

**Transnet National Ports Authority**

an Operating Division **TRANSNET SOC LTD**

[Registration Number 1990/000900/30]

**REQUEST FOR QUOTATION (RFQ)**

**SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF FIRE FIGHTING  
WORKSHOP PLANT AT THE PORT OF RICHARDS BAY**

<b>RFQ NUMBER</b>	<b>: TNPA/2022/09/1144/12939/RFQ</b>
<b>RFQ ISSUE DATE</b>	<b>: 23 September 2022</b>
<b>COMPULSORY BRIEFING</b>	<b>: 03 October 2022</b>
<b>CLOSING DATE</b>	<b>: 21 October 2022</b>
<b>CLOSING TIME</b>	<b>: 12h00pm</b>
<b>TENDER VALIDITY PERIOD</b>	<b>: 12 weeks from closing date</b>

**Note to the bidders:**

**Bidders are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth or the size of the number of uploads they are submitting. Please do not wait for the last hour to submit. A Bidder can upload 30mb per upload and multiple uploads are permitted.**

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## T1.1 TENDER NOTICE AND INVITATION TO TENDER

### SECTION 1: NOTICE TO TENDERERS

#### 1. INVITATION TO TENDER

Responses to this Tender [hereinafter referred to as a **Tender**] are requested from persons, companies, close corporations or enterprises [hereinafter referred to as a Tenderer].

<b>DESCRIPTION</b>	Supply, Delivery, Installation, Testing and Commissioning of Fire Fighting Workshop Plant at the Port of Richards Bay
<b>TENDER DOWNLOADING</b>	<b>This Tender may be downloaded directly from the National Treasury e-Tender Publication Portal at <a href="http://www.etenders.gov.za">www.etenders.gov.za</a> FREE OF CHARGE. The RFQ may also be downloaded from the Transnet website at <a href="http://www.transnet.net">www.transnet.net</a> free of charge</b>

<b>COMPULSORY TENDER CLARIFICATION MEETING</b>	<p>A Compulsory Tender Clarification Meeting will be conducted at <b>Anchor Boardroom, Old Naval Base, Commodores Close, Richards Bay (Adjacent to The Zululand Yacht Club) on the 03 October 2022, at 10:00am [10 O'clock]</b> for a period of ± two (2) hours. [Tenderers to provide own transportation and accommodation].</p> <p>The Compulsory Tender Clarification Meeting will start punctually and information will not be repeated for the benefit of Tenderers arriving late.</p> <p>All queries are to be forwarded to Fezeka Mhlongo by no later than 17 October 2022 via email – <a href="mailto:Fezeka.Mhlongo@Transnet.net">Fezeka.Mhlongo@Transnet.net</a> / 035 905 3129</p>
<b>CLOSING DATE</b>	<p><b>12:00pm on 21 October 2022</b></p> <p>Tenderers must ensure that tenders are uploaded timeously onto the system. <b>If a tender is late, it will not be accepted for consideration.</b></p>

#### 2. TENDER SUBMISSION

Transnet has implemented a new electronic tender submission system, the e-Tender Submission Portal, in line with the overall Transnet digitalization strategy where suppliers can view advertised tenders, register their information, log their intent to respond to bids and upload their bid proposals/responses on to the system.

a) The Transnet e-Tender Submission Portal can be accessed as follows:

- Log on to the Transnet e-Tenders management platform website (<https://www.transnet.net>);
- Click on "TENDERS";
- Scroll towards the bottom right-hand side of the page;

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- On the blue window click on "register on our new e-Tender Portal";
  - Click on "ADVERTISED TENDERS" to view advertised tenders;
  - Click on "SIGN IN/REGISTER – for bidder to register their information (must fill in all mandatory information);
  - Click on "SIGN IN/REGISTER" - to sign in if already registered;
  - Toggle (click to switch) the "Log an Intent" button to submit a bid;
  - Submit bid documents by uploading them into the system against each tender selected.
  - Refer to the e-tenders Annexure attached
- b) The tender offers to this tender will be opened as soon as possible after the closing date and time. Transnet shall not, at the opening of tenders, disclose to any other company any confidential details pertaining to the Tender Offers / information received, i.e. pricing, delivery, etc. The names and locations of the Tenderers will be divulged to other Tenderers upon request.
- c) Submissions must not contain documents relating to any Tender other than that shown on the submission.

### **3. CONFIDENTIALITY**

All information related to this RFQ is to be treated with strict confidentiality. In this regard Tenderers are required to certify that they have acquainted themselves with the Non- Disclosure Agreement. All information related to a subsequent contract, both during and after completion thereof, will be treated with strict confidence. Should the need however arise to divulge any information gleaned from provision of the Works, which is either directly or indirectly related to Transnet's business, written approval to divulge such information must be obtained from Transnet.

### **4. DISCLAIMERS**

Tenderers are hereby advised that Transnet is not committed to any course of action as a result of its issuance of this Tender and/or its receipt of a tender offer. In particular, please note that Transnet reserves the right to:

- 4.1. Award the business to the highest scoring Tenderer/s unless objective criteria justify the award to another tenderer.
- 4.2. Not necessarily accept the lowest priced tender or an alternative Tender;
- 4.3. Go to the open market if the quoted rates (for award of work) are deemed unreasonable;

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- 4.4. Should the Tenderers be awarded business on strength of information furnished by the Tenderer, which after conclusion of the contract is proved to have been incorrect, Transnet reserves the right to terminate the contract;
- 4.5. Request audited financial statements or other documentation for the purposes of a due diligence exercise;
- 4.6. Not accept any changes or purported changes by the Tenderer to the tender rates after the closing date;
- 4.7. Verify any information supplied by a Tenderer by submitting a tender, the Tenderer/s hereby irrevocably grant the necessary consent to the Transnet to do so;
- 4.8. Conduct the evaluation process in parallel. The evaluation of Tenderers at any given stage must therefore not be interpreted to mean that Tenderers have necessarily passed any previous stage(s);
- 4.9. Unless otherwise expressly stated, each tender lodged in response to the invitation to tender shall be deemed to be an offer by the Tenderer. The Employer has the right in its sole and unfettered discretion not to accept any offer.
- 4.10. Not be held liable if tenderers do not provide the correct contact details during the clarification session and do not receive the latest information regarding this RFP with the possible consequence of being disadvantaged or disqualified as a result thereof.
- 4.11. Transnet reserves the right to exclude any Tenderers from the tender process who has been convicted of a serious breach of law during the preceding 5 [five] years including but not limited to breaches of the Competition Act 89 of 1998, as amended. Tenderers are required to indicate in tender returnable, **[T2.2-16: Breach of Law]** whether or not they have been found guilty of a serious breach of law during the past 5 [five] years.
- 4.12. Transnet reserves the right to perform a risk analysis on the preferred tenderer to ascertain if any of the following might present an unacceptable commercial risk to the employer:
- unduly high or unduly low tendered rates or amounts in the tender offer;
  - contract data of contract provided by the tenderer; or
  - the contents of the tender returnables which are to be included in the contract.

5. Transnet will not reimburse any Tenderer for any preparatory costs or other work performed in connection with this Tender, whether or not the Tenderer is awarded a contract.

## 6. NATIONAL TREASURY'S CENTRAL SUPPLIER DATABASE

Tenderer are required to self-register on National Treasury's Central Supplier Database (CSD) which has been established to centrally administer supplier information for all organs of state and facilitate the verification of certain key supplier information. The CSD can be accessed at <https://secure.csd.gov.za/>. Tenderer are required to provide the following to Transnet in order to enable it to verify information on the CSD:

Supplier Number..... and Unique registration reference  
number..... (Tender Data)

**Transnet urges its clients, suppliers and the general public to  
report any fraud or corruption to  
TIP-OFFS ANONYMOUS: 0800 003 056 OR [Transnet@tip-offs.com](mailto:Transnet@tip-offs.com)**

## T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex C of the CIDB Standard for Uniformity in Engineering and Construction Works Contracts. The Standard for Uniformity in Construction Procurement was first published in Board Notice 62 of 2004 in Government Gazette No 26427 of 9 June 2004. It was subsequently amended in Board Notice 67 of 2005 in Government Gazette No 28127 of 14 October 2005, Board Notice 93 of 2006 in Government Gazette No 29138 of 18 August 2006, Board Notice No 9 of 2008 in Government Gazette No 31823 of 30 January 2009, Board Notice 86 of 2010 in Government Gazette No 33239 of 28 May 2010, Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015 and Board Notice 423 of 2019 in Government Gazette No 42622 of 8 August 2019.

This edition incorporates the amendments made in Board Notice 423 of 2019 in Government Gazette 42622 of 8 August 2019. ([www.cidb.org.za](http://www.cidb.org.za)).

The Standard Conditions of Tender make several references to Tender data for detail that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the Standard Conditions of Tender.

Each item of data given below is cross-referenced in the left-hand column to the clause in the Standard Conditions of Tender to which it mainly applies.

Clause	Data
C.1.1 The Employer is	<b>Transnet SOC Ltd</b> <b>(Reg No. 1990/000900/30)</b>
C.1.2 The tender documents issued by the Employer comprise:	
<b>Part T: The Tender</b>	
Part T1: Tendering procedures	T1.1 Tender notice and invitation to tender T1.2 Tender data
Part T2: Returnable documents	T2.1 List of returnable documents T2.2 Returnable schedules
<b>Part C: The contract</b>	
Part C1: Agreements and contract data	C1.1 Form of offer and acceptance C1.2 Contract data (Part 1 & 2)
Part C2: Pricing data	C2.1 Pricing instructions C2.2 Bill of Quantities
Part C3: Scope of work	C3 Works Information
Part C4: Site information	C4 Site information

C.1.4	<p>The Employer's agent is: Contract Specialist</p> <p>Name: Fezeka Mhlongo</p> <p>Address: 1st Floor, Bayvue Building Ventura Road RICHARDS BAY 3900</p> <p>Tel No. 035 905 3129/066 190 1126</p> <p>E – mail <a href="mailto:Fezeka.Mhlongo@transnet.net">Fezeka.Mhlongo@transnet.net</a></p>	
C.2.1	<p>Only those tenderers who satisfy the following eligibility criteria are eligible to submit tenders:</p> <p><b>1. Stage One - Eligibility with regards to attendance of the compulsory clarification meeting:</b></p> <p>An authorised representative of the tendering entity or a representative of a tendering entity that intends to form a Joint Venture (JV) must attend the compulsory clarification meeting in terms C2.7</p> <p><b>Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.</b></p> <p><b>2. Stage Two - Pre-qualification criteria for preferential procurement in terms of the Preferential Procurement Regulations, 2017:</b></p> <p>a) A tenderer having a stipulated minimum B-BBEE status level 2 of contributor</p> <p>b) Only EME's are eligible to submit a tender offer</p> <p><b>Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.</b></p> <p><b>3. Stage Three - Eligibility in terms of the Construction Industry Development Board:</b></p> <p>a) Only those tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, designation of <b>1SF</b> class of construction work, are eligible to have their tenders evaluated.</p> <p>b) Joint Venture (JV) Joint ventures are eligible to submit tenders subject to the following:</p>	



1. every member of the joint venture is registered with the CIDB;
2. the lead partner has a contractor grading designation of **1SF** class of construction work; and
3. the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **1SF** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations
4. The tenderer shall provide a certified copy of its signed joint venture agreement.

**Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.**

#### **4. Stage four - Functionality:**

Only those tenderers who obtain the minimum qualifying score for functionality will be evaluated further in terms of price and the applicable preference point system. The minimum qualifying for score for functionality is **60** points.

The evaluation criteria for measuring functionality and the points for each criteria and, if any, each sub-criterion as stated in C.3.11.3 below.

**Any tenderer that fails to meet the stipulated pre-qualifying criteria will be regarded as an unacceptable tender.**

C.2.7 The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. **Tenderers must complete and sign the attendance register.** Addenda will be issued to and tenders will only be received from those tendering entities including those entities that intends forming a joint venture appearing on the attendance register. Tenderers are also **required to bring their RFQ document to the briefing session and have their returnable document T2.2-01 certificate of attendance** signed off by the Employer's authorised representative.

C.2.12 No alternative tender offers will be considered.

C.2.13.3 Each tender offer shall be in the **English Language.**

C.2.13.5 The Employer's details and identification details that are to be shown on each tender offer are as follows:

Identification details:

The tender documents must be uploaded with:

- Name of Tenderer
- Contact person and details
- The Tender Number: **TNPA/2022/09/1144/12939/RFQ**

- The Tender Description: **Supply, Delivery, Installation, Testing and Commissioning of Fire Fighting Workshop Plant**

Documents must be marked for the attention of:

**Employer's Agent: Fezeka Mhlongo**

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C.2.13.9 Telephonic, telegraphic, facsimile or e-mailed tender offers will not be accepted.

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C.2.15 The closing time for submission of tender offers is: Time:  
**12:00pm on the 21 October 2022**  
 Location: The Transnet e-Tender Submission Portal: [www.transnet.net](http://www.transnet.net)

**NO LATE TENDERS WILL BE ACCEPTED**

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C.2.16 The tender offer validity period is **12 weeks** after the closing date. Tenderers are to note that they may be requested to extend the validity period of their tender, on the same terms and conditions, if Transnet's internal evaluation and governance approval processes has not been finalised within the validity period.

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C.2.23 The tenderer is required to submit with his tender:

1. A valid Tax Clearance Certificate issued by the South African Revenue Services.

**Tenderers also to provide Transnet with a TCS PIN to verify Tenderer's compliance status.**

2. A **valid B-BBEE Certificate** from a Verification Agency accredited by the South African Accreditation System [SANAS], or a **sworn affidavit** confirming annual turnover and level of black ownership in case of all EMEs and QSEs with 51% black ownership or more together with the tender;
3. A valid CIDB certificate in the correct designated grading;
4. Proof of registration on the Central Supplier Database;
5. Letter of Good Standing with the Workmen's compensation fund by the tendering entity or separate Letters of Good Standing from all members of a newly constituted JV.

**Note:** Refer to Section T2.1 for List of Returnable Documents

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C3.11 The minimum number of evaluation points for functionality is **60**

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The procedure for the evaluation of responsive tenders is Functionality, Price and Preference:

**Only those tenderers who attain the minimum number of evaluation points for Functionality will be eligible for further evaluation, failure to meet the minimum threshold will result in the tender being disqualified and removed from any further consideration.**

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### Functionality Criteria

The functionality criteria and maximum score in respect of each of the criteria are as follows:

Quality Criteria	Sub-Criteria	Sub-Criteria Point	Maximum number of points
Management and CVs of Key persons	The tenderer must be able to demonstrate that the project personnel have sufficient knowledge, experience and qualifications to provide the required service.		25
	Submit the following documents as a minimum with your tender document.	3	
	An organisation chart showing on-site and off-site management (including the key people you have identified in the Contract Data Part two and identify the required legal appointments). Details of the location (and functions) of offices from which the works will be managed. Details of the experience of the staff who will be working on the works with respect to:		
	(Working with the NEC3 Engineering and Construction Contract Option chosen for this contract. If staff experience of these matters is limited, an indication of relevant training that they have attended would be helpful).		
	Key personnel should include at least, amongst others:		
	Project Manager/Site Agent/Construction Manager	5	
	Mechanical Engineer/Technologist	10	
	Electrician	3	
	Health and safety officer	4	
Quality Plan	Tenderers should submit a complete and comprehensive Quality Plan that demonstrates the following:		
	Project Quality Plan for the contract	3	
	Valid ISO 9001:2015 certification (certified).	1	
	Index / list of procedures / method statements to be used during the contract.	2	
	Project specific Quality Control Plan (For each task)		

	<ul style="list-style-type: none"> <li>• Firefighting and rescue equipment</li> <li>• Mechanical Works</li> <li>• Electrical Works</li> </ul>	3	10
	Signed Quality Policy based on ISO 9001:2015 five key requirements	1	
<b>Health and Safety</b>	<b>Tenderers should note that they will be scored on the level of quality and relevant content pertaining to the Scope of Works:</b>		
	The Tenderer must provide their Contract specific health and safety plan addressing the requirements of Transnet health and safety specification include but not limited to the following documents:		
	1. Health & Safety Company Policy signed by the accounting officer. List the five elements - <ul style="list-style-type: none"> <li>➢ Commitment to Safety, prevention of pollution,</li> <li>➢ Continual improvement,</li> <li>➢ Compliance to legal requirements, appropriate to the nature of contractor's activities,</li> <li>➢ Hold management accountable for development of the safety systems</li> <li>➢ Include objectives and targets.</li> </ul>	2	
	2. Roles and responsibilities of legal appointees  a) In terms of OHSA 85 of 1993 and its Regulations. <ul style="list-style-type: none"> <li>I. S16.2,</li> <li>II. CR8.1 Construction manager (Registered with SACPCMP),</li> <li>III. CR8.5 Construction Health &amp; Safety officer (Registered with SACPCMP),</li> </ul>		

	IV. CR8.7 Construction Supervisor,	4	15
	3. Overview of the tenderer's Risk Assessment methodology, and submission of risk assessments indicating major activities of the project namely, but not limited to manufacturing and installation of the works per task: <ul style="list-style-type: none"> <li>Civil and Structural Works</li> <li>Mechanical Works</li> <li>Electrical Works</li> </ul>	6	
	4. Two years synopsis of SHE incidents, description, type and action taken to prevent re-occurrence	3	
Previous Experience	<ul style="list-style-type: none"> <li>Tenderers are required to demonstrate their experience in the delivery of similar Works, and to this end shall supply a sufficiently detailed reference list of previous and existing customers i.e name of employer, project name, project description, contact person, contact details, project amount and project duration. Letters of award for each project, completion certificates from customers if the work is complete, and also demonstrate their overall experience in the delivery of similar works. The tenderer must demonstrate their relevant experience with regards to:</li> </ul>		30
	<ul style="list-style-type: none"> <li>The tenderer's experience in the installation of mechanical workshop plant</li> </ul>	7.5	
	<ul style="list-style-type: none"> <li>The tenderer's experience in the installation of fire fighting workshop plant.</li> </ul>	7.5	
	Evidence of project completion	15	
Method Statement	<b>Tenderers are to submit a project specific Method Statement highlighting the categories below:</b>		
	A detailed technical method statement is required covering the construction/installation method and sequence of all aspects of the works to enable the Employer to assess the impact of the tenderer's methods with regard to constructability, practicality, quality, health, safety, risk and the environment.	10	20

	As a minimum the detailed technical method statement should include:		
	• Pre-construction activities (including designs, OEM engagements and meetings)	1	
	• Manufacturing of facilities, equipment and processes where applicable	2	
	• Supply, delivery, installation, testing and commissioning of firefighting Workshop plant	2	
	Submit management Level Schedule (Level 2) – which defines the major activities and interfaces between engineering, procurement, design, fabrication and execution, transportation, installation, pre-commissioning and commissioning.	5	
		100	
			<b>100</b>

Functionality shall be scored independently by not less than 3 (three) evaluators and averaged in accordance with the following schedules:

- T2.2-04 Management & CVs of Key Persons
- T2.2-05 Previous Experience
- T2.2-06 Quality Management
- T2.2-07 Environmental Management
- T2.2-08 Health and Safety Requirements

Each evaluation criteria will be assessed in terms of scores of **0, 20, 40, 60, 80 or 100**.

The scores of each of the evaluators will be averaged, weighted and then totalled to obtain the final score for functionality, unless scored collectively. (See CIDB Inform Practice Note #9).

**Note: Any tender not complying with the above-mentioned requirements, will be regarded as non-responsive and will therefore not be considered for further evaluation. This note must be read in conjunction with Clause C.2.1.**

- C.3.11. Only tenders that achieve the minimum qualifying score for functionality will be evaluated further in accordance with the 80/20 preference points systems as described in Preferential Procurement Regulations 6 and 7.

80 where the financial value of one or more responsive tenders received have a value equal to or below R50 million, inclusive of all applicable taxes

Up to 100 minus W1 tender evaluation points will be awarded to tenderers who complete the preferencing schedule and who are found to be eligible for the preference claimed. **Should the BBBEE rating not be provided, tenderers with no verification will score zero points for preferencing.**

**Note:** Transnet reserves the right to carry out an independent audit of the tenderer's scorecard components at any stage from the date of close of the tenders until completion of the contract.

- C.3.13 Tender offers will only be accepted if:

1. The tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector;
2. The tenderer does not appear on Transnet's list for restricted tenderers and National Treasury's list of Tender Defaulters;
3. The tenderer has fully and properly completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the Employer or potentially compromise the tender process and persons in the employ of the state.
4. Transnet reserves the right to award the tender to the tenderer who scores the highest number of points overall, unless there are **objective criteria** which will justify the award of the tender to another tenderer. Objective criteria include but are not limited to the outcome of a due diligence exercise to be conducted. The due diligence exercise may take the following factors into account inter alia.

the tenderer:

- a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement,
- b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract,
- c) has the legal capacity to enter into the contract,
- d) is not insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act, 2008, bankrupt or being wound up, has his affairs administered by a court or a judicial officer, has suspended his business activities, or is subject to legal proceedings in respect of any of the foregoing,
- e) complies with the legal requirements, if any, stated in the tender data and

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f) is able, in the option of the employer to perform the contract free of conflicts of interest.

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C.3.17 The number of paper copies of the signed contract to be provided by the Employer is **1(one)**.

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## **T2.1 List of Returnable Documents**

### **2.1.1 These schedules are required for pre-qualification and eligibility purposes:**

- T2.2-01 **Stage One: Eligibility Criteria Schedule** - Certificate of attendance at Compulsory Tender Clarification Meeting
- T2.2-02 **Stage Two: Prequalification for Preferential Procurement – B-BBEE**  
Status level 2 of contributor and only EME's are eligible to submit tender offer
- T2.2-03 **Stage Three: Stage Two as per CIDB** - Eligibility Criteria Schedule - CIDB Registration

### **2.1.2 Stage Four as Per CIDB: these schedules will be utilised for evaluation purposes:**

- T2.2-04 **Evaluation Schedule:** Management & CVs of key persons
- T2.2-05 **Evaluation Schedule:** Previous experience
- T2.2-06 **Evaluation Schedule:** Quality Management
- T2.2-07 **Evaluation Schedule:** Method Statement
- T2.2-08 **Evaluation Schedule:** Health and Safety Management & Questionnaire

### **2.1.3 Returnable Schedules:**

#### **General:**

- T2.2-09 Authority to submit tender
- T2.2-10 Record of addenda to tender documents
- T2.2-11 Letter of Good Standing
- T2.2-12 Schedule of proposed Subcontractors (if subcontract in terms of PPPFA is not eligibility)

#### **Agreement and Commitment by Tenderer:**

- T2.2-13 CIDB SFU ANNEX G Compulsory Enterprise Questionnaire
- T2.2-14 Non-Disclosure Agreement
- T2.2-15 RFQ Declaration Form
- T2.2-16 RFQ – Breach of Law
- T2.2-17 Certificate of Acquaintance with Tender Document
- T2.2-18 Service Provider Integrity Pact
- T2.2-19 Supplier Code of Conduct
- T2.2-20 Agreement in terms of Protection of Personal Information Act, 4 of 2013 ("POPIA")

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### **1.3.2 Bonds/Guarantees/Financial/Insurance:**

T2.2-21 Insurance provided by the Contractor

## **2.2 C1.1 Offer portion of Form of Offer & Acceptance**

## **2.3 C1.2 Contract Data**

## **2.5 C2.1 Pricing Instructions (Bill of Quantities)**

## **2.6 C2.2 Bill of Quantities**

## **2.7 C3 Goods Information**

## **2.8 C4 Site Information**

## T2.2-01: Eligibility Criteria Schedule:

### Certificate of Attendance at Tender Clarification Meeting

This is to certify that

(Company Name)

Represented

(Name and

by:

Surname)

Was represented at the compulsory tender clarification meeting

Held on:	<b>Anchor Boardroom, Old Naval Base, Commodores Close, Richards Bay (Adjacent to The Zululand Yacht Club)</b>	
On (date)	<b>03 October 2022</b>	Starting time: <b>10h00am</b>

### Particulars of person(s) attending the meeting:

Name

Signature

Capacity

### Attendance of the above company at the meeting was confirmed:

Name

Signature

**For and on Behalf of the  
Employers Agent.**

Date

## T2.2.02 Pre-qualification Criteria Schedule - Preferential Procurement

In an endeavour to grow and develop Black Owned (BO) companies as well as to ensure that Transnet meets its Shareholder Compact Objectives, Potential Tenderers are required to meet the Pre-qualification criteria for preferential procurement in terms of the Preferential Procurement Regulations, 2017,

- It is a specific tendering condition that tenderers must meet the pre-qualifying criteria required below. Only respondents falling within the following categories may respond to this Tender:
  - Only Tenderers with a minimum **B-BBEE Level 2** contributor are eligible to submit a tender offer
  - Only EME's are eligible to submit a tender offer

**Company registration documents, Financial Statements and Identity Document Copies of the directors of the company are to be attached in order for TNPA to verify the B-BBEE Certificates or Sworn Affidavits attached.**

**Any tender that fails to meet the pre-qualifying criteria stipulated above will be regarded as an unacceptable tender.**

Provide information of the Contractor below:

	<b>Name of proposed Contractor</b>	<b>Address and Region</b>	<b>Nature and extent of work</b>	<b>B-BBEE Certificates or Sworn Affidavit attached behind this schedule? Yes/No</b>
<b>1</b>				

Comments:

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Signed at..... on this ..... day of .....

## T2.2-03: Eligibility Criteria Schedule - CIDB Grading Designation

### Note to tenderers:

Tenderers are to indicate their CIDB Grading by filling in the table below. **Attach a copy of the CIDB Grading Designation or evidence of being capable of being so registered.**

CRS Number	Status	Grading	Expiry Date

5. Only those tenderers who are registered with the CIDB or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **1SF** class of construction work, are eligible to have their tenders evaluated.

### 6. Joint Venture (JV)

Joint ventures are eligible to submit tenders subject to the following:

5. every member of the joint venture is registered with the CIDB;
6. the lead partner has a contractor grading designation in the **1SF** class of construction work; and
7. the combined Contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a Contractor grading designation determined in accordance with the sum tendered for a **1SF** class of construction work or a value determined in accordance with Regulation 25(1B) or 25(7A) of the Construction Industry Development Regulations
8. the Contractor shall provide the employer with a certified copy of its signed joint venture agreement;
9. and in the event that the joint venture is an 'Incorporated Joint Venture' the Memorandum of Incorporation to be provided within 4 (four) weeks of the Contract Date.

## T2.2-04: Evaluation Schedule: Management & CVs of Key Persons

The tenders will automatically be given a score of zero (0) if the engineering team (mechanical engineer and electrician does not have the required ECSA and Department of Labour's Wireman's licence as stipulated by relevant legislation.

The tender must be able to demonstrate that the project personnel have sufficient knowledge, experience and qualifications to provide the required service.

Submit the following documents as a minimum with your tender document:

1. Organizational structure to include a clear indication of roles and responsibilities and specific function of each team member;
2. The experience of assigned key persons in relation to the scope of work will be evaluated from two different points of view, namely:
  - a. Relevant experience.
  - b. The education, training and skills. (Proof of education and training must be attached. Copies of all qualifications must be certified by a Commissioner of Oaths)
  - c. Key personnel should include at least, amongst others but not limited to:
    - Project Manager/Site Agent/Construction Manager;
    - Mechanical Engineer/Technologist;
    - Electrician
    - Health & Safety Officer.

No.	Key Persons	Name and Surname	CV attached (Yes/No)
1	Project Manager/Construction Manager/Site Agent		
2	Health & Safety Officer		
3	Mechanical Engineer/Technologist		
4	Electrician		

**Note: CV's and profiles should show experience, background and track record in similar types of projects**

**Attached submissions to this schedule:**

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The table below will be used as guidelines for scoring / evaluating the management and CVs of key persons submitted by the Tenderer:

	<b>Organizational structure to include a clear indication of roles and responsibilities and specific function of each team member</b>	<b>Project Manager/Site Agent/Construction Manager</b>	<b>Mechanical Engineer/Technologist</b>	<b>Electrician</b>	<b>Health and Safety Officer</b>
	<b>3</b>	<b>5</b>	<b>10</b>	<b>3</b>	<b>4</b>
<b>Score 0</b>	<b>The tenderer has submitted no information or inadequate information to determine the score</b>				
<b>Score 20</b>	Inadequate organisation chart, Incomplete list of Key staff and management structure. No details of the location and functions of offices where the work will be managed.	Key staff does not have suitable levels of relevant experience and qualifications or equivalent specialized training.	Key staff does not have suitable levels of relevant experience and qualifications or equivalent specialized training.	Key staff does not have suitable levels of relevant experience and qualifications or equivalent specialized training.	Safety officer does not have relevant qualifications or not registered with SACPCMP.

<b>Score 40</b>	Organisation chart show incomplete list of Key staff and management structure. Details of the location where the work will be managed are defined but functions of offices are not defined.	Key staff has limited recommended levels of relevant experience (from 1 but less than 3 years' post Professional Registration experience) and qualifications or equivalent specialized training.	Key staff has limited recommended levels of relevant experience (from 1 but less than 3 years' post Professional Registration experience) and qualifications or equivalent specialized training.	Key staff has limited recommended levels of relevant experience (from 1 but less than 3 years experience and qualifications or equivalent specialized training.	Safety officer have below average qualifications but are registered with SACPCMP.
<b>Score 60</b>	Organisation chart showing onsite and off-site management but not all Key staff have reasonable experience of issues pertinent to the project. Details of the location where the work will be managed are defined but functions of offices are not clearly defined	Key staff has acceptable levels of relevant experience (from 3 but less than 5 years' post Professional Registration experience) and qualifications or equivalent specialized training.	Key staff has acceptable levels of relevant experience (from 3 but less than 5 years' post Professional Registration experience) and qualifications (Diploma or B-Tech) or equivalent specialized training.	Key staff has acceptable levels of relevant experience (from 3 but less than 5 years' experience and qualifications or equivalent specialized training.	Safety officer have average relevant qualifications (SAMTRAC or Equivalent) and are registered with SACPCMP and have up to 5 years of relevant experience.
<b>Score 80</b>	Organisation chart showing onsite and off-site management. Details of the location and functions of offices from which the works will be managed are clearly defined.	All Key staff have acceptable levels of relevant experience (from 5 but less than 8 years' post Professional Registration experience) and qualifications or equivalent specialized training.	All Key staff have acceptable levels of relevant experience (from 5 but less than 8 years' post Professional Registration experience) and qualifications (Diploma or B-Tech) or	All Key staff have acceptable levels of relevant experience (from 5 but less than 8 year's experience and qualifications or equivalent specialized training.	Safety officer have average relevant qualifications (Diploma or B-Tech) and are registered with SACPCMP and have more than 5 years of relevant experience.



			equivalent specialized training.		
<b>Score 100</b>	Organisation chart showing onsite and off-site management and Key staff have reasonable experience of issues pertinent to the project. Details of the location and functions of offices from which the works will be managed are clearly defined.	All Key staff have highly acceptable levels of relevant experience (from 8 or more years' post Professional Registration experience) and with Diploma /Postgraduate Diploma in Project Management qualifications or equivalent specialized training. All relevant and required professional registration with SACPCMP/certification are provided.	All Key staff have highly acceptable levels of relevant experience (from 8 or more years' post Professional Registration experience) and qualifications (Diploma or B-Tech) or equivalent. All Key staff must be professionally registered with ECSA and SACPCMP. specialized training. All relevant and required professional registration/certification are provided.	All Key staff have highly acceptable levels of relevant experience from 8 or more years' Registration and qualifications or equivalent specialized training. All relevant and required professional registration/certification are provided.	Safety officer have above average relevant qualifications (High degree / Honors / Doctorate) and are registered with SACPCMP and have more than 5 years of relevant experience.

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

**T2.2-05: Evaluation Schedule: Previous experience****Note to tenderers:**

Tenderers are required to demonstrate their overall experience in the delivery of similar works over the last 10 years, and to this end shall supply a sufficiently detailed reference list with contact details of existing customers and also demonstrate their relevant experience with regards to the Construction of similar works as detailed in the Works Information with reference to:

- The tenderer's experience in the installation of mechanical workshop plant.
- The tenderer's experience in the installation of fire fighting workshop plant.

References to substantiate experience indicated showing:

- Project description
- Customer name and contact details
- Contract value and duration. Reference letter to have a minimum of at least R250 000.
- Evidence of project completion i.e., Completion Certificate

The tenderer to submit the following:

- Previous experience based on similar work (specific to the scope)
- Sufficient references to substantiate experience indicated (project description, Client name and contact details, contract value and duration). Reference letters should not be older than 10 years.

**The tenderer's experience in the installation of mechanical workshop plant.**

<b>Project Description</b>	<b>Client name and contact details</b>	<b>contract value and duration</b>	<b>Date of project completion</b>

**The tenderer's experience in the installation of fire fighting workshop plant.**

<b>Project Description</b>	<b>Client name and contact details</b>	<b>contract value and duration</b>	<b>Date of project completion</b>

TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2022/09/1144/12939/RFQ

DESCRIPTION OF THE WORKS: SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF FIRE FIGHTING WORKSHOP PLANT IN THE PORT OF RICHARDS BAY

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**Attach the index of documentation to this schedule to substantiate your submission:**

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The table below indicate the method of scoring that will be followed to evaluate the previous experience submitted by the Tenderer:

	<b>The tenderer's experience in the installation of mechanical workshop plant.</b>	<b>The tenderer's experience in the installation of fire fighting workshop plant.</b>	<b>Evidence of project completion</b>
	<b>(7.5)</b>	<b>(7.5)</b>	<b>(15)</b>
<b>Score 0</b>	The tenderer has submitted no information or inadequate information to determine a score.		
<b>Score 20</b>	Tenderer has submitted previous experience that is not acceptable, as the tender have undertaken insufficient project of a similar nature/value.	No references provided to substantiate experience indicated.	
<b>Score 40</b>	The tenderer previous experience is not acceptable, as the tender have undertaken insufficient project of a similar nature/value.	Insufficient references provided to substantiate experience indicated.	
<b>Score 60</b>	Tenderer has submitted previous experience relating to construction of similar works with minor deviations from the nature or value of the current scope of works to be undertaken.	Acceptable references provided to substantiate experience indicated and stipulated the contract values for those previous projects.	

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<b>Score 80</b>	Tenderer has submitted an extensive previous experience with no deviations from the nature or value of the current scope of works to be undertaken.	Sufficient references provided to substantiate experience indicated and stipulated the contract values for those previous projects.
<b>Score 100</b>	Tenderer has submitted an outstanding previous experience with no deviations from the nature or value of the current scope of works to be undertaken.	Extensive references provided to substantiate experience indicated and stipulated the contract values for those previous projects.

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The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

## **T2.2-06: Evaluation Schedule: Quality Management**

Due consideration must be given to the deliverables required to execute and complete the contract as per the Quality Management Standard, QAL-STD-0001 General Quality Requirements for Contractors and Suppliers as stated above and should include but not be limited to:

1. Project Quality Plan for the contract
2. Valid ISO 9001:2015 certification
3. Index / list of quality procedures to be used during the contract
4. Project specific Quality Control Plan (For each task)
  - Firefighting and rescue equipment
  - Mechanical Works
  - Electrical Works
5. A signed Quality Policy based on International Organisation for Standardisation (ISO 9001:2015) that displays the five key policy requirements.

Note:

The policy must include or cover the following requirements:

- a) Is appropriate to the purpose of the organisation,
- b) Includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system,
- c) Provides a framework for establishing and reviewing quality objectives,
- d) Is communicated and understood within the organisation, and
- e) Is reviewed for continuing suitability.

**The scoring will be as follows**

	<b>Quality Management (10)</b>				
	<b>Project Quality Plan for the contract (3)</b>	<b>Valid ISO 9001:2015 certificate (1)</b>	<b>A signed Quality Policy (1)</b>	<b>Project specific Quality Control Plan (For each task) (3)</b>	<b>Index / list of quality procedures to be used during the contract (2)</b>
<b>Score (0)</b>	No PQP submitted.	No ISO 9001:2015 certificate	No Signed Quality policy	No QCPs submitted	No list of procedures and method statement submitted
<b>Score (20)</b>	PQP is too general with not project specifics	N/A	1 of the 5 key policy requirements are recognised and meet the Employer's requirements.	QCPs are not product project specific	Index / list of procedures and method statement is not project specific
<b>Score (40)</b>	PQP is project specific but inadequate to cover project scope	N/A	2 of the 5 key policy requirements are recognised and meet the Employer's requirements.	QCPs are product manufacturing specific but inadequate to cover project information	Index / list of procedures and method statements is project specific but inadequate to cover the project scope

<b>Score (60)</b>	PQP shows adequate understanding of project quality requirements	ISO 9001:2015 certificate expired, letter of renewal available	3 of the 5 key policy requirements are recognised and meet the Employer's requirements.	QCP's shows adequate understanding of project quality requirements	Index / list of procedures and method statements shows adequate understanding of project quality requirements
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	<b>Quality Management (10)</b>				
	<b>Project Quality Plan for the contract (3)</b>	<b>Valid ISO 9001:2015 certificate (1)</b>	<b>A signed Quality Policy (1)</b>	<b>Project specific Quality Control Plan (For each task) (3)</b>	<b>Index / list of quality procedures to be used during the contract (2)</b>
<b>Score (80)</b>	PQP shows above average understanding of the project quality requirements	N/A	4 of the 5 key policy requirements are recognised and meet the Employer's requirements.	QPC's shows above average understanding of the project quality requirements	Index / list of procedures and method statements shows above average understanding of the project quality requirements
<b>Score (100)</b>	PQP covers all and above the project quality requirements of the project scope	ISO 9001:2015 certificate is valid	5 of the 5 key policy requirements are recognised and meet the Employer's requirements	QCP's covers all and above the project quality requirements of the supply information	Index / list of procedures and method statements covers all and above the project quality requirements

TRANSNET NATIONAL PORTS AUTHORITY

TENDER NUMBER: TNPA/2022/09/1144/12939/RFQ

DESCRIPTION OF THE WORKS: SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF FIRE FIGHTING WORKSHOP PLANT IN THE PORT OF RICHARDS BAY

**Attached submissions to this schedule:**

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.

**T2.2-07: Evaluation Schedule: Method Statement****Note to tenderers:**Method statement

1. A detailed technical method statement is required covering the construction/installation method and sequence of all aspects of the works to enable the Employer to assess the impact of the tenderer's methods with regard to constructability, practicality, quality, health, safety, risk and the environment.
2. The method statement should articulate what value add the tenderer will provide in achieving the stated objectives for the project. As a minimum the detailed technical method statement should include:
  - Pre-construction activities (including designs, OEM engagements and meetings
  - Manufacturing of facilities, equipment and processes where applicable
  - Supply, delivery, installation, testing and commissioning of firefighting Workshop plant
3. The tenderer must as such explain his / her understanding of the objectives of the assignment and the Employer's stated and implied requirements, highlight the issues of importance, and explain the technical approach they would adopt to address them. The method statement should also correlate with the tenderer's quality plan outlining the processes, procedures and associated resources, applied by whom and when, to meet the requirements and indicate how risks will be managed and what contribution can be made regarding value management.
4. Programme: Tender should submit management Level Schedule (Level 2) – which defines the major activities and interfaces between engineering, procurement, design, fabrication and execution, transportation, installation, pre-commissioning and commissioning.

The table below is for information purposes only to indicate the method of scoring that will be followed to evaluate the method statement submitted by the Tenderer:

	<b>A detailed technical method statement covering the construction/installation method and sequence with regard to constructability, practicality, quality, health, safety, risk and the environment</b>	<b>The detailed technical method statement articulating what value add the tenderer include to achieve the stated objectives:</b> - Pre-construction activities - Manufacturing of facilities, equipment and processes - Supply, delivery, installation, testing and commissioning of firefighting Workshop plant	<b>Management Level Schedule – which defines the major activities and interfaces between engineering, procurement, design, fabrication and execution, transportation, installation, pre-commissioning and commissioning.</b>
	<b>10</b>	<b>5</b>	<b>5</b>
<b>Score 0</b>	The tenderer has submitted no information or inadequate information to determine a score.		
<b>Score 40</b>	The method statements are not acceptable as it will not satisfy project objectives or requirements. The tenderer has misunderstood the scope of work and does not deal with any aspects of the project.	The method statements are not acceptable as it will not satisfy project objectives or requirements. The tenderer has misunderstood the scope of work and does not deal with any aspects of the project.	The programme is not acceptable as it will not satisfy project objectives or requirements. <ul style="list-style-type: none"> <li>• The programme does not meet all the required timeframes.</li> <li>• The tenderer submission is missing critical activities and dates which renders it unrealistic / unachievable.</li> </ul>
<b>Score 60</b>	Tenderer has submitted a method statement with major omissions and/or irregularities. Tenderers technical approach and / methodology is poor, not realistic, generic and unlikely to satisfy project objectives or requirements.	Tenderer has submitted a method statement with major omissions and/or irregularities. The tenderer misunderstood the scope of works and does not deal with the critical aspects of the project. The approach to managing works too generic.	The tenderer has addressed some but not all date requirements and submission is missing some activities and dates which renders it at risk of being unrealistic / unachievable.
<b>Score 80</b>	Tenderer has submitted an acceptable method statement with minor omissions and/or irregularities and / or partially	Tenderer has submitted an acceptable method statement with minor omissions and/or irregularities and / or partially complete, and does encompass and detail the	The tenderer has addressed most date requirements correctly and submission contains logic and sequencing which is

	complete, and detail the works objectives and requirements to be undertaken	works objectives and requirements to be undertaken; the approach does partially deal with the characteristics of the project	accurate and renders the submission realistic and achievable.
<b>Score 100</b>	<p>Tenderer has submitted an outstanding method statement:</p> <ol style="list-style-type: none"> <li>1. The proposed construction methodology will ensure that the design meets the specifications and quality standards. The proposed tools/equipment meets the requirements set out in the Works Information/applicable technical specifications and relates to the programme.</li> <li>2. Besides meeting the "80" rating, the important issues are approached in an innovative and efficient way, indicating that the Tenderer has outstanding knowledge of state-of-the-art approaches.</li> </ol> <p>The methodology details ways to improve the project outcomes and quality of outputs.</p>	<p>Tenderer has submitted an outstanding method statement:</p> <ol style="list-style-type: none"> <li>1. Approach clearly articulated and based on this project; the works are aligned with the scope of works and project schedule;</li> <li>2. The methodology details ways to improve the project outcomes and quality of outputs.</li> </ol>	<p>The tenderer has addressed all date requirements correctly and submission contains logic and sequencing which is accurate and renders the submission realistic and achievable.</p>

## T2.2-08: Evaluation Schedule - Health and Safety Requirements

Submit the following documents as a minimum with your tender:

- I. The Tenderer must provide their Contract specific health and safety plan addressing the requirements of Transnet health and safety specification include but not limited to the following documents:
  5. Safety, Health & Environmental Company Policy signed by the Accounting Officer, must include or cover the following five elements -
    1. Commitment to Safety, prevention of pollution & ill health,
    2. Continual improvement,
    3. Compliance to legal requirements, appropriate to the nature of tenderer's activities,
    4. Hold management accountable for development of the safety systems,
    5. Include objectives and targets.
  6. Table or outline the Roles & Responsibilities, such as S16.2, Construction manager, Construction Supervisor, Health and Safety officer, etc. as per the Occupational health and safety Act 85 of 1993.
  7. Overview of Risk Assessment process and examples, highlighting major activities of the project.
  8. **Two-year** synopsis of SHE incidents, description, type and action taken to prevent re-occurrence.
- II. Complete and return with tender documentation the Contractor Safety Questionnaire with supporting documentation included as an Annexure.

### Attached submissions to this schedule:

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**The scoring of the Tenderer's Health and safety requirements will be as follows:**

	<p><b>The Tenderers must provide a Signed Policy covering the following five elements</b></p> <p><b>1.Commitment to Safety, prevention of pollution &amp; ill health,</b></p> <p><b>2.Continual improvement,</b></p> <p><b>3.Compliance to legal requirements, appropriate to the nature of tenderer's activities,</b></p> <p><b>4.Hold management accountable for development of the safety systems,</b></p> <p><b>5.Include objectives and targets.</b></p>	<p><b>Roles &amp; Responsibilities, such as S16.2, 8.1 Construction manager, 8.5 Construction Safety Officer, 8.7 Construction Supervisor, etc. as per the Occupational health and safety Act 85 of 1993</b></p>	<p><b>Overview of the tenderer's Risk Assessment methodology, and submission of risk assessments indicating major activities of the project namely, but not limited to: Construction as per the works information</b></p>	<p><b>Two-year synopsis of SHE incidents, description, type and action taken to prevent re-occurrence.</b></p> <p><b>Submission of completed cost breakdown sheet.</b></p>
<b>Points</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>3</b>
<b>Score 0</b>				
<b>Score 20</b>	Information supplied is totally insignificant/inadequate to achieve the required standard of service.	Roles and responsibilities do not meet the Occupational health and safety Act as per construction regulations and TNPA health and safety specification.	Information supplied is totally insignificant/inadequate to achieve the required standard of service.	Information supplied is totally insignificant/inadequate to achieve the required standard of service.

<b>Score 40</b>	Poor response/answer/solution lacks convincing evidence, medium risk that stated employer's requirements will not be met.	Roles and responsibilities are unlikely to ensure compliance as per the Works information and not in line with OHS Act and TNPA health and safety specification.	Poor response/answer/solution lacks convincing evidence, medium risk that stated employer's requirements will not be met.	Poor response/answer/solution lacks convincing evidence, medium risk that stated Employer's requirements will not be met.
<b>Score 60</b>	Satisfactory response/answer/solution to the particular aspect of the requirement, evidence given that the stated Employer's requirements will be met.	Satisfactory response on roles and responsibilities as per Employer's requirements.	Satisfactory response/answer/solution to the particular aspect of the requirement, evidence given that the stated Employer's requirements will be met.	Satisfactory response/answer/solution to the particular aspect of the requirement, evidence given that the stated Employer's requirements will be met.
<b>Score 80</b>	Good response/answer/solution which demonstrates real understanding and evidence of ability to meet stated Employer's requirements.	Roles and responsibilities are likely to ensure compliance as per Works Information, OHS Act and TNPA health and safety specification.	Good response/answer/solution which demonstrates real understanding and evidence of ability to meet stated Employer's requirements.	Good response/answer/solution which demonstrates real understanding and evidence of ability to meet stated Employer's requirements.
<b>Score 100</b>	Very good response/answer/solution gives real confidence that the tenderer is most likely to ensure compliance with stated Employer's requirements.	Roles and Responsibilities most likely to ensure compliance as per requirements of OHS Act and TNPA Health and Safety Management Specification and CV and proof of professional registration with SACPCMP submitted.	Very good response/answer/solution gives real confidence that the tenderer is most likely to ensure compliance with stated Employer's requirements.	Very good response/answer/solution gives real confidence that the tenderer is most likely to ensure compliance with stated Employer's requirements.

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this schedule are within my personal knowledge and are to the best of my belief both true and correct.



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**Tender Health and Safety Cost Breakdown**

<b>Tenderer (Company)</b>	<b>Responsible Person</b>	<b>Designation</b>	<b>Date</b>
<b>Project/Tender Title</b>	<b>Project/Tender No.</b>	<b>Project Location / Description</b>	

#	Cost element	Unit Cost (R)	# Of Units	Total Cost (R)
1.	Human Resources			
2.	Systems Documentation			
3.	Meetings & Administration			
4.	H&S Training			
5.	PPE & Safety Equipment			
6.	Signage & Barricading			
7.	Workplace Facilities			
8.	Emergency & Rescue Measures			
9.	Hygiene Surveys & Monitoring			
10.	Medical Surveillance			
11.	Safe Transport of Workers			
12.	HazMat Management (e.g. asbestos /silica)			
13.	Substance Abuse Testing			
14.	H&S Reward & Recognition			
		<b>Total Health and Safety Cost (R)</b>		
		<b>Total Tender Value (R)</b>		
		<b>H&amp;S Cost as % of Tender value</b>		<b>%</b>

## Contractor Safety Questionnaire

1. Safe Work Performance									
1A	Injury Experience / Historical Performance – Alberta								
	Use the previous three years injury and illness records to complete the following:								
	Year								
	Number of medical treatment cases								
	Number of restricted workday cases								
	Number of lost time injury cases								
	Number of fatal injuries								
	Total recordable frequency								
	Lost time injury frequency								
	Number of worker manhours								
	1	Medical Treatment Case	Any occupational injury or illness requiring treatment provided by a physician or treatment provided under the direction of a physician						
	2	Restricted Workday Case	Any occupational injury or illness that prevents a worker from performing any of his/her craft jurisdiction duties						
	3	Lost Time injury Cases	Any occupational injury that prevents the worker from performing any work for at least one day						
	4	Total Recordable Frequency	Total number of Medical Treatment, Restricted Work and Lost Time Injury cases multiplied by 200,000 then divided by total manhours						
5	Lost Time Injury Frequency	Total number of Lost Time Injury cases multiplied by 200,000 then divide by total manhours							
1B	Workers' Compensation Experience								
	Use the previous three years injury and illness records to complete the following (if applicable):								
	Industry Code:			Industry Classification:					
	Year								
	Industry Rate								
	Contractor Rate								
	% Discount or Surcharge								
	Is your Workers' Compensation account in good standing? (Please provide letter of confirmation)						Yes		No
2. Citations									
2A	Has your company been cited, charged or prosecuted under Health, Safety and/or Environmental Legislation in the last 5 years?					Yes		No	
2B	Has your company been cited, charged or prosecuted under the above Legislation in another Country, Region or State?					Yes		No	
	If yes, provide details:								

3. Citations									
	Does your company have a Certificate of Recognition?					Yes		No	
	If yes, what is the Certificate No:		Issue Date:						
4. Safety Program									
4A	Do you have a written safety program manual? If Yes, provide a copy for review					Yes		No	
4B	Do you have a pocket safety booklet for field distribution? If Yes, provide a copy for review					Yes		No	
4C	Does your safety program contain the following elements:								
		Yes	No		Yes		No		
	Corporate Safety Policy			Equipment Maintenance					
	Incident Notification Policy			Emergency Response					
	Recordkeeping & Statistics			Hazard Assessment					
	Reference to Legislation			Safe Work Practices					
	General Rules &			Safe Work Procedures					
	Progressive Discipline			Workplace Inspections					
	Responsibilities			Investigation Process					
	PPE Standards			Training Policy & Program					
	Environmental Standards			Communication Processes					
	Modified Work Program								
5. Training Program									
5A	Do you have an orientation program for new hire employees? If Yes, include a course outline. Does it include any of the following:					Yes		No	
		Yes	No		Yes		No		
	General Rules & Regulations			Confined Space Entry					
	Emergency Reporting			Trenching & Excavation					
	Injury Reporting			Signs & Barricades					
	Legislation			Dangerous Holes & Openings					
	Right to Refuse Work			Rigging & Cranes					
	Personal Protective			Mobile Vehicles					
	Emergency Procedures			Preventative Maintenance					
	Project Safety Committee			Hand & Power Tools					
	Housekeeping			Fire Prevention & Protection					
	Ladders & Scaffolds			Electrical Safety					
	Fall Arrest Standards			Compressed Gas Cylinders					
	Aerial Work Platforms			Weather Extremes					
5B	Do you have a program for training newly hired or promoted supervisors? If Yes, submit an outline for evaluation. Does it include instruction on the					Yes		No	
		Yes	No		Yes		No		
	Employer Responsibilities			Safety Communication					
	Employee Responsibilities			First Aid/Medical Procedures					
	Due Diligence			New Worker Training					
	Safety Leadership			Environmental Requirements					
	Work Refusals			Hazard Assessment					
	Inspection Processes			Pre-Job Safety Instruction					

	Emergency Procedures			Drug & Alcohol Policy		
	Incident Investigation			Progressive Disciplinary Policy		
	Safe Work Procedures			Safe Work Practices		
	Safety Meetings			Notification Requirements		
<b>6. Safety Activities</b>						
6A	Do you conduct safety inspections?	Yes	No	Weekly	Monthly	Quarterly
	Describe your safety inspection process (include participation, documentation requirements, follow-up, report distribution)					
6B	Do you hold site safety meetings for field employees? If Yes, how often?	Yes	No	Daily	Weekly	Biweekly
6C	Do you hold site meetings where safety is addressed with management and field supervisors?	Yes	No	Weekly	Biweekly	Monthly
6D	Is pre-job safety instruction provided before to each new task?			Yes		No
	Is the process documented?			Yes		No
	Who leads the discussion?					
6E	Do you have a hazard assessment process?			Yes		No
	Are hazard assessments documented?			Yes		No
	If yes, how are hazard assessments communicated and implemented on each project?					
	Who is responsible for leading the hazard assessment process?					
6F	Does your company have policies and procedures for environmental protection, spill clean-up, reporting, waste disposal, and recycling as part of the Health & Safety Program?			Yes		No
6G	How does your company measure its H&S success? Attach separate sheet to explain					
<b>7. Safety Stewardship</b>						
7A	Are incident reports and report summaries sent to the following and how often?	Yes	No	Monthly	Quarterly	Annually
	Project/Site Manager					
	Vice President/Managing Director					
	Safety Director/Manager					
	President/Chief Executive Officer					
7B	How are incident records and summaries kept? How often are they reported internally?	Yes	No	Monthly	Quarterly	Annually
	Incidents totalled for the entire company					
	Incidents totalled by project					
	subtotalled by superintendent					
	subtotalled by foreman					
7C	How are the costs of individual incidents kept? How often are they reported internally?	Yes	No	Monthly	Quarterly	Annually
	Costs totalled for the entire company					

	Costs totalled by project					
	subtotalled by superintendent					
	Subtotalled by foreman/general foreman					
7D	Does your company track non-injury incidents?	Yes	No	Monthly	Quarterly	Annually
	Near Miss					
	Property Damage					
	Fire					
	Security					
	Environmental					
<b>8. Personnel</b>						
List key health and safety officers planned for this project. Attach resume.						
Name		Position / Title		Designation		
Supply name, address and phone number of your company's corporate health and safety representative. Does this individual have responsibilities other than health, safety and environment?						
Name		Address		Telephone Number		
Other responsibilities:						
<b>9. References</b>						
List the last three company's your form has worked for that could verify the quality and management commitment to your occupational Health & Safety program						
Name and Company		Address		Telephone Number		

**T2.2-09: Authority to submit a Tender**

Indicate the status of the tenderer by ticking the appropriate box hereunder. The tenderer must complete the certificate set out below for his category of organisation or alternatively attach a certified copy of a company / organisation document which provides the same information for the relevant category as requested here.

<b>A - COMPANY</b>	<b>B - PARTNERSHIP</b>	<b>C - JOINT VENTURE</b>	<b>D - SOLE PROPRIETOR</b>

**A. Certificate for Company**

I, \_\_\_\_\_ chairperson of the board of directors \_\_\_\_\_  
 \_\_\_\_\_, hereby confirm that by resolution of the board taken on \_\_\_\_\_  
 \_\_\_\_\_ (date), Mr/Ms \_\_\_\_\_, acting in the capacity of \_\_\_\_\_  
 \_\_\_\_\_, was authorised to sign all documents in connection with this tender  
 offer and any contract resulting from it on behalf of the company.

Signed

Date

Name

Position

Chairman of the Board of Directors

---

**B. Certificate for Partnership**

We, the undersigned, being the **key partners** in the business trading as \_\_\_\_\_  
\_\_\_\_\_ hereby authorise Mr/Ms \_\_\_\_\_ acting in the capacity  
of \_\_\_\_\_, to sign all documents in connection with the tender offer for  
Contract \_\_\_\_\_ and any contract resulting from it on our behalf.

Name	Address	Signature	Date

**NOTE:** This certificate is to be completed and signed by the full number of Partners necessary to commit the Partnership. Attach additional pages if more space is required.

---

**C. Certificate for Joint Venture**

We, the undersigned, are submitting this tender offer in Joint Venture and hereby authorise Mr/Ms

\_\_\_\_\_, an authorised signatory of the company \_\_\_\_\_

\_\_\_\_\_, acting in the capacity of lead partner, to sign all documents in connection with the tender offer for Contract \_\_\_\_\_ and any contract resulting from it on our behalf.

This authorisation is evidenced by the attached power of attorney signed by legally authorised signatories of all the partners to the Joint Venture.

Furthermore we attach to this Schedule a copy of the joint venture agreement which incorporates a statement that all partners are liable jointly and severally for the execution of the contract and that the lead partner is authorised to incur liabilities, receive instructions and payments and be responsible for the entire execution of the contract for and on behalf of any and all the partners.

Name of firm	Address	Authorising signature, name (in caps) and capacity



---

## D. Certificate for Sole Proprietor

I, \_\_\_\_\_, hereby confirm that I am the sole owner of the business trading

as \_\_\_\_\_.

Signed

Date

Name

Position

Sole Proprietor

**T2.2-10: Record of Addenda to Tender Documents**

This schedule as submitted confirms that the following communications received from the Employer before the submission of this tender offer, amending the tender documents, have been taken into account in this specific tender offer:

	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Attach additional pages if more space is required.

---

**T2.2-11 Letter/s of Good Standing with the Workmen's Compensation Fund**

Attached to this schedule is the Letter/s of Good Standing.

- 1.
- 2.

Name of Company/Members of Joint Venture:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

## T2.2-12: Schedule of Proposed Subcontractors

The tenderer is required to provide details of all the sub-contractors that will be utilised in the execution of the works.

### Note to tenderers:

- In terms of PPPFA Regulation 6 (5), A tenderer may not be awarded points for B-BBEE status level of contributor if the tender documents indicate that the tenderer intends subcontracting more than 25% of the value of the contract to any other person not qualifying for at least the points that the tenderer qualifies for, unless the intended subcontractor is an EME that has the capability to execute the subcontract.
- In terms of PPPFA Regulation 12 (3), A person awarded a contract may not subcontract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level of contributor that the person concerned, unless the contract is subcontracted to an EME that has the capability and ability to execute the contract.

**Tenderer to note that after award, any deviations from this list of proposed sub-contractors will be subject to acceptance by the Project Manager in terms of the Conditions of Contract.**

Provide information of the Sub-contractors below:

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships	Military Veterans	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

Name of Proposed Subcontractor			Address		Nature of work		Amount of Worked	Percentage of work
% Black Owned	EME	QSE	Youth	Women	Disabilities	Rural/ Underdeveloped areas/ Townships		Military Veterans
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>

## T2.2-13: Compulsory Enterprise Questionnaire

The following particulars hereunder must be furnished.

In the case of a Joint Venture, separate enterprise questionnaires in respect of each partner/member must be completed and submitted.

**1. Section 1: Name of enterprise:** \_\_\_\_\_

**2. Section 2: VAT registration number, if any:** \_\_\_\_\_

**3. Section 3: CIDB registration number, if any:** \_\_\_\_\_

**4. Section 4: CSD number:** \_\_\_\_\_

**5. Section 5: Particulars of sole proprietors and partners in partnerships**

Name	Identity number	Personal income tax number

\* Complete only if sole proprietor or partnership and attach separate page if more than 3 partners

## 6. Section 6: Particulars of companies and close corporations

Company registration number \_\_\_\_\_

Close corporation number \_\_\_\_\_

Tax reference number: \_\_\_\_\_

**Section 7: The attached SBD4 must be completed for each tender and be attached as a tender requirement.**

**Section 8: The attached SBD 6 must be completed for each tender and be attached as a requirement.**

**Section 9: The attached SBD8 must be completed for each tender and be attached as a requirement.**

**Section 10: The attached SBD9 must be completed for each tender and be attached as a requirement.**

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise:

- i) authorizes the Employer to obtain a tax clearance certificate from the South African Revenue Services that my / our tax matters are in order;
- ii) confirms that the neither the name of the enterprise or the name of any partner, manager, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears on the Register of Tender Defaulters established in terms of the Prevention and Combating of Corrupt Activities Act of 2004;
- iii) confirms that no partner, member, director or other person, who wholly or partly exercises, or may exercise, control over the enterprise appears, has within the last five years been convicted of fraud or corruption;
- iv) confirms that I / we are not associated, linked or involved with any other tendering entities submitting tender offers and have no other relationship with any of the tenderers or those responsible for compiling the scope of work that could cause or be interpreted as a conflict of interest; and
- v) confirms that the contents of this questionnaire are within my personal knowledge and are to the best of my belief both true and correct.

Signed

Date

Name

Position

Enterprise  
name

**SBD 4**

**DECLARATION OF INTEREST**

1. Any legal person, including persons employed by the state<sup>1</sup>, or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes a price quotation, advertised competitive bid, limited bid or proposal). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/ adjudicating authority where-

- the bidder is employed by the state; and/or

- the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

- State means :

a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act

No. 1 of 1999); any municipality or municipal entity;

b) provincial legislature;

c) national Assembly or the national Council of provinces; or d) Parliament.



**SBD 4**

**2. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

2.1 Full Name of bidder or his or her representative: \_\_\_\_\_  
\_\_\_\_\_

2.2 Identity Number: \_\_\_\_\_

2.3 Position occupied in the Company (director, trustee, shareholder<sup>2</sup>): \_\_\_\_\_  
\_\_\_\_\_

2.4 Company Registration Number: \_\_\_\_\_

2.5 Tax Reference Number: \_\_\_\_\_

2.6 VAT Registration Number: \_\_\_\_\_

2.6.1 The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee / personnel numbers must be indicated in paragraph 3 below.

2.7 Are you or any person connected with the bidder presently employed by the state?

**YES / NO**

2.7.1 If so, furnish the following particulars:

- Name of person / director / trustee / shareholder/ member:

\_\_\_\_\_

- Name of state institution at which you or the person connected to the bidder is employed:

\_\_\_\_\_

- Position occupied in the state institution:

\_\_\_\_\_

Any other particulars:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**SBD 4**

\_\_\_\_\_

<sup>2</sup> "Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

---

2.7.2 If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector?

**YES / NO**

2.7.3 If yes, did you attached proof of such authority to the bid document?

**YES / NO**

Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.

2.7.3.1 If no, furnish reasons for non-submission of such proof:

---

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2.8 Did you or your spouse, or any of the company's directors / trustees / shareholders / members or their spouses conduct business with the state in the previous twelve months?

**YES / NO**

2.8.1 If so, furnish particulars:

---

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---

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid?

**YES / NO**

2.8.2 If so, furnish particulars.

---

---

---

#### **SBD 4**

2.9 Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between any other bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid?

---

**YES/NO**

2.9.1 If so, furnish particulars.

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2.10 Do you or any of the directors / trustees / shareholders / members of the company have any interest in any other related companies whether or not they are bidding for this contract?

**YES/NO**

2.10.1 If so, furnish particulars:

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**SBD 4****3 Full details of directors / trustees / members / shareholders.**

<b>Full Name</b>	<b>Identity Number</b>	<b>Personal Tax Reference Number</b>	<b>State Employee Number / Persal Number</b>

---


**SBD 4**

#### **4 DECLARATION**

I, THE UNDERSIGNED (NAME) \_\_\_\_\_ CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 23 OF THE GENERAL CONDITIONS OF CONTRACT SHOULD THIS DECLARATION PROVE TO BE FALSE.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Position

\_\_\_\_\_  
Name of bidder

## SBD 6.1

### PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

This preference form must form part of all bids invited. It contains general information and serves as a claim for preference points for Broad-Based Black Economic Empowerment [**B-BBEE**] Status Level of Contribution. Transnet will award preference points to companies who provide valid proof of their B-BBEE status using either the latest version of the generic Codes of Good Practice or Sector Specific Codes (if applicable).

**NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017.**

#### 1. GENERAL CONDITIONS

- 1.1 The following preference point systems are applicable to all bids:
- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
  - the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).
- 1.2 The value of this bid is estimated to not exceed R50 000 000 (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable. Despite the stipulated preference point system, Transnet shall use the lowest acceptable bid to determine the applicable preference point system in a situation where all received acceptable bids are received outside the stated preference point system.
- 1.3 Preference points for this bid shall be awarded for:
- (a) Price; and
  - (b) B-BBEE Status Level of Contribution.
- 1.4 The maximum points for this bid are allocated as follows:

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTION	20
Total points for Price and B-BBEE must not exceed	100

- 1.5 Failure on the part of a bidder to submit proof of B-BBEE status level of contributor together with the bid will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.
- 1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

#### 2. DEFINITIONS

- (a) **"all applicable taxes"** includes value-added tax, pay as you earn, income tax, unemployment insurance fund contributions and skills development levies;
- (b) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-

Based Black Economic Empowerment Act;

- (c) **"B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (d) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the supply/provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;
- (e) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (f) **"EME"** means an Exempted Micro Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (g) **"functionality"** means the ability of a bidder to provide goods or services in accordance with specification as set out in the bid documents
- (h) **"Price"** includes all applicable taxes less all unconditional discounts.
- (i) **"Proof of B-BBEE Status Level of Contributor"**
  - i) the B-BBEE status level certificate issued by an authorised body or person;
  - ii) a sworn affidavit as prescribed by the B-BBEE Codes of Good Practice; or
  - iii) any other requirement prescribed in terms of the B-BBEE Act.
- (j) **"QSE"** means a Qualifying Small Enterprise as defines by Codes of Good Practice under section 9 (1) of the Broad-Based Black Economic Empowerment Act, 2003 ( Act No. 53 of 2003);
- (k) **"Rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties.

### 3. POINTS AWARDED FOR PRICE

#### 3.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:

80/20

$$P_s = \frac{P_t - P_{\min}}{P_{\min}}$$

Where

$P_s$  = Points scored for comparative price of bid under consideration

$P_t$  = Comparative price of bid under consideration

$P_{\min}$  = Comparative price of lowest acceptable bid

### 4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

- 4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-compliant contributor	0

4.2 The table below indicates the required proof of B-BBEE status depending on the category of enterprises:

Enterprise	B-BBEE Certificate & Sworn Affidavit
<b>Large</b>	Certificate issued by SANAS accredited verification agency
<b>QSE</b>	<p>Certificate issued by SANAS accredited verification agency</p> <p>Sworn Affidavit signed by the authorised QSE representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership (only black-owned QSEs - 51% to 100% Black owned)</p> <p>[Sworn affidavits must substantially comply with the format that can be obtained on the DTI's website at <a href="http://www.dti.gov.za/economic_empowerment/bee_codes.jsp">www.dti.gov.za/economic_empowerment/bee_codes.jsp</a>.]</p>
<b>EME<sup>3</sup></b>	<p>Sworn Affidavit signed by the authorised EME representative and attested by a Commissioner of Oaths confirming annual turnover and black ownership</p> <p>Certificate issued by CIPC (formerly CIPRO) confirming annual turnover and black ownership</p> <p>Certificate issued by SANAS accredited verification agency only if the EME is being measured on the QSE scorecard</p>

- 4.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level verification certificate for every separate bid.
- 4.4 Tertiary Institutions and Public Entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.
- 4.5 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract.

<sup>3</sup> In terms of the Implementation Guide: Preferential Procurement Regulations, 2017, Version 2, paragraph 11.11 provides that in the Transport Sector, EMEs can provide a letter from accounting officer or get verified and be issued with a B-BBEE certificate by SANAS accredited professional or agency as the Transport Sector Code has not been aligned to the generic Codes. EMEs in the Transport Sector are not allowed to provide a sworn affidavit as the generic codes are not applicable to them.



- 4.6 A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.
- 4.7 Bidders are to note that the rules pertaining to B-BBEE verification and other B-BBEE requirements may be changed from time to time by regulatory bodies such as National Treasury or the DTI. It is the Bidder's responsibility to ensure that his/her bid complies fully with all B-BBEE requirements at the time of the submission of the bid.

## 5. BID DECLARATION

- 5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

## 6. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 6.1

- 6.1 B-BBEE Status Level of Contribution: . = ..... (maximum of 20 points)
- (Points claimed in respect of paragraph 6.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.)

## 7. SUB-CONTRACTING

- 7.1 Will any portion of the contract be sub-contracted?

(Tick applicable box)

YES		NO	
-----	--	----	--

- 7.1.1 If yes, indicate:

- What percentage of the contract will be subcontracted .....%
- The name of the sub-contractor.....
- The B-BBEE status level of the sub-contractor.....
- Whether the sub-contractor is an EME or QSE.

(Tick applicable box)

YES		NO	
-----	--	----	--

- v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2017:

Designated Group: An EME or QSE which is at least 51% owned by:	EME √	QSE √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

**8. DECLARATION WITH REGARD TO COMPANY/FIRM**

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture / Consortium
- One person business/sole propriety
- Close corporation
- Company
- (Pty) Limited

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

8.6 COMPANY CLASSIFICATION

- Manufacturer
- Supplier
- Professional Service provider
- Other Service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If a bidder submitted false information regarding its B-BBEE status level of contributor, local production and content, or any other matter required in terms of the Preferential Procurement Regulations, 2017 which will affect or has affected the evaluation of a bid, or where a bidder has failed to declare any subcontracting arrangements or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have
  - (a) disqualify the person from the bidding process;
  - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
  - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
  - (d) if the successful bidder subcontracted a portion of the bid to another person

without disclosing it, Transnet reserves the right to penalise the bidder up to 10 percent of the value of the contract;

- (e) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the Audi alteram partem (hear the other side) rule has been applied; and
- (f) forward the matter for criminal prosecution.

WITNESSES

1. ....

2. ....

.....

SIGNATURE(S) OF BIDDERS(S)

DATE: .....

ADDRESS.....

.....

## SBD 8

### DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1. This Standard Bidding Document must form part of all bids invited.
2. It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
3. The bid of any bidder may be disregarded if that bidder, or any of its directors have-
  - a. abused the institution's supply chain management system;
  - b. committed fraud or any other improper conduct in relation to such system; or
  - c. failed to perform on any previous contract.
- 4. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's database as companies or persons prohibited from doing business with the public sector? <b>(Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the audi alteram partem rule was applied).</b>	<input type="checkbox"/>	<input type="checkbox"/>
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? <b>To access this Register enter the National Treasury's website, <a href="http://www.treasury.gov.za">www.treasury.gov.za</a>, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445.</b>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?	<input type="checkbox"/>	<input type="checkbox"/>
4.3.1	If so, furnish particulars:		

4.4	Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes D	No D
4.4.1	If so, furnish particulars:		

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**SBD 8**

**CERTIFICATION**

**I, THE UNDERSIGNED (FULL NAME) ..... CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.**

**I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.**

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Signature

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Date

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Position

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Name of Tenderer

## **CERTIFICATE OF INDEPENDENT BID DETERMINATION**

1. This Standard Bidding Document (SBD) must form part of all bids/quotes<sup>4</sup> invited.
2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).<sup>5</sup> Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
3. Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
  - (a) disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.
  - (b) cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.
4. This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
5. In order to give effect to the above, the attached Certificate of Bid Determination (SBD 9) must be completed and submitted with the bid:

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<sup>4</sup> Includes price quotations, advertised competitive bids, limited bids and proposals.

<sup>5</sup> Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

**SBD 9**

**CERTIFICATE OF INDEPENDENT QUOTATION/PROPOSAL DETERMINATION**

I, the undersigned, in submitting the accompanying quote:

\_\_\_\_\_  
(Quote Number and Description)

in response to the invitation for the quote made by:

\_\_\_\_\_  
(Name of Institution)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of \_\_\_\_\_ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate.
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
  - (a) has been requested to submit a bid in response to this bid invitation;
  - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
  - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder



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**SBD 9**

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement, or arrangement with any competitor. However communication between partners in a joint venture or consortium<sup>6</sup> will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - (a) prices;
  - (b) geographical area where product or service will be rendered (market allocation)
  - (c) methods, factors or formulas used to calculate prices;
  - (d) the intention or decision to submit or not to submit, a bid;
  - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
  - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

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<sup>6</sup> Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

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Signature

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Date

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Position

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Name of bidder

## **T2.2-14 NON-DISCLOSURE AGREEMENT**

**Note to tenderers: This Non-Disclosure Agreement is to be completed and signed by an authorised signatory:**

**THIS AGREEMENT** is made effective as of ..... day of ..... 20..... by and between:

### **TRANSNET SOC LTD**

(Registration No. 1990/000900/30), a company incorporated and existing under the laws of South Africa, having its principal place of business at 138 Eloff Street, Braamfontein, Johannesburg, 2000, South Africa

**and**

.....

(Registration No. ....), a private company incorporated and existing under the laws of South Africa having its principal place of business at

.....

.....

### **WHEREAS**

Transnet and the Company wish to exchange Information [as defined below] and it is envisaged that each party may from time to time receive Information relating to the other in respect thereof. In consideration of each party making available to the other such Information, the parties jointly agree that any dealings between them shall be subject to the terms and conditions of this Agreement which themselves will be subject to the parameters of the Tender Document.

### **IT IS HEREBY AGREED**

#### **1. INTERPRETATION**

In this Agreement:

- 1.1 Agents mean directors, officers, employees, agents, professional advisers, contractors or sub-contractors, or any Group member;
- 1.2 Bid or Bid Document (hereinafter Tender) means Transnet's Request for Information [RFI] Request for Proposal [RFP] or Request for Quotation [RFQ], as the case may be;
- 1.3 Confidential Information means any information or other data relating to one party [the Disclosing Party] and/or the business carried on or proposed or intended to be carried on by that party and which is made available for the purposes of the Bid to the other party [the Receiving Party] or its Agents by the Disclosing Party or its Agents or recorded in agreed minutes following oral disclosure and any other information otherwise made available by the Disclosing Party or its Agents to the Receiving Party or its Agents, whether before, on or

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after the date of this Agreement, and whether in writing or otherwise, including any information, analysis or specifications derived from, containing or reflecting such information but excluding information which:

- 1.3.1 is publicly available at the time of its disclosure or becomes publicly available [other than as a result of disclosure by the receiving party or any of its agents contrary to the terms of this agreement]; or
  - 1.3.2 was lawfully in the possession of the receiving party or its agents [as can be demonstrated by its written records or other reasonable evidence] free of any restriction as to its use or disclosure prior to its being so disclosed; or
  - 1.3.3 following such disclosure, becomes available to the receiving party or its agents [as can be demonstrated by its written records or other reasonable evidence] from a source other than the disclosing party or its agents, which source is not bound by any duty of confidentiality owed, directly or indirectly, to the disclosing party in relation to such information;
- 1.4 Group means any subsidiary, any holding company and any subsidiary of any holding company of either party; and
- 1.5 Information means all information in whatever form including, without limitation, any information relating to systems, operations, plans, intentions, market opportunities, know-how, trade secrets and business affairs whether in writing, conveyed orally or by machine-readable medium.

## 2. CONFIDENTIAL INFORMATION

- 2.1 All Confidential Information given by one party to this Agreement [the Disclosing Party] to the other party [the Receiving Party] will be treated by the Receiving Party as secret and confidential and will not, without the Disclosing Party's written consent, directly or indirectly communicate or disclose [whether in writing or orally or in any other manner] Confidential Information to any other person other than in accordance with the terms of this Agreement.
- 2.2 The Receiving Party will only use the Confidential Information for the sole purpose of technical and commercial discussions between the parties in relation to the Tender or for the subsequent performance of any contract between the parties in relation to the Tender.
- 2.3 Notwithstanding clause **2.1** above, the Receiving Party may disclose Confidential Information:
  - 2.3.1 To Those Of Its Agents Who Strictly Need To Know The Confidential Information For The Sole Purpose Set Out In Clause **2.2** Above, Provided That The Receiving Party Shall Ensure That Such Agents Are Made Aware Prior To The Disclosure Of Any Part Of The Confidential Information That The Same Is Confidential And That They Owe A Duty Of Confidence To The Disclosing Party. The Receiving Party Shall at All Times Remain Liable For Any Actions Of Such Agents That Would Constitute A Breach Of This Agreement; Or

2.3.2 To The Extent Required By Law Or The Rules Of Any Applicable Regulatory Authority, Subject To Clause **2.4** Below.

2.4 In the event that the Receiving Party is required to disclose any Confidential Information in accordance with clause **2.3.2** above, it shall promptly notify the Disclosing Party and cooperate with the Disclosing Party regarding the form, nature, content and purpose of such disclosure or any action which the Disclosing Party may reasonably take to challenge the validity of such requirement. In the event that any Confidential Information shall be copied, disclosed or used otherwise than as permitted under this Agreement then, upon becoming aware of the same, without prejudice to any rights or remedies of the Disclosing Party, the Receiving Party shall as soon as practicable notify the Disclosing Party of such event and if requested take such steps [including the institution of legal proceedings] as shall be necessary to remedy [if capable of remedy] the default and/or to prevent further unauthorised copying, disclosure or use.

2.5 All Confidential Information shall remain the property of the Disclosing Party and its disclosure shall not confer on the Receiving Party any rights, including intellectual property rights over the Confidential Information whatsoever, beyond those contained in this Agreement.

### **3. RECORDS AND RETURN OF INFORMATION**

3.1 The Receiving Party agrees to ensure proper and secure storage of all Information and any copies thereof.

3.2 The Receiving Party shall keep a written record, to be supplied to the Disclosing Party upon request, of the Confidential Information provided and any copies made thereof and, so far as is reasonably practicable, of the location of such Confidential Information and any copies thereof.

3.3 The Company shall, within 7 [seven] days of receipt of a written demand from Transnet:

3.3.1 Return All Written Confidential Information [Including All Copies]; And

3.3.2 Expunge Or Destroy Any Confidential Information from Any Computer, Word Processor Or Other Device Whatsoever Into Which It Was Copied, Read Or Programmed By The Company Or On Its Behalf.

3.4 The Company shall on request supply a certificate signed by a director as to its full compliance with the requirements of clause **3.3.2** above.

### **4. ANNOUNCEMENTS**

4.1 Neither party will make or permit to be made any announcement or disclosure of its prospective interest in the Tender without the prior written consent of the other party.

4.2 Neither party shall make use of the other party's name or any information acquired through its dealings with the other party for publicity or marketing purposes without the prior written consent of the other party.

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**5. DURATION**

The obligations of each party and its Agents under this Agreement shall survive the termination of any discussions or negotiations between the parties regarding the Tender and continue thereafter for a period of 5 [five] years.

**6. PRINCIPAL**

Each party confirms that it is acting as principal and not as nominee, agent or broker for any other person and that it will be responsible for any costs incurred by it or its advisers in considering or pursuing the Tender and in complying with the terms of this Agreement.

**7. ADEQUACY OF DAMAGES**

Nothing contained in this Agreement shall be construed as prohibiting the Disclosing Party from pursuing any other remedies available to it, either at law or in equity, for any such threatened or actual breach of this Agreement, including specific performance, recovery of damages or otherwise.

**8. PRIVACY AND DATA PROTECTION**

- 8.1 The Receiving Party undertakes to comply with South Africa's general privacy protection in terms Section 14 of the Bill of Rights in connection with this Tender and shall procure that its personnel shall observe the provisions of such Act [as applicable] or any amendments and re-enactments thereof and any regulations made pursuant thereto.
- 8.2 The Receiving Party warrants that it and its Agents have the appropriate technical and organisational measures in place against unauthorised or unlawful processing of data relating to the Tender and against accidental loss or destruction of, or damage to such data held or processed by them.

**9. GENERAL**

- 9.1 Neither party may assign the benefit of this Agreement, or any interest hereunder, except with the prior written consent of the other, save that Transnet may assign this Agreement at any time to any member of the Transnet Group.
- 9.2 No failure or delay in exercising any right, power or privilege under this Agreement will operate as a waiver of it, nor will any single or partial exercise of it preclude any further exercise or the exercise of any right, power or privilege under this Agreement or otherwise.
- 9.3 The provisions of this Agreement shall be severable in the event that any of its provisions are held by a court of competent jurisdiction or other applicable authority to be invalid, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.
- 9.4 This Agreement may only be modified by a written agreement duly signed by persons authorised on behalf of each party.

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9.5 Nothing in this Agreement shall constitute the creation of a partnership, joint venture or agency between the parties.

9.6 This Agreement will be governed by and construed in accordance with South African law and the parties irrevocably submit to the exclusive jurisdiction of the South African courts

## T2.2-15: RFQ DECLARATION FORM

NAME OF COMPANY: \_\_\_\_\_

We \_\_\_\_\_ do hereby certify that:

1. Transnet has supplied and we have received appropriate tender offers to any/all questions (as applicable) which were submitted by ourselves for tender clarification purposes;
2. we have received all information we deemed necessary for the completion of this Tender;
3. at no stage have we received additional information relating to the subject matter of this tender from Transnet sources, other than information formally received from the designated Transnet contact(s) as nominated in the tender documents;
4. we are satisfied, insofar as our company is concerned, that the processes and procedures adopted by Transnet in issuing this tender and the requirements requested from tenderers in responding to this tender have been conducted in a fair and transparent manner; and
5. furthermore, we acknowledge that a direct relationship exists between a family member and/or an owner / member / director / partner / shareholder (unlisted companies) of our company and an employee or board member of the Transnet Group as indicated below: [Respondent to indicate if this section is not applicable]

FULL NAME OF OWNER/MEMBER/DIRECTOR/  
PARTNER/SHAREHOLDER:

ADDRESS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Indicate                      nature                      of                      relationship                      with                      Transnet:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[Failure to furnish complete and accurate information in this regard may lead to the disqualification of your response and may preclude a Respondent from doing future business with Transnet]

We declare, to the extent that we are aware or become aware of any relationship between ourselves and Transnet (other than any existing and appropriate business relationship with Transnet) which could unfairly advantage our company in the forthcoming adjudication process, we shall notify Transnet immediately in writing of such circumstances.

6. We accept that any dispute pertaining to this tender will be resolved through the Ombudsman process and will be subject to the Terms of Reference of the Ombudsman. The Ombudsman process must first



be exhausted before judicial review of a decision is sought. (Refer "Important Notice to respondents" below).

7. We further accept that Transnet reserves the right to reverse a tender award or decision based on the recommendations of the Ombudsman without having to follow a formal court process to have such award or decision set aside.
8. We have acquainted ourselves and agree with the content of T2.2-18 "Service Provider Integrity Pact".

For and on behalf of  .....  duly authorised thereto
Name:
Signature:
Date:

#### IMPORTANT NOTICE TO TENDERERS

- Transnet has appointed a Procurement Ombudsman to investigate any material complaint in respect of tenders exceeding R5,000,000.00 (five million S.A. Rand) in value. Should a Tenderer have any material concern regarding an tender process which meets this value threshold, a complaint may be lodged with Transnet's Procurement Ombudsman for further investigation.
- It is incumbent on the Tenderer to familiarise himself/herself with the Terms of Reference for the Transnet Procurement Ombudsman, details of which are available for review at Transnet's website [www.transnet.net](http://www.transnet.net).
- An official complaint form may be downloaded from this website and submitted, together with any supporting documentation, within the prescribed period, to [procurement.ombud@transnet.net](mailto:procurement.ombud@transnet.net)
- For transactions below the R5,000,000.00 (five million S.A. Rand) threshold, a complaint may be lodged with the Chief Procurement Officer of the relevant Transnet Operating Division.
- All Tenderers should note that a complaint must be made in good faith. If a complaint is made in bad faith, Transnet reserves the right to place such a tenderer on its List of Excluded Bidders.

## T2.2-16: REQUEST FOR QUOTATION – BREACH OF LAW

NAME OF COMPANY: \_\_\_\_\_

I / We \_\_\_\_\_ do hereby certify that **I/we have/have not been** found guilty during the preceding 5 (five) years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Tenderer is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences.

Where found guilty of such a serious breach, please disclose:

NATURE OF BREACH:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE OF BREACH: \_\_\_\_\_

Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any Tenderer from the tendering process, should that person or company have been found guilty of a serious breach of law, tribunal or regulatory obligation.

Signed on this \_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_

SIGNATURE OF TENDER

## **T2.2-17 Certificate of Acquaintance with Tender Documents**

NAME OF TENDERING ENTITY:

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1. By signing this certificate I/we acknowledge that I/we have made myself/ourselves thoroughly familiar with and agree with all the conditions governing this RFP. This includes those terms and conditions of the Contract, the Supplier Integrity Pact, Non-Disclosure Agreement etc. contained in any printed form stated to form part of the documents thereof, but not limited to those listed in this clause.
2. I/we furthermore agree that Transnet SOC Ltd shall recognise no claim from me/us for relief based on an allegation that I/we overlooked any tender/contract condition or failed to take it into account for the purpose of calculating my/our offered prices or otherwise.
3. I/we understand that the accompanying Tender will be disqualified if this Certificate is found not to be true and complete in every respect.
4. For the purposes of this Certificate and the accompanying Tender, I/we understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
  - a) has been requested to submit a Tender in response to this Tender invitation;
  - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
  - c) provides the same Services as the Tenderer and/or is in the same line of business as the Tenderer
5. The Tenderer has arrived at the accompanying Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive Tendering.
6. In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
  - a) prices;
  - b) geographical area where Services will be rendered [market allocation]
  - c) methods, factors or formulas used to calculate prices;
  - d) the intention or decision to submit or not to submit, a Tender;
  - e) the submission of a tender which does not meet the specifications and conditions of the tender; or
  - f) Tendering with the intention not winning the tender.

7. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Services to which this tender relates.
8. The terms of the accompanying tender have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening or of the awarding of the contract.
9. I/We am/are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to tenders and contracts, tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation. In addition, Tenderers that submit suspicious tenders may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

Signed on this \_\_\_\_ day of \_\_\_\_\_ 20\_\_

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SIGNATURE OF TENDERER

## **T2.2-18 Service Provider Integrity Pact**

**Important Note: All potential tenderers must read this document and certify in the RFP Declaration Form that that have acquainted themselves with and agree with the content.**

**The contract with the successful tenderer will automatically incorporate this Integrity Pact and shall be deemed as part of the final concluded contract.**

### **INTEGRITY PACT**

Between

#### **TRANSNET SOC LTD**

Registration Number: 1990/000900/30

("Transnet")

and

The Contractor (hereinafter referred to as the "Tenderer/Service Providers/Contractor")

## **PREAMBLE**

Transnet values full compliance with all relevant laws and regulations, ethical standards and the principles of economical use of resources, fairness and transparency in its relations with its Tenderers/Service Providers/Contractors.

In order to achieve these goals, Transnet and the Tenderer/Service Provider/Contractor hereby enter into this agreement hereinafter referred to as the "Integrity Pact" which will form part of the Tenderer's/Service Provider's/Contractor's application for registration with Transnet as a vendor.

The general purpose of this Integrity Pact is to agree on avoiding all forms of dishonesty, fraud and corruption by following a system that is fair, transparent and free from any undue influence prior to, during and subsequent to the currency of any procurement and/or reverse logistics event and any further contract to be entered into between the Parties, relating to such event.

All Tenderers/Service Providers/Contractors will be required to sign and comply with undertakings contained in this Integrity Pact, should they want to be registered as a Transnet vendor.

## **1 OBJECTIVES**

- 1.1 Transnet and the Tenderer/Service Provider/Contractor agree to enter into this Integrity Pact, to avoid all forms of dishonesty, fraud and corruption including practices that are anti-competitive in nature, negotiations made in bad faith and under-pricing by following a system that is fair, transparent and free from any influence/unprejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:
  - a) Enable Transnet to obtain the desired contract at a reasonable and competitive price in conformity to the defined specifications of the works, goods and services; and
  - b) Enable Tenderers/Service Providers/Contractors to abstain from bribing or participating in any corrupt practice in order to secure the contract.

## **2 COMMITMENTS OF TRANSNET**

Transnet commits to take all measures necessary to prevent dishonesty, fraud and corruption and to observe the following principles:

- 2.1 Transnet hereby undertakes that no employee of Transnet connected directly or indirectly with the sourcing event and ensuing contract, will demand, take a promise for or accept directly or through intermediaries any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the Tenderer, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the tendering process, Tender evaluation, contracting or implementation process related to any contract.
- 2.2 Transnet will, during the registration and tendering process treat all Tenderers/ Service Providers/Contractor with equity, transparency and fairness. Transnet will in particular, before and during the registration process, provide to all Tenderers/ Service Providers/Contractors the same information and will not provide to any Tenderers/Service Providers/Contractors confidential/additional information through which the Tenderers/Service Providers/Contractors could obtain an advantage in relation to any tendering process.
- 2.3 Transnet further confirms that its employees will not favour any prospective Tenderers/Service Providers/Contractors in any form that could afford an undue advantage to a particular Tenderer during the

tendering stage and will further treat all Tenderers/Service Providers/Contractors participating in the tendering process in a fair manner.

- 2.4 Transnet will exclude from the tender process such employees who have any personal interest in the Tenderers/Service Providers/Contractors participating in the tendering process.

### **3 OBLIGATIONS OF THE TENDERER / SERVICE PROVIDER**

- 3.1 Transnet has a 'Zero Gifts' Policy. No employee is allowed to accept gifts, favours or benefits.

- a) Transnet officials and employees shall not solicit, give or accept, or from agreeing to solicit, give, accept or receive directly or indirectly, any gift, gratuity, favour, entertainment, loan, or anything of monetary value, from any person or juridical entities in the course of official duties or in connection with any operation being managed by, or any transaction which may be affected by the functions of their office.
- b) Transnet officials and employees shall not solicit or accept gifts of any kind, from vendors, suppliers, customers, potential employees, potential vendors, and suppliers, or any other individual or organisation irrespective of the value.
- c) Under no circumstances should gifts, business courtesies or hospitality packages be accepted from or given to prospective suppliers participating in a tender process at the respective employee's Operating Division, regardless of retail value.
- d) Gratuities, bribes or kickbacks of any kind must never be solicited, accepted or offered, either directly or indirectly. This includes money, loans, equity, special privileges, personal favours, benefit or services. Such favours will be considered to constitute corruption.

- 3.2 The Tenderer/Service Provider/Contractor commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Tender or during any ensuing contract stage in order to secure the contract or in furtherance to secure it and in particular the Tenderer/Service Provider/Contractor commits to the following:

- a) The Tenderer/Service Provider/Contractor will not, directly or through any other person or firm, offer, promise or give to Transnet or to any of Transnet's employees involved in the tendering process or to any third person any material or other benefit or payment, in order to obtain in exchange an advantage during the tendering process; and
- b) The Tenderer/Service Provider/Contractor will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any employee of Transnet, connected directly or indirectly with the tendering process, or to any person, organisation or third party related to the contract in exchange for any advantage in the tendering, evaluation, contracting and implementation of the contract.

- 3.3 The Tenderer/Service Provider/Contractor will not collude with other parties interested in the contract to preclude a competitive Tender price, impair the transparency, fairness and progress of the tendering process, Tender evaluation, contracting and implementation of the contract. The Tenderer / Service Provider further commits itself to delivering against all agreed upon conditions as stipulated within the contract.

- 3.4 The Tenderer/Service Provider/Contractor will not enter into any illegal or dishonest agreement or understanding, whether formal or informal with other Tenderers/Service Providers/Contractors. This applies in particular to certifications, submissions or non-submission of documents or actions that are restrictive or to introduce cartels into the tendering process.

- 3.5 The Tenderer/Service Provider/Contractor will not commit any criminal offence under the relevant anti-corruption laws of South Africa or any other country. Furthermore, the Tenderer/Service Provider/Contractor will not use for illegitimate purposes or for restrictive purposes or personal gain, or pass on to others, any information provided

by Transnet as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

- 3.6 A Tenderer/Service Provider/Contractor of foreign origin shall disclose the name and address of its agents or representatives in South Africa, if any, involved directly or indirectly in the registration or tendering process. Similarly, the Tenderer / Service Provider / Contractor of South African nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly in the registration or tendering process.
- 3.7 The Tenderer/Service Provider/Contractor will not misrepresent facts or furnish false or forged documents or information in order to influence the tendering process to the advantage of the Tenderer/Service Provider/Contractor or detriment of Transnet or other competitors.
- 3.8 Transnet may require the Tenderer/Service Provider/Contractor to furnish Transnet with a copy of its code of conduct. Such code of conduct must address the compliance programme for the implementation of the code of conduct and reject the use of bribes and other dishonest and unethical conduct.
- 3.9 The Tenderer/Service Provider/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 3.10 The Tenderer/Service Provider/Contractor confirms that they will uphold the ten principles of the United Nations Global Compact (UNGC) in the fields of Human Rights, Labour, Anti-Corruption and the Environment when undertaking business with Transnet as follows:

**a) Human Rights**

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

**b) Labour**

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labour;
- Principle 5: the effective abolition of child labour; and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

**c) Environment**

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

**d) Anti-Corruption**

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.



## 4 INDEPENDENT TENDERING

- 4.1 For the purposes of that Certificate in relation to any submitted Tender, the Tenderer declares to fully understand that the word "competitor" shall include any individual or organisation, other than the Tenderer, whether or not affiliated with the Tenderer, who:
- a) has been requested to submit a Tender in response to this Tender invitation;
  - b) could potentially submit a Tender in response to this Tender invitation, based on their qualifications, abilities or experience; and
  - c) provides the same Goods and Services as the Tenderer and/or is in the same line of business as the Tenderer.
- 4.2 The Tenderer has arrived at his submitted Tender independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium will not be construed as collusive tendering.
- 4.3 In particular, without limiting the generality of paragraph 5 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
- d) prices;
  - e) geographical area where Goods or Services will be rendered [market allocation];
  - f) methods, factors or formulas used to calculate prices;
  - g) the intention or decision to submit or not to submit, a Tender;
  - h) the submission of a Tender which does not meet the specifications and conditions of the RFP; or i) tendering with the intention of not winning the Tender.
- 4.4 In addition, there have been no consultations, communications, agreements, or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the Goods or Services to which his/her tender relates.
- 4.5 The terms of the Tender as submitted have not been, and will not be, disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official Tender opening or of the awarding of the contract.
- 4.6 Tenderers are aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to Tenders and contracts, Tenders that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and/or may be reported to the National Prosecuting Authority [NPA] for criminal investigation and/or may be restricted from conducting business with the public sector for a period not exceeding 10 [ten] years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.
- 4.7 Should the **Tenderer find any terms or conditions stipulated in any of the relevant documents quoted in the Tender unacceptable**, it should indicate which conditions are unacceptable and offer alternatives by written submission on its company letterhead, attached to its submitted Tender. Any such submission shall be subject to review by Transnet's Legal Counsel who shall determine whether the proposed alternative(s) are acceptable or otherwise, as the case may be.

## 5 DISQUALIFICATION FROM TENDERING PROCESS

- 5.1 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3 of this Integrity Pact or in any other form such as to put its reliability or credibility as a Tenderer/Service Provider/Contractor into question, Transnet may reject the Tenderer's / Service Provider's / Contractor's application from the registration or tendering process and remove the Tenderer/Service Provider/Contractor from its database, if already registered.
- 5.1 If the Tenderer/Service Provider/Contractor has committed a transgression through a violation of section 3, or any material violation, such as to put its reliability or credibility into question. Transnet may after following

due procedures and at its own discretion also exclude the Tenderer/Service Provider /Contractor from future tendering processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, which will include amongst others the number of transgressions, the position of the transgressors within the company hierarchy of the Tenderer/Service Provider/Contractor and the amount of the damage. The exclusion will be imposed for up to a maximum of 10 (ten) years. However, Transnet reserves the right to impose a longer period of exclusion, depending on the gravity of the misconduct.

- 5.1 If the Tenderer/Service Provider/Contractor can prove that it has restored the damage caused by it and has installed a suitable corruption prevention system or taken other remedial measures as the circumstances of the case may require, Transnet may at its own discretion revoke the exclusion or suspend the imposed penalty.

## **6 TRANSNET'S LIST OF EXCLUDED TENDERERS (BLACKLIST)**

- 6.1 The process of restriction is used to exclude a company/person from conducting future business with Transnet and other organs of state for a specified period. No Tender shall be awarded to a Tenderer whose name (or any of its members, directors, partners or trustees) appear on the Register of Tender Defaulters kept by National Treasury, or who have been placed on National Treasury's List of Restricted Suppliers. Transnet reserves the right to withdraw an award, or cancel a contract concluded with a Tenderer should it be established, at any time, that a tenderer has been restricted with National Treasury by another government institution.
- 6.2 All the stipulations on Transnet's restriction process as laid down in Transnet's Supply Chain Policy and Procurement Procedures Manual (CPM included) are included herein by way of reference. Below follows a condensed summary of this restriction procedure.
- 6.3 On completion of the restriction procedure, Transnet will submit the restricted entity's details (including the identity number of the individuals and registration number of the entity) to National Treasury for placement on National Treasury's Database of Restricted Suppliers for the specified period of exclusion. National Treasury will make the final decision on whether to restrict an entity from doing business with any organ of state for a period not exceeding 10 years and place the entity concerned on the Database of Restricted Suppliers published on its official website.
- 6.4 The decision to restrict is based on one of the grounds for restriction. The standard of proof to commence the restriction process is whether a "prima facie" (i.e. on the face of it) case has been established.
- 6.5 Depending on the seriousness of the misconduct and the strategic importance of the Goods/Services, in addition to restricting a company/person from future business, Transnet may decide to terminate some or all existing contracts with the company/person as well.
- 6.6 A Service Provider or Contractor to Transnet may not subcontract any portion of the contract to a blacklisted company.
- 6.7 Grounds for blacklisting include: If any person/Enterprise which has submitted a Tender, concluded a contract, or, in the capacity of agent or subcontractor, has been associated with such Tender or contract:
- a) Has, in bad faith, withdrawn such Tender after the advertised closing date and time for the receipt of Tenders;
  - b) has, after being notified of the acceptance of his Tender, failed or refused to sign a contract when called upon to do so in terms of any condition forming part of the Tender documents;
  - c) has carried out any contract resulting from such Tender in an unsatisfactory manner or has breached any condition of the contract;
  - d) has offered, promised or given a bribe in relation to the obtaining or execution of the contract;

- e) has acted in a fraudulent or improper manner or in bad faith towards Transnet or any Government Department or towards any public body, Enterprise or person;
- f) has made any incorrect statement in a certificate or other communication with regard to the Local Content of his Goods or his B-BBEE status and is unable to prove to the satisfaction of Transnet that:
- g) he made the statement in good faith honestly believing it to be correct; and
- h) before making such statement he took all reasonable steps to satisfy himself of its correctness;
- i) caused Transnet damage, or to incur costs in order to meet the contractor's requirements and which could not be recovered from the contractor;
- j) has litigated against Transnet in bad faith.

6.8 Grounds for blacklisting include a company/person recorded as being a company or person prohibited from doing business with the public sector on National Treasury's database of Restricted Service Providers or Register of Tender Defaulters.

6.9 Companies associated with the person/s guilty of misconduct (i.e. entities owned, controlled or managed by such persons), any companies subsequently formed by the person(s) guilty of the misconduct and/or an existing company where such person(s) acquires a controlling stake may be considered for blacklisting. The decision to extend the blacklist to associated companies will be at the sole discretion of Transnet.

## **7 PREVIOUS TRANSGRESSIONS**

7.1 The Tenderer/Service Provider/Contractor hereby declares that no previous transgressions resulting in a serious breach of any law, including but not limited to, corruption, fraud, theft, extortion and contraventions of the Competition Act 89 of 1998, which occurred in the last 5 (five) years with any other public sector undertaking, government department or private sector company that could justify its exclusion from its registration on the Tenderer's/Service Provider's/Contractor's database or any tendering process.

7.2 If it is found to be that the Tenderer/Service Provider/Contractor made an incorrect statement on this subject, the Tenderer/Service Provider/Contractor can be rejected from the registration process or removed from the Tenderer/Service Provider/Contractor database, if already registered, for such reason (refer to the Breach of Law Returnable Form contained in the document.)

## **8 SANCTIONS FOR VIOLATIONS**

8.1 Transnet shall also take all or any one of the following actions, wherever required to:

- a) Immediately exclude the Tenderer/Service Provider/Contractor from the tendering process or call off the pre-contract negotiations without giving any compensation the Tenderer/Service Provider/Contractor. However, the proceedings with the other Tenderer/Service Provider/Contractor may continue;
- b) Immediately cancel the contract, if already awarded or signed, without giving any compensation to the Tenderer/Service Provider/Contractor;
- c) Recover all sums already paid by Transnet;
- d) Encash the advance bank guarantee and performance bond or warranty bond, if furnished by the Tenderer/Service Provider/Contractor, in order to recover the payments, already made by Transnet, along with interest;
- e) Cancel all or any other contracts with the Tenderer/Service Provider/Contractor; and
- f) Exclude the Tenderer/Service Provider/Contractor from entering into any Tender with Transnet in future.

## **9 CONFLICTS OF INTEREST**

9.1 A conflict of interest includes, inter alia, a situation in which:

- a) A Transnet employee has a personal financial interest in a tendering / supplying entity; and
- b) A Transnet employee has private interests or personal considerations or has an affiliation or a relationship which affects, or may affect, or may be perceived to affect his / her judgment in action in the best interest of Transnet, or could affect the employee's motivations for acting in a particular manner, or which could result in, or be perceived as favouritism or nepotism.

9.2 A Transnet employee uses his / her position, or privileges or information obtained while acting in the capacity as an employee for:

- a) Private gain or advancement; or
- b) The expectation of private gain, or advancement, or any other advantage accruing to the employee must be declared in a prescribed form.

Thus, conflicts of interest of any Tender committee member or any person involved in the sourcing process must be declared in a prescribed form.

9.3 If a Tenderer/Service Provider/Contractor has or becomes aware of a conflict of interest i.e. a family, business and / or social relationship between its owner(s)/ member(s)/director(s)/partner(s)/shareholder(s) and a Transnet employee/ member of Transnet's Board of Directors in respect of a Tender which will be considered for the Tender process, the Tenderer/Service Provider/ Contractor:

- a) must disclose the interest and its general nature, in the Request for Proposal ("RFX") declaration form; or
- b) must notify Transnet immediately in writing once the circumstances have arisen.

9.4 The Tenderer/Service Provider/Contractor shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any committee member or any person involved in the sourcing process, where this is done, Transnet shall be entitled forthwith to rescind the contract and all other contracts with the Tenderer/Service Provider/Contractor.

## 10 DISPUTE RESOLUTION

10.1 Transnet recognises that trust and good faith are pivotal to its relationship with its Tenderer / Service Provider / Contractor. When a dispute arises between Transnet and its Tenderer / Service Provider / Contractor, the parties should use their best endeavours to resolve the dispute in an amicable manner, whenever possible. Litigation in bad faith negates the principles of trust and good faith on which commercial relationships are based. Accordingly, following a blacklisting process as mentioned in paragraph 6 above, Transnet will not do business with a company that litigates against it in bad faith or is involved in any action that reflects bad faith on its part. Litigation in bad faith includes, but is not limited to the following instances:

- a) **Vexatious proceedings:** these are frivolous proceedings which have been instituted without proper grounds;
- b) **Perjury:** where a Tenderer / Service Provider / Contractor make a false statement either in giving evidence or on an affidavit;
- c) **Scurrilous allegations:** where a Tenderer / Service Provider / Contractor makes allegations regarding a senior Transnet employee which are without proper foundation, scandalous, abusive or defamatory; and
- d) **Abuse of court process:** when a Tenderer / Service Provider / Contractor abuses the court process in order to gain a competitive advantage during a Tender process.

## 11 GENERAL

11.1 This Integrity Pact is governed by and interpreted in accordance with the laws of the Republic of South Africa.

11.2 The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the law relating to any civil or criminal proceedings.

- 11.3 The validity of this Integrity Pact shall cover all the tendering processes and will be valid for an indefinite period unless cancelled by either Party.
- 11.4 Should one or several provisions of this Integrity Pact turn out to be invalid the remainder of this Integrity Pact remains valid.
- 11.5 Should a Tenderer/Service Provider/Contractor be confronted with dishonest, fraudulent or corruptive behaviour of one or more Transnet employees, Transnet expects its Tenderer/Service Provider/Contractor to report this behaviour directly to a senior Transnet official/employee or alternatively by using Transnet's "Tip-Off Anonymous" hotline number 0800 003 056, whereby your confidentiality is guaranteed.

The Parties hereby declare that each of them has read and understood the clauses of this Integrity Pact and shall abide by it. To

the best of the Parties' knowledge and belief, the information provided in this Integrity Pact is true and correct.

## **T2.2-19: Supplier Code of Conduct**

Transnet SOC Limited aims to achieve the best value for money when buying or selling goods and obtaining services. This however must be done in an open and fair manner that supports and drives a competitive economy. Underpinning our process are several acts and policies that any supplier dealing with Transnet must understand and support. These are:

- The Transnet Procurement Policy – A guide for Tenderers.
- Section 217 of the Constitution - the five pillars of Public PSCM (Procurement and Supply Chain Management): fair, equitable, transparent, competitive and cost effective;
- The Public Finance Management Act (PFMA);
- The Broad Based Black Economic Empowerment Act (BBBEE)
- The Prevention and Combating of Corrupt Activities Act (PRECCA); and
- The Construction Industry Development Board Act (CIDB Act).

This code of conduct has been included in this contract to formally appraise Transnet Suppliers of Transnet's expectations regarding behaviour and conduct of its Suppliers.

### **Prohibition of Bribes, Kickbacks, Unlawful Payments, and Other Corrupt Practices**

Transnet is in the process of transforming itself into a self-sustaining State-Owned Enterprise, actively competing in the logistics industry. Our aim is to become a world class, profitable, logistics organisation. As such, our transformation is focused on adopting a performance culture and to adopt behaviours that will enable this transformation.

#### **1. Transnet SOC Limited will not participate in corrupt practices. Therefore, it expects its suppliers to act in a similar manner.**

- Transnet and its employees will follow the laws of this country and keep accurate business records that reflect actual transactions with, and payments to, our suppliers.
- Employees must not accept or request money or anything of value, directly or indirectly, from suppliers.
- Employees may not receive anything that is calculated to:
  - Illegally influence their judgement or conduct or to ensure the desired outcome of a sourcing activity;
  - Win or retain business or to influence any act or decision of any person involved in sourcing decisions; or
  - Gain an improper advantage.
- There may be times when a supplier is confronted with fraudulent or corrupt behaviour of Transnet employees. We expect our Suppliers to use our "Tip-offs Anonymous" Hot line to report these acts. (0800 003 056).

#### **2. Transnet SOC Limited is firmly committed to the ideas of free and competitive enterprise.**

- Suppliers are expected to comply with all applicable laws and regulations regarding fair competition and antitrust practices.

- Transnet does not engage with non-value adding agents or representatives solely for the purpose of increasing BBBEE spend (fronting).

**3. Transnet's relationship with suppliers requires us to clearly define requirements, to exchange information and share mutual benefits.**

- Generally, suppliers have their own business standards and regulations. Although Transnet cannot control the actions of our suppliers, we will not tolerate any illegal activities. These include, but are not limited to:
  - Misrepresentation of their product (origin of manufacture, specifications, intellectual property rights, etc);
  - Collusion;
  - Failure to disclose accurate information required during the sourcing activity (ownership, financial situation, BBBEE status, etc.);
  - Corrupt activities listed above; and
  - Harassment, intimidation or other aggressive actions towards Transnet employees.
- Suppliers must be evaluated and approved before any materials, components, products or services are purchased from them. Rigorous due diligence is conducted and the supplier is expected to participate in an honest and straight forward manner.
- Suppliers must record and report facts accurately, honestly and objectively. Financial records must be accurate in all material respects.

### Conflicts of Interest

A conflict of interest arises when personal interests or activities influence (or appear to influence) the ability to act in the best interests of Transnet SOC Limited.

- Doing business with family members.
- Having a financial interest in another company in our industry

Where possible, contracts will be negotiated to include the above in the terms of such contracts. To the extent such terms are not included in contractual obligations and any of the above code is breached, then Transnet reserves its right to review doing business with these suppliers.

I, \_\_\_\_\_ of \_\_\_\_\_  
(insert name of Director or as per Authority Resolution from Board of Directors) (insert name of Company)

hereby acknowledge having read, understood and agree to the terms and conditions set out in the "Transnet Supplier Code of Conduct."

Signed this on day \_\_\_\_\_ at \_\_\_\_\_

\_\_\_\_\_  
Signature



## **T2.2-20: Agreement in terms of Protection of Personal Information Act, 4 of 2013 ("POPIA")**

### **1. PREAMBLE AND INTRODUCTION**

- 1.1. The rights and obligation of the Parties in terms of the Protection of Personal Information Act, 4 of 2013 ("POPIA") are included as forming part of the terms and conditions of this contract.

### **2. PROTECTION OF PERSONAL INFORMATION**

- 2.1. The following terms shall bear the same meaning as contemplated in Section 1 of the Protection of Person information act, No. of 2013 "(POPIA)":

consent; data subject; electronic communication; information officer; operator; person; personal information; processing; record; Regulator; responsible party; special information; as well as any terms derived from these terms.

- 2.2. The Operator will process all information by the Transnet in terms of the requirements contemplated in Section 4(1) of the POPIA:

Accountability; Processing limitation; Purpose specification; Further processing limitation; Information quality; Openness; Security safeguards and Data subject participation.

- 2.3. The Parties acknowledge and agree that, in relation to personal information of Transnet and the information of a third party that will be processed pursuant to this Agreement , the Operator is ..... ) hereinafter Operator and the Data subject is "Transnet". Operator will process personal information only with the knowledge and authorisation of Transnet and will treat personal information and the information of a third party which comes to its knowledge as confidential and will not disclose it, unless so required by law or subject to the exceptions contained in the POPIA.

- 2.4. Transnet reserves all the rights afforded to it by the POPIA in the processing of any of its information as contained in this Agreement and the Operator is required to comply with all prescripts as detailed in the POPIA relating to all information concerning Transnet.

- 2.5. In terms of this Agreement, the Operator acknowledges that it will obtain and have access to personal information of Transnet and the information of a third party and agrees that it shall only process the information disclosed by Transnet in terms of this Agreement and only for the purposes as detailed in this Agreement and in accordance with any applicable law.

- 2.6. Should there be a need for the Operator to process the personal information and the information of a third party in a way that is not agreed to in this Agreement, the Operator must request consent from Transnet to the processing of its personal information or and the information of a third party in a manner other than that it was collected for, which consent cannot be unreasonably withheld.
- 2.7. Furthermore, the Operator will not otherwise modify, amend or alter any personal information and the information of a third party submitted by Transnet or disclose or permit the disclosure of any personal information and the information of a third party to any third party without prior written consent from Transnet.
- 2.8. The Operator shall, at all times, ensure compliance with any applicable laws put in place and maintain sufficient measures, policies and systems to manage and secure against all forms of risks to any information that may be shared or accessed pursuant to the services offered to Transnet in terms of this Agreement (physically, through a computer or any other form of electronic communication).
- 2.9. The Operator shall notify Transnet in writing of any unauthorised access to personal information and the information of a third party, cybercrimes or suspected cybercrimes, in its knowledge and report such crimes or suspected crimes to the relevant authorities in accordance with applicable laws, after becoming aware of such crimes or suspected crime. The Operator must inform Transnet of the breach as soon as it has occurred to allow Transnet to take all necessary remedial steps to mitigate the extent of the loss or compromise of personal information and the information of a third party and to restore the integrity of the affected personal information as quickly as is possible.
- 2.10. Transnet may, in writing, request the Operator to confirm and/or make available any personal information and the information of a third party in its possession in relation to Transnet and if such personal information has been accessed by third parties and the identity thereof in terms of the POPIA.
- 2.11. Transnet may further request that the Operator correct, delete, destroy, withdraw consent or object to the processing of any personal information and the information of a third party relating to the Transnet or a third party in the Operator's s possession in terms of the provision of the POPIA and utilizing Form 2 of the POPIA Regulations .
- 2.12. In signing this addendum that is in terms of the POPIA, the Operator hereby agrees that it has adequate measures in place to provide protection of the personal information and the

information of a third party given to it by Transnet in line with the 8 conditions of the POPIA and that it will provide to Transnet satisfactory evidence of these measures whenever called upon to do so by Transnet.

**The Operator is required to provide confirmation that all measures in terms of the POPIA are in place when processing personal information and the information of a third party received from Transnet:**

YES	
-----	--

NO	
----	--

2.13. Further, the Operator acknowledges that it will be held liable by Transnet should it fail to process personal information in line with the requirements of the POPIA. The Operator will be subject to any civil or criminal action, administrative fines or other penalty or loss that may arise as a result of the processing of any personal information that Transnet submitted to it.

2.14. Should a Tenderer have any complaints or objections to processing of its personal information, by Transnet, the Tenderer can submit a complaint to the Information Regulator on <https://www.justice.gov.za/infoereg/>, click on contact us, click on complaints.IR@justice.gov.za

### **3. SOLE AGREEMENT**

3.1. The Agreement, constitute the sole agreement between the parties relating to the subject matter referred to in paragraph 1.1 of this and no amendment/variation/change shall be of any force and effect unless reduced to writing and signed by or on behalf of both parties.

Signed at \_\_\_\_\_ on this \_\_\_\_\_ day of \_\_\_\_\_ 2021

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

.....

(Operator)

Authorised signatory for and on behalf of .....who warrants that he/she is duly authorised to sign this Agreement.



**AS WITNESSES:**

- |           |                    |                         |
|-----------|--------------------|-------------------------|
| <b>1.</b> | <b>Name:</b> _____ | <b>Signature:</b> _____ |
| <b>2.</b> | <b>Name:</b> _____ | <b>Signature:</b> _____ |

Transnet National Ports Authority

Tender Number: TNPA/2022/09/1144/12939/RFQ

Description of the Works: Supply, delivery, installation, testing and commissioning of fire fighting Workshop plant

## T2.2-21: Insurance provided by the Contractor

Clause 84.1 in NEC3 Engineering & Construction Contract (June 2005) (amended June 2006 and April 2013) requires that the Contractor provides the insurance stated in the insurance table except any insurance which the Employer is to provide as stated in the Contract Data.

Please provide the following details for insurance which the Contractor is still to provide. Notwithstanding this information all costs related to insurance are deemed included in the tenderer's rates and prices.

Insurance against (See clause 84.2 of the ECC)	Name of Insurance Company	Cover	Premium
Liability for death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract			
Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R5 000 000/R10 000 000.			
Insurance in respect of loss of or damage to own property and equipment.			
(Other)			

## C1.1: Form of Offer & Acceptance

### Offer

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

### **SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF FIRE FIGHTING WORKSHOP PLANT AT THE PORT OF RICHARDS BAY**

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto as listed in the Returnable Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the Contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the Contract Data.

The offered total of the Prices exclusive of VAT is	<b>R</b>
Value Added Tax @ 15% is	<b>R</b>
The offered total of the Prices inclusive of VAT is	<b>R</b>
(in words)	

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the Contractor in the conditions of contract identified in the Contract Data.

Signature(s)

Name(s)

Capacity

**For the  
tenderer:**

(Insert name and address of  
Name & organisation)  
signature of  
witness

Date

Tenderer's CIDB registration number:

## Acceptance

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the conditions of contract identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the Employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the Employer's agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now Contractor) within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)

Capacity

**for the  
Employer**

Transnet SOC Ltd

Name &  
signature of

(Insert name and address of  
organisation)

Date

witness



## Schedule of Deviations

Note:

1. To be completed by the Employer prior to award of contract. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1		
2		
3		
4		
5		

By the duly authorised representatives signing this Schedule of Deviations below, the Employer and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the Offer agreed by the tenderer and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the tenderer:	For the Employer
Signature	_____	_____
Name	_____	_____
Capacity	_____	_____
On behalf of	(Insert name and address of organisation)	Transnet SOC Ltd
Name & signature of witness	_____	_____
Date	_____	_____

## C1.2 Contract Data

### Part one - Data provided by the Employer

Clause	Statement	Data
1	<b>General</b>	
	The conditions of contract are the core clauses and the clauses for main Option	
		<b>B: Priced contract with bill of quantities</b>
	dispute resolution Option	<b>W1: Dispute resolution procedure</b>
	and secondary Options	
		<b>X2: Changes in the law</b>
		<b>X7: Delay damages</b>
		<b>X16: Retention</b>
		<b>X18: Limitation of liability</b>
		<b>Z: Additional conditions of contract</b>
	of the NEC3 Engineering and Construction Contract June 2005 (amended June 2006 and April 2013)	
10.1	The Employer is:	<b>Transnet SOC Ltd</b> <b>(Registration No. 1990/000900/30)</b>
	Address	Registered address: <b>Transnet Corporate Centre</b> <b>138 Eloff Street,</b> <b>Braamfontein,</b> <b>JOHANNESBURG,</b> <b>2000</b>
	Having elected its Contractual Address for the purposes of this contract as:	<b>Transnet National Ports Authority</b> <b>1st Floor Bayvue Centre</b> <b>Ventura Road</b> <b>Port of Richards Bay,</b> <b>3900</b>

10.1	The Project Manager is: (Name)	Siphokazi Mpetshwa		
	Address	Pioneer Centre Building, San-thom Road Port of Richards Bay 3900		
	Tel	035 905 4650		
	e-mail	Siphokazi.Mpetshwa@transnet.net@transnet.net		
10.1	The Supervisor is: (Name)	Nontobeko Ntshangase		
	Address	Pioneer Centre Building, San-thom Road Port of Richards Bay 3900		
	Tel No.	0113081837		
	e-mail	Nontobeko.Ntshangase@transnet.net		
11.2(13)	The works are	SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF FIRE FIGHTING WORKSHOP PLANT IN THE PORT OF RICHARDS BAY		
11.2(14)	The following matters will be included in the Risk Register	None		
11.2(15)	The boundaries of the site are	As stated in Part C4."Description of the Site and its surroundings"		
11.2(16)	The Site Information is in	Part C4		
11.2(19)	The Works Information is in	Part C3		
12.2	The law of the contract is the law of	the Republic of South Africa subject to the jurisdiction of the Courts of South Africa.		
13.1	The language of this contract is	English		
13.3	The period for reply is	2 (two) weeks		
2	The Contractor's main responsibilities	No additional data is required for this section of the conditions of contract.		
3	Time			
11.2(3)	The completion date for the whole of the works is	30 May 2023		
30.1	The access dates are	Part of the Site		Access Date
		1	Whole of the Construction Site	14 February 2023

31.1	The Contractor is to submit a first programme for acceptance within	<b>2 (two) weeks of the Contract Date.</b>
31.2	The starting date is	<b>17 January 2023</b>
32.2	The Contractor submits revised programmes at intervals no longer than	<b>2 (two) weeks.</b>
35.1	The Employer is not willing to take over the works before the Completion Date.	
<b>4</b>	<b>Testing and Defects</b>	
42.2	The defects date is	<b>52 (fifty-two) weeks after Completion of the whole of the works.</b>
43.2	The defect correction period is	<b>2 weeks</b>
<b>5</b>	<b>Payment</b>	
50.1	The assessment interval is monthly on the	<b>between 10th to 15th of the month and include forecasted period up to 25th.</b>
51.1	The currency of this contract is the	<b>South African Rand.</b>
51.2	The period within which payments are made is	<b>Payment will be affected on or before the last day of the month following the month during which a valid Tax Invoice and Statement were received. Transnet payment terms is 30 (thirty) days from date of statement</b>
51.4	The interest rate is	<b>the prime lending rate of Standard Bank of South Africa.</b>
<b>6</b>	<b>Compensation events</b>	
60.1(13)	<p>The weather measurements to be recorded for each calendar month are,</p> <p><b>the cumulative rainfall (mm)</b></p> <p><b>the number of days with rainfall more than 10 mm</b></p> <p><b>the number of days with minimum air temperature less than 0 degrees Celsius</b></p> <p><b>the number of days with snow lying at 08:00 hours South African Time</b></p> <p><b>and these measurements: N/a</b></p>	

The place where weather is to be recorded (on the Site) is: **The Contractor's Site establishment area**

The weather data are the records of past weather measurements for each calendar month which were recorded at: **Richards Bay Weather Station, KwaZulu Natal**

and which are available from: **South African Weather Service 012 367 6023 or [info3@weathersa.co.za](mailto:info3@weathersa.co.za).**

<b>7</b>	<b>Title</b>	<b>No additional data is required for this section of the conditions of contract.</b>
<b>8</b>	<b>Risks and insurance</b>	
80.1	These are additional Employer's risks	<b>None</b>
84.1	The Employer provides these insurances from the Insurance Table	
	1 Insurance against:	<b>Loss of or damage to the works, Plant and Materials is as stated in the Insurance policy for Contract Works/ Public Liability.</b>
	Cover / indemnity:	<b>to the extent as stated in the insurance policy for Contract Works / Public Liability</b>
	The deductibles are:	<b>as stated in the insurance policy for Contract Works / Public Liability</b>
	2 Insurance against:	<b>Loss of or damage to property (except the works, Plant and Materials &amp; Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) arising out of or in connection with the performance of the Contract as stated in the insurance policy for Contract Works / Public Liability</b>
	Cover / indemnity	<b>Is to the extent as stated in the insurance policy for Contract Works / Public Liability</b>
	The deductibles are	<b>as stated in the insurance policy for Contract Works / Public Liability</b>
	3 Insurance against:	<b>Loss of or damage to Equipment (Temporary Works only) as stated in the insurance policy for contract Works and Public Liability</b>

	Cover / indemnity	<b>Is to the extent as stated in the insurance policy for Contract Works / Public Liability</b>
	The deductibles are:	<b>As stated in the insurance policy for Contract Works / Public Liability</b>
4	Insurance against:	<b>Contract Works SASRIA insurance subject to the terms, exceptions and conditions of the SASRIA coupon</b>
	Cover / indemnity	<b>Cover / indemnity is to the extent provided by the SASRIA coupon</b>
	The deductibles are	<b>The deductibles are, in respect of each and every theft claim, 0,1% of the contract value subject to a minimum of R2,500 and a maximum of R25,000.</b>
	Note:	<b>The deductibles for the insurance as stated above are listed in the document titled "Certificate of Insurance: Transnet (SOC) Limited Principal Controlled Insurance."</b>
84.1	<p>The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract for any one event is</p> <p>The Contractor provides these additional Insurances</p>	
	<p><b>The Contractor must comply at a minimum with the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as amended.</b></p> <ol style="list-style-type: none"> <li><b>Where the contract requires that the design of any part of the works shall be provided by the Contractor the Contractor shall satisfy the Employer that professional indemnity insurance cover in connection therewith has been affected</b></li> <li><b>Where the contract involves manufacture, and/or fabrication of Plant &amp; Materials, components or other goods to be incorporated into the works at premises other than the site, the Contractor shall satisfy the Employer that such plant &amp; materials, components or other goods for incorporation in the works are adequately insured during manufacture and/or fabrication and transportation to the site.</b></li> <li><b>Should the Employer have an insurable interest in such items during manufacture, and/or fabrication, such interest shall be noted by endorsement to the Contractor's policies of insurance as well as those of any sub-contractor</b></li> </ol>	

**4 Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger and Unauthorised Passenger Liability indemnity with a minimum indemnity limit of R 5 000 000.**

**5 The insurance coverage referred to in 1, 2, 3 and 4 above shall be obtained from an insurer(s) in terms of an insurance policy approved by the Employer. The Contractor shall arrange with the insurer to submit to the Project Manager the original and the duplicate original of the policy or policies of insurance and the receipts for payment of current premiums, together with a certificate from the insurer or insurance broker concerned, confirming that the policy or policies provide the full coverage as required. The original policy will be returned to the Contractor.**

84.2 The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract for any one event is

**Whatever the Contractor requires in addition to the amount of insurance taken out by the Employer for the same risk.**

84.2 The insurance against loss of or damage to the works, Plant and Materials as stated in the insurance policy for contract works and public liability selected from:

**Principal Controlled Insurance (PCI) – Sankofa Insurance Brokers.**

<b>9</b>	<b>Termination</b>	<b>Additional Conditions of Contract Clause Z3</b>
<b>10</b>	<b>Data for main Option clause</b>	
<b>B</b>	<b>Priced contract with Bill of Quantities</b>	<b>No additional data is required for this Option.</b>

60.6	The method of measurement is	<b>The Bill of Quantities have been measured in accordance with SANS 1200 unless indicated otherwise.</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	The Adjudicator is	<b>Both parties will agree as and when a dispute arises. If the parties cannot reach an agreement on the Adjudicator, the Chairman of the Association of Arbitrators will appoint an Adjudicator.</b>
W1.2(3)	The Adjudicator nominating body is:	<b>The Chairman of the Association of Arbitrators (Southern Africa)</b>
	If no Adjudicator nominating body is entered, it is:	<b>the Association of Arbitrators (Southern Africa)</b>
W1.4(2)	The tribunal is:	<b>Arbitration</b>
W1.4(5)	The arbitration procedure is	<b>The Rules for the Conduct of Arbitrations of the Association of Arbitrators (Southern Africa)</b>
	The place where arbitration is to be held is	<b>Durban, KwaZulu Natal, South Africa, South Africa</b>
	The person or organisation who will choose an arbitrator	
	- if the Parties cannot agree a choice or	<b>The Chairman of the Association of Arbitrators (Southern Africa)</b>
	- if the arbitration procedure does not state who selects an arbitrator, is	
<b>12</b>	<b>Data for secondary Option clauses</b>	
<b>X2</b>	<b>Changes in the law</b>	<b>No additional data is required for this Option</b>
X2.1	The law of the project is	<b>South African Law</b>
<b>X7</b>	<b>Delay damages</b>	
X7.1	Delay damages for Completion of the whole of the works are	<b>R1 500 per day</b>
<b>X16</b>	<b>Retention</b>	
X16.1	The retention free amount is	<b>Nil</b>
	The retention percentage is	<b>10% on all payments certified.</b>



Transnet National Ports Authority

Tender Number: TNPA/2022/09/1144/12939/RFQ

Description of the Works: Supply, Delivery, Installation, Testing and Commissioning of Fire Fighting Workshop Plant at  
The Port of Richards Bay



## **X18 Limitation of liability**

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X18.1	The Contractor's liability to the Employer for indirect or consequential loss is limited to:	<b>Nil</b> <b>The deductible of the relevant insurance policy</b>
X18.2	For any one event, the Contractor's liability to the Employer for loss of or damage to the Employer's property is limited to:	<b>The deductible of the relevant insurance policy</b>
X18.3	The Contractor's liability for Defects due to his design which are not listed on the Defects Certificate is limited to:	<b>The cost of correcting the Defect</b>
X18.4	The Contractor's total liability to the Employer for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	<b>The Total of the Prices</b> <b>2 (two) years after Completion of the whole of the works</b>
X18.5	The end of liability date is/	

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## **Z Additional conditions of contract are:**

### **Additional clauses relating to Joint Venture Insert the additional core clause 27.5**

**27.5. In the instance that the Contractor is a joint venture, the Contractor shall provide the Employer with a certified copy of its signed joint venture agreement, and in the instance that the joint venture is an 'Incorporated Joint Venture,' the Memorandum of Incorporation, within 4 (four) weeks of the Contract Date.**

**The Joint Venture agreement shall contain but not be limited to the following:**

## **Z2**

### **Z2.1**

- **A brief description of the Contract and the Deliverables;**
- **The name, physical address, communications addresses and domicilium citandi et executandi of each of the constituents and of the Joint Venture;**
- **The constituent's interests;**
- **A schedule of the insurance policies, sureties, indemnities and guarantees which must be taken out by the Joint Venture and by the individual constituents;**
- **Details of an internal dispute resolution procedure;**
- **Written confirmation by all of the constituents:**
  - i. **of their joint and several liabilities to the Employer to Provide the Works;**
  - ii. **identification of the lead partner in the joint venture confirming the authority of the lead partner to bind the joint venture through the Contractor's representative;**
  - iii. **Identification of the roles and responsibilities of the constituents to provide the Works.**
- **Financial requirements for the Joint Venture:**
  - iv. **the working capital requirements for the Joint Venture and the extent to which and manner whereby this will be provided and/or guaranteed by the constituents from time to time;**

		<b>the names of the auditors and others, if any, who will provide auditing and accounting services to the Joint Venture.</b>
<b>Z2.2</b>		<b>Insert additional core clause 27.6</b>
	<b>v.</b>	<b>27.6. The Contractor shall not alter its composition or legal status of the Joint Venture without the prior approval of the Employer.</b>
<b>Z3</b>	<b>Additional obligations in respect of Termination</b>	
<b>Z3.1</b>		<p><b>The following will be included under core clause 91.1: In the second main bullet, after the word 'partnership' add 'joint venture whether incorporate or otherwise (including any constituent of the joint venture)' and</b></p> <p><b>Under the second main bullet, insert the following additional bullets after the last sub-bullet:</b></p> <ul style="list-style-type: none"> <li><b>commenced business rescue proceedings (R22)</b></li> </ul> <p><b>repudiated this Contract (R23)</b></p>
<b>Z3.2</b>	<b>Termination Table</b>	<p><b>The following will be included under core clause 90.2 Termination Table as follows:</b></p> <ul style="list-style-type: none"> <li><b>Amend "A reason other than R1 – R21" to "A reason other than R1 – R23"</b></li> </ul>
<b>Z3.3</b>		<b>Amend "R1 – R15 or R18" to "R1 – R15, R18, R22 or R23."</b>
<b>Z4</b>	<b>Right Reserved by the Employer to Conduct Vetting through SSA</b>	
<b>Z4.1</b>		<p><b>The Employer reserves the right to conduct vetting through State Security Agency (SSA) for security clearances of any Contractor who has access to National Key Points for the following without limitations:</b></p> <p><b>Confidential – this clearance is based on any information which may be used by malicious, opposing or hostile elements to harm the objectives and functions of an organ of state.</b></p>

		<ol style="list-style-type: none"> <li><b>1. Secret – clearance is based on any information which may be used by malicious, opposing or hostile elements to disrupt the objectives and functions of an organ of state.</b></li> <li><b>2. Top Secret – this clearance is based on information which may be used by malicious, opposing or hostile elements to neutralise the objectives and functions of an organ of state.</b></li> </ol>
<b>Z5</b>	<b>Additional Clause Relating to Collusion in the Construction Industry</b>	
<b>Z5.1</b>		<ol style="list-style-type: none"> <li><b>3. The contract award is made without prejudice to any rights the Employer may have to take appropriate action later with regard to any declared tender rigging including blacklisting.</b></li> </ol>
<b>Z6</b>	<b>Protection of Personal Information Act</b>	
<b>Z6.1</b>		<p><b>The Employer and the Contractor are required to process information obtained for the duration of the Agreement in a manner that is aligned to the Protection of Personal Information Act.</b></p>
<b>Z7</b>	<b>The first assessment interval</b>	
<b>Z7.1</b>		<p><b>In the event the Contractor is not loaded on the Employers data base, the Project Manager's first assessment of the amount due will be done once the Contractor has been successfully loaded as a vendor on the Employers data base following submitting all valid updated documents.</b></p> <p><b>Therefore on NEC ECC Clause 50.1 the following text is removed in its entirety "and is no later than the assessment interval after the starting date".</b></p>
<b>Z8</b>	<b>Transfer of Rights</b>	<p><b>The Employer owns the Consultant rights over any of the material whatsoever prepared for the Services of this Contract by the Consultant. The Consultant provides on request by the Employer's Agent, all documentation in whatever form as required (native's, PDF's, CD's, etc) and all other material items which transfer these rights to the Employer.</b></p>

## C1.2 Contract Data

### Part two - Data provided by the Contractor

The tendering Contractor is advised to read both the NEC3 Engineering and Construction Contract - June 2005 (with amendments June 2006 and April 2013) and the relevant parts of its Guidance Notes (ECC3-GN) in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 Guidance Notes.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The Contractor is (Name):	
	Address	
	Tel No.	
	Fax No.	
11.2(8)	The direct fee percentage is	..... %
	The subcontracted fee percentage is	..... %
11.2(18)	The working areas are the Site and	
24.1	The Contractor's key persons are:	
	1 Name:	
	Job:	
	Responsibilities:	
	Qualifications:	
	Experience:	
	2 Name:	
	Job	
	Responsibilities:	
	Qualifications:	
	Experience:	
		<b>CV's (and further key persons data including CVs) are appended to Tender Schedule entitled.....</b>
11.2(14)	The following matters will be included in the Risk Register	.....

31.1	The programme identified in the Contract Data is	.....		
<b>B</b>	<b>Priced contract with bill of quantities</b>			
11.2(21)	The bill of quantities is in	.....		
11.2(31)	The tendered total of the Prices is	(in figures)  (in words), excluding VAT		
41 in SCCC	The percentage for people overheads is:	..... %		
21 in SCCC	The published list of Equipment is the last edition of the list published by	.....		
	The percentage for adjustment for Equipment in the published list is	..... % (state plus or minus)		
22 in SCCC	The rates of other Equipment are:	<b>Equipment</b>	<b>Size or capacity</b>	<b>Rate</b>
61 in SCCC	The hourly rates for Defined Cost of design outside the Working Areas are	<b>Category of employee</b>	<b>Hourly rate</b>	
62 in SCCC	The percentage for design overheads is	..... %		
63 in SCCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:	.....		

## PART 2: PRICING DATA

Document reference	Title	No of pages
C2.1	Pricing instructions: Option B	7
C2.2	The bill of quantities	7



## **C2.1 Pricing instructions: Option B**

### **1. The conditions of contract**

#### **1.1. How the contract prices work and assesses it for progress payments**

Clause 11 in NEC3 Engineering and Construction Contract, June 2005 and 2013 (ECC) Option B states:

##### **Identified and defined terms**

11.2 (21) The Bill of Quantities is the bill of quantities as changed in accordance with this contract to accommodate implemented compensation events and for accepted quotations for acceleration.

(22) Defined Cost is the cost of the components in the Shorter Schedule of Cost Components whether work is subcontracted or not excluding the cost of preparing quotations for compensation events.

(28) The Price for Work Done to Date is the total of

- the quantity of the work which the Contractor has completed for each item in the Bill of Quantities multiplied by the rate and
- a proportion of each lump sum which is the proportion of the work covered by the item which the Contractor has completed.

Completed work is work without Defects which would either delay or be covered by immediately following work.

(31) The Prices are the lump sums and the amounts obtained by multiplying the rates by the quantities for the items in the Bill of Quantities.

This confirms that Option B is a re-measurement contract and the bill comprises only items measured using quantities and rates or stated as lump sums. Value related items are not used. Time related items are items measured using rates where the rate is a unit of time.

## **1.2. Function of the Bill of Quantities**

Clause 55.1 in Option B states, "Information in the Bill of Quantities is not Works Information or Site Information". This confirms that instructions to do work or how it is to be done are not included in the Bill, but in the Works Information. This is further confirmed by Clause 20.1 which states, "The Contractor Provides the Works in accordance with the Works Information". Hence the Contractor does **not** Provide the Works in accordance with the Bill of Quantities. The Bill of Quantities is only a pricing document.

## **1.3. Guidance before pricing and measuring**

Employers preparing tenders or contract documents, and tendering contractors are advised to consult the sections dealing with the bill of quantities in the NEC3 Engineering and Construction Contract (June 2005) Guidance Notes before preparing the bill of quantities or before entering rates and lump sums into the bill.

Historically bill of quantities-based contracts in South Africa have been influenced by the different approaches of the civil engineering and building sectors of the industry through their respective discipline based standard forms of contract and methods of measurement. This is particularly apparent in the approach to the Preliminary and General bill. On the other hand, because ECC caters for a number of disciplines in the same contract, including electrical works, a different approach not currently found in local methods of measurement to the Preliminary & General bill items may have been used.

The NEC approach to the P & G bill assumes use will be made of method related charges for Equipment applied to Providing the Works based on durations shown in the Accepted Programme, fixed charges for the use of Equipment that is required throughout the construction phase, time related charges for people working in a supervisory capacity for the period required, and lump sum charges for other facilities or services not directly related to performing work items typically included in other parts of the bill.

## 2. Measurement and payment

### 2.1. Symbols

The units of measurement described in the Bill of Quantities are metric units abbreviated as follows:

Abbreviation	Unit
%	Percent
h	Hour
ha	Hectare
kg	Kilogram
kl	Kilolitre
km	Kilometre
km-pass	kilometre-pass
kPa	Kilopascal
kW	Kilowatt
l	Litre
m	Metre
mm	Millimetre
m <sup>2</sup>	square metre
m <sup>2</sup> -pass	square metre pass
m <sup>3</sup>	cubic metre
m <sup>3</sup> -km	cubic metre-kilometre
MN	Meganewton
MN.m	meganewton-metre
MPa	megapascal

No.	number
Prov sum <sup>1</sup>	provisional sum
PC-sum	prime cost sum
R/only	Rate only
sum	Lump sum
t	ton (1000kg)
W/day	Work day

## 2.2. General assumptions

- 2.2.1. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance has been made in the quantities for waste.
- 2.2.2. The Prices and rates stated for each item in the Bill of Quantities shall be treated as being fully inclusive of all work, risks, liabilities, obligations, overheads, profit and everything necessary as incurred or required by the Contractor in carrying out or providing that item.
- 2.2.3. Clause 63.13 in Option B provides that these rates and Prices may be used as a basis for assessment of compensation events instead of Defined Cost.
- 2.2.4. Where this contract requires detailed drawings, designs or other information to be provided, and no rates or prices are included in the bill specifically for such matters, then the Contractor is deemed to have allowed for all costs associated with such requirements within the tendered rates and Prices in the Bill of Quantities.
- 2.2.5. An item against which no Price is entered will be treated as covered by other Prices or rates in the bill of quantities. If a number of items are grouped together for pricing purposes, this will be treated as a single lump sum.
- 2.2.6. The quantities contained in the Bill of Quantities may not be final and do not necessarily represent the actual amount of work to be done. The quantities of work assessed and certified for payment

<sup>1</sup> Provisional Sums should not be used unless absolutely unavoidable. Rather include specifications and associated bill items for the most likely scope of work, and then change later using the compensation event procedure if necessary. This is because tenderers cannot programme effectively for unknown scopes of work

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by the Project Manager at each assessment date will be used for determining payments due and not the quantities given in the Bill of Quantities.

2.2.7. The short descriptions of the items of payment given in the bill of quantities are only for the purposes of identifying the items. More detail regarding the extent of the work entailed under each item is provided in the Works Information.

### **2.3. Departures from the method of measurement**

### **2.4. Amplification of or assumptions about measurement items**

For the avoidance of doubt the following is provided to assist in the interpretation of descriptions given in the method of measurement. In the event of any ambiguity or inconsistency between the statements in the method of measurement and this section, the interpretation given in this section shall be used.

## **C2.2 The *Bill of Quantities***

Please refer to Annexure A– BOQ.





Item No.	Payment Ref.	Description	Unit	Qty	Rate	Price
1.1	SANS 1200A	<b>SECTION 1 BILL NO: 1 PRELIMINARIES &amp; GENERAL Fixed Charge Items</b>				
1.1.1	8.3.1	<b>Contractual Requirements</b>				
1.1.1.1	a	All other Contractual and legal requirements including, permitting and licensing, etc.	sum	1		
1.1.2	8.3.2	<b>Establishment of Facilities on Site</b>				
1.1.2.1	8.3.2.1	<b>Facilities for Engineer</b>				
1.1.2.1.3	a	Nameboards	sum	1		
	8.3.2.2	<b>Facilities for the Contractor</b>				
1.1.2.2.1	a	Living Accommodation	sum	1		
1.1.2.2.2	b	Ablution & Latrine facilities	sum	1		
1.1.2.2.3	c	Tools & equipment	sum	1		
1.1.2.2.4	d	Water supplies, electric power and communications	sum	1		
1.1.2.2.5	e	Access	sum	1		
1.1.2.2.6	f	Plant	sum	1		
1.1.3	8.3.3	<b>Other Fixed charge obligations</b>				
1.1.3.1	a	Comply with all environmental and pollution control requirements	sum	1		
1.1.3.2	b	Compliance with Construction Regulations (2003) Health and Safety measures	sum	1		
1.1.3.3	c	Comply with all quality management requirements not included elsewhere	sum	1		
1.1.3.4	d	3 sets of Operation and maintenance manuals including As-Built drawings on hard copy and CD as specified. Refer to tender specification.	Sum	1		
1.1.3.5	e	Instructing and training the Employer's staff in operation of system and equipment prior to hand over to the Client .	Day	1		
1.1.4		<b>De-establishment</b>				
1.1.4.1	8.3.4	Removal of all items as stated above, including restoring and making good to the Project Manager's satisfaction	sum	1		
		<i>Total carried forward to next page</i>				
		<i>Total brought forward from previous page</i>				
1.2		<b>Time Related Preliminary Items</b>				
1.2.1	8.4.1	Time related obligations	Sum			
1.3		<b>Temporary works</b>				
1.3.1	8.8	Temporary works				
1.3.1.1	8.8.1	Allow an amount of seventy five thousand rand for the Protection of existing structure until construction in vicinity is complete	PS	1	R 75,000.00	R 75,000
1.3.1.2	8.8.2	Allow an amount of seventy five thousand rand for existing services	PS	1	R 75,000.00	R 75,000
		<b>Total Carried to the Summary Page</b>				



**PRICED BILL OF QUANTITIES**

Item No.	Payment Ref.	Description	Unit	Qty	Rate	Price
1		<u>Mechanical Installation</u>				
		<u>Workshop Plant</u>				
		For the design, supply, delivery, installation, testing and commissioning of the workshop plant together with all accessories as per the technical specifications and manufacturer requirements for correct operation.				
		1.1 Design, Workshop Drawings and Specifications	sum	1		
		1.2 Air Compressor (rosenbauer Agre Boss 7002 D or similar approved)	each	1		
		1.3 DCP Powder filling machine	each	1		
		1.4 Hydrostatic pressure test equipment for fire extinguishers	each	1		
		1.5 Extinguisher Drying machine	each	1		
		1.6 Glass blasting machine	each	1		
		1.7 Flexible LED lamp for inspection (Cordia or similar approved)	each	3		
		1.8 Telescopic mirror (Cordia or similar approved)	each	3		
		1.9 O ring removal kit for fire extinguishers (Cordia or similar approved)	each	2		
		1.10 CO2 filling machine	each	1		
		1.11 Fire extinguisher clamping device	each	3		
		1.12 Master Gauge	each	3		
		1.13 Extinguisher Scale	each	3		
		1.14 Testing and Commissioning	sum	1		
		1.15 Training	sum	1		
		1.16 Operation and Maintenance Manuals	sum	1		
Total Carried to the Summary Page						

## PART C3: SCOPE OF WORK

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C3.2	<i>Contractor's Works</i>	56
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## SECTION 1

### 1 Description of the *works*

#### 1.1. Executive overview

The Port of Richards Bay Project (RCB) was excluded from the TNPA National Fire Services Infrastructure & Equipment Upgrade project, which purely focused on Fire Emergency Service's needs in all the Ports. The port then embarked on the project to close the gaps, which would have been executed under national project. Port firefighting Installation Expansion and Upgrade in the Port of Richards Bay is inclusive of the total Port fire protection requirements around the Port and not just fire services.

Transnet fire safety standards require all ports to have sufficient resource capacity in terms of manpower, material, machines and facilities to deal with port fire firefighting requirements (Fire Safety Divisions and a First Strike Unit).

Firefighting system forms part of critical equipment in the Port hence it is important to ensure that this system remain functional in order to protect port users, property, environment and business. Furthermore, firefighting systems are a legal requirement that need to be complied with.

The proposed upgrades will mitigate risks, ensure a high level of operational readiness and safety compliance to all the identified buildings.

#### 1.2. *Employer's objectives*

The *Employer's* objective is to procure stationary equipment to be fitted in the Fire Station as outlined below:

- Life safety equipment
- Repairs and maintenance equipment for the upkeep of emergency equipment.

#### 1.3. Interpretation and terminology

Abbreviation	Meaning given to the abbreviation
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASCE	American Society of Civil Engineers
ASTM	American Society for testing and Materials
BS	British Standards
DIN	Deutsches Institut für Normung (German Institute for Standardization)
EU	European Standards
FAD	Free Air Delivery
FAT	Factory Acceptance Testing
FEL	Front-End Loading
FM	Factory Mutual
HVAC	Heating, Ventilation and Air Conditioning
IEC	International Electrotechnical Commission

IP	Ingress Protection
ISO	International Organization for Standardization
NEC	New Engineering Contract
NFPA	National Fire protection Association
NRSR	National Railway Safety Regulator
OEM	Original Equipment Manufacturer
OHS	Occupational Health and Safety
ORS	Owner Requirement Specification
P&ID	Piping and Instrumentation Diagram
SABS	South African Bureau of Standards
SANS	South African National Standards
SAT	Site Acceptance Testing
SI	International System of Units
UL	Underwriters Laboratories
VSD	Variable Speed Drive
VRV	Variable Refrigerant Volume
AIA	Authorised Inspection Authority
BBBEE	Broad Based Black Economic Empowerment
CEMP	Construction Environmental Management Plan
CD	Compact Disc
CDR	Contractor Documentation Register
CDS	Contractor Documentation Schedule
CRL	Contractor Review Label
CSHEO	Contractor's Safety, Health and Environmental Officer
CM	Construction Manager
DTI	Department of Trade and Industry
DWG	Drawings
DSTI	Daily Safety Task Instruction
EO	Environmental Officer
HAW	Hazard Assessment Workshop
HAZOP	Hazard and Operability Study
HSSP	Health and Safety Surveillance Plan
INC	Independent Nominated Consultant
IP	Industrial Participation
IR	Industrial Relations
IPP	Industrial Participation Policy
IPO	Industrial Participation Obligation
IPS	Industrial Participation Secretariat
IRCC	Industrial Relations Co-ordinating Committee
JSA	Job Safety Analysis
CIRP	Contractor's Industrial Relations Practitioner
Native	Original electronic file format of documentation
PES	Project Environmental Specifications
PHA	Preliminary Hazard Assessment
PIRM	Project Industrial Relations Manager
PIRPMP	Project Industrial Relations Policy and Management Plan
PLA	Project Labour Agreements

PSIRM	Project Site Industrial Relations Manager
PSPM	Project Safety Program Manager
PSSM	Project Site Safety Manager
ProgEM	Programme Environmental Manager
ProjEM	Project Environmental Manager
QA	Quality Assurance
R&D	Research and Development
SANS	South African National Standards
SASRIA	South African Special Risks Insurance Association
SES	Standard Environmental Specification
SHE	Safety, Health and Environment
SHEC	Safety, Health and Environment Co-ordinator
SIP	Site Induction Programme
SMP	Safety Management Plan
SSRC	Site Safety Review Committee

## 2 Engineering and the *Contractor's* design

### 2.1 *Employer's* design

- 2.1.1 The *Employer* does not take any responsibility for the design of the works.
- 2.1.2 The *Employer* has provided a technical specification detailing the *works* that is required and the plant that needs to be procured.
- 2.1.3 The *Employer* grants the *Contractor* a licence to use the copyright in design data presented to the *Contractor* for the purpose of the *works* (and the *Contractor's* obligation under paragraph 2.2 of the *Employer's Works* Information) ONLY.

### 2.2 Parts of the *works* which the *Contractor* is to design

- 2.2.1 The *Contractor* is responsible for the design of all the systems and plant as detailed in the Technical specifications. This shall include and not be limited to all supporting structures, plinths, plant bases, hangers, fixtures and fittings required for the correct operation and installation of the plant and systems.
- 2.2.2 Unless expressly stated to form part of the design responsibility of the *Employer* as stated under 2.1 *Employer's* design above and whether or not specifically stated to form part of the design responsibility of the *Contractor* under this paragraph 2.2, all residual design responsibility and overall responsibility for the total design solution for the *works* rests with the *Contractor*.

### 2.3 Procedure for submission and acceptance of *Contractor's* design

- 2.3.1 The *Contractor* shall address the following procedures:
- 2.3.2 The *Contractor's* documentation shall be issued to the *Project Manager* under cover of the *Contractor's* Transmittal Note indicating all Contract references (i.e. Project No, Contract No, etc.) as well as the *Contractor's* Project Document Number, Revision Number, Title

and chronological listing of transmitted documentation. Formats of *Contractor* data submitted is dependent on the project procedure and shall be specified by the *Project Manager*, upon the notified request of the *Contractor*.

- 2.3.3 The *Contractor* shall deliver both hard copies and electronic media copies (CD Rom) to the *Project Manager* either at the address stated within the Contract Data or at the Project site office.
- 2.3.4 All electronic documentation shall be submitted by the *Contractor* in Adobe Acrobat (PDF) and native file format
- 2.3.5 Acceptance of documentation by the *Project Manager* will in no way relieve the *Contractor* of responsibility for the correctness of information, or conformance with his obligation to provide the *Works*. This obligation rests solely with the *Contractor*.
- 2.3.6 After review, a copy of the original reviewed/marked-up drawing/document, with the *Project Manager's* consolidated comments and document status marked on the *Contractor* Review Label, is scanned and the copy shall be returned to the *Contractor* under cover of the project's Transmittal Note for revision or re-submittal as instructed.
- 2.3.7 The *Contractor* shall allow the *Project Manager*, 2 weeks (unless otherwise stated and agreed) to review and respond to the *Contractor's* submission of their documentation, i.e. from time of receipt by the *Project Manager* to the time of despatch. However, work shall proceed without delay in the event of late return of the documentation by the *Project Manager* with prior notification in writing by the *Contractor*.
- 2.3.8 On receipt of the reviewed documentation, the *Contractor* shall make any modifications requested/marked-up and resubmit the revised documentation to the *Project Manager* within 2 weeks. Queries regarding comments/changes should be addressed with the *Project Manager* prior to re-submittal.
- 2.3.9 Any re-submittals, which have not included the changes/comments identified, will be returned to the *Contractor* to be corrected. The *Contractor* shall re-issue the revised documentation incorporating all comments and other specified details not included in the previous issue within 2 working days of receipt of the marked-up document.
- 2.3.10 The *Contractor* is required to undertake design safety reviews with the *Project Manager*, the NEC Supervisor, the *Employer's Engineer's* and Professional team, the *Employer's* Health and Safety Officers, the *Employer's* Environmental Officers, the *Employer's* Quality Assurance and Quality Control Officers and any other Specialists and/or Subject Matter Experts (SME) as deemed by the *Employer* necessary for the provision of the *Works*.
- 2.3.11 The *Contractor* shall further conform to the requirements of health and safety as applicable and as directed by the Project Manager.
- 2.3.12 The *Contractor* shall submit all designs, drawings and details of plant including detailed technical specifications to the *Project Manager* for acceptance by the *Employers* engineer prior to the procurement of any items of plant.
- 2.3.13 Documentation Submission

The Project Management Office filing system will be utilized for the control of all relevant documentation. All document will be delivered via document control with a proof of transmittal. Copies of all correspondence, specifications and drawings, contracts and agreements, data sheets, minutes of meetings, Employers agent instructions, invoices and payment certificates, access certificates, quality and any variations, (compensation events or project change notices) will be filed and archived in the project folder by the Doc Controller. A document register will also be developed to capture incoming and outgoing documents. All documents issued to 3rd Party contractors and to the *Employer* must be submitted through the *Employer's* Document Control Department.

## 2.4 Review and Acceptance of *Contractor* Documentation

- 2.4.1 The *Contractor* submits documentation as the 'Works Information' requires to the *Project Manager* for review and acceptance.
- 2.4.2 The Project Management Office filing system will be utilized for the control of all relevant documentation. All document will be delivered via document control with a proof of transmittal. Copies of all correspondence, specifications and drawings, contracts and



agreements, data sheets, minutes of meetings, *Employer's* agent instructions, invoices and payment certificates, access certificates, quality and any variations, (compensation events or project change notices) will be filed and archived in the project folder by the Doc Controller. A document register will also be developed to capture incoming and outgoing documents. All documents issued to 3rd Party contractors and to the *Employer* must be submitted through the *Employer's* Document Control Department.

2.4.3 All electronic/Email communication to be copied to this address:

TNPA DocControl RCB Group Mailbox, The *Contractor* documentation 'Starter Kit' will be issued at the kick-off meeting following award. The project number shall be indicated on the subject line for all correspondence with TNPA. All correspondence between the *Contractor* and TNPA shall be directed to the *Project Manager*. The *Employer* shall distribute documentation via Document control with transmittal slip/note; the *Contractor* should always acknowledge receipt of documentation by signing the transmittal and return to *Employer's* Document control.

## 2.5 Other requirements of the *Contractor's* design

2.5.1 The Quality Plan means the *Contractor's* statement, which outlines strategy, methodology, resources allocation, QA and Quality Control co-ordination activities to ensure that the *works* meet the standards stated in the *Works* Information.

The *Contractor* will be responsible for Quality Management through the project Quality Management System (QMS) and has the responsibility and authority to ensure design of the project QMS requirements by the following means:

- Administration of Quality Assurance, Quality Control and Expediting activities.
- Issuing Corrective Action Requests (CAR's).
- Reporting on the effectiveness of the QMS to the Project Manager

An overall Project Quality Plan shall be developed to monitor the effectiveness of the Project QMS. The Project Quality Plan will be issued to the Client for review and approval.

### ***Quality Control and Expediting***

The Projects Quality Inspector shall ensure that Vendors/Suppliers provide Quality Control Plans specifying the proposed quality control activities for the scope of their supply.

These Quality Control Plans shall incorporate, as a minimum, the requirements specified by the specific *Employer Engineer*. The Projects Quality Inspectors shall use the Suppliers Quality Control Plans to control and monitor Suppliers Quality. Quality Control and Expediting shall be carried out by the *Employer Engineer* for all Mechanical, Structural, Piping, Electrical and Instrumentation Equipment and Materials procured for the Project.

## 2.6 Use of *Contractor's* design

- 2.6.1 The *Contractor* grants the *Employer* a licence to use the copyright in all design data presented to the *Employer* in relation to the *works* for any purpose in connection with the construction, re-construction, refurbishment, repair, maintenance and extension of the *works* with such licence being capable of transfer to any third party without the consent of the *Contractor*.

## 2.7 Design of Equipment

- 2.7.1 The *Contractor* submits his design details for the following categories of his proposed principal Equipment to the *Project Manager* for his information only:
- a) Any formwork required to Provide the *Works*
  - b) Equipment designed for the lifting of personnel to access any areas necessary to provide the *Works* which are not at ground level.
  - c) Equipment designed for the lowering of personnel to access any areas necessary to provide the *Works* which are below ground level.
- 2.7.2 The following principal Equipment categories deployed for the *Contractor* to Provide the *Works* require its design to be accepted by the *Project Manager* under ECC Clause 23.1:
- a) Specialist Equipment required to Provide the *Works*
  - b) Rigging platforms and specialised rigging Equipment that may be required by the *Contractor* to Provide the *Works*.
  - c) Launching platforms and incremental launching equipment that may be required by the *Contractor* to Provide the *Works*
  - d) Temporary access platforms, ladders, walkways, scaffolds, and any other temporary structures required to provide the *Works*.
- 2.7.3 The design of Equipment is considered in terms of this contract as *Contractor's* design and all applicable requirements of paragraph 2.5 of this document shall apply.

## 2.8 As-built drawings, operating manuals and maintenance schedules

The *Contractor* provides the following:

### 2.8.1 As-Built/Final Documentation

The Project Management Office filing system will be utilized for the control of all relevant documentation. All document will be delivered via document control with a proof of transmittal. Copies of all correspondence, specifications and drawings, contracts and agreements, data sheets, minutes of meetings, *Employer's* agent instructions, invoices and payment certificates, access certificates, quality and any variations, (compensation events or project change notices) will be filed and archived in the project folder by the Doc Controller. A document register will also be developed to capture incoming and outgoing documents. All documents issued to 3rd Party contractors and to the *Employer* must be submitted through the *Employer's* Document Control Department.

### 2.8.2 Installation, Maintenance and Operating Manuals and Data Books

In undertaking the 'Works' (including all incidental services required), the Supplier shall conform and adhere to the requirements of the 'Data Books and Manuals' All document will be delivered via document control with a proof of transmittal. All documents issued to 3rd Party contractors and to the *Employer* must be submitted through the *Employer's* Document Control Department.

- a) The *Contractor* prepares three (3) marked up hard copies of the latest revision of the *Employer* documents/drawings to represent the As-Built/Final status.
- b) The mark-ups shall be in RED pencil or pen and be complete and accurate. The *Contractor* submits same to the *Project Manager* under cover of a Contractor's Transmittal Note.

- c) The *Contractor* provides manuals in an A4 hard covered, red, grease and waterproof binder, using 2 ring type binders. The manuals are well indexed and user friendly and include a summarized Table of Contents.
- d) Drawings and charts larger than A4 are folded and those greater than A3 are enclosed in an A4 plastic pocket of adequate strength.
- e) The *Contractor* submits the draft Table of Contents to the *Project Manager* for acceptance prior to the compilation and official submittal of the manuals.
- f) The originals of all brochures shall be issued to the *Project Manager*. When a general brochure is applicable to a range of equipment, then the specific item, catalogue number or model number shall be stated, which is best achieved by introducing a separate index page, which cross-references the specific item to a tag number.
- g) The address, phone numbers, fax numbers and reference numbers of all Sub-*Contractors* is provided
- h) Where manuals include drawings that still need to be revised to 'As-Built' status, and such manuals are required prior to 'As-Built' status, the manual will not be considered to be in its final form until the 'As-Built' version of each such drawing has been incorporated. The required number of copies of the manual(s) shall be as specified by the *Project Manager* and submitted per type or model number of equipment included in the contract, or as specified by the *Project Manager*. A typical example of what the binder/file(s) shall be marked with on the spine and the front cover is as follows: -

- Project No./Name
- Manual Title, e.g. Installation, Maintenance and Operating Manual
- FBS No. and Title
- Manual Numbering (e.g. Volume 1 of 2, etc.)
- Contract Number
- Contractor Name

- i) Unless otherwise stated in the CDS, the required number of copies of all As Built/Final/Data Packs shall be:  
3 x hard copies (Full size) including 1 x copy to be laminated in plastic enclosing 2 pages back-to-back for use by maintenance staff, 4 x CD Roms with Adobe Acrobat (.pdf) and Native formats and 2 x usb drives with Adobe Acrobat (.pdf) and Native formats.

2.8.3 Operating and Maintenance Manuals shall consist of the following sections:

- Descriptive Information

This section shall comprise at least the following:

- General Description
- Design Parameters
- Building Load
- Installed Capacities
- Principal Components
- Electrical Board Schematics
- Control Schematics

- Plant Data Comprising

This section shall comprise at least the following:

- Plant Designation
- Manufacturer and Model
- Size and Rating
- Pressure, Speed and Temperature Limitations
- Manufactures Local Representative.

- Systems Operating Instructions

Complete instructions for all Plant including:

- Starting and Stopping Procedures.
- Time Switch Functions.
- Seasonal Adjustments.
- Sequence under Loading and Unloading.
- Normal Operation and Tripped Conditions.
- Logs and Records to be kept.

- Inspection and Maintenance

- Inspection Schedules and Checklist.
- Lubrication Schedules.
- Routine Replacements, Adjustments and Calibrating.
- Routine Cleaning, Painting and Protection.
- Inspection and Maintenance Logs and Records to be kept.

- Reference Documents

Reference documents to include:

- Tender Specification & Drawing List
- As built Record Drawings
- Test Reports
- Commissioning Reports

- Plant: Manufacturers Data

This part of the Manual shall consist of manufacturer's data including:

- Descriptive Literature
- Catalogue Cuts, Brochures or Shop Drawings
- Dimensioned Drawings

- Materials of Construction
- Parts Designations
- Operating Characteristics
- Performance Tables and Charts
- Performance Curves
- Pressure, Temperature, and Speed Limitations
- Safety Devices
- Plant Operating Instructions
- Pre-start Checklist
- Start-up Procedures
- Inspection during Operation
- Adjustment and Regulation
- Testing
- Detection of Malfunction
- Precautions
  - Inspection Instructions and Procedures
- Normal and Abnormal Operating Temperature, Pressure and Speed Limits.
- Schedule and Manner of Operation
- Detection Signals
  - Maintenance Instructions and Procedures
- Schedule of Routine Maintenance.
- Procedures.
- Troubleshooting Chart.
  - Parts List
  - Service Contracts

## Maintenance

Allow for the maintenance of the complete installation for a period of TWELVE (12) MONTHS after commissioning certificate has been issued by the *Employer*. Visit the installation once a month based on a proper preventive programme approved by the *Employer*.

Report to an official nominated by the *Employer* on arrival and again on leaving their premises on the occasion of each visit. Such person, who has been nominated by the Client, shall sign a Service Report giving details of corrected temperature and humidity readings taken, etc.

A logbook shall be supplied by the *Contractor*. The logbook shall be kept on site in charge of the responsible person appointed by the Client for this purpose. The *Contractor* shall complete the logbook, showing all maintenance done by him, as well as repairs of faults which may have occurred. The logbook shall also contain the following information:

- Date
- Type of fault reported and by whom
- Date of fault report
- Work done
- Name and signature of person carrying out the work
- Name and signature of the person in charge of the site.

The logbook shall be completed in TRIPLICATE. One copy shall accompany the monthly report to the Regional Representative of Transnet National Ports Authority, one copy shall be for the Contractor's own use, whilst the third copy shall remain in the logbook as a record.

At each service visit, maintenance personnel shall, inter alia, perform the following duties in addition to any other which may be necessary.

- Check all fans, drives and variable speed drives, lubricate moving part and tighten where applicable, belts, as required, and check all lock-out stops. Check drip trays, drainage systems for cleanliness and correct functioning.
- Check differential pressure gauges and switches, etc.
- Check all switchboards. Tighten connections, check switchgear for burnt contacts, check overload settings, phase failure relays, etc. Relays etc. Replace defective voltmeter, ammeters, transformers, pilot lights, hour meter, timers. Time switches, etc.
- Check all control systems and safety devices, air flow switches, manometer, etc. for correct functioning and replace defective items or any other as necessary.
- Any other checks or maintenance as directed by the Plant manufacturers.

### 3 Construction

#### 3.1 Temporary *works*, Site services & construction constraints

##### 3.1.1 *Employer's* Site entry and security control, permits, and Site regulations

The area where the *works* or equipment is going to be delivered within the Port of Richards Bay Boundary. Access to the Port of Richards Bay and the work site(s) or delivery site is Umfolozi building/Fire Station, refer to annexure F for equipment layout. Access must be subject to the Transnet National Ports Authority security requirements and regulations, which states that "access should be obtain for all the Contractor's personnel at Permit Office located at Sizakala Truck Staging Facility".

##### 3.1.2 The *Contractor* complies with the following requirements of the *Employer*:

There is a permit card access system to enter the Port Area. The Port Staff must arrange the required access permits and issue them to the *Contractor* free of charge. Should any person lose his/her access permit these must be replaced at a cost of R 360-00 per person,

cost to be incurred by the *Contractor*. This must also apply if permits are not returned at the end of the project completion.

The *Contractor* will be required to attend TNPA induction prior to access the site or start performing the work.

3.1.3 Restrictions to access on Site, roads, walkways and barricades:

During the installation of some of the equipment, barricades may be required to restrict access. The *Contractor* will be restricted to access berth 208 & 209 quaysides.

3.1.4 The *Contractor* complies with the following requirements of the *Employer*:

The *Contractor* will be required to attend TNPA induction prior to access the site or start performing the work. The *Contractor* must make necessary allowance for interface with other work executed by others for safe working procedure. During delivery and installation of equipment, the Contractor should adhere to the safety measures put in place by Transnet while working within the work vicinity.

The *Contractor* is solely responsible for manufacturing and supplying the goods and services under the Contract having the highest regard for the health and safety of its employees, Transnet's employees and persons at or in the vicinity of the Site, the Works, temporary work, materials, the property of third parties and any purpose relating to the Contractor carrying out its obligations under this Contract.

The *Contractor* must initiate and maintain safety precautions and programs to conform to all applicable Health and Safety laws or other requirements, including requirements of any applicable government instrumentality and client corporate, business unit and site requirements.

The *Contractor* must comply and is responsible for ensuring that all of its *Sub-Contractors* comply with the relevant legislation(s) and statutory regulations for health and safety, the Transnet Health and Safety requirements included in the Contract and other document pertaining to health & safety contained in the Programme Health & Safety Management System and include standards, policies, procedures, guidelines and safe work instructions, risk assessments and Health and Safety plans as required.

3.1.5 People restrictions on Site; hours of work, conduct and records:

- Normal working hours at the Port of Richards Bay are from 08:00 to 16:30, Monday to Friday, Inclusive. Transnet National Ports Authority has a strict Health and Safety policy in place. No person(s) may enter the site and undertake work on the site until undergoing the mandatory induction. The induction must be arranged by the Port personnel at no cost to the Contractor. Prior arrangement must be made with the Project Manager.
- The *Contractor* keeps daily records of his people engaged on the Site and Working Areas (including Subcontractors) with access to such daily records available for inspection by the Project Manager at all reasonable times
- The *Contractor* complies with the CEMP, SES and PES in the construction of the works, all as described under paragraph 2.4 of C3.1 Employer's Works Information.

3.1.6 The *Contractor* complies with the following hours of work for his people (including Subcontractors) employed on the Site:



Normal working hours at the Port of Richards Bay are from 08:00 to 16:30, Monday to Friday.

- 3.1.7 The *Contractor* keeps daily records of his people engaged on the Site and Working Areas (including Subcontractors) with access to such daily records available for inspection by the *Project Manager* at all reasonable times.

- 3.1.8 Health and safety facilities on Site

The *Contractor* shall comply with the requirements of the Occupational & Safety Act of 1993 and applicable regulations as well as Compensation for Occupational injuries and Diseases Act 130 of 1993. The safety specification will be issued with the tender documents, returnable safety file will include risk, health, safety plans and COVID 19 plans as per National Disaster Management Act 57 of 2002

The *Contractor* provides a notice board [state specific details as required, *Employer* title, *Supervisor* name, size layout where sited etc] at [state location at the Site etc] [state relevant details] (refer to SHE specification guidelines)

The *Contractor* provides progress photographs, progress reports and quality checks monthly to the *Project Manager*.

- 3.1.9 The *Contractor* complies with the requirements stated under paragraph 2.3 of C3.1 *Employer's Works Information*.

The *Contractor* is solely responsible for manufacturing and supplying the goods and services under the Contract having the highest regard for the health and safety of its employees, Transnet's employees and persons at or in the vicinity of the Site, the *Works*, temporary work, materials, the property of third parties and any purpose relating to the Contractor carrying out its obligations under this Contract.

The *Contractor* must initiate and maintain safety precautions and programs to conform to all applicable Health, Safety, and environmental laws or other requirements, including requirements of any applicable government instrumentality and client corporate, business unit and site requirements.

The *Contractor* must comply and is responsible for ensuring that all of its *Sub-Contractors* comply with the relevant legislation(s) and statutory regulations for health and safety, the Transnet Health and Safety, environmental requirements included in the Contract and other document pertaining to health & safety, environmental contained in the Programme Health & Safety Management System and include standards, policies, procedures, guidelines and safe work instructions, risk assessments and Health, Safety and environmental plans as required.

- 3.1.10 Environmental controls, pertaining to waste management must be taken into consideration. No fauna & flora, dealing with objects of historical interest

- 3.1.11 The *Contractor* complies with the CEMP, SES and PES in the construction of the *works*, all as described under paragraph 2.4 of C3.1 *Employer's Works Information*.

- 3.1.12 Cooperating with and obtaining acceptance of others

The *Contractor* must make necessary allowance for interface with other work executed by others for safe working procedure.



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The *Contractor* performs the *works* and co-operates with:

- TNPA Civil Departments
- TNPA Electrical Department
- TNPA Risk Department
- TNPA Environmental Department
- TNPA Security Department
- TNPA Projects team, and
- Other relevant Departments

The permit to work will be granted to the *Contractor* before delivery and installation of equipment to site, this will include all relevant Departments required.

3.1.13 The *Contractor* performs the *works* and co-operates with:

- TNPA Civil Departments
- TNPA Electrical Department
- TNPA Risk Department
- TNPA Environmental Department
- TNPA Security Department
- TNPA Projects team, and
- Other relevant Departments

3.1.14 Publicity and progress photographs

The *Contractor* shall have to provide Site notice board which will have *Contractor's* name, Supervisor's name and contact details, this will caution people of the work in progress in the area during delivery and installation of equipment. (refer to SHE guidelines attached).

The *Project Manager* will send out the newsflash to inform all TNPA employees about the work to be performed including the start date and end date of the project

3.1.15 The *Contractor* provides a notice board [state specific details as required, *Employer* title, *Supervisor* name, size layout where sited etc] at [state location at the Site etc] [state relevant details]. refer to SHE guidelines attached).

3.1.16 The *Contractor* provides progress photographs progress reports and quality checks monthly to the *Project Manager*.

3.1.17 The *Contractor* does not advertise the contract or the project to any third party, nor communicate directly with the media (in any jurisdiction) whatsoever without the express written notification and consent of the *Project Manager*.

3.1.18 *Contractor's Equipment*

N/A

3.1.19 The *Contractor* keeps daily records of his Equipment used on Site and the Working Areas (distinguishing between owned and hired Equipment) with access to such daily records available for inspection by the *Project Manager* at all reasonable times.

3.1.20 The *Contractor* complies with the following [state relevant details] [assembly] [dismantling] [operation in use] permissions and restrictions in the use of Equipment as required by the *Employer*.

N/A

3.1.21 Equipment provided by the *Employer*

The *Employer* shall provide no equipment to the Site.

3.1.22 The *Employer* provides the following Equipment on the Site for the *Contractor's* use:

The *Employer* shall provide no equipment to the Site.

3.1.23 The *Contractor* complies with the following conditions in using the *Employer's* Equipment:

N/A

3.1.24 Site services and facilities:

The *Contractor* will not be required to do the Site Establishment; hence, the available TNPA services will be shared with the *Contractor*, i.e. electricity, water and ablution facilities, etc.

The waste generated shall be disposed as per Environmental Management Plan that will be submitted by the *Contractor* for review and approval by TNPA Environmental Department.

The *Contractor* shall provide everything else necessary for providing the Works.

3.1.25 The *Employer* provides the following facilities for the *Contractor*:

The *Employer* will provide no facilities to the *Contractor*

3.1.26 Wherever the *Employer* provides facilities (including, *inter alia*, temporary power, water, waste disposal, telecommunications etc) for the *Contractor's* use within the Working Areas and the *Contractor* adapts such facilities for use, then the *Contractor* makes good and provides full reinstatement to the land (including all apparatus of the *Employer* and Others in, on or under the land) and surrounding areas to its original standard upon dismantling of such facilities and hand-back to the *Employer*.

3.1.27 Facilities provided by the *Contractor*:

The *Contractor* shall provide everything necessary for providing the Works.

- 3.1.28 The *Contractor* provides the following facilities for the *Project Manager* and *Supervisor*.  
The *Contractor* shall provide everything necessary for providing the Works.
- 3.1.29 Wherever the *Contractor* provides facilities (either his own or for the *Project Manager* and/or *Supervisor*) and all items of Equipment, involving, *inter alia*, offices, accommodation, laboratories, Materials storage, compound areas etc, within the Working Areas, then the *Contractor* makes good and provides full reinstatement to the land (including all apparatus of the *Employer* and Others in, on or under the land) and surrounding areas to its original standard, upon dismantling of such facilities and items of Equipment.
- 3.1.30 Unless expressly stated as a responsibility of the *Employer* as stated under 5.1.11 Site services and facilities, all residual requirements for the provision of facilities and all items of Equipment necessary for the *Contractor* to Provide the *Works* remains the responsibility of the *Contractor*.
- 3.1.31 Existing premises, inspection of adjoining properties and checking work of Others  
N/A
- 3.1.32 The *Contractor* inspects and surveys the following [buildings / premises / facilities] adjacent to the Site in accordance with [state specific details as to what is required of the Contractor (e.g.) punch-lists, co-ordination and / or liaison with adjacent landowners and agents of the Employer] and in conjunction with the *Project Manager*:  
N/A
- 3.1.33 The *Contractor* inspects [state precise details of inspection / survey] the work of [state specific third party] with which the *works* interfaces in conjunction with the *Project Manager*.  
N/A
- 3.1.34 Survey control and setting out of the *works*  
N/A
- 3.1.35 The *Employer* provides the following information and survey controls for the *Contractor*:  
N/A
- 3.1.36 Excavations and associated water control  
N/A
- 3.1.37 The *Contractor* complies with the following requirements:  
N/A
- 3.1.38 Underground services, other existing services, cable and pipe trenches and covers  
There are no underground services the *Contractor* may come into contact with while providing the works.
- 3.1.39 Where the *Contractor* encounters existing [underground services / existing services cables / pipe trenches] [state as appropriate], the *Contractor* undertakes the following:  
N/A

3.1.40 Control of noise, dust, water and waste

The *Contractor* to comply with NEMA regulations and environmental legislations.

The CEMP should include but not limited to the following:

- Noise control
- Pollution control
- Waste management
- Water management

3.1.41 The *Contractor* complies with the following:

The *Contractor* to comply with NEMA regulations and environmental legislations.

The CEMP should include but not limited to the following:

- Noise control
- Pollution control
- Waste management
- Water management

The main *Contractor* to ensure that the *sub-Contractors* comply with the requirements of the CEMP.

3.1.42 Sequences of construction or installation

No sequencing of the work, buildings will be available to deliver and install the equipment. The *Contractor* to refer to the project specification for the development of the programme and submit to TNPA for acceptance.

The *Contractor* to comply with the accepted project programme

3.1.43 The *Contractor* complies with the following:

The *Contractor* to comply with the accepted Level 4 project programme

3.1.44 Giving notice of work to be covered up:

The *Contractor* to notify the *Project Manager* one (1) week prior the delivery and installation of equipment.

The *Contractor* to submit a four (4) week level 4 look ahead programme. This will enable the *Project Manager* to notify the affected stakeholders of the planned work and arrange Security Access requirements.

The Contractor should adhere to the accepted programme.

3.1.45 The *Contractor* notifies the *Supervisor* of the following elements of the *works* [either include specific details or make an overarching general statement that this is to include all elements of the works] which are to be covered up:

The *Contractor* should adhere to the accepted programme.

3.1.46 Hook ups to existing *works*

There are no constraints that are foreseen.

3.1.47 The *Contractor* complies with the following constraints in the execution of the *works*:

The *Contractor* will be working during office hours, therefore the *Contractor* needs to be mindful of the personnel working in the area.

## 3.2 Completion, testing, commissioning and correction of Defects

3.2.1 The *Contractor* shall provide a detailed testing and commissioning plan which shall be approved prior to the start of any testing activities.

3.2.2 The *work* to be done by the Completion Date

On or before the Completion Date the *Contractor* shall have done everything required to Provide the *Works* including the work listed below which is to be done before the Completion Date and in any case before the dates stated. The *Project Manager* cannot certify Completion until all the work listed below has been done and is also free of Defects, which would have, in his opinion, prevented the *Employer* from using the works and Others from doing their work.

The *Contractor* shall provide a full set of specifications for the equipment to be purchased during tender stage.

The *Contractor* to identify and provide a minimum critical spares and consumables for the equipment as part of the *Works*. The spares to be delivered at Umfolozi building/Fire Station, Port of Richards Bay, refer to annexure F for site layout.

3.2.3 Use of the *works* before Completion has been certified

The certification for completion for use will be done progressively until the entire project is complete. Such use does not constitute a takeover by the employer.

3.2.4 The *Employer* uses the following part / parts of the *works* before Completion is certified by the *Project Manager* which do not constitute take over by the *Employer* for the reason(s) stated:

The certification for completion for use will be done progressively until the entire project is complete, such use does not constitute a takeover by the employer.

3.2.5 Materials facilities and samples for tests and inspections

There will be no materials facilities and samples for tests and inspections for the project.

3.2.6 The *Contractor* provides the *Employer* with the following [state what facilities will be made available and when, what Materials if any and samples in order for the *Supervisor* to perform his tests and inspections as described under paragraph 5.2.1 of C3.1 *Employer's* Works Information] as ECC Clause 40.2:

N/A

3.2.7 The *Employer* provides the *Contractor* with the following [state what facilities will be made available and when, what materials if any and samples in order for the Supervisor to perform his tests and inspections as described under paragraph 3.2.1 of C3.1 *Employer's Works Information*] as ECC Clause 40.2:

N/A

3.2.8 Commissioning

- a) Details of all the tests for FATs, SATs and Commissioning as well as all documentation to be used for the recording of these shall be submitted to the Project Manager for approval by the Employer's Engineers three (3) weeks prior to the start of any testing.
- b) The Contractor shall not be allowed to start testing without the approval of the Testing and Commissioning Plan.
- c) The testing of the systems shall be done in the presence and to the satisfaction of an authorised representative of the Employer's Engineer and the Supervisor. The test results shall be forwarded to the Employer for acceptance.
- d) FAT testing shall include simulations of the equipment, which shall be done in the presence of the Employer's Engineer and the Supervisor. FAT testing shall be done for, but not limited to, all pumps, compressors, and pneumatic conveyors, which shall include pressure and flow testing as well as all other testing required for correct operation.
- e) All consumables required for the testing and commissioning shall be provided by the Contractor and shall be priced for.
- f) Commissioning shall be done by an ECSA registered Professional Engineer who shall be provided by the Contractor. The Contractor's Engineer provided shall have reasonable experience in the commissioning of similar types of Plant or systems. The Contractor shall provide Programme for the time and cost associated with the commissioning of all the works.

3.2.9 The *Contractor* provides the following commissioning activities to bring the *works* in use in liaison with the *Employer*:

The testing and commissioning of the works shall be done as per the requirements set out in the technical specification.

3.2.10 Start-up procedures required to put the *works* into operation

The *Employer* will require Commissioning report and Certification of the equipment before operation.

3.2.11 The *Contractor* performs the following duties and actions on behalf of the *Employer* to put the *works* into operation:

Tenderers shall allow in their tender prices for a training course, to train on site at least thirty (30) persons, as nominated by the User (Client) from his own operating personnel. The training shall follow the following guidelines as listed below:

- The training shall be done on all items of Plant procured as well as any installed Plant and systems. All consumables required for the training shall be provided by the *Contractor* and shall be priced for.
- During this period the personnel shall be made fully conversant with the operation of, and daily maintenance required for, each item of Plant of the system.
- The training shall be of such a standard that will enable the Client to carry out his own in-house training of other personnel.

- The training course shall start only after first take-over inspection of the system.
- The training course shall be carried out in the language medium as chosen by the Client.
- The Operating Manual of the contract shall include a full description of the contents of the training course.

#### 3.2.12 Take over procedures

The *Contractor* to provide completion certificate for the supply of all deliverables that are mentioned at 3.2.1 of the Works Information, Certification of the equipment, training of TNPA fire officials, maintenance and operating manuals of equipment to be provided by the *Contractor* before takeover of the project.

#### 3.2.13 The *Contractor* provides the following assistance to the *Employer*:

Allow for the maintenance of the complete installation for a period of TWELVE (12) MONTHS after commissioning certificate has been issued to the *Employer*. Visit the installation once a month on the basis of a proper preventive programme approved by the *Employer*.

#### 3.2.14 The *Contractor* ensures that the documentation as described under paragraph 3.8 of the Works Information is presented to the *Project Manager* before Completion.

#### 3.2.15 The *Contractor* ensures that the *Project Manager* has a full and accurate dossier of As-built documents that represent the [state combination of Mechanical, Electrical, Instrumentation, General Layout as appropriate] status of the completed works (to include Plant within the works) to present to the *Employer*.

#### 3.2.16 The *Contractor* ensures that the *Project Manager* has a full and accurate dossier of [state Maintenance and Operating Manuals as appropriate] at the earlier of take-over or Completion.

#### 3.2.17 Where the *Contractor* has presented [state Maintenance and Operating Manuals as appropriate] to the *Project Manager* at take-over, the *Contractor* modifies and updates As-built documents as necessary prior to Completion.

The *Contractor* will be required to provide training material and issue out training certificate to declare the TNPA Fire Officials' competent to operate the equipment safely and effectively. The training to be conducted by the competent person from the *Contractor*.

#### 3.2.18 Access given by the *Employer* for correction of Defects

Clause 43.4 requires that the *Project Manager* arrange for the *Employer* to allow the *Contractor* access to and use of a part of the works, which has been taken over if needed to correct a Defect. After the works have been put into operation, the *Employer* may require the *Contractor* to undertake certain procedures before such access can be granted (for example barricading a motorway or in a nuclear power station). Include these here.

#### 3.2.19 The *Contractor* complies with the following constraints and procedures of the *Employer* where the *Project Manager* arranges access for the *Contractor* after Completion:

There is a permit card access system to enter the Port Area. The Port Staff must arrange the required access permits and issue them to the *Contractor* free of charge. Should any person lose his/her access permit these must be replaced at a cost of R 360-00 per



person, cost to be incurred by the *Contractor*. This must also apply if permits are not returned at the end of the project completion.

In case there is someone coming to the site for the first time, that person will be required to attend TNPA induction prior to access the site or start performing the work.

### 3.2.20 Performance tests after Completion

The equipment must perform according to the specification in 3.2.1 of the *Works Information* provided by the *Employer*. Should there be any equipment that does not perform according to the specification post completion; the Contractor will still be required to correct the deviation at *Contractor's* cost.

## 3.3 Guarantee

3.3.1 The *Contractor* shall guarantee the plant, materials, apparatus and workmanship delivered and installed by him. The guarantee shall be valid for a period of twelve months or as per the manufacturer's guarantee/warranty, whichever is longer, starting on the date when the commissioning certificate is issued, the complete installation shall be guaranteed against defects as a result of patent and latent defects of the apparatus, as well as against faulty materials and workmanship. Fair wear and tear is excluded from the guarantee.

3.3.2 All items of Plant purchased from OEM's shall be provided with the OEM guarantee, however for the first 12 months the *Contractor* shall still be liable to attend to any problems or liaise with the manufacturer should any problems occur. Where the manufacturers are responsible for the guarantee/warranty, the relevant certificates shall be provided to the *Employer* as well as copies kept in the Operations and Maintenance Manuals.

3.3.3 The guarantee shall provide for all parts, spares and appurtenances which become defective during the guarantee period, to be replaced free of charge to the client. All costs of labour, out-of-town allowances, materials and transportation required to replace such part of a defective installation shall be borne by the Contractor and shall be included in his guarantee. The *Contractor* shall cede to the client the remainder of any Plant guarantee which he has received from his Sub-Contractor and which may extend beyond the period of twelve months mentioned herein.

3.3.4 Where certain Plant have *Contractor's* standard guarantee clauses of which do not correspond with the guarantee clause 22.1 the selected Subcontractor shall allow in the tender price for the extensions of guarantees and additional charges thereof, in order to comply with guarantee clause.

3.3.5 The *Contractor* is permitted to carry out the following *works* after Completion:  
There is no additional work to be undertaken by the *Contractor* after the completion of the scope mentioned above except the following maintenance work:

## 3.4 Maintenance

Allow for the maintenance of the complete installation for a period of TWELVE (12) MONTHS after commissioning certificate has been issued to the *Employer*. Visit the installation once a month on the basis of a proper preventive programme approved by the Employer.

Report to an official nominated by the *Employer* on arrival and again on leaving their premises on the occasion of each visit. Such person, who has been nominated by the Client, shall sign a Service Report giving details of corrected temperature and humidity readings taken, etc.



A log book shall be supplied by the *Contractor*. The log book shall be kept on site in charge of the responsible person appointed by the Client for this purpose. The *Contractor* shall complete the log book, showing all maintenance done by him, as well as repairs of faults which may have occurred. The log book shall also contain the following information:

- Date
- Type of fault reported and by whom
- Date of fault report
- Work done
- Name and signature of person carrying out the work
- Name and signature of the person in charge of the site.

The logbook shall be completed in TRIPLICATE. One copy shall accompany the monthly report to the Regional Representative of Transnet; one copy shall be for the *Contractor's* own use, whilst the third copy shall remain in the logbook as a record.

At each service visit, maintenance personnel shall, inter alia, perform the following duties in addition to any other which may be necessary.

- Check all fans, drives and variable speed drives, lubricate moving part and tighten where applicable, belts, as required, and check all lock-out stops. Check drip trays, drainage systems for cleanliness and correct functioning.
- Check differential pressure gauges and switches, etc.
- Check all switchboards. Tighten connections, check switchgear for burnt contacts, check overload settings, phase failure relays, etc. Relays etc. Replace defective voltmeter, ammeters, transformers, pilot lights, hour meter, timers. Time switches, etc.
- Check all control systems and safety devices, air flow switches, manometer, etc. for correct functioning and replace defective items or any other as necessary.
- Any other checks or maintenance as directed by the Plant manufacturers.

3.4.1 The *Contractor* arranges for the following technology transfer to the *Employer* after Completion for the *works* in use:

The *Contractor* to transfer the designs technology documents used on the development of the equipment and provide simulation software to assist the *Employer* for operating the equipment and fault finding

3.4.2 Operational maintenance after Completion

The *Contractor* to submit the proposal of maintenance plan for review and approval by the *Employer*

3.4.3 The *Contractor* performs the following operational maintenance in relation to the *works* after Completion:

Allow for the maintenance of the complete installation for a period of TWELVE (12) MONTHS after commissioning certificate has been issued to the Employer. Visit the installation once a month on the basis of a proper preventive programme approved by the Employer.

## 4 Plant and Materials Standards and Workmanship

### 4.1 General:

- 4.1.1 The *Contractor* provides Plant and Materials for inclusion in the *Works* in accordance with the Standard Specifications and/or Project Specifications, unless otherwise stated elsewhere in the *Works Information* provided by the *Employer*. All Plant and Materials are new and undamaged, unless the use of old or refurbished goods and/or Materials are expressly permitted as stated elsewhere in this *Works Information* or as may be subsequently instructed by the *Project Manager*.
- 4.1.2 The *Contractor* shall make all necessary planning provision for labour, equipment, material and execution of the *Works*.
- 4.1.3 All materials shall be of the quality specified and the *Contractor* shall, upon request of the *Project Manager*, furnish him with proof to his satisfaction that the materials are of the specified quality. The *Project Manager* is not responsible for Quality Assurance on behalf of the *Contractor* but shall be entitled to judge unsatisfactory work.
- 4.1.4 The *Contractor* replaces any Plant and Materials subject to breakages (whether in the Working Areas or not) or any Plant and Materials not conforming to standards or specifications stated and notifies the *Project Manager* and the *Supervisor* on each occasion where replacement is required.
- 4.1.5 No Plant or Materials will be provided “free issue” by the *Employer*
- 4.1.6 The *Contractor* provides all Plant and Materials necessary for the *Works*.
- 4.1.7 The *Contractor* supplies all certification including test certificates, user manuals, maintenance manuals and data books with respect to Plant and Materials procured for the *Works*:

### 4.2 Investigation, Survey and Site Clearance

- 4.2.1 The *Contractor* will be responsible for setting out the *Works*.
- 4.2.2 The *Contractor* validates the information provided by the *Project Manager* and records all existing and final levels on a survey drawing and presents this to the *Project Manager* for acceptance.
- 4.2.3 Prior to commencing the *Works* the *Contractor* records any defects or inaccuracies related to the existing structures, paving, etc. and presents this record to the *Project Manager* for acceptance. Only items recorded in this manner will be accepted as having pre-existed the *Works* and the remedying of all other damage will be the *Contractor's* responsibility and for his cost.

## 4.3 Electrical & mechanical engineering works

### Mechanical Engineering Works

#### 4.3.1 Scope of Work

The scope of the *works* entails the design, supply, delivery, installation, testing, commissioning and handing over fire and maintenance equipment in complete working order ready for immediate use and subsequent maintenance as per the Technical Specifications.

#### 4.3.2 Visit to Site

Tenderers must acquaint themselves with local site conditions such as access area available on site, type of ground, space available for on-site fabrication, storage, transport, loading and unloading facilities, scaffolding, tackles and tools needed, as no claims by the *Contractor*, which may arise from ignorance of the site conditions, shall be considered.

#### 4.3.3 Materials and Workmanship

- a) All materials shall be of the quality specified and the *Contractor* shall, furnish proof that the materials are of the specified quality. The *Contractor's* Engineer will be responsible for Quality Assurance and shall be entitled to condemn unsatisfactory work.
- b) All materials and equipment used for the installations shall be new and undamaged. The *Contractor* shall, if requested by the *Project Manager*, provide samples of material and tools for approval. If judged necessary by the *Project Manager*, such samples may only be returned after the completion of the installation, in order to ensure that the quality of the installed product is the same as that of the approved sample
- c) Material for which an SABS specification exists, shall be in accordance with such a specification, and shall bear the SABS mark.
- d) All fire protection Plant used shall originate from *Contractor* which have been certified in accordance with SABS ISO 9001 (ISO 9001) or SABS ISO 9002 (ISO 9002) for Quality assurance. Copies of certificates of approval shall be provided by the tenderers with their tenders. Plant designed to BS 5446, Fire systems for residential premises, or similar other standards, are not acceptable.

#### 4.3.4 Design and Drawings

##### a) Design Responsibilities

- The *Contractor* is responsible for the detailed design of all systems and plant as per the technical specifications including all supporting structures, non-standard Plant (where Plant needs to be purpose built) and all electrical and control plant required for the correct operation of all Plant.
- The *Contractor* shall ensure that all designs and calculations are submitted to the *Project Manager* for acceptance by the *Employer's Engineer* together with the Workshop detailed Drawings. The drawings shall be submitted in PDF as well as DWG formats for all submissions. The *Contractor* shall price in the works for the submission of the calculations and drawings as well as schedule the time for acceptance of all designs and approval of plant type (should there be any deviation from the specifications).
- The *Contractor* shall furnish details of any Plant that is other than, or different to, that specified by the *Employer's Engineers*, to the *Supervisor* for Approval by the *Employer's Engineers*. The *Contractor* is prohibited from procuring and installing without the required prior authorization from the *Employer's Engineers*. The approval shall only apply to the selection of the type of Plant and in doing so, the *Employer's Engineers* assume no responsibility or accountability for the proper functionality of Plant or associated systems designed by the Contractor in any way whatsoever.

##### b) Shop Drawings

- Preparation of complete shop drawings is the responsibility of the *Contractor*. The shop drawings must be prepared on the basis of:
- The latest Architect's, Structural Engineer's, Civil Engineer's and Electrical Engineer's drawings regarding co-ordination and layout;
- Actual Plant offered in the Tender and Approved by the *Project Manager*. No work may be put in hand before the relevant shop drawings have been reviewed by the *Project Manager* for acceptance. The *Employer's* responsibility in this regard is limited to checking conformance with the works information and co-ordination with other disciplines where necessary. This does not absolve the *Contractor* of any responsibility in terms of the Subcontract or for errors or omissions in the shop drawings; and
- The *Contractor* shall include time in the schedule for acceptance of shop drawings and Approval of Plant by the *Employer*.

**c) The shop drawings shall include but not be limited to the following:**

- P&I.D showing the entire system layout and plant details;
- Plant Specifications, including fixing details and materials;
- Piping schedules;
- Detailed piping drawings, including joint details and positions;
- Welding schedules and weld maps (if applicable);
- Foundation, Plinth and Base details of all plant;
- Corrosion protection specifications for all plant and materials;
- Cable schedules; and
- General arrangement drawings and component lists for electrical works associated with the mechanical plant.

**d) Structural Work Drawings**

- Openings
- The *Contractor* shall show all openings and other finishes on layout drawings in such a way as to constitute a clear instruction to others.
- Plant Foundations, Bases and Plinths
- The *Contractor* shall be responsible for providing detailed Structure's Work drawings for all foundations, plinths and plant bases as per the manufacturer's recommendations for the Plant selected.

**4.3.5 Responsibilities of the *Contractor***

**a) Ordering of Plant and Materials**

The *Contractor* shall be responsible to ensure that the project programme is adhered to and that no delays are caused by late deliveries of Plant and materials. All other activities which must proceed placing of orders must be taken into account when the *Contractor* schedules his activities.

**b) Storage of Materials and Plant**

The *Contractor* shall be responsible for the proper storage of all materials and Plant on site to ensure protection against the elements, damage by impact, dirt, builder's rubble dust theft etc. After handover it will be the responsibility of TNPA Fire to ensure good keeping and safety of material

**c) Protection of the Works**

The *Contractor* shall programme his work to avoid damage by other Trades and shall be responsible for protection of the works against such damage until handover to the Client.

**d) Accessibility**

- The *Contractor* shall plan suitable accessibility for thermometers, gauges, controls, dampers and other devices which require reading adjustment, inspection, repair removal or replacement.
- The *Contractor* shall design all systems and plant positioning to enable ease of maintenance or repair and provide sufficient space for removal or replacement of plant if required.

**e) Weather Proofing**

- All outdoor Plant shall be weatherproof and corrosion resistant including minor items such as screws fixers, brackets, etc.
- The IP rating for waterproofing of all Plant must be accepted by the *Engineer* and should adhere to relevant SANS standards.

**4.3.6 Reference Specifications and Standards**

- a) The latest revision of any Specification referred to in this specification, shall be applicable.
- b) In addition to the specifications, the Project will comply with the following relevant Acts and Regulations as listed below:

- Occupational Health and Safety Act 85 of 1993;
- The S.A. National Building Regulations and Building Standards Act. (Act 103 of 1977);
- South African National Standards and Codes of Practice;
- IEC Standards and Recommendations;
- International Standards and Codes – ISO, DIN, BS, ASME, ASCE, ANSI, ASTM, EU, NFPA; and
- The local, provincial or S.A. Government laws in force at the time.

- c) The SI ("Le System International d' Unites") – Metric System of Units shall apply. Refer to SANS – M33A: The International Metric System: Guide to the use of the SI in South Africa.

**South African National Standards**

Standard No.	Description
SANS 10400	The Application of the National Building Regulations
SANS 347:2012	Categorisation and Conformity Assessment Criteria for all Pressure Equipment

SANS 62	Steel pipes - Part 1 and 2
SANS 10142	Code of Practice for the Wiring of Premises
SANS 10044	Welding
SANS 2560	Welding Consumables
SANS 1182	Light Gauge Welded Steel Pipes
SANS 121	Hot Dip Galvanized Coatings on Fabricated Iron and Steel Articles
SANS 10140	Identification Colour Marking
SANS 8501-3	Preparation of Steel Substrates Before Application of Paints and Related products
SANS 10142-1	The Wiring of Premises Part 1: Low Voltage Installations
SANS 1109-1	Pipe Threads Where Pressure-Tight Joints are Made on the Threads

#### Other Specifications

Specification No.	Description
API 5L	Welded and Seamless pipe
ASTM A153	Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
Government Notice	Pressure Equipment Regulations, 2009
	The General Electrical Specification for the Provincial Administration of the Republic of South Africa Part 2E
	The Municipal by laws and any special requirements of the Supply Activities of the area or district concerned.
	The Occupational Health and Safety Act No 85 of 1993
ISO 9001	Quality Management
ISO 9002	Model for Quality Assurance in Production, Installation and Servicing
ISO 14001	Environmental Management
AD 2000	Code for Pressure Vessels
ASME VIII	Rules for Construction of Pressure Vessels

#### 4.4 Process control and IT works

N/A

#### 4.5 Other [as required]

N/A

### 5 List Of Documents

#### 5.1 Documents issued by the *Employer*

This is the list of documents issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note: Some documents may contain both *Works Information* and *Site Information*.

Document number	Revision	Title
01	01	Technical Specification (Package 1)
RBH 87-0-129	01	Fire Station Equipment Layout



## SECTION 2

### 6 Management and start up

#### 6.1 Management meetings

Regular meetings of a general nature may be convened and chaired by the *Project Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
<b>Safety Action Meetings</b> (see paragraph 6.3), Risk register and compensation events,	Bi-Weekly Time-TBA Day-TBA	TNPA-Port of Richards Bay or Virtual meetings	<i>Project Manager</i> and TNPA projects team, <i>Supervisor</i> and <i>Contractor</i> (appropriate key persons)], CSHEO, CM, SHEC, etc. as appropriate]
Overall contract progress, Technical and feedback	Monthly Time-TBA Day-TBAon	TNPA-Port of Richards Bay or Virtual meetings	<i>Project Manager</i> and TNPA projects team, <i>Supervisor</i> , <i>Contractor</i> (appropriate key persons), and

Meetings of a specialist nature may be convened as specified elsewhere in this *Works Information* or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *works*. Records of these meetings are to be submitted to the *Project Manager* by the person convening the meeting within five days of the meeting.

All meetings are to be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register are not to be used for the purpose of confirming actions or instructions under the contract as these are to be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

#### 6.2 Documentation Control

All electronic/Email communication to be copied to this address: TNPA DocControl RCB Group Mailbox, The *Contractor* documentation 'Starter Kit' will be issued at the kick-off meeting following award. The project number shall be indicated on the subject line for all correspondence with TNPA. All correspondence between the *Contractor* and TNPA shall be directed to the *Project Manager*.

In undertaking the '*Works*' the Project Management Office filing system will be utilized for the control of all relevant documentation. All document will be delivered via document control with a proof of transmittal. Copies of all correspondence, specifications and drawings, contracts and agreements, data sheets, minutes of meetings, *Employer's agent* instructions, invoices and payment certificates, access certificates, quality and any variations, (compensation events or project change notices) will be filed and archived in the project folder by the Doc Controller. A document register will also be developed to capture incoming and outgoing documents. All documents issued to 3rd Party contractors and to the *Employer* must be submitted through the *Employer's* Document Control Department. The *Employer* shall distribute documentation via Document control with transmittal slip/note; the *Contractor* should always acknowledge receipt of documentation by signing the transmittal and return to *Employer's* Document control.



The *Contractor* is to ensure that the latest versions of the required application software and a suitable 'IT' Infrastructure are in place to support the electronic transmission of documentation.

## 6.3 Safety, Health & Environmental management

### Health Safety & Environmental Management

The *Contractor* shall comply with the requirements of the Occupational & Safety Act of 1993, NEMA and environmental legislations and applicable regulations as well as Compensation for Occupational injuries, Diseases Act 130 of 1993 and COVID 19 and National Disaster Management Act 57 of 2002. The safety specification will be issued with the tender documents, returnable safety file will include risk, health, and safety plans.

### ***Contractor's* requirements for Health, Safety and Environment**

The *Contractor* is solely responsible for manufacturing and supplying the goods and services under the Contract having the highest regard for the health, safety and environment of its employees, Transnet's employees and persons at or in the vicinity of the Site, the Works, temporary work, materials, the property of third parties and any purpose relating to the *Contractor* carrying out its obligations under this Contract.

The *Contractor* must initiate and maintain safety precautions and programs to conform to all applicable Health, Safety and environmental laws or other requirements, including requirements of any applicable government instrumentality and client corporate, business unit and site requirements.

The *Contractor* must comply and is responsible for ensuring that all of its *Sub-Contractors* comply with the relevant legislation(s) and statutory regulations for health, safety and environmental, the Transnet Health, Safety and environmental requirements included in the Contract and other document pertaining to health, safety and environmental contained in the Programme Health, Safety and Environmental Management System and include standards, policies, procedures, guidelines and safe work instructions, risk assessments and Health, Safety and environmental plans and environmental legislations as required.

#### 6.3.1 The *Contractor* complies with the following SMP:

The *Contractor* is solely responsible for manufacturing and supplying the goods and services under the Contract having the highest regard for the health, safety and environment of its employees, Transnet's employees and persons at or in the vicinity of the Site, the Works, temporary work, materials, the property of third parties and any purpose relating to the *Contractor* carrying out its obligations under this Contract.

The *Contractor* must initiate and maintain safety precautions and programs to conform to all applicable Health, Safety and environmental laws or other requirements, including requirements of any applicable government instrumentality and client corporate, business unit and site requirements.

The *Contractor* must comply and is responsible for ensuring that all of its *Sub-Contractors* comply with the relevant legislation(s) and statutory regulations for health, safety and environmental, the Transnet Health, Safety and environmental requirements included in the Contract and other document pertaining to health, safety and environmental contained in the Programme Health, Safety and Environmental Management System and include standards, policies, procedures, guidelines and safe work instructions, risk assessments and Health, Safety and environmental plans and environmental legislations as required.

#### 6.3.2 The *Contractor* ensures that its Subcontractors comply with the requirements of the SMP.

#### 6.3.3 The *Contractor* performs the works having due regard to the HSSP.

6.3.4 The HSSP is:

The HSSP will be sent with the *Works Information* NEC Part C3 tender document, refer to annexure B with SHE specification attached.

6.3.5 The *Contractor* complies with the requirements of the SSRC with respect to his own activities and others on the Site and Working Areas.

6.3.6 The *Contractor* makes the SHE management plan available to its employees and Subcontractors in the *language of this contract* and other local languages as required

6.3.7 The *Contractor* completes a DSTI prior to carrying out any operation on the Site and/or Working Area to the approval of *Project Manager* or other named person acting on his behalf

6.3.8 The lines of communication of the various personnel under the *Project Manager* who communicate directly with the *Contractor* and his key persons with respect to the SMP are contained within Annexure A.

6.3.9 The roles and responsibilities of the various personnel under the *Project Manager* with respect to the SMP and health and safety issues are as stated in the following table:

Roles and Responsibilities	
<i>Project Manager</i>	<ul style="list-style-type: none"> <li>Oversee the execution of deliverables</li> <li>CM will manage the risks originating from the project respective activities.</li> <li>Guiding the <i>Contractor</i> to ensure all works conform to TNPA safety processes and systems</li> <li>Convening of Progress, Risk, Early Warning and other site issues</li> </ul>
<i>Employer's Engineer</i>	<ul style="list-style-type: none"> <li>Oversee the quality management plan</li> <li>Ensures that the <i>Contractor</i> complies with the Specification and attends health and safety risk mitigation meetings</li> </ul>
Risk Control Officer	<ul style="list-style-type: none"> <li>Ensures that the <i>Contractor</i> complies with all health and safety regulations</li> <li>Attend risks meeting during the progress of the project</li> </ul>
<i>Supervisor</i>	Ensures that the <i>Contractor</i> complies with the Specification and attends health and safety risk mitigation meetings

Environmental Officer	<ul style="list-style-type: none"> <li>Ensures that the Contractor complies with all environmental regulations and legislations</li> </ul> <p>Attend risks meeting during the progress of the project</p>
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6.3.10 The *Project Manager* is responsible (in the context of the SMP only) for health, safety and environment on the Site and Working Areas...

6.3.11 The *Project Manager* specific tasks as per SHE specification are:

- CM will manage the risks originating from the project respective activities.
- Guiding the *Contractor* to ensure all works conform to TNPA safety processes and systems
- Convening of Progress, Risk, Early Warning and other site issues

6.3.12 The PSSM specific tasks are:

N/A

6.3.13 The PSPM specific tasks are:

N/A

## 6.4 Environmental constraints and management

6.4.1 The *Contractor* complies with the following:

The *Contractor* performs the *works* and all construction activities within the Site and Working Areas having due regard to the environment and to environmental management practices as more particularly described within the SHE specification attached.

The SHE specification describes the minimal acceptable standard for environmental management for a range of environmental aspects commonly encountered on construction projects and sets environmental objectives and targets, which the *Contractor* observes and complies.

The overarching obligations of the *Contractor* under the SHE specification before construction activities commence on the Site and/or Working Areas is to provide an environmental method statement for a particular construction operation at the Site and/or Working Area by the *Contractor* and where requested by the *Project Manager* and to comply with the following:

Where relevant, method statements, as detailed in the SHE specification, shall be provided by the *Contractor*. These include, but are not limited to, the following where applicable:

- Establishment of storage area
- Hazardous and non-hazardous solid waste management
- Dust control
- Noise and vibration control
- Environmental awareness training

- Emergency procedures for environmental incidents
- *Contractor's* SHE Officer

The *Contractor* to ensure monitoring of environmental issues e.g. litter, spills, illegal activities, fence patrol, dust etc.

During the construction period, the *Contractor* complies with the following:

A copy of SHE plans shall be available on Site, and the *Contractor* shall ensure that all the personnel on Site (including *Subcontractors* and their staff) as well as suppliers are familiar with and understand the specifications contained in the SHE plan.

Environmental Management Plan must be submitted and approved at least 20 days prior to the proposed commencement of the activity.

Where applicable, the *Contractor* shall provide job-specific training on an *ad hoc* basis when workers are engaged in activities.

The *Contractor* shall ensure that any Materials delivery drivers are informed of all procedures and restrictions (e.g. which access roads to use, no go areas, speed limits, noise, etc) required by the SHE specification before they arrive at Site and off load any Materials.

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The *Contractor* shall clear and clean the Site and Working Areas and ensure that everything not forming part of the *works* is removed from the Site and Working Areas and that all rehabilitation has taken place in accordance with the SHE plan

The *Contractor* makes copies of the, SHE plan available at the offices of the *Contractor* on Site. The *Contractor* ensures that all personnel on Site (including *Subcontractors*) are familiar with and understand the requirements of the SHE plan.

6.4.2 The *Contractor* complies with the following:

The *Contractor* shall identify the kinds of environmental impacts that will occur as a result of his activities and then prepare separate Environmental Management Plans describing how each of those impacts will be prevented or managed so that the standards set out in this document are achieved.

6.4.3 The lines of communication of the various personnel under the *Project Manager* who communicate to the *Contractor* and his keys persons with respect to the SHE plan are contained within Annexure A, see SHE specifications. For organogram, refer to annexure A.

6.4.4 The roles and responsibilities of the various personnel under the *Project Manager* with respect to environmental issues are stated in the paragraph 6.3.11 of the *Works information*.

The *Project Manager* specific tasks as per SHE specification refer to 6.3 of the *Works Information*.

6.4.5 The *Contractor* complies with the SHE specifications. The *Contractor* abides by the instructions of the *Project Manager* regarding the implementation of the SHE specifications.

## 6.5 Quality assurance requirements

The *Contractor* shall provide equipment certificates for all equipment supplied under this contract, in addition test certificates for all lifting and rigging equipment, which is part of the gravity, take up unit shall be provided.

The *Contractor* to maintain and demonstrate equipment's use to the *Project Manager*, *Employer Engineer* and Fire officials. The *Contractor* to submit the Quality Management Plan to the *Employer* for review and acceptance. The documented Quality Management System to be used in the manufacture of the goods.

The *Contractor* to comply with the requirements of Transnet Quality Management Plan (refer to annexure C).

- 6.5.1 The *Contractor* shall have, maintain and demonstrate its use to the *Project Manager* (and/or the *Supervisor* to satisfy the requirements of paragraphs 7.4, 7.5, 3.2.1 and 3.2.8 as appropriate) the documented Quality Management System to be used in the performance of the *works*. The *Contractor's* Quality Management System shall conform to International Standard ISO 9001 (or an equivalent standard acceptable to the *Project Manager*).
- 6.5.2 The *Contractor* submits his Quality Management System documents to the *Project Manager* as part of his programme under ECC Clause 31.2 to include details of:
- Quality Plan for the contract;
  - Quality Policy
  - Index of Procedures to be used; and
- 6.5.3 The *Contractor* develops and maintains a comprehensive register of documents that will be generated throughout the contract including all quality related documents as part of its Quality Plan.
- 6.5.4 The *Project Manager* indicates those documents required to be submitted for either information, review or acceptance and the *Contractor* indicates such requirements within his register of documents. The register shall indicate the dates of issue of the documents with the *Project Manager* responding to documents submitted by the *Contractor* for review or acceptance within the *period for reply* prior to such documents being used by the *Contractor*.
- 6.5.5 The Quality Plan means the *Contractor's* statement, which outlines strategy, methodology, resources allocation, QA and Quality Control co-ordination activities to ensure that the *works* meet the standards stated in the *Works Information*.

The *Contractor* will be responsible for Quality Management through the project Quality Management System (QMS) and has the responsibility and authority to ensure design of the project QMS requirements by the following means:

- Administration of Quality Assurance, Quality Control and Expediting activities.
- Issuing Corrective Action Requests (CAR's).
- Reporting on the effectiveness of the QMS to the *Project Manager*

An overall Project Quality Plan shall be developed to monitor the effectiveness of the Project QMS. The Project Quality Plan will be issued to the Client for review and approval.

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### **Quality Control and Expediting**

The Projects Quality Inspector shall ensure that Vendors/Suppliers provide Quality Control Plans specifying the proposed quality control activities for the scope of their supply.

These Quality Control Plans shall incorporate, as a minimum, the requirements specified by the specific *Employer Engineer*. The Projects Quality Inspectors shall use the Suppliers Quality Control Plans to control and monitor Suppliers Quality. Quality Control and Expediting shall be carried out by the *Employer Engineer* for all Mechanical, Structural, Piping, Electrical and Instrumentation Equipment and Materials procured for the Project.

The *Contractor* provides an Organogram of all his key people (both as required by the *Employer* and as independently stated by the *Contractor* under Contract Data Part Two) and how such key people communicate with the *Project Manager*, the Supervisor, and their delegates.

## **6.6 Programming constraints**

The Critical Path Method (CPM) technique of planning and scheduling is being used for the Project. The *Project Manager* with the assistance of the Project Planner is utilizing the Microsoft Project to manage the project schedule on a day-to-day basis. The following schedules will be generated from the Project Master Schedule:

Management Level Schedule (Level 2) – which defines the major activities and interfaces between engineering, procurement, design, fabrication and execution, transportation, installation, pre-commissioning and commissioning. This is a high level summary schedule and is issued in the monthly progress report

The *Contractor* to develop a Project Level Schedule (Level 4) – which defines in detail the interfaces between the different project disciplines. This schedule to be issued on a day-to-day basis for guiding the project team as to what must be done and by when. For this purpose a four (4) week look ahead report will be issued on a weekly basis

The *Contractor* to develop a fabrication Schedules – Each of the equipment vendors will produce a detailed fabrication schedule. The Project Planner will approve this schedule. Progress will be reported on a weekly basis by the vendor. The Project Planner will then update the Project Schedule with the progress per activity.

The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements of [state further details as required. I anticipate paragraph 6.3 Health Safety and Environmental issues need to be highlighted on the programme and potentially paragraph 7 procurement issues. Hopefully it is obvious that the *Contractor* has to show delivery and installation (paragraph 5) operations on the programme, but the *Project Manager* might require various mandatory statements (e.g.) in relation to Equipment manufacturing and/or assembly / dismantling].

TNPA employees and other *Contractors* operate on Site during normal working hours at the Port of Richards Bay are from 08:00 to 16:30, Monday to Friday excluding public holidays and December builder's break.

- 6.6.1 The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements of the SHE specifications and Quality Management Plans as described under paragraph 2.4 of the Works Information, together with the associated environmental Management Plans.
- 6.6.2 The *Contractor* shows on each programme he submits to the *Project Manager*, the requirements of [state further details as required. I anticipate paragraph 6.3 Health Safety and Environmental issues need to be highlighted on the programme, and potentially paragraph 7 procurement issues. Hopefully it is obvious that the *Contractor* has to show construction (paragraph 5) operations on the programme, but the *Project Manager* might require various mandatory statements (e.g.) in relation to Equipment design and/or assembly / dismantling].



6.6.3 The *Contractor* complies with the *Employer's* programme when he submits his first programme.

The *Employer's* Level 3 programme is attached in annexure D.

6.6.4 The *Contractor* presents his first programme and all subsequently revised programmes in hard copy format printed in full colour in A3 size and in soft copy 'Native' format with activity layout files (Note that PDF soft copy versions are not acceptable). Within seven days of award of contract, the *Contractor* submits his Level 4 Programme to the *Project Manager* for acceptance, together with the associated works method statements and a supporting Basis of Schedule document.

6.6.5 The *Contractor* uses Primavera version 8.2 for his programme submissions or Ms Project 2013, a programme software package equivalent to Primavera version 8.2 or Ms Project 2013 subject to the prior written notification and acceptance by the *Project Manager*.

6.6.6 The *Contractor* shows on his Accepted Programme and all subsequently revised programmes schedules showing the critical path or paths and all necessary logic diagrams demonstrating sequence of operations.

6.6.7 The *Contractor's* programme shows duration of operations in working days, normal working hours at the Port of Richards Bay are from 08:00 to 16:30, Monday to Friday excluding public holidays and December builder's break

6.6.8 The *Contractor's* programme shows the following levels:

- Level 1 Master Schedule – defines the major operations and interfaces between engineering design, procurement, fabrication and assembly of Plant and Materials, transportation, construction, testing and pre-commissioning, commissioning and Completion.
- Level 2 Project Schedule – summary schedules 'rolled up' from Level 3 Project Schedule described below
- Level 3 Project Schedule – detailed schedules generated to demonstrate all operations identified on the programme from the starting date to Completion. The *Project Manager* notifies any subsequent layouts and corresponding filters on revised programmes
- Level 4 Project Schedule – detailed discipline speciality level developed and maintained by the *Contractor* relating to all operations identified on the programme representing the daily activities by each discipline
- A narrative status report, which includes precise details status and performance of operations on the Site and Working Areas; status and performance of operations outside the Working Areas; manpower histograms; S-curve of overall progress; critical action items (top 10) and deviations from the Accepted Programme and action plan to rectify

6.6.9 The *Contractor* shows on each revised programme he submits to the *Project Manager* a resource histogram showing planned progress versus actual, deviations from the Accepted Programme and any remedial actions proposed by the *Contractor*.

6.6.10 The *Contractor* submits programme report information to the *Project Manager* at monthly intervals in addition to the intervals for submission of revised programmes stated under Contract Data Part One.

6.6.11 The *Contractor's* weekly programme narrative report includes:

- Level 4 Project Schedule – showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.

- 4-week Look ahead Schedule - showing two separate bars for each task i.e. the primary bar must reflect the current forecast dates and the secondary bar the latest Accepted programme.
- Manpower Histogram – reflecting actual, forecasted and planned activities
- S-curves – reflecting the actual percentage complete versus the planned percentage for the overall contract utilising the earned values as calculated by the detailed progress report.

6.6.12 The *Employer* (including the agents of the *Employer*) operates on Site during normal working hours at the Port of Richards Bay are from 08:00 to 16:30, Monday to Friday excluding public holidays and December builder's break

6.6.13 TNPA employees and other *Contractors* operate on Site during normal working hours at the Port of Richards Bay are from 08:00 to 16:30, Monday to Friday excluding public holidays and December builder's break. Please include the above default statement under paragraph 6.6 of the Works Information.

## 6.7 Contractor's management, supervision, and key people

In a case of a Joint Venture, the main *Contractor* to provide the Organogram showing his people and their lines of authority/communication.

6.7.1 The *Contractor* provides an Organogram of all his key people (both as required by the *Employer* and as independently stated by the *Contractor* under Contract Data Part Two) and how such key people communicate with the *Project Manager* and the Supervisor and their delegates all as stated at paragraph 6.5 of C3.1 *Employer's Works* Information.

6.7.2 The CSHEO reports to the SHEC on the Site. The CSHEO ensures that the *works* (to include any part thereof) are subject to a prior environmental Management Plan approved by the Environmental Officer/Manager and ensures that the SHE plan is implemented by the *Contractor* in a timely and proper manner. The CSHEO provides the *Project Manager* with all environmental Management Plan.

6.7.3 The CSHEO tasks are:

Daily, weekly and monthly inspections of the Site and Working Areas [state specific distinguishing requirements per period].

Monitor compliance with the SHE specifications and the environmental Management Plan submitted to the *Project Manager*

- Reporting of an environmental incident [define further, consult with Environment Dept.] to the *Project Manager*
- Attendance at all SHE meetings, toolbox talks and induction programmes
- Litter control and ensuring the *Contractor* clears litter from the Site and Working Areas; and
- Ensuring that environmental signage and barriers are correctly placed [this is superfluous unless specific *Contractor* obligations explain signs and barriers placement under the SHE specification.

The CSHEO submits daily, weekly, and monthly to the SHEC.

6.7.4 The *Contractor* provides an Organogram of all his key people (both as required by the *Employer* and as independently stated by the *Contractor* under Contract Data Part Two) and how such key people communicate with the *Project Manager* and the Supervisor and their delegates all as stated at paragraph 6.5 of C3.1 *Employer's Works* Information.



## 6.8 Training workshops and technology transfer

Tenderers shall allow in their tender prices for a training course, to train on site at least thirty (30) persons, as nominated by the User (Client) from his own operating personnel. The training shall follow the following guidelines as listed below:

- The training shall be done on all items of Plant procured as well as any installed Plant and systems. All consumables required for the training shall be provided by the *Contractor* and shall be priced for.
- During this period, the personnel shall be made fully conversant with the operation of, and daily maintenance required for, each item of Plant of the system.
- The training shall be of such a standard that will enable the Client to carry out his own in-house training of other personnel.
- The training course shall start only after first take-over inspection of the system.
- The training course shall be carried out in the language medium as chosen by the Client.
- The Operating Manual of the contract shall include a full description of the contents of the training course.

The *Contractor* to transfer the designs technology documents used on the development of the equipment and provide simulation software to assist the *Employer* for operating the equipment and fault finding.

### 6.8.1 The *Contractor* arranges for the following technology transfer to the Employer:

The *Contractor* to transfer the designs technology documents used on the development of the equipment and provide simulation software to assist the *Employer* for operating the equipment and fault finding

The *Contractor* shall provide equipment certificates and warranty certificates for all equipment supplied under this contract.

The *Contractor* to maintain and demonstrate *equipment's use to the Project Manager, Employer Engineer and Fire officials*. The *Contractor* to submit the Quality Management Plan to the *Employer* for review and acceptance. The documented Quality Management System to be used in the manufacture of the goods.

The *Contractor* to comply with the requirements of Quality Management Plan.

## 6.9 Insurance provided by the Employer

### 6.9.1 Insurance provided by the *Employer* is contained in the Contract Data – Part 1.

## 6.10 Contract change management

### 6.10.1 No additional requirements apply to ECC Clause 60 series.

## 6.11 Provision of bonds and guarantees

The *Contractor* provides a bond or guarantee as required by the conditions of contract concurrently with the execution by the Parties of the form of agreement for the ECC contract.

6.11.1 The form in which a bond or guarantee required by the conditions of contract (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

6.11.2 The *Contractor* provides a bond or guarantee as required by the conditions of contract concurrently with the execution by the Parties of the form of agreement for the ECC contract.

## **6.12 Records of Defined Cost, payments & assessments of compensation events kept by *Contractor***

6.12.1 The *Contractor* keeps the following records available for the *Project Manager* to inspect:

- Records of design
- Site instructions records
- Daily site events records
- SHE File
- SHE Management System performance

## **6.13 The *Contractor's* Invoices**

6.13.1 When the *Project Manager* certifies payment (see ECC Clause 51.1) following an assessment date, the *Contractor* complies with the *Employer's* procedure for invoice submission.

6.13.2 The invoice must correspond to the *Project Manager's* assessment of the amount due to the *Contractor* as stated in the payment certificate.

6.13.3 The invoice states the following:

Invoice addressed to Transnet SOC Ltd;  
Transnet SOC Limited's VAT No: 4720103177;  
Invoice number;  
The *Contractor's* VAT Number; and  
The Contract number  
The invoice contains the supporting detail

6.13.4 The invoice is presented either by post or by hand delivery.

6.13.5 Invoices submitted by post are addressed to:

**Transnet SOC Ltd**  
**P O Box 181**  
**Richards Bay**  
**3900.**

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**For the attention of Finance Manager**

Invoices submitted by hand are presented to:

**Transnet National Ports Authority**  
**Pioneer Centre Building, San-Thom Road**  
**Port of Richards Bay**  
**3900**

**For the attention of Siphokazi Mpetshwa**

The invoice is presented as an original.

## **6.14 People**

### **6.14.1 Minimum requirements of people employed on the Site**

The *Contractor* to have legitimate documentation for his/her employees as per SHE specification requirements.

### **6.14.2 The *Contractor* complies with the following PIRPMP**

## **6.15 Contractor Liability**

6.15.1 The *Contractor* warrants that it will be liable to Transnet for any loss or damage caused by strikes, riots, lockouts or any labour disputes by and/or confined to the *Contractor's* employees, which loss will include any indirect or consequential damages;

6.15.2 The *Contractor* warrants that no negotiations or feedback meetings by the *Contractor's* employees shall take place on Transnet premises, whether owned or rented by Transnet.

6.15.3 The *Contractor* shall give notice to Transnet of any industrial action by the *Contractor's* employees immediately upon becoming aware of any actual or contemplated action that is or may be carried out on Transnet's premises, whether owned or rented, and shall notify Transnet of all matters associated with such action that may potentially affect Transnet.

6.15.4 The *Contractor* is responsible for educating its employees on relevant provisions of the Labour Relations Act, which deal with industrial action processes, and the risks of non-compliance.

6.15.5 The *Contractor* is required to develop a Contingency Strike Handling Plan, which plan the *Contractor* is obliged to update on a three-monthly basis. The *Contractor* must provide Transnet with this plan and all updates to the Plan. The *Contractor* is responsible to communicate with its employees on site details of the plan.

## **6.16 Industrial Action By Contractor Employees**

6.16.1 In the event of any industrial action by the *Contractor's* employees, the *Contractor* is required to provide competent contingency resources permitted in law to carry out any of

the duties that are or could potentially be interrupted by industrial action in delivering the Service.

- 6.16.2 In the event of any industrial action by the *Contractor's* employees, the *Contractor* is obliged:
- 6.16.3 To prepare and deliver to Transnet, within two (2) hours of the commencement of industrial action an Industrial Action Report. If the industrial action persists the *Contractor* is required to deliver the report at 8h30 each day.
- 6.16.4 The Industrial Action Report must provide at least the following information:
- Industrial incident report,
  - Attendance register,
  - Productivity / progress to schedule reports,
  - Operational contingency plan,
  - Site security report,
  - Industrial action intelligence gathered.
- 6.16.5 The final Industrial Action Report is to be delivered 24 hours after finalisation of the industrial action.
- 6.16.6 The management of the *Contractor* is required to hold a daily industrial action teleconference with personnel identified by Transnet to discuss the industrial action, settlement of the industrial action, security issues and the impact on delivery under the contract.
- 6.16.7 The resolution of any disputes or industrial action by the *Contractor's* employees is the sole responsibility of the Contractor.
- 6.16.8 Access to Transnet premises by the Contractor and its employees is only provided for purposes of the *Contractor* delivering its services to Transnet. Should the *Contractor* and its employees not, for any reason, be capable of delivering its services Transnet is entitled to restrict or deny access onto its premises and unless otherwise authorized; such person will be deemed to be trespassing.

## 7. Plant and Materials

### Quality

- a) All materials shall be of the quality specified and the *Contractor* shall, furnish proof that the materials are of the specified quality. The *Contractor's* Engineer will be responsible for Quality Assurance and shall be entitled to condemn unsatisfactory work.

- b) All materials and equipment used for the installations shall be new and undamaged. The *Contractor* shall, if requested by the Project Manager, provide samples of material and tools for approval. If judged necessary by the *Project Manager*, such samples may only be returned after the completion of the installation, in order to ensure that the quality of the installed product is the same as that of the approved sample
- c) Material for which an SANS specification exists, shall be in accordance with such a specification, and shall bear the SANS mark.
- d) All fire protection Plant used shall originate from *Contractor* which have been certified in accordance with SANS standards and or ISO 9001 (ISO 9001) and ISO 9002 (ISO 9002) guidelines for Quality assurance. The tenderers shall provide copies of accredited Safety Management System certificates of approval with their tenders. Plant designed to BS 5446, Fire systems for residential premises, or similar other standards, are not acceptable.

7.1.1. The *Contractor* provides Plant and Materials for inclusion in the works in accordance with SANS 1200A sub-paragraph 2.1, unless otherwise stated elsewhere in the *Works Information* provided by the *Employer*. All Plant and Materials are new, unless the use of old or refurbished goods and/or Materials are expressly permitted as stated elsewhere in this Works Information or as may be subsequently instructed by the *Project Manager*.

7.1.2. Where Plant and Materials for inclusion in the works originate from outside the Republic of South Africa, all such Plant and Materials are new and of merchantable quality, to a recognised national standard, with all proprietary products installed to manufacturers' instructions.

7.1.3. The *Contractor* replaces any Plant and Materials subject to breakages (whether in the Working Areas or not) or any Plant and Materials not conforming to standards or specifications stated and notifies the *Project Manager* and the *Supervisor* on each occasion where replacement is required.

7.1.4. Plant & Materials provided "free issue" by the *Employer*  
N/A

7.1.5. The *Employer* provides the following Plant and Materials for the *Contractor* to use in the works:  
N/A

7.1.6. The Plant and Materials provided by the *Employer* are solely at the risk of the *Contractor* for inclusion in the works. The *Contractor* takes responsibility for ensuring the Plant and Materials do not contain a Defect(s) and are in compliance with the standards stated elsewhere in the Works Information.  
N/A

7.1.7. The *Contractor* takes receipt of the Plant and Materials from the *Employer* in accordance with the following procedure:  
N/A

7.1.8. The *Contractor* provides all other Plant and Materials necessary for the works not specifically stated to be provided "free issue" by the *Employer*.

7.1.9. *Contractor's* procurement of Plant and Materials

The *Contractor* shall ensure that any equipment delivery drivers are informed of all procedures and restrictions (e.g. which access roads to use, no go areas, speed limits, noise, etc.) required by the SHE specification before they arrive at Site and off load any equipment's.

The *Contractor* must acquaint themselves with local site conditions such as access area available on site, type of ground, storage, transport, loading and unloading facilities needed, as no claims by the *Contractor*, which may arise from ignorance of the site conditions, shall be considered.

## **7.2 Constraints at the Delivery Place**

### **7.2.1 Purchaser's entry and security control, permits, and site regulations**

Entry to the Port of Richards Bay is via security-controlled gates on the east and west boundaries only. All personnel entering and leaving the Port must have positive identification. All personnel, other than temporary visitors, should be provided with Transnet identity cards, which must be always worn visibly. A person working only for a short period or very few times during a year will not be issued with a Transnet identity card.

No identity cards will be issued until the *Contractor* has been appointed and the contract has been registered with Transnet

Identity cards are issued by Transnet National Ports Authority (TNPA) Customer Services, Bayvue Centre, Port of Richards Bay, during normal working hours on weekdays only. The following items must be furnished with each application for an identity card:

- 7.2.2 The *Contractor* performs the following with respect to Plant and Materials procured for the works:

#### **Responsibilities of the *Contractor***

##### **7.2.1.1 Ordering of Plant and Materials**

The *Contractor* shall be responsible to ensure that the project programme is adhered to and that no delays are caused by late deliveries of Plant and materials. All other activities which must proceed placing of orders must be taken into account when the *Contractor* schedules his activities.

##### **7.2.1.2 Storage of Materials and Plant**

The *Contractor* shall be responsible for the proper storage of all materials and Plant on site to ensure protection against the elements, damage by impact, dirt, builder's rubble dust theft etc. After handover it will be the responsibility of TNPA Fire to ensure good keeping and safety of material

##### **7.2.1.3 Protection of the Works**

The *Contractor* shall programme his work to avoid damage by other Trades and shall be responsible for protection of the works against such damage until handover to the Client.

##### **7.2.1.4 Accessibility**

The *Contractor* shall plan suitable accessibility for thermometers, gauges, controls, dampers and other devices, which require reading adjustment, inspection, repair removal or replacement.

The *Contractor* shall design all systems and plant positioning to enable ease of maintenance or repair and provide sufficient space for removal or replacement of plant if required.

#### **7.2.1.5 Weather Proofing**

All outdoor Plant shall be weatherproof and corrosion resistant including minor items such as screws fixers, brackets, etc. The IP rating for waterproofing of all Plant must be accepted by the *Engineer* and should adhere to relevant SANS standards.

7.2.1.6 The *Contractor* to provide manufacturers certificates stating country of origin, tests carried out by manufacturer, requirements for labels, signage, component name plates, instruction sheets, shipping marks, software codes where applicable

7.2.1.7 The *Contractor* to state how a shipment (especially for Plant and Materials from outside RSA) is to be unloaded at Site, opened and checked for damage in transit. The *Contractor* to state if a damage report signed and counter-signed by the Project Manager and Contractor to the *Contractor's* insurance broker (see notes at Contract Data - Part One) with copies to the Project Manager and the Employer.

#### **7.2.3 Spares and consumables**

The *Contractor* to identify and provide a minimum critical spares and consumables for the equipment as part of the *Works*.

7.2.4 The *Contractor* provides the following spares and consumables to the *Employer*:

The *Contractor* to identify and provide a minimum critical spares and consumables for the equipment as part of the *Works*. The spares to be delivered at Umfolozi building, Berth 208 & 209 garages, Port of Richards Bay, refer to annexure F for site Layout.

### **7.3 Tests and inspections before delivery**

Testing and commissioning is covered under section 3.2.1 of the *Works Information*, the *Employer* will require no further intervention prior to delivery.

The *Contractor* submits to the Supervisor details to certify that tests and inspections have been carried out on Plant and Materials. by others which include:

- AIA
- INC

The *Contractor* to provide the SABS approved certification for the equipment in terms of compliance to standards and regulations.

### **7.4 Marking Plant and Materials outside the Working Areas**

The *Contractor* prepares and marks the goods if payment is made before supply with 'Property of Transnet SOC Ltd' and the Contract number.

Goods are to be clearly and indelibly marked using hard stamping, or security tags. The *Contractor* provides designated areas sealed off from the rest of the manufacturer's production run in which to store goods that are complete and awaiting delivery to site.

7.4.1 The *Contractor* prepares and marks items of Plant and Materials outside the Working Areas with hard stamping, or security tags. The *Contractor* provides designated areas



---

sealed off from the rest of the manufacturer's production run in which to store *goods* that are complete and awaiting delivery to site.

## **7.5 Contractor's Equipment (including temporary works).**

N/A

- 7.5.1 The *Contractor* provides the Project Manager with the following category of Equipment (or similar) for the execution of the works:

N/A

- 7.5.2 The Equipment category [state relevant details] is subject to the following acceptance tests and inspections by the *Project Manager* prior to using the Equipment on the Site and/or Working Areas:

N/A

## **7.6 Preparation of post Completion contracts**

The *Contractor* may be required to assist with the preparation of a post Completion NEC3 Term Service Contract as part of his obligations under this contract in order to assure continuity into the operational phase.

- 7.6.1 The *Contractor* provides the following assistance to the *Employer* post Completion:

- Maintenance Scope of work
- Tools and equipment to execute maintenance
- Bill of Quantities
- Maintenance frequency of the equipment



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## **SECTION 3**

### **C3.2 CONTRACTOR'S WORKS INFORMATION**

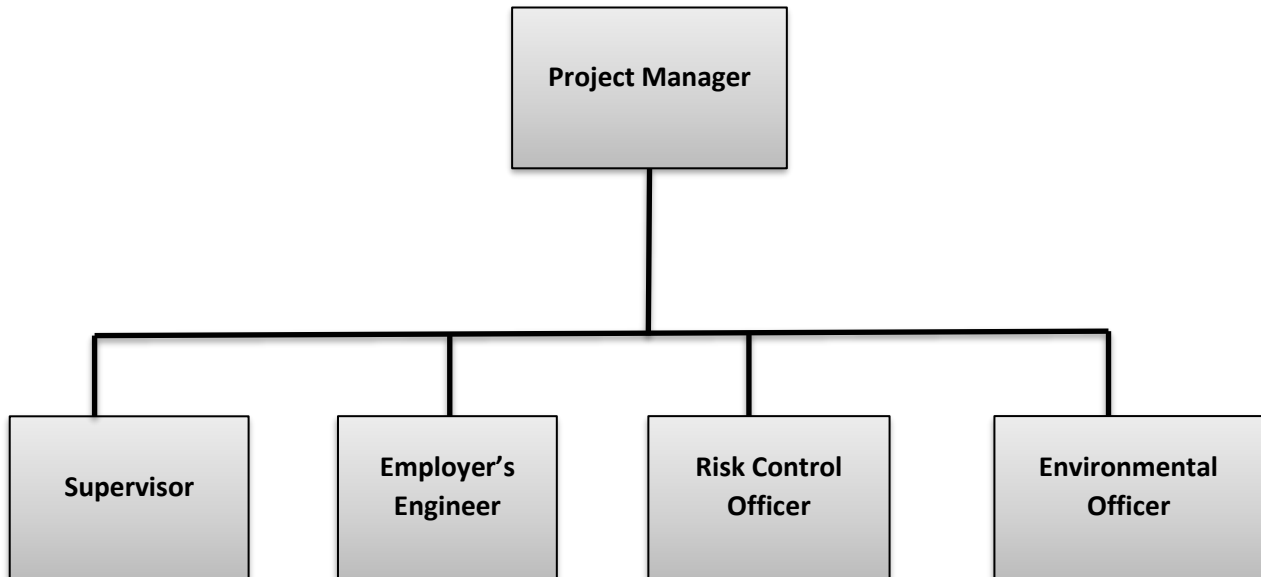
The *Contractor* submits with his tender full technical drawings, details and specifications for all equipment and systems required for the works. These details shall include manufacturing, erection and application details where applicable, performance characteristics as well as any applicable warranties and guarantees.

The *Contractors* works shall include for, but not limited to:

- Procurement, design where required, installation where required, testing, commissioning and handing over of fire fighting workshop equipment in the Port of Richards Bay in complete working order ready for immediate use and subsequent maintenance as per the NEC-3 Contract

## Annexures

Annexure A: Organogram showing lines of communication between *Contractor* and Employer with respect to the SMP



## **Annexure B: Health & Safety specification Guidelines**

## **Annexure C: Transnet Quality Management Plan**

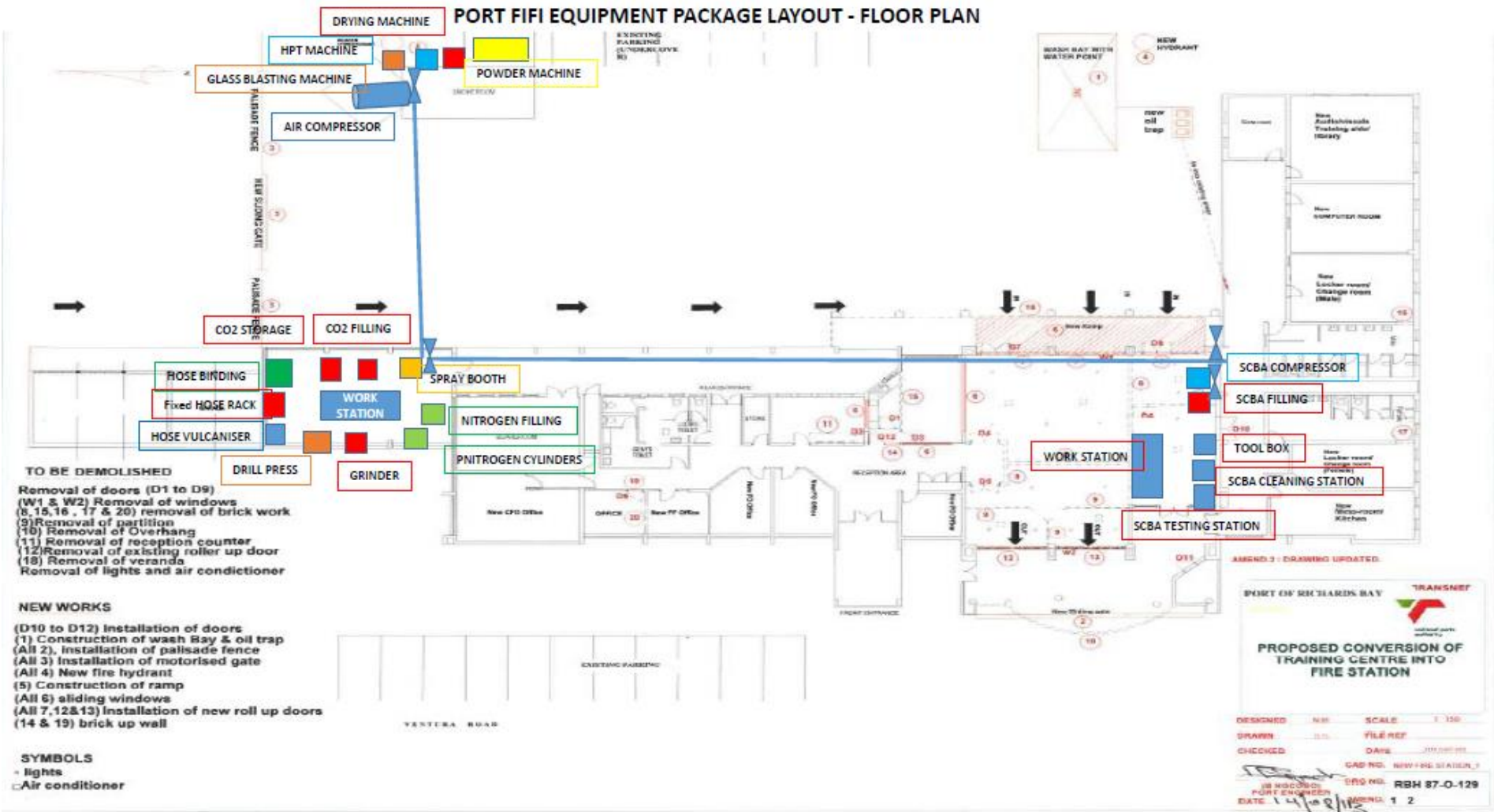
# Annexure D: Employer's Level 3 programme

ID	Task Mod	Task Name	Duration	Start	Finish	% Complete
0		Port fire Fighting Installation, Expansion and Upgrade Equipment Package Phase1_Package1	262.4 wks	19/09/18	26/03/24	57%
1		Deliverables and Milestones	262.4 wks	19/09/18	26/03/24	42%
2		ORS	199 days	19/09/18	19/07/19	100%
3		Compile Works Information	112 days	19/09/18	20/09/19	100%
4		Technical Review	1 day	04/10/19	04/10/19	100%
5		Port CAPIC	1 day	18/10/19	18/10/19	100%
6		TNPA Investment Forum (IF)	1 day	22/10/19	22/10/19	100%
7		TNPA CAPIC	1 day	19/11/19	19/11/19	100%
8		Sanction Issued	1 day	09/12/19	09/12/19	100%
9		Appointment of Contractor	1 day	14/09/21	14/09/21	0%
10		SHEQ Document	12 days	23/08/22	07/09/22	0%
11		Issue Site Access Certificate	1 day	07/09/22	07/09/22	0%
12		Procurement, Supply and Intallation of Fire Equipment	120 days	22/06/22	07/12/22	0%
13		Defects and Liability Period (Release of final retention)	240 days	08/12/22	11/12/23	0%
14		Issue of Completion Certificate / Hand-over	5 days	08/12/22	14/12/22	0%
15		CLOSE-OUT PHASE	60 days	12/12/23	26/03/24	0%
16		FEL 4: EXECUTION & CLOSE-OUT PHASE	262.4 wks	19/09/18	26/03/24	65%
17		ORS	39.8 wks	19/09/18	19/07/19	100%
21		Update ORS for Technical Evaluation	10 days	09/09/19	20/09/19	100%
22		Scalability	1 wk	06/09/19	12/09/19	100%
25		Compile Works Information	108 days	22/04/19	20/09/19	100%
26		Business Case (BC)	46.4 wks	15/10/18	01/10/19	100%
30		Technical review	0.6 wks	04/10/19	08/10/19	100%
33		TNPA SUPPORT AND APPROVALS PROCESSES	8.8 wks	09/10/19	09/12/19	100%
34		Port CAPIC	1.6 wks	09/10/19	18/10/19	100%
38		TNPA Investment Forum (IF)	1.4 wks	18/10/19	28/10/19	100%
45		TNPA CAPIC	5.4 wks	29/10/19	04/12/19	100%
52		Sanction Issued	0.6 wks	05/12/19	09/12/19	100%
53		Sanction Issued	3 days	05/12/19	09/12/19	100%

54	✚	FEL 4: Project Number Allocation	3 wks	11/12/19	21/01/20	100%
57	✚	FEL 4: Re-Confirm Business Need and Team	0.2 wks	22/01/20	22/01/20	100%
60	✚	FEL 4: Project Kick-off Meeting	0.2 wks	30/01/20	30/01/20	100%
62	✚	FEL 4: Procurement	128.4 wks	20/11/19	08/08/22	80%
63	✚	FEL 4: PSA Process	7.2 wks	20/11/19	29/01/20	100%
73	✚	Procurement Strategy Changed	6.6 wks	30/01/20	16/03/20	100%
75	✚	TNPA Project team preparing Tender Documents / Specification	36.8 wks	04/05/20	11/02/21	100%
77	✚	Send Specification to Procurement	4 wks	12/02/21	11/03/21	100%
78	✚	Send Specification to Procurement for review and Sign off	20 days	12/02/21	11/03/21	100%
79	✚	FEL 4: Procurement for Execution Contractor	67.8 wks	12/03/21	08/08/22	70%
80	✚	FEL 4: Appointment of Non Pre-Approved SP	25.6 wks	12/03/21	14/09/21	75%
143	✚	Procurement Strategy Changed	42.2 wks	15/09/21	08/08/22	69%
144	✚	Procurement Strategy Changed (Split into Two Packages)	17 days	15/09/21	08/10/21	100%
145	✚	Procurement Strategy Changed (Split into Three Packages)	8 days	11/10/21	20/10/21	100%
146	✚	Submit Works Information to SCM	21.8 wks	11/10/21	07/04/22	87%
147	✚	Package 1 - Workshop (installed) Equipmentnt - Procurement Initiation (Documenetation and Squad Checking)	21.8 wks	11/10/21	07/04/22	87%
153	✚	Package 1 - Workshop (installed) Equipment	17 wks	07/04/22	08/08/22	0%
154	✚	FEL 4: Appointment of Non Pre-Approved SP	17 wks	07/04/22	08/08/22	0%
155	✚	Submit Works Information to SCM	0 wks	07/04/22	07/04/22	0%
161	✚	Procurement Process	16.8 wks	11/04/22	08/08/22	0%
162	✚	Preparing of RFQ doc	3.4 wks	11/04/22	04/05/22	0%
176	✚	Issue of Advert	0.2 wks	05/05/22	05/05/22	0%
178	✚	Tender Period	2 wks	11/05/22	24/05/22	0%
180	✚	Tender Briefing	0.6 wks	12/05/22	16/05/22	0%
184	✚	Closing of Tender	0.4 wks	25/05/22	26/05/22	0%
187	✚	Tender Evaluation	4.4 wks	27/05/22	28/06/22	0%
202	✚	Adjudication Process	0.6 wks	29/06/22	01/07/22	0%
206	✚	Adjudication Process	1.4 wks	04/07/22	12/07/22	0%
210	✚	Negotiation	0.4 wks	13/07/22	14/07/22	0%
212	✚	Letter Award, Draft Contract and Contract Sign-Off	3 wks	13/07/22	02/08/22	0%
222	✚	Contract Upload by Port and Issue of PO	0.8 wks	03/08/22	08/08/22	0%
229	✚	FEL 4: Execution Phase	18.2 wks	10/08/22	14/12/22	0%
230	✚	Execution Kick-Off Meeting	2 wks	10/08/22	23/08/22	0%
235	✚	Construction	18 wks	11/08/22	14/12/22	0%
236	✚	SHEQ Document	4 wks	11/08/22	07/09/22	0%
241	✚	Issue Site Access Certificate	0 wks	07/09/22	07/09/22	0%
243	✚	Procurement, Supply and Intallation of Fire Equipment	16 wks	11/08/22	30/11/22	0%
245	✚	Training	1 wk	01/12/22	07/12/22	0%
247	✚	Issue of Completion Certificate / Hand-over	1 wk	08/12/22	14/12/22	0%
249	✚	Defects and Liability Period (Release of final retention)	48 wks	08/12/22	11/12/23	0%
251	✚	FEL 4: CLOSE-OUT PHASE	12 wks	12/12/23	26/03/24	0%

**Annexure E: Technical Specification**

Annexure F: Fire Station & Berth 208/209 Garages Equipment Layout









Umfolozi Building/Fire Station: Workshop



## **PART C4: SITE INFORMATION**

<b>Document reference</b>	<b>Title</b>	<b>No of page</b>
C4	This cover page	1
	Site Information	5
	<b>Total number of pages</b>	<b>5</b>

## Part 4: Site Information

Core clause 11.2(16) states

"Site Information is information which

- describes the Site and its surroundings and
- is in the documents which the Contract Data states it is in."

In Contract Data, reference has been made to this Part 4 of the contract for the location of Site Information.

### 1. Description of the Site and its surroundings

#### 1.1. General description

The area where the *works* or equipment to be delivered will be within the Port of Richards Bay Boundary. Access to the Port of Richards Bay and the work site(s) or delivery site is Umfolozi building/Fire Station, refer to annexure A and Annexure B. Access must be subject to the Transnet National Ports Authority security requirements and regulations, which states that "access should be obtain for all the Contractor's personnel at Permit Office located at Sizakala Truck Staging Facility".

There is a permit card access system to enter the Port Area. The Port Staff must arrange the required access permits and issue them to the *Contractor* free of charge. Should any person loose his/her access permit these must be replaced at a cost of R 360-00 per person, cost to be incurred by the *Contractor*. This must also apply if permits are not returned at the end of the project completion.

Normal working hours at the Port of Richards Bay are from 08:00 to 16:30, Monday to Friday, Inclusive. Transnet National Ports Authority has a strict Health and Safety policy in place. No person(s) may enter the site and undertake work on the site until undergoing the mandatory induction. The induction must be arranged by the Port personnel at no cost to the *Contractor*. Prior arrangement must be made with the *Project Manager*.

#### 1.2. Existing buildings, structures, and plant & machinery on the Site

The project scope does not involve construction, but the procurement and installation of the firefighting Workshop equipment. There are no existing equipment on site.

#### 1.3. Subsoil information

N/A

#### **1.4. Hidden services**

The *Contractor* is to apply care not to damage existing services during walls and floor drillings for some equipment. See project specification for further requirements.

#### **1.5. Other reports and publicly available information**

The mentioned information will not be applicable in this project, see project specification

## Annexure A

### Equipment Sites: Umfolozi Building/Fire Station





**Annexure B: Umfolozi Building/Fire Station: Workshop**



## REPORTS

*Note: In all cases check against online version for the latest revision prior to use*

### TECHNICAL SPECIFICATION

Project Name: Port Firefighting Installation Expansion & Upgrade – Phase 1  
in the Port of Richards Bay – Package 1

Project Number: XRB.E.0017

Author: Aslam Haffejee

Owner: Transnet National Ports Authority

Client: Port of Richards Bay

Project Sponsor: Dennis Mqadi

Project Manager: Siphokazi Mpetshwa

Revision Number: 01  
Approved by: Victor Mdlalose

Print Date: 12/07/2022  
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Distribution	
Name	Location
Victor Mdlalose	Port of Richards Bay
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Neelan Moodley	Port of Richards Bay

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REVISION NUMBER	DATE	DISTRIBUTION/ REVISION	PREPARED BY	REVIEWED BY	APPROVED BY
01	11/11/2020		A.Haffejee	S.Mpetshwa N.Moodley L.Ramohlale	V.Mdlalose

Prepared by:

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Date

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Date

Reviewed by:

Chief Fire Officer-Neelan Moodley

Date

Recommended  
by:

Senior Project Manager-Lebese Ramohlale

Date

Approved by:

Acting Port Engineer-Victor Mdlalose

Date



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<b>4. Technical Specification</b>	<b>10</b>
Workshop Plant	<b>11</b>

## 1. SCOPE OF WORK

- 1.1 The scope of the *works* entails the supply, delivery, installation; testing, commissioning and handing over in complete working order ready for immediate use and subsequent maintenance of firefighting Workshop plant.

## 2. REFERENCE SPECIFICATIONS AND STANDARDS

- 2.1 The latest revision of any Specification referred to in this specification, shall be applicable.
- 2.2 In addition to the specifications, the Project will comply with the following relevant Acts and Regulations as listed below:
- 2.2.1 **Occupational Health and Safety Act 85 of 1993;**
- 2.2.2 **The S.A. National Building Regulations and Building Standards Act. (Act 103 of 1977);**
- 2.2.3 **South African National Standards and Codes of Practice;**
- 2.2.4 **IEC Standards and Recommendations;**
- 2.2.5 **International Standards and Codes – ISO, DIN, BS, ASME, ASCE, ANSI, ASTM, EU, NFPA; and**
- 2.2.6 **The local, provincial or S.A. Government laws in force at the time.**
- 2.3 The SI (“Le System International d’ Unites”) – Metric System of Units shall apply. Refer to SANS – M33A: The International Metric System: Guide to the use of the SI in South Africa.

### 2.4 South African National Standards

Standard No.	Description
SANS 10400	The Application of the National Building Regulations
SANS 347:2012	Categorisation and Conformity Assessment Criteria for all Pressure Equipment
SANS 62	Steel pipes - Part 1 and 2
SANS 10142	Code of Practice for the Wiring of Premises
SANS 10044	Welding
SANS 2560	Welding Consumables
SANS 1182	Light Gauge Welded Steel Pipes
SANS 121	Hot Dip Galvanized Coatings on Fabricated Iron and Steel Articles
SANS 10140	Identification Colour Marking
SANS 8501-3	Preparation of Steel Substrates Before Application of Paints and Related products

SANS 10142-1	The Wiring of Premises Part 1: Low Voltage Installations
SANS 1109-1	Pipe Threads Where Pressure-Tight Joints are Made on the Threads

## 2.5 Other Specifications

Specification No.	Description
API 5L	Welded and Seamless pipe
ASTM A153	Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
Government Notice	Pressure Equipment Regulations, 2009
	The General Electrical Specification for the Provincial Administration of the Republic of South Africa Part 2E
	The Municipal by laws and any special requirements of the Supply Activities of the area or district concerned.
	The Occupational Health and Safety Act No 85 of 1993
ISO 9001	Quality Management
ISO 9002	Model for Quality Assurance in Production, Installation and Servicing
ISO 14001	Environmental Management
AD 2000	Code for Pressure Vessels
ASME VIII	Rules for Construction of Pressure Vessels

### 3. TECHNICAL REQUIREMENTS

#### 3.1 Erection of Plant

- 3.1.1 The *Contractor* shall allow for a complete installation, including the provision of mobile cranes, air compressors, lifting tackle, measuring equipment, precision levels, and all other special or
- 3.1.2 regular tools and equipment that may be needed to complete the entire installation in accordance with the specification.
- 3.1.3 The *Contractor* will be responsible for any damage caused to buildings, Plant, etc. during the course of the erection of the Plant.

#### 3.2 Welding

- 3.2.1 Welding shall be carried out in accordance with the current edition of SANS 10044 where applicable.
- 3.2.2 All welded filler or butt joints shall be free from porosity, cavities and entrapped slag.
- 3.2.3 The joints in the weld run, where welding has been recommended, shall be as smooth as possible and shall show no pronounced hump or crater in the weld surface.
- 3.2.4 The profile of the weld shall be uniform, of approximately equal leg length and free from overlap at the toe of the weld. Unless otherwise specified the surface shall be either flat or
- 3.2.5 slightly convex in the case of fillet welds and with reinforcement of not more than 3mm in the case of butt welds. The weld face shall be uniform in appearance throughout its length.
- 3.2.6 Filler metal electrodes shall be of an approved type for the material being used and shall be kept in a dry condition. All electrodes shall conform to the latest edition of SANS 2560.
- 3.2.7 Only welders in possession of a valid approved competence certificate shall be employed. All certificates shall be sent to the *Project Manager* for acceptance prior to commencement of any work on site.
- 3.2.8 All welds must show proper fusion.
- 3.2.9 The *Contractor* shall denote the type of quality control procedures (QCP) to be used for checking of weld quality in the QCP which shall be submitted to the *Project Manager* for acceptance by the *Employer's Engineers* and Quality Manager.

#### 3.3 Galvanising

- 3.3.1 All fabricated mild steel sections, ducts, pipework, fixtures and fittings shall be hot dip zinc galvanised to comply with SANS 62, SANS 121 and SANS 1182 and shall be of minimum mean coating thickness 100µm.
- 3.3.2 Items to be galvanised shall be entirely pre-fabricated and then dismantled in sections for galvanising. No cutting of threads or welding will be accepted after galvanising.
- 3.3.3 Mild steel plate and sections shall be of good commercial quality, or higher grades, best suited for galvanising. The materials shall be free from slag or coarse laminations, fine fissures and rolled-in impurities.
- 3.3.4 Welding flux shall be chipped away and all welds wire brushed before galvanising.
- 3.3.5 The surface to be galvanised shall be free from paint, oil, grease and similar impurities.
- 3.3.6 All exposed surfaces including welds shall be thoroughly sand blasted prior to galvanising.

- 3.3.7 The *Employers* Engineer reserves the right to inspect all steel components before galvanising, and shall have the right to reject or ask for remedial treatment of any material which is considered to be unsuitable. This applies particularly to welds.
- 3.3.8 The *Contractor* shall denote the type of quality control procedures to be used for checking of galvanizing quality in the QCP which shall be submitted to the *Project Manager* for acceptance by the *Employer's Engineers* and Quality Manager. A method statement for the process
- 3.3.9 followed for galvanising shall also be submitted by the *Contractor* to the *Project Manager* for acceptance.
- 3.3.10 The hot dip galvanizing bath shall primarily contain molten zinc. The total of the other elements (as identified in ISO 752, EN 1179 or EN 13283, excluding tin and iron) in the molten zinc shall not exceed 1,5% by mass.
- 3.3.11 The significant surface(s) of all the hot dip galvanized article(s), when first examined by normal or corrected vision from a distance of not less than 1 m, shall be free from nodules, blisters (i.e.
- 3.3.12 raised areas without solid metal beneath), roughness and sharp points (if either can cause injury) and uncoated areas. Flux residues shall not be permitted. Lumps and zinc ash shall not be
- 3.3.13 permitted where they might affect the intended use of the hot dip galvanized article or its corrosion resistance requirement.
- 3.3.14 Articles that fail visual inspection of the galvanising shall be renovated according to the criteria mentioned in clause 6.3 of SANS 121:2011.

### **3.4 Vibration Control**

#### **3.4.1 Vibration Isolation**

- 3.4.1.1 Proper provisions shall be made in the foundations and mountings of all Plant capable of transmitting vibration forces to its environment, whether local or remote, (as is the case with pipes) for vibration isolation.
- 3.4.1.2 Selection of vibration isolation Plant and in particular, mountings for Plant, shall be done with due regard to the forcing frequency of the driven machinery and the mounted natural resonant frequency of the machine.
- 3.4.1.3 In the case of installation of Plant on upper floors, suspended floors, roofs etc. it is of prime importance that floor stiffness, floor deflection and natural frequency of the floor be taken in to consideration to ensure that resonant conditions cannot occur.
- 3.4.1.4 Driven machinery and isolator deflections shall be carefully selected in these applications.
- 3.4.1.5 Should added mass inertia blocks be required to comply with these vibration isolation requirements, proper provision shall be made at tender stage for the provision of such.

#### **3.4.2 Damping**

- 3.4.2.1 Where static deflections in excess of 8mm are indicated, steel springs shall be employed incorporating acoustic sound pads in series with the spring.
- 3.4.2.2 The horizontal stiffness of the springs shall not exceed that in the vertical, in particular for systems mounted at vertical frequencies below 5Hz.
- 3.4.2.3 Low frequency mounts shall incorporate rubber snubbers to accommodate extreme horizontal or vertical motions such as can occur near resonance during start up.

- 3.4.2.4 The snubbers shall however not be relied upon to provide the necessary horizontal stability of the machine in normal operational conditions. Spring layouts and inertia blocks shall be employed to avoid this situation.
- 3.4.2.5 For static deflections below 8mm, rubber in sheer mounts may be used provided the frequency is above 6Hz.
- 3.4.2.6 For small static deflections less than 4mm and particularly for high-speed machines and general acoustic isolation, ribbed rubber neoprene composite pads may be employed subject to the specified requirements.
- 3.4.2.7 Sufficient stability and damping shall be incorporated in the mountings to minimise the movement of the machine during start up or changes in the operating conditions.
- 3.4.2.8 The selection of mounts shall take proper cognisance of unequal distribution of the mounting weight of Plant and rotational and/or pressure forces acting thereon.

### 3.5 Insulation

- 3.5.1 Insulation shall in all instances be applied by specialist contractors and be of the highest standard. Any section not installed to the approval of the Engineer shall be re-done at the *Contractor's* expense.
- 3.5.2 Data sheets for all insulation and accessories shall be submitted to the *Employer* for acceptance that they meet the requirements listed.
- 3.5.3 Material shall be delivered in non-broken, factory furnished packaging and stored in a clean, dry indoor space that provides protection against the weather.
- 3.5.4 Progressive testing of the systems to be insulated shall have been completed, inspected and approved by the owners' representative before the insulation is applied.
- 3.5.5 Insulation shall not be applied until all surfaces are clean, dry, and free of dirt, dust, grease, frost, moisture and other extraneous elements.
- 3.5.6 Insulation, cladding and vapour barriers shall be painted as specified.
- 3.5.7 All items of plant likely to operate at temperatures below the surrounding ambient dew point shall be insulated and provided with a vapour barrier.
- 3.5.8 The individual insulation requirements of each system shall be indicated in their relevant sections of this document.

### 3.6 Painting

- 3.6.1 The paint colour scheme shall comply fully with the SANS 10140 requirements.
- 3.6.2 All steel surfaces that need to be painted shall be prepared as per SANS 8501-3 and SANS 10322.
- 3.6.3 All exposed portions of hot water tanks, heat exchangers, cylinders, etc. shall be properly cleaned, primed and painted two coats of heat resistant paint.
- 3.6.4 All other exposed metal parts such as pumps, belt guards, all piping, pipe lagging, fittings, dampers, fans, coils, motors, packaged units, control panels, steelwork, exposed ducts and

lagging, expansion tanks, make-up tanks, cooling tower, unit shelters, etc. shall be cleaned, primed, undercoated and finished in a high quality gloss paint of approved colour.

- 3.6.5 All external Plant exposed to the weather must be cleaned, primed and painted with two coats of epoxy paint.
- 3.6.6 The lagged surface of calorifiers, headers and pipes shall be primed, undercoated and finished in a high quality gross of approved colour. Unlagged steam piping shall be painted with heat resistant paint.
- 3.6.7 Machinery, Structural Steelwork Colours:

Checker plates, Pipe supports, Handrails, Base plates	Black
Body portions of machines	Olive Green
All machinery external to the building (except piping, valves and fittings)	Dove Grey
All moving parts which are visible when operating In-side surfaces of all machine guards, belt guards etc	Orange
All handles, levers, handwheel centres adjustment knobs, etc	Yellow
All lagging on boilers, calo-rifiers, tanks, cylinders etc. except on piping and pump sets and ducting)	Aluminium
Electrical distribution boards (except where transparent covers are used)	Orange
Control panels and Indicator panels, Water treatment plant (except on piping), Air Conditioning plant (except on piping)	Light Blue
All points which constitute a physical hazard, e.g. (stay-wires, low pipes, access areas)	Yellow and Black
Doorways, Cross Hatch, Drainage piping	Black

**3.6.8 Piping, Pumps, Valves, Fittings, etc.:**

- 3.6.8.1 All unlagged black piping, holderbolts, supports anchors fittings, etc. shall be painted in accordance with British Standard Specification No. BS 1710.
- 3.6.8.2 Except where otherwise specified all piping on surfaces shall be painted with a primer, an undercoat and a finishing coat in approved high quality gloss paint to the colour indicated in the schedule. This also applies to all holderbolts, supports, anchors, fittings and valves.
- 3.6.8.3 Pump sets, valves, fittings, etc. shall be painted the same basic colour as the pipelines, except those of fire-fighting services, which shall be painted red.
- 3.6.8.4 Were bands are painted for identification purposes over a base colour, the length of the band shall be same as the final pipe diameter, but not less than 100 mm. Where three strips are required per band, each strip shall be one third of the final pipe diameter but not less than 35 mm.
- 3.6.8.5 The direction of flow shall be indicated with a 25 x 100 mm long black arrow at intervals of approximately 4 m and at valves and junctions. Flow lines shall be marked with an F and

return lines with an R at each arrow. Arrows shall be located at all bends in pipework and where pipes enter or exit through walls, partitions, etc.

3.6.8.6 Where outlets require identification the colour identification shall take the form of coloured centre pieces on hand wheels or cocks, and/or other suitable approved marking on the neck of the outlet fittings as specified. The colour shall primarily be that of the pipe colour and where banding is used, the colour shall be that of the band and stroke.

3.6.8.7 All radiators, pipes, fittings etc. in finished areas such as wards, offices, passages, etc. shall be cleaned, primed, undercoated and finished in a high gloss paint to match the existing finish.

**3.6.9 Identification Colours for Pipework:**

	Basic Pipe Colour	Banding Colour
Drinkable Water (Cold)	Brilliant Green (D10)	Cornflower (F29)
Drinkable Water (Hot)	Brilliant Green (D10)	Crimson (A03)
De-ionized Water	Brilliant Green (D10)	White
Fire Fighting Water	Signal Red (A11)	
Fire Fighting Water (Foam Line)	Signal Red (A11)	Biscuit (B64)
Diesel	Middle Buff (B33)	
Compressed Air	Arctic Blue (F28)	
Refrigerant	White	
Oil	Golden Brown (B13)	Verdigris Green (E22)
Sanding	Arctic Blue (F28)	Crimson (A03)

## **4. TECHNICAL SPECIFICATION**

4.1 All Plant shall be accompanied by a valid compliance certificate and shall be tested and approved by the relevant authorities where required for use.

4.2 The *Contractor* shall utilise suppliers who are able to provide service for all components in South Africa and who are able to provide spares on short notice.

4.3 The *Contractor* shall ensure that they limit the number of suppliers and endeavour to procure equipment from a single supplier where possible to provide standardisation and ease of maintenance.



### Workshop Plant

ITEM No.	NAME & MANUFACTURER	DESCRIPTION
1	Air Compressor (rosenbauer Agre Boss 7002 D, Bauer or similar approved)	<ul style="list-style-type: none"> <li>• Air inlet: 600 l/min</li> <li>• FAD at 7bar: 410 l/min</li> <li>• Max Pressure: 10bar</li> <li>• Power: 3kW, 230/400V, 50Hz</li> <li>• Air Receiver: 90Litres</li> <li>• Noise level: 67 dB(A)</li> <li>• Dimensions (LxWxH): 1250 x 590 x 920 mm</li> <li>• Dual cylinder air cooled, direct driven</li> <li>• Finned cylinder heads made of aluminium</li> <li>• Plant shall be complete ready for use with lead and plug</li> <li>• Pressure switch with motor overload protection relay</li> <li>• Includes manometer, check valve, safety valve and condensate drain.</li> <li>• Low noise intake filter</li> <li>• Filter/regulator with quick connection coupling</li> <li>• Receiver shall have CE certification</li> <li>• Comes with 2 x 10m rubber air hoses with couplings, rated to 20bar</li> <li>• Comes with 2 x 5m spiral coiled air hoses rated to 10bar</li> </ul>
2	DCP Powder filling machine (Angus or similar approved)	<p>Supplied with:</p> <ul style="list-style-type: none"> <li>• Various extinguisher filling caps from 1kg to 50kg</li> <li>• Spare filter and hose assembly kit</li> <li>• Scale measurement in metric accurate to +/- 0.5% and supplied with calibration certificate</li> <li>• Built in sieve to remove hard powder</li> <li>• Automated filling</li> <li>• Unit comes with fixed wheels and push handle for easy movement</li> <li>• Includes 1 storage tank for 50kg extinguishers, 1 suction hose and 1 suction pipe</li> </ul>
3	Hydrostatic pressure test equipment for fire extinguishers. (Angus or similar approved)	<p>Supplied with:</p> <ul style="list-style-type: none"> <li>• Adjustable stand for extinguishers with cage</li> <li>• Capable of testing three extinguishers at a time</li> <li>• Quick release screw cap fitting for various types of fire extinguishers plus a spare set</li> <li>• 1 x master gauge</li> <li>• 2 x male/female quick release HP hose fitting</li> </ul>

		<ul style="list-style-type: none"> <li>• 2 x spare gauges</li> <li>• 6 x spare high pressure hoses</li> </ul>
4	Extinguisher Drying machine. (Angus or similar approved)	<ul style="list-style-type: none"> <li>• Capacity: 6 extinguishers</li> <li>• Variable heat setting: 0 – 90 degrees Celsius</li> <li>• Built in timer with alarm</li> <li>• Drying duration: 15 minutes</li> <li>• Stainless steel drying tubes and drip tray</li> <li>• Unit built with wheels and push handle for easy movement</li> </ul>
5	Glass blasting machine	<ul style="list-style-type: none"> <li>• Dimensions: 138 x 87 x 63 cm</li> <li>• Work space: 145 x 87 x 63 cm</li> <li>• Air consumption: 708 l/min</li> <li>• Min compressor: 10HP belt driven</li> <li>• Including light, gloves, gun and 2 x 20kg glass bags</li> <li>• Colour: gun metal grey</li> </ul>
6	3 x Flexible LED lamp for inspection (Cordia or similar approved)	<p>For inspection of fire extinguishers</p> <ul style="list-style-type: none"> <li>• Lamp type: LED</li> <li>• 520mm arm length</li> <li>• Flexible neck</li> <li>• 100 – 277V AC</li> <li>• Transformer built into base</li> </ul>
7	3 x Telescopic mirror (Cordia or similar approved)	<p>For inspection of fire extinguishers</p> <ul style="list-style-type: none"> <li>• Adjustable length arm: 180 – 520mm</li> <li>• Rotatable mirror</li> <li>• Mirror diameter: 32mm</li> </ul>
8	O ring removal kit for fire extinguishers (Cordia or similar approved)	
9	CO2 filling machine (Angus or similar approved)	<ul style="list-style-type: none"> <li>• Automatic cut out of filling process.</li> <li>• Suitable for filling extinguishers from 2 to 45 kg.</li> <li>• Filling output: 5 kg/min.</li> <li>• Electric motor: 1,5 kW.</li> <li>• Pressure relief valve: 2 x 130 bar.</li> <li>• Power supply: 400 V: 50Hz.</li> <li>• IP rating: 54.</li> <li>• Weight: <ul style="list-style-type: none"> <li>○ Total weight: 175 kg.</li> <li>○ Pump stand: 98 kg.</li> <li>○ Control desk with support: 37 kg.</li> <li>○ Floor scales with ramp: 44 kg</li> </ul> </li> <li>• Dimensions: <ul style="list-style-type: none"> <li>○ Pump stand: L.845 x H.351 x D.600 mm.</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>○ Control desk with support: L.440 x H.1200 x D.430 mm.</li> <li>○ Floor scales with ramp: L.580 x H.1100 x D.1135 mm.</li> <li>○ Supplied with SANAS certification.</li> </ul>
10	Fire extinguisher clamping device	<ul style="list-style-type: none"> <li>● The device shall be able to hold fire extinguishers for service</li> <li>● Maximum weight of extinguisher: 12kg</li> </ul>
11	Master Gauge	<ul style="list-style-type: none"> <li>● Utilized for in-house testing of all gauges,</li> <li>● Shall be supplied with all appropriate fittings for testing of gauges on different types of fire plant.</li> <li>● Supplied complete with calibration certificate valid for 12 months</li> </ul>
12	Extinguisher Scale	<p>The extinguisher scale shall be able to be used to fill extinguishers with high precision. The scale shall comply with the following specifications:</p> <ul style="list-style-type: none"> <li>● Max Weight: 150kg</li> <li>● Graduation: 100g</li> <li>● Tare function.</li> <li>● Weighing modes: lb., kg.</li> <li>● Stable reading indication.</li> <li>● Overload protection.</li> <li>● Separate display.</li> <li>● Low battery indication.</li> <li>● Included power adaptor</li> <li>● Power supply: 230 V / 50 Hz with battery backup.</li> <li>● Dimensions: W.380 x H.30 x D.305 mm</li> <li>● Supplied complete with calibration certificate valid for 12 months</li> </ul>

TRANSNET RESERVE THE RIGHT TO ACCEPT OR REJECT THE USE OF ANY CONTRACTOR EMPLOYED BY THE SUCCESSFUL TENDERER FOR ANY SPECIFIED WORK. TRANSNET WILL BE THE SOLE JUDGE OF THE ACCEPTABLE LIMITS FOR WORKMANSHIP, INSTALLATION, ETC. AND THE SUCCESSFUL TENDERER SHALL, AT NO ADDITIONAL COST TO TRANSNET, REPLACE ANY SUBCONTRACTOR FOR ANY SPECIFIED WORK SHOULD THE SUCCESSFUL TENDERER BE DIRECTED TO DO SO BY TRANSNET AT ANY TIME DURING THE DURATION OF THE CONTRACT.

ACCEPTANCE SIGNATURE OF TENDERER: .....

NAME OF AUTHORISED SIGNATORY: .....

DESIGNATION OF SIGNATORY: .....

DATE: .....

## Contractor Health and Safety Specification Guidelines

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## 1. Purpose

This specification development guideline identifies and encompass the working behaviours and safe work practices that are expected of all Transnet SOC Ltd employees, Contractors, Consultant, Visitors and Suppliers, engaged on Transnet managed projects as required by Construction Regulation of 2014, regulation 5(1)(b).

All contractors and service providers must take careful note of these requirements and must ensure that adequate provision has been made to ensure compliance.

This Specification development guideline has been compiled to cover a wide range of construction/ work activities and should serve as a guideline for Safety Agents to develop site specific specifications for construction projects. In order to determine which requirements are applicable, the contractor must conduct a health and safety risk assessment specific to the project and specific to the contractor's scope of work. All applicable requirements must be addressed in the Contractor's Health and Safety Management Plan.

This Specification development guideline will be reviewed and updated periodically as and when necessary) to address and / or include:

- Changes in legislation;
- Client requirements;
- Leading practices; and
- Lessons learnt from incidents.

The specification development guideline provides the minimum requirements for site specific specification and should be used as a guide to develop the site specific specification as it is required by the Construction Regulation of 2014.

## 2. Scope

This Specification applies to all project sites, and to all persons working on or visiting the Transnet managed projects. The requirements specified in this document are applicable to the contractor as well as any sub-contractors, EPCM Contractors, Consultant, Vendors and Visitors that may be appointed by Transnet as an Employer. It is the contractor's responsibility to ensure that all sub-contractors comply fully with all legal requirements as well as the requirements of this health and safety specification.

## 3. Definitions

### **Acceptable Risk**

A risk that has been reduced to a level that can be tolerated having regard for the applicable legal requirements and the Health and Safety Policy adopted for the project.

### **ALARP (As Low As Reasonably Practicable)**

The concept of weighing a risk against the sacrifice needed to implement the measures necessary to avoid the risk. With respect to health and safety, it is assumed that the measures should be implemented unless it can be shown that the sacrifice is grossly disproportionate to the benefit.

**Applicant (Permit to Work)**

A person requesting permission to perform work for which a Permit to Work is required. Applicants must be authorised (in writing) to receive (or accept) Permits to Work and must be competent to do so by virtue of their training, experience and knowledge of the area or plant in which the work is to be performed.

**Authorised Person (Permit to Work)**

A person (typically a Project employee or an employee of the client) who has been authorised (in writing) by the nominated project management representative to issue Permits to Work within the scope of his designation. A person may only be appointed to issue Permits to Work if he has undergone training and has been assessed and found competent in systems, plant and equipment operation within the scope of his designation.

**Barricade**

A temporary structure that is erected as a physical barrier to prevent persons from inadvertently coming into contact with an identified hazard.

**Battering**

Sloping the sides of an excavation to a predetermined angle (usually less than the natural angle of repose) to ensure stability.

**Benching**

The creation of a series of steps in the sides of an excavation to prevent collapse.

**Consequence**

The outcome of an event expressed qualitatively or quantitatively.

**Contractor**

An employer (organisation) or a person who performs **ANY** work and has entered into a legal binding business agreement contract to supply a product or provide services to Transnet. This applies to the Suppliers, Vendors, and Consultants, Service providers or Contractors performing construction work

**NB:** A Contractor is an employer in his/her own right

**Competent Person**

A person who has in respect of the work or task to be performed the required knowledge, training, experience and as per act cr2014.

**Construction Supervisor**

A competent person responsible for supervising construction activities on a construction site

**Clearance Certificate**

A signed declaration by an Isolation Officer that a specified hazardous energy source associated with a particular system, plant or item of equipment has been isolated in accordance with an approved Isolation and Lockout Procedure.

**Discipline Lock (many locks with a restricted number of identical keys)**

Attached at a Lockout Station or at a Local Isolation Point in order to lock out a system, plant or equipment. A Discipline Lock (e.g. A Low Voltage Electricity Discipline Lock) is owned by an

Isolation Officer who has been authorised in writing to isolate and lockout a particular hazard (e.g. Low voltage electricity).

### **Equipment Lock (many locks with one unique key)**

Attached directly to pieces of equipment in order to lock them out. Equipment Locks may only be used by Isolation Officers who have been authorised in writing to perform isolation and lockout procedures. The key must have a solid key ring that fits over an Isolation Bar.

### **Excavation**

Any man-made cut, cavity, pit, trench, or depression in the earth's surface formed by removing rock, sand, soil or other material using tools, machinery, and / or explosives. Tunnels, caissons and cofferdams are specifically excluded and are not addressed in this standard.

### **First-Aid Injury (FA)**

A first-aid injury is any one time treatment and any follow up visit for observation of minor scratches, cuts, burns, splinters and the like which do not normally require medical care. Such treatment is considered to be first aid even if administered or supervised by a medical practitioner. First aid includes any hands on treatment given by a first aider. (E.g. Band-Aid, washing, cleansing, pain, relief). The following procedures are generally considered first aid treatment:

- Application of Antiseptics.
- Application of Butterfly adhesive dressing or sterile strips for cuts and lacerations.
- Administration of tetanus shot(s) or booster(s). However, these shots are often given in conjunction with more serious injuries, consequently injuries requiring these shots may be recordable for other reasons.
- Application of bandages during any visit to medical personnel.
- Application of ointments to abrasions to prevent drying or cracking.
- Inhalation of toxic or corrosive gas, limited to the removal of the employee to fresh air or the one time administration of oxygen for several minutes.
- Negative X-Ray diagnosis.
- Removal of foreign bodies not embedded in the eye if only irrigation is required.
- Removal of foreign bodies from a wound if procedure is uncomplicated, for example by tweezers or other simple technique.
- Treatment for first degree burns.
- Use of non-prescription medications and administration of single dose of prescription medication on first visit for any minor injury or discomfort.

### **Hazard**

A source of potential harm in terms of human injury or ill health, or a combination of these.

### **Hierarchy of Controls**

A sequence of control measures, arranged in order of decreasing effectiveness, used to eliminate or minimise exposure to workplace health and safety hazards:

- Elimination – Completely removing a hazard or risk scenario from the workplace.
- Substitution – Replacing an activity, process or substance with a less hazardous alternative.
- Isolation (Engineering) Controls – Isolating a hazard from persons through the provision of mechanical aids, barriers, machine guarding, interlocks, extraction, ventilation or insulation.
- Administrative Controls – Establishing appropriate policies, procedures and work practices to reduce the exposure of persons to a hazard. This may include the provision of specific training and supervision.
- Personal Protective Equipment – Providing suitable and properly maintained PPE to cover and protect persons from a hazard (i.e. Prevent contact with the hazard).

## **Isolation and Lockout Procedure**

A plant or equipment-specific procedure that describes the method, and sequence to be followed, for rendering equipment, plant and systems safe to work on.

### **Isolation Bar**

A device used at a Lockout Station to which anyone is able to attach a Personal Lock making it impossible for an Isolation Officer to remove the key to the Equipment Locks, thus preventing the de-isolation of a system, plant or equipment while it is still being worked on. A Discipline Lock must always be the first lock attached to an Isolation Bar and last to be removed.

### **Isolation Officer**

A person (typically a Project employee or an employee of the client) who has been authorised (in writing) by the nominated project management representative to perform isolation and lockout procedures. A person may only be appointed as an Isolation Officer if he has undergone training and has been assessed and found competent in the isolation and lockout of systems, plant and equipment within the scope of his designation.

### **Incident**

An event (or a continuous or repetitive series of events) that results or has the potential to result in a negative impact on people (employees, contractors and visitors), the environment, operational integrity, assets, community, process, product, legal liability and / or reputation.

### **Likelihood**

A description of probability or frequency, in relation to the chance that an event will occur.

### **Lost Time Injury (LTI)**

Any occurrence that resulted in a permanent disability or time lost from work of one day/shift or more.

If an employee is injured and cannot return to work in the next shift (will ordinarily miss one whole shift), and the department brings the employee in to only receive treatment by the Supervisor/ Return to Work Coordinator in that shift, this is still considered an LTI.

Lost Time Injury Frequency Rate (LTIFR) - Number of LTI's multiplied by 1 million or 200,000 and divided by labour hours worked.

### **Light Vehicle**

A vehicle that:

- Can be licensed and registered for use on a public road;
- Has four or more wheels, and seats a maximum of 12 adults (including the driver);
- Requires the driver to hold only a standard civil driving licence; and
- Does not exceed 4.5 tonnes gross vehicle mass (GVM), which is the maximum loaded mass of the motor vehicle as specified by:
  - ♦ The vehicle's manufacturer; or
  - ♦ An approved and accredited automotive engineer, if the vehicle has been modified to the extent that the manufacturer's specification is no longer appropriate.

Examples of light vehicles include passenger cars, four-wheel drive vehicles, sports utility vehicles (SUVs), pick-ups, minibuses, and light trucks.

Any vehicle falling outside of this definition must be considered mobile equipment.

## **Medical Treatment Injury (MTI)**

A work injury requiring treatment by a Medical Practitioner and which is beyond the scope of normal first aid including initial treatment given for more serious injuries. The procedure is to be of an invasive nature (e.g. Stitches, removal of foreign body).

The following procedures are generally considered medical treatment:

- Application of sutures (stitches).
- Cutting away dead skin (surgical debridement).
- Loss of consciousness due to an injury or exposure in the work environment.
- Positive X-Ray diagnosis (fractures, broken bones etc.).
- Removal of foreign bodies embedded in the eye.
- Removal of foreign bodies from the wound by a physician due to the depth of embedment, size or shape of object or the location wound.
- Reaction to a preventative shot administered because of an occupational injury.
- Sprains and strains - series (more than one) of hot and cold soaks, use of whirlpools, diathermy treatment or other professional treatment.
- Treatment of infection.
- Treatment for second or third degree burns
- Use of prescription medications (except a single dose administered on first visit for minor injury or discomfort.)

## **Mobile Equipment**

A vehicle (wheeled or tracked) that generally requires:

- The driver to hold a specific state or civil license; or
- The operator to hold a nationally recognized certificate of competency.

Examples of mobile equipment include, but are not limited to, dump trucks, water trucks, graders, dozers, loaders, excavators, forklifts, tractors, back-actors, bobcats, mobile cranes, tele-handlers, drill rigs, buses and road-going trucks.

## **Near Hit**

An incident that has occurred that did not result in any injuries, illnesses, environmental or property damage but had the potential to cause an injury, illness, environmental or property damage.

## **Personal Lock**

A single lock with one unique key controlled by the owner. Used for personal protection.

## **Regulation**

In the context of this guideline, 'Regulation(s)' refers to the Construction Regulations, 2014 required by Section 43 of the Occupational Health and Safety Act 85 of 1993, published under Government Notice R 84 in Government Gazette 37305 of February 2014.

## **Risk**

A combination of the likelihood of an occurrence of a hazardous event or exposure and the severity of injury or ill health that can be caused by the event or exposure.

## **Risk Assessment**

A process of evaluating the risk arising from a hazard, taking into account the adequacy of any existing control measures, and deciding on whether or not the risk is acceptable.

### **Risk Management**

The systematic application of management policies, processes and procedures to identifying hazards, analysing and evaluating the associated risks, determining whether the risks are acceptable, and controlling and monitoring the risks on an ongoing basis.

## **4. Abbreviations**

DSTI - Daily Safety Task Instruction

CR – Construction Regulations

EPC - Engineering Procurement and Construction

EPCM - Engineering Procurement and Construction Management

HIRA - Hazard Identification and Risk Assessment

HEALTH AND SAFETY - Integrated Management System

MS - Management System

OHS Act - Occupational Health and Safety Act

SOC - Safety Observation and Conversation

VFL - Visible Felt Leadership

OHS - Occupational Health and Safety

SACPCMP - The South African Council for Project and Construction Management Professions, here in refer to as they register of Health and Safety Professionals

## **5. SHE Management Plan**

The contractor must prepare, implement and maintain a project-specific SHE Management Plan. The plan must be based on the requirements set out in this specification as well as all applicable legislation. It must cover all activities that will be carried out on the project site(s), from mobilisation and set-up through to rehabilitation and decommissioning.

The plan must demonstrate the contractor's commitment to HEALTH AND SAFETY and must, as a minimum, include the following:

- A copy of the contractor's **Health and Safety Policy**; in terms of the OHS Act section 7
- Procedures concerning **Hazard Identification and Risk Assessment**, including both Baseline and Task-Based Risk Assessments;
- Arrangements concerning the identification of applicable **Legal and Other Requirements**, measures to ensure compliance with these requirements, and measures to ensure that this information is accessible to relevant personnel;
- Details concerning **Health and Safety Objectives** – a process must be in place for setting objectives (and developing associated action plans) to drive continual improvement;
- Details concerning **Resources, Accountabilities and Responsibilities** – this includes the assignment of specific health and safety responsibilities to individuals in accordance with legal or project requirements, including the appointment of a Project Manager, Health and Safety Officers, Supervisors, Health and Safety Representatives, and First Aiders;

- Details concerning **Competence, Training and Awareness** – a system must be in place to ensure that each employee is suitably trained and competent, and procedures must be in place for identifying training needs and providing the necessary training;
- **Communication, Participation and Consultation** arrangements concerning health and safety, including Safety Observations and Coaching, Toolbox Talks, Daily Safe Task Instructions, project health and safety meetings, and notice boards;
- **Documentation and Document Control** – project-specific documentation required for the effective management of health and safety on the project must be developed and maintained, and processes must be in place for the control of these documents;
- Processes and procedures for maintaining **Operational Control**, including rules and requirements (typically contained in Safe Work Procedures) for effectively managing health and safety risks, particularly critical risks associated with working at heights, confined spaces, mobile equipment and light vehicles, lifting operations, hazardous chemical substances, etc.;
- **Emergency Preparedness and Response** procedures;
- **Management of Change** – a process must be in place to ensure that health and safety risks are considered before changes are implemented;
- **Sub-contractor Alignment** procedures – a process must be in place for the assessment of sub-contractors and suppliers with regard to health and safety requirements and performance (before any contract or purchase order is awarded);
- **Measuring and Monitoring** plans, including a plan for the measuring and monitoring of employee exposure to hazardous substances or agents (e.g. Noise, dust, etc.) In order to determine the effectiveness of control measures;
- **Incident Reporting and Investigation** procedures describing the protocols to be followed with regard to incident reporting, recording, investigation and analysis;
- **Non-conformance and Action Management** procedures concerning the management of corrective actions;
- **Performance Assessment and Auditing** procedures concerning health and safety performance reporting, monthly internal audits to assess compliance with the project health and safety requirements, and daily site health and safety inspections; and
- Details concerning the **Management Review** process followed to assess the effectiveness of health and safety management efforts.

Prior to mobilisation, the HEALTH AND SAFETY Management Plan must be forwarded electronically, and as a hard copy, to the nominated project management representative for review. The plan will be audited for completeness and, if found to be adequate, will be accepted (typically “with comments”). Work may not commence until the plan has been accepted.

Once the plan has been accepted, the contractor must action and resolve any issues within 30 days from the start of work.

If the issues requiring corrective action are not resolved within this 30 day period, the contractor will be required to stop any work related to the outstanding actions until they have been resolved.

Any proposed amendments or revisions to the contractor’s Health and Safety Management Plan must be submitted to the nominated project management representative for acceptance.



Should it be identified that the contractor has overlooked a high risk activity, and as a result has omitted the activity and associated control measures from the Health and Safety Management Plan, the plan will not be approved.

## **6. Policy**

The contractor must develop, display and communicate a Health and Safety Policy that clearly states the contractor's values and objectives for the effective management of health and safety as required by OHS Act of 1993, 7(3). These values and objectives must be endorsed by the contractor's management representatives and must be consistent with those adopted for the project.

The policy must be signed and dated, and must be reviewed annually.

The policy must commit to:

- Compliance with all applicable legal requirements in the TCP regulatory universe;
- The effective management of health and safety risks;
- The establishment of measurable objectives for improving performance, and the provision of the necessary resources to meet these objectives;
- The prevention of incidents; and
- Achieving continual improvement with regard to health and safety performance.

All employees of the contractor as well as the employees of any sub-contractors that may be appointed by the contractor must be made aware of the policy. This must be done through Health and Safety Induction Training and Toolbox Talks (refer to Sections 10 and 11).

A copy of the policy must be displayed in each meeting room and on each notice board.

## **7. Hazard Identification and Risk Assessment.**

Detailed hazard identification and risk assessment processes must be followed for all work to be performed as well as for all associated equipment and facilities as required by the Construction regulation of 2014, regulation 9(1) – (7).

The client will provide a baseline risk assessment informing contractor on the hazards and risks on site. Contractor must ensure that effective procedures and risk assessment systems are in place to control hazards and to mitigate risks to levels that are as low as is reasonably practicable.

The risk assessment processes must be applied to:

- The full life cycle of the project;
- Routine and non-routine activities;
- Planned or unplanned changes (refer to Section 15);
- All employees, sub-contractors, suppliers and visitors; and
- All infrastructure, equipment and materials.

The risk assessment processes and methodologies must be appropriate for the nature and scale of the risks, and must be implemented by competent persons.

The process of analysing and managing risk must include the following:

- Establishing the context of the risk assessment;

- Identifying hazards and determining possible risk scenarios (unwanted events);
- Evaluating risks and assigning ratings (classification);
- Recording the risk analysis in a risk register;
- Managing risks according to their classification (prioritising for action);
- Identifying and implementing control measures (through the application of the Hierarchy of Controls) to ensure that risks are managed to levels that are as low as is reasonably practicable (ALARP);
- Developing action plans for reducing risk levels (where possible);
- Verifying the completion of actions;
- Re-evaluating the risks and classifications as appropriate; and
- Reviewing and updating the risk register.

## 7.1 Baseline Risk Assessments

Prior to site establishment, the client must conduct a detailed Baseline Risk Assessment identifying foreseeable hazards and risk scenarios associated with the contractor's scope of work on the project site(s) as required by Construction Regulations of 2014, regulation 5(1)(a). Details concerning proposed control measures must be included. The risk assessment process must be facilitated by a competent person who has been appointed in writing and must involve the participation of the contractor's site management representatives, supervisory personnel and technical experts (as required). An attendance register must be completed and retained for reference purpose. The Baseline Risk Assessment must be reviewed and approved by the Project Health and Safety Manager and Project Construction Manager.

When carrying out a Baseline Risk Assessment or a Task-Based Risk Assessment (refer to Section 6.2), Hazard (Energy) Types must be specified in accordance with the categorisation detailed in Table 6-1. Risk scenarios must be described indicating the manner in which a person may come into contact with, or be exposed to, a specific hazard.

An initial risk rating must be assigned to each risk scenario without taking any control measures into consideration. Control measures for managing the risks to levels that are as low as is reasonably practicable must then be identified for implementation on the project, and a residual risk rating must be assigned to each risk scenario taking the identified control measures into consideration.

Ratings must be assigned qualitatively using TCP consequence and likelihood scales and descriptors (i.e. TCP 5x5 qualitative risk matrix). Refer to Tables 6-2, 6-3 and 6-4.

### Table 7-1: Hazard (Energy) Types

A Risk Register comprised of all significant risks (i.e. Risks rated as major or catastrophic) identified for the project will be compiled using the information contained in the project Baseline Risk Assessment as well as the contractor's Baseline Risk Assessment. Key control measures for managing each of these risks will be specified in the register.

For the significant risks in particular, action plans will be developed for reducing the risk levels (where possible).

The project Risk Register will be reviewed and, if necessary, updated:

- On a quarterly basis during construction;

- When changes are made to a design and / or the construction scope, schedule, methods, etc. That result in a change to the risk profile; and
- Following an incident.

The contractor must ensure that the hazards, risk scenarios and control measures identified in the contractor's Baseline and Task-Based Risk Assessments are taken into consideration when developing, implementing and maintaining the various elements of the contractor's health and safety management system for the project (e.g. Competence, training and awareness requirements).

All persons potentially affected must be made aware of the hazards, risk scenarios and control measures identified in the contractor's risk assessments. This must be done through training, Toolbox Talks, and Daily Safe Task Instructions (refer to Sections 10 and 11).

## 7.2 Task-Based Risk Assessments

The contractor must carry out detailed project-specific Task-Based Risk Assessments which must be reviewed and approved by the Client's Project Health and Safety Manager and Contract Manager prior to the commencement of any work.

The risk assessment process must be facilitated by a competent person who has been appointed in writing in terms CR 9 sub regulation (1). The contractor's site management representatives, supervisory personnel, technical experts (as required) and workforce personnel directly involved with the task being examined must participate in the risk assessment process. An attendance register must be completed and retained.

**Please Note:** Under no circumstances may a Contractor Health and Safety Officer perform a risk assessment in isolation. The active participation of all persons referred to above is mandatory.

A Task-Based Risk Assessment must at least:

- Be accompanied by a Work Method Statement (describing in sufficient detail how the specific job or task is to be performed in a logical and sequential manner);
- Provide a breakdown of the job or task into specific steps;
- Identify the hazards and potential risk scenarios associated with each step;
- Include consideration of possible exposure to noise, heat, dust, fumes, vapours, gases, chemicals, radiation, vibration, ergonomic stressors, or any other occupational health hazard or stressor;
- Describe the control measures that will be implemented to ensure that the risks are managed to levels that are as low as is reasonably practicable; and
- Assign an initial risk rating (without taking any control measures into consideration) and a residual risk rating (taking the identified control measures into consideration) to each risk scenario.

A Task-Based Risk Assessment must be reviewed and, if necessary, updated:

- On an annual basis (as a minimum);
- When changes are made to the associated Work Method Statement; and
- Following an incident.

### **7.3 Pre-Task Hazard Assessments**

A pre-task hazard assessment must be completed whenever a change is identified while carrying out an activity. Any deviation from what was discussed during the Daily Safe Task Instruction (prior to the activity commencing), or anything that was not discussed, constitutes a change.

Before carrying out the particular task that involves the identified change, a few minutes must be spent identifying the hazards and risks associated with that task as well as suitable control measures.

## **8. Legal and Other Requirements**

The Contractor must comply with the requirements of all applicable legislation as well as Transnet and project-specific standards and procedures as amended from time to time.

The Contractor must compile and maintain a register of all legal and other requirements applicable to the work that will be carried out and / or services that will be provided. This register must be updated regularly to ensure that it remains relevant.

Applicable laws and standards must be appropriately communicated to all employees of the contractor (as well as the employees of any sub-contractors that may be appointed by the contractor) through training, Toolbox Talks, and Daily Safe Task Instructions (refer to Sections 10 and 11).

## **9. Objectives**

In order to drive continual improvement, the contractor must set project-specific objectives, and must develop improvement action plans to achieve these objectives. The contractor's objectives must be aligned with the objectives set for the project as a whole as required by the Construction regulations of 2014, regulation 7.

Eliminating hazards, minimising risks, preventing incidents, injuries and illnesses, and ensuring legal compliance must be the primary considerations for setting objectives.

When setting objectives, consideration must be given to the following:

- Leading indicators such as inspection findings, audit findings, hazard reporting, and observations;
- Lagging indicators (i.e. Incidents including Near Hits);
- Leading practices and lessons learnt; and
- Injury frequency rates with due understanding that the goal is "no harm".

The objectives must be specific and measurable. The improvement action plans must specify the resources (both human and financial) required to achieve the objectives, the person's responsible, and realistic timeframes for completion. The contractor must ensure that adequate resources are allocated and that progress towards meeting the objectives is monitored regularly.

The objectives and associated improvement action plans must be documented and must be communicated to all contractor employees. Furthermore, to ensure that the objectives remain relevant, they must be reviewed on a quarterly basis and whenever significant change has taken place on the project (i.e. Changes to activities, scope of work, operating conditions, etc.).

Performance reviews must be carried out at quarterly intervals to assess and document performance against these personal or team objectives.

If a reward or incentive scheme is introduced, it must be designed in such a manner that health and safety performance is not compromised in order to maximise financial reward.



## 10. Resources, Accountabilities and Responsibilities

The Contractor must adequately allocate resources, responsibility and accountability to ensure the effective implementation, maintenance and continual improvement of the contractor's HEALTH AND SAFETY management system on the projects required by Construction regulation Of 2014, regulation 7(2)(c)

For each role that carries health and safety accountability and / or responsibilities (including legislative requirements), a role description detailing the accountability and / or responsibilities must be documented.

All appointments (i.e. the assignment of specific SHE responsibilities to individuals in accordance with legal or project requirements) must be done in writing. Documented proof of each appointment (i.e. a signed appointment letter) must be retained.

Contractor should not discharge any legal responsibilities to employees who are not legally appointed.

The contractor must comply with the requirements of all applicable legislation concerning health and safety related appointments and delegations for the project.

A Organogram specific to the project must be documented and maintained. All roles that carry SHE accountability and / or responsibilities must be included, and all individuals that carry health and safety appointments must be clearly identified.

The provision of dedicated professionals on the project must be appropriate for the nature and scale of the work to be carried out.

The contractor is solely responsible for carrying out the work under the contract whilst having the highest regard for the health and safety of all persons on the project site(s).

Health and safety is the responsibility of each and every individual on the project site(s), but in particular, it is the responsibility of the contractor's management team who must set the tone.

Visible commitment is essential to providing and maintaining a safe workplace. The contractor's managers and supervisors at all levels must demonstrate their commitment and support by adopting a risk management approach to all health and safety issues. These individuals must consistently take immediate and firm action to address violations of health and safety rules, and must actively participate in day to day activities with the objective of preventing harm.

The contractor's management representatives are responsible and accountable for health and safety performance on the project. Key responsibilities include the following:

- Preparing, implementing and maintaining a risk-based Health and Safety Management Plan specific to the work that will be carried out (refer to Section 4);
- Establishing, implementing and maintaining health and safety programmes and procedures to ensure that all work is carried out in compliance with the requirements of this specification, the contract, and all applicable legislation;
- Establishing, implementing and maintaining effective hazard identification and risk management processes and procedures to ensure that all reasonably foreseeable hazards are controlled in order to minimise risk (refer to Section 6);
- Providing the resources necessary to meet the requirements of this specification (refer to Section 9);

- Ensuring that all contractor employees have clearly defined responsibilities with regard to health and safety, and that these responsibilities are clearly communicated and understood (refer to Section 9);
- Establishing, implementing and maintaining a system for ongoing training and assessment of skills and competence (refer to Section 10);
- Establishing, implementing and maintaining procedures to ensure that only qualified and competent personnel are permitted to work on the project site(s) (refer to Section 10);
- Establishing, implementing and maintaining effective communication and consultative processes concerning health and safety for the duration of the contract (refer to Section 11);
- Maintaining operational control for the protection of all persons on the project site(s) as well as the public (refer to Section 13);
- Establishing, implementing and maintaining effective emergency preparedness and response procedures (refer to Section 14);
- Establishing, implementing and maintaining effective management of change processes and procedures (refer to Section 15);
- Establishing, implementing and maintaining effective incident reporting and investigation processes and procedures (refer to Section 18);
- Establishing, implementing and maintaining effective auditing and inspection processes and procedures (refer to Section 20); and
- Formally reviewing the contractor's Health and Safety Management System annually to ensure that the system continues to be effective in managing health and safety performance and meeting project requirements (refer to Section 21).

All costs associated with meeting these responsibilities shall be borne by the contractor.

Any cost associated with any work stoppage due to non-compliance with a health and safety requirement shall be for the contractor's account.

## 10.1 Contractor Construction Manager

The Contractor must appoint a competent Construction Manager who shall be responsible for the successful and safe completion of all work to be carried out by the contractor as required by the Construction regulations of 2014, regulation 8(1).

The contractor's Project Manager shall be responsible for:

- Ensuring that a Health and Safety Policy that clearly states the contractor's values and objectives for the effective management of health and safety on the project is in place and is communicated to all contractor and sub-contractor employees;
- Ensuring that all applicable legal and project health and safety requirements are identified and complied with at all times;
- Ensuring that effective hazard identification and risk management processes are established and implemented for all work to be carried out by the contractor;
- Participating in the Baseline Risk Assessment for the contractor's scope of work (prior to site establishment);

- Participating in (and approving) all Task-Based Risk Assessments conducted for the work to be carried out by the contractor;
- Driving the achievement of agreed health and safety objectives;
- Ensuring that the necessary resources are made available for the effective implementation of the contractor's Health and Safety Management Plan;
- Ensuring that all work is adequately and competently supervised;
- Ensuring that all contractor employees have clearly defined responsibilities with regard to health and safety (assigned in writing), and that these responsibilities are clearly communicated and understood;
- Ensuring as far as is reasonably practicable that each contractor and sub-contractor employee is competent to perform his role, and has received appropriate workplace health and safety training and instruction;
- Managing all appointed sub-contractors with regard to health and safety performance;
- Establishing and maintaining effective communication and consultative processes to ensure that all contractor and sub-contractor employees are kept up to date with regard to health and safety information (e.g. Incidents and lessons learnt, leading practices, hazards, risks and control measures, etc.) And that feedback is provided promptly regarding issues and / or concerns raised;
- Participating in the project's Visible Felt Leadership (VFL) programme;
- Chairing monthly Contractor Health and Safety Meetings and attending monthly Site Health and Safety Meetings;
- Implementing programmes that encourage continual improvement and providing recognition for suggestions made by contractor and sub-contractor employees;
- Implementing the contractor's Health and Safety Management Plan and associated Safe Work Procedures;
- Acting consistently and strictly against any contractor or sub-contractor employee who transgresses a health and safety rule or requirement;
- Ensuring that an effective management of change process is in place;
- Implementing, testing and maintaining an effective Emergency Response Plan for all contractor and sub-contractor activities, and ensuring that the plan is adequately resourced;
- Ensuring that workplace exposure of contractor and sub-contractor employees to hazardous substances or agents is measured and monitored to determine the effectiveness of controls and compliance with legal (and project) requirements;
- Ensuring that all incidents are reported without delay and are investigated thoroughly;
- Participating in investigations into significant incidents;
- Ensuring that accurate health and safety statistics are maintained, and that health and safety performance reports are compiled as required;
- Providing the necessary resources for regular health and safety audits and inspections to be conducted, and supporting the auditing process;
- Participating in health and safety audits, and carrying out workplace inspections;



- Ensuring that corrective actions (arising from incident investigations, audits, inspections, etc.) Are implemented, and that adequate resources are provided for this purpose; and
- Participating in an annual review of the contractor's Health and Safety Management System.

## 10.2 Contractor Health and Safety Officers

The contractor must appoint a full-time Health and Safety Officer for the duration of the contract who is registered with the SACPCMP (The South African Council for Project Construction Management Professions). The project site(s) (directly or through sub-contractors), must at least appoint two full-time Health and Safety Officers depending on the scope, complexity, budget and high risk activities involved, as required by the Construction regulations of 2014, regulation 7(2)(c).

The Health and Safety Officer must be on site when work commences at the start of the day and must remain on site until all activities for that day (including the activities of sub-contractors) have been completed. A Health and Safety Officer must be present during all shifts, so if work is carried out over more than one shift per day, the contractor must make provision for an additional Health and Safety Officer.

Each Contractor Health and Safety Officer shall be responsible for:

- Reviewing all applicable legal and project health and safety requirements and providing guidance to contractor and sub-contractor personnel (particularly the contractor's Project Manager) to help ensure compliance at all times;
- Assisting with the implementation of effective hazard identification and risk management processes for all work to be carried out by the contractor;
- Participating in the Baseline Risk Assessment for the contractor's scope of work (prior to site establishment) and ensuring that identified control measures are implemented;
- Participating in all Task-Based Risk Assessments conducted for the work to be carried out by the contractor and ensuring that identified control measures are implemented;
- Conducting contractor health and safety induction training for all contractor and sub-contractor personnel;
- Compiling and maintaining all health and safety related documents and records required of the contractor;
- Communicating relevant health and safety information to contractor and sub-contractor personnel (e.g. Incidents and lessons learnt, leading practices, hazards, risks and control measures, etc.);
- Carrying out Safety Observations and Coaching (one per day);
- Evaluating (on a daily basis) the content of the Daily Safe Task Instructions (DSTI's) conducted by the contractor's appointed supervisors, and attending at least one DSTI each day;
- Attending monthly Contractor and Site Health and Safety Meetings;
- Assisting with the implementation of the contractor's Health and Safety Management Plan and associated Safe Work Procedures;
- Carrying out Planned Task Observations on an ad hoc basis;
- Assisting with the implementation, testing and maintenance of an effective Emergency Response Plan for all contractor and sub-contractor activities;
- Responding to workplace incidents (as appropriate);



- Participating in incident investigations;
- Maintaining accurate health and safety statistics (for the contractor and all sub-contractors), and compiling health and safety performance reports as required;
- Auditing the health and safety management system and workplace activities of the contractor and each sub-contractor on a monthly basis to assess compliance with the project health and safety requirements; and
- Tracking and reporting on the implementation of corrective actions (arising from incident investigations, audits, inspections, etc.).

The contractor must ensure that each Health and Safety Officer is adequately equipped to enable him to perform his duties effectively. Each Health and Safety Officer must be provided with the following:

- A computer with access to all necessary systems, including access to e-mail and the internet;
- A mobile telephone on contract or with adequate pre-paid airtime; and
- A vehicle where required or instructed by a nominated project management representative (depending on the size and location of the project site(s)).

A Health and Safety Officer must over and above the SACPCMP registration as an Officer; be computer literate, fluent in English, and must have the following minimum qualifications, training and experience:

- At least 5 years' experience as a Health and Safety Officer on construction projects;
- SAMTRAC, NEBOSH or an equivalent training course with accredited health and safety service provider as a minimum qualification ;
- Experience and appropriate training with regard to implementing and maintaining a health and safety management system compliant with national legislation or an international standard;
- Experience and appropriate training with regard to construction related hazard identification and risk management processes;
- Competence, experience and relevant training with regard to incident investigation procedures and causation analysis;
- Health and safety auditing experience and training;
- A valid First Aid certificate of competency;
- Fire prevention and protection training; and
- A valid Driving Licence (light motor vehicle).
- Registered as a Health and Safety Officer or Health and Safety Manager with SACPCMP depending on the size of the project and on the risk.

Before placing a Health and Safety Officer on the project site(s), the contractor must forward a copy of the person's CV to the nominated project management representative or to the Programme Health and Safety manager for review and acceptance. A proposed candidate may be rejected should he not meet the experience and / or qualification requirements, or due to poor work performance on previous projects.

### 10.3 Contractor Supervisors

The contractor must ensure that all project and / or construction works are supervised at all times by an adequate number of qualified, competent and appointed supervisors who have experience

in the type of work being carried out as required by Construction regulations of 2014, regulation 8(7).

No work may be carried out without an appointed supervisor being physically present in the work area and daily safety task instruction.

Each Contractor Supervisor shall be responsible for:

- Ensuring that all work carried out under his supervision is done so in accordance with the requirements of all applicable legislation, rules, standards, specifications, plans and procedures;
- Participating in Baseline and Task-Based Risk Assessments;
- Ensuring that all employees under his supervision are made aware of the hazards, risk scenarios and control measures identified in relevant risk assessments;
- Ensuring that the control measures stipulated in all relevant risk assessments are in place and are implemented fully for all work carried out under his supervision;
- Ensuring that all employees under his supervision conduct pre-task hazard assessments when necessary;
- Driving the achievement of health and safety objectives set for his team;
- Ensuring that the necessary written appointments are in place for each employee under his supervision (e.g. First aider, mobile crane operator, etc.);
- Ensuring that all employees under his supervision attend all required training;
- Ensuring that no employee carries out any work that he is not competent to perform or has not been appointed to perform;
- Identifying training needs within his team;
- Carrying out Safety Observations and Coaching (one per day);
- Conducting a weekly Toolbox Talk with his team;
- Leading a Daily Safe Task Instruction discussion with his team;
- Attending Health and Safety Meetings as required;
- Maintaining a Health and Safety Management Information Notice Board in the work area for which he is responsible;
- Recording, on a daily basis, a description of the day's activities as well as a breakdown (by occupation) of the personnel on site under his supervision (e.g. 5 bricklayers, 2 carpenters, 3 welders, 22 general workers, and 1 supervisor);
- Ensuring that all Safe Work Procedures applicable to the work carried out under his supervision are adhered to and are fully implemented;
- Maintaining discipline and taking the necessary action whenever an employee under his supervision does not adhere to a rule or requirement;
- Carrying out Planned Task Observations (one per day);
- Ensuring that emergency response procedures are understood by all employees under his supervision and that these procedures are followed in the event of an emergency;

- Reporting all incidents immediately, participating in incident investigations, communicating the lessons learnt to all employees under his supervision, and implementing corrective actions where required; and
- Carrying out workplace health and safety inspections.

Each supervisor must accept these responsibilities in writing as part of his appointment.

Each supervisor must be equipped with a mobile telephone to ensure that effective communication can be maintained for the duration of the contract.

## 10.4 Health and Safety Representatives

The team of employees on site must have a health and safety representative deployed on the project site(s), a Health and Safety Representative must be elected and appointed. Taking into consideration the number of employees deployed, the geographical area in which the work is taking place, the different work disciplines, and the shift pattern (if applicable), the contractor must ensure that an adequate number of Health and Safety Representatives (at a minimum ratio of one Health and Safety Representative per 50 employees) are elected and appointed to effectively represent all site personnel as required by the OHS Act 85 of 1993, section 17 - 18.

Each Health and Safety Representative must attend an accredited training course for health and safety representatives. The cost of this training shall be for the contractor's account.

The contractor must make the necessary allowances for the Health and Safety Representatives to carry out their duties as specified in the applicable legislation.

The contractor must ensure that an appropriate sticker is affixed to the safety helmet of each Health and Safety Representative for identification purposes.

## 10.5 First Aiders

If 10 or more employees are deployed on the project site(s), at least one trained and competent First Aider must be in place and must be appointed. Taking into consideration the number of employees deployed, the geographical area in which the work is taking place, the different work disciplines, and the shift pattern (if applicable), the contractor must ensure that an adequate number of First Aiders (at a minimum ratio of one First Aider per 50 employees) are in place and have been appointed to administer first aid treatment should this be required.

First Aid training must be done through an accredited training institution. The cost of this training shall be for the contractor's account.

The contractor must ensure that an appropriate sticker is affixed to the safety helmet of each First Aider for identification purposes.

## 10.6 Duties of Client

As per the Construction regulations of 2014, regulation 5(1) – (8) a client must—

- Prepare a baseline risk assessment for an intended construction work project;
- Prepare a suitable, sufficiently documented and coherent site specific health and safety specification for the intended construction work based on the baseline risk assessment contemplated in paragraph
- Provide the designer with the health and safety specification contemplated in paragraph (b);
- Ensure that the designer takes the prepared health and safety specification into consideration during the design stage;
- Ensure that the designer carries out all responsibilities contemplated in CR regulation 6;
- Include the health and safety specification in the tender documents;
- Ensure that potential principal contractors submitting tenders have made adequate provision for the cost of health and safety measures;



- Ensure that the principal contractor to be appointed has the necessary competencies and resources to carry out the construction work safely;
- Take reasonable steps to ensure co-operation between all contractors appointed by the client to enable each of those contractors to comply with these Regulations;
- Ensure before any work commences on a site that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No. 130 of 1993);
- Appoint every principal contractor in writing for the project or part thereof on the construction site;
- Discuss and negotiate with the principal contractor the contents of the principal contractor's health and safety plan contemplated in CR regulation 7(1), and must thereafter finally approve that plan for implementation;
- Ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor;
- Take reasonable steps to ensure that each contractor's health and safety plan contemplated in
- CR Regulation 7(1)(a) is implemented and maintained;
- Ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the principal contractor and any contractor, but at least once every 30 days;
- Ensure that a copy of the health and safety audit report contemplated in paragraph (o) is provided to the principal contractor within seven days after the audit;
- Stop any contractor from executing a construction activity which poses a threat to the ensure that a copy of the health and safety audit report contemplated in paragraph (o) is provided to the principal contractor within seven days after the audit;
- Stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site;
- Where changes are brought about to the design or construction work, make sufficient health and safety information and appropriate resources available to the principal contractor to execute the work safely; and
- Ensure that the health and safety file contemplated in CR regulation 7(1) (b) is kept and maintained by the Principal contractor.

Where a client requires additional work to be performed as a result of a design change or an error in Construction due to the actions of the client, the client must ensure that sufficient safety information and appropriate additional resources are available to execute the required work safely.

Where a fatality or permanent disabling injury occurs on a construction site, the client must ensure that the contractor provides the provincial director with a report contemplated in section 24 of the Act, in accordance with regulations 8 and 9 of the General Administrative Regulations, 2013, and that the report includes the measures that the contractor intends to implement to ensure a safe construction site as far as is reasonably practicable.

Where more than one principal contractor is appointed as contemplated in sub-regulation CR 5(1) (k), the client must take reasonable steps to ensure co-operation between all principal contractors and Contractors in order to ensure compliance with these Regulations.

Where a construction work permit is required as contemplated in CR 3(1), the client must, without derogating from his or her health and safety responsibilities or liabilities, appoint

a competent person in writing as an agent to act as his or her representative, and where such an appointment is made the duties that are imposed by these Regulations upon a client, apply as far as reasonably practicable to the agent so appointed.

Where notification of construction work is required as contemplated in CR regulation 4(1), the client may, without derogating from his or her health and safety responsibilities or liabilities, appoint a competent person in writing as an agent to act as his or her representative, and where such an appointment is made the duties that are imposed by these Regulations upon a client, apply as far as reasonably practicable to the agent so appointed: Provided that, where the question arises as to whether an Agent is necessary, the decision of an inspector is decisive.

An agent contemplated in CR sub-regulations (5) and (6) must—  
 Manage the health and safety on a construction project for the client; and  
 Be registered with a statutory body approved by the Chief Inspector as qualified to perform the required functions;

When the chief inspector has approved a statutory body as contemplated in CR sub-regulation (7) (b), he or she must give notice of that approval in the Gazette.

## 10.7 Duties of the Designer

As per the Construction regulations of 2014, regulation 6(1) – (2) a designer must –

- Ensure that the applicable safety standards incorporated into these Regulations under section 44 of the Act are compiled within the design;
- Take into consideration the health and safety specification submitted by the client;
- Before the contract is put out to tender, make available in a report to the client—
- All relevant health and safety information about the design of the relevant structure that may affect the pricing of the construction work;
- The geotechnical-science aspects, where appropriate; and
- The loading that the structure is designed to withstand;
- Inform the client in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;
- When modifying the design or substituting materials; take into account the hazards relating to any subsequent maintenance of the relevant structure and must make provision in the design for that work to be performed to minimize the risk;
- When mandated by the client to do so, carry out the necessary inspections at appropriate stages to verify that the construction of the relevant structure is carried out in accordance with his design: Provided that if the designer is not so mandated, the client's appointed agent in this regard is responsible to carry out such inspections;
- When mandated stop any contractor from executing any construction work which is not in accordance with the relevant design's health and safety aspects: Provided that if the designer is not so mandated, the client's appointed agent in that regard must stop that contractor from executing that construction work;
- When mandated in his or her final inspection of the completed structure in accordance with the National Building Regulations, include the health and safety aspects of the structure as far as reasonably practicable, declare the structure safe for use, and issue a completion certificate to the client and a copy thereof to the contractor; and
- During the design stage, take cognisance of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.

The designer of temporary works must ensure that -



- All temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied;
- The designs of temporary works are done with close reference to the structural;
- The designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor;
- All drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector; and
- The loads caused by the temporary works and any imposed loads are clearly indicated in the design.

## 10.8 Duties of Principal Contractor

As per the Construction regulations of 2014, regulation 7(1) – (8) a Principal Contractor and Contractor must

- Provide and demonstrate to the client a suitable, sufficiently documented and coherent site specific health and safety plan, based on the client's documented health and safety specifications contemplated in CR 5(1)(b), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the principal contractor as work progresses;
- Open and keep on site a health and safety file, which must include all documentation required in terms of the Act and these Regulations, which must be made available on request to an inspector, the client, the client's agent or a contractor; and
- On appointing any other contractor, in order to ensure compliance with the provisions of the Act-
- Provide contractors who are tendering to perform construction work for the principal contractor, with the relevant sections of the health and safety specifications contemplated in CR regulation 5(1)(b) pertaining to the construction work which has to be performed;
- Ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process;
- Ensure that no contractor is appointed to perform construction work unless the principal contractor is reasonably satisfied that the contractor that he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely;
- Ensure prior to work commencing on the site that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer as contemplated in the Compensation for Occupational Injuries and Diseases Act, 1993;
- Appoint each contractor in writing for the part of the project on the construction site
- Ensure that a copy of his or her health and safety plan contemplated in paragraph (a),
- As well as the contractor's health and safety plan contemplated in CR 7 sub-regulation (2)(a), is available on request to an employee, an inspector, a contractor, the client or the client's agent;
- Hand over a consolidated health and safety file to the client upon completion of the construction work and must, in addition to the documentation referred to in CR 7 sub-regulation (2)(b), include a record of all drawings, designs, materials used and other similar information concerning the completed structure;
- In addition to the documentation required in the health and safety file in terms of paragraph (c)(v) and CR 7 sub-regulation (2)(b), include and make available a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being



principal contractor, the agreements between the parties and the type of work being done; and

- Ensure that all his or her employees have a valid medical certificate of fitness specific to the Construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

## 10.9 Duties of Contractor

A contractor must -

- Prior to performing any construction work provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the client's health and safety specification) and provided by the principal contractor), which plan must be applied from the date of commencement of and for the duration of the construction work and which must be reviewed and updated by the contractor as work progresses;
- Open and keep on site a health and safety file, which must include all documentation required and must be made available on request to an inspector, the client, the client's agent or the principal contractor;
- Before appointing another contractor to perform construction work be reasonably satisfied that the contractor that he or she intends to appoint has the necessary competencies and resources to perform the construction work safely;
- Co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act; and
- As far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work on the site, any person who might be affected by the work of such a person at work, or which might justify a review of the health and safety plan.

Where a contractor appoints another contractor to perform construction work, the duties that apply to the principal contractor apply to the contractor as if he or she were the principal contractor.

A contractor must take reasonable steps to ensure co-operation between all contractors appointed by the principal contractor to enable each of those contractors to comply with these Regulations.

No contractor may allow or permit any employee or person to enter any site, unless that employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

A contractor must ensure that all visitors to a construction site undergo health and safety induction training pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor;

A contractor must ensure that all his or her employees have a valid medical certificate of fitness specific to the construction work to be performed and issued by an occupational health practitioner in the form of Annexure 3.

### **10.10 Management and supervision of Construction work**

A principal contractor must in writing appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the construction manager an alternate must be appointed by the principal contractor.

A principal contractor must upon having considered the size of the project, in writing appoint one or more assistant construction managers for different sections thereof: Provided that the designation of any such person does not relieve the construction manager of any personal accountability for failing in his or her management duties in terms of this regulation.

Where the construction manager has not appointed assistant construction managers as in the opinion of an inspector, a sufficient number of such assistant construction managers have not been appointed, that inspector must direct the construction manager in writing to appoint the number of assistant construction managers indicated by the inspector,

No construction manager appointed may manage any construction work on or in any construction site other than the site in respect of which he or she has been appointed.

A contractor must, after consultation with the client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on the site: Provided that, where the question arises as to whether a construction health and safety officer is necessary, the decision of an inspector is decisive.

No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor

A construction manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site.

A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor and every such employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor: Provided that the designation of any such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties in terms of this regulation.

No construction supervisor appointed under may supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that if a sufficient number of competent employees have been appropriately designated on all the relevant construction sites, the appointed construction supervisor may supervise more than one site.

### **10.11 Construction Health and Safety Agent**

A Construction Health and Safety Agent, based on their experience, knowledge and capabilities, as prescribed in the registration requirements for the Construction Health





and Safety Agent. A person will obtain registration once they have submitted the required documentation and met the registration criteria in full.

Construction Health and Safety Agent an applicant must provide proof of:

- Recognized and appropriate health and safety qualifications
- Relevant experience in the health and safety industry, with specific detail on construction experience
- Knowledge, skill and experience by attending and passing a professional interview
- Registration letter with SACPCMP

A Construction Health and Safety Agent is required to comply with the Continuing Professional Development (CPD) Policy Framework. A Construction Health and Safety Agent shall be expected to demonstrate detailed knowledge of health and safety requirements at all levels, with the capability to design, compile, implement and manage the health and safety requirements for a construction project from Initiation and Briefing to Project Close-out. A Construction Health and Safety Agent shall also be required to show ability to mentor, coach and guide Construction Health and Safety Managers and Construction Health and Safety Officers.

Construction project health and safety management systems.

A Construction Health and Safety Agent is expected to be experienced and knowledgeable in:

- Identifying and developing an appropriate health and safety legal framework for a construction project
- Principles of cause and effect analysis and its application to hazard identification and risk management on a construction project
- Identifying leading construction health and safety practice and applying such to a construction project
- Construction project health and safety risk profiling
- Designing and developing a construction project health and safety management system
- Construction project health and safety policy and standards
- Design risk management

## 10.12 Operational legal appointment letters

The contractor must ensure other legal appointment letter are compiled and be submitted with the Contractor compliance plan, below is some appointment required as per the legislation, the appointment letters varies based on the project;

- OHS Act Sec 16(2)
- Sec 17,18,19 SHE Representative
- GSR 3(4) First Aider
- GAR 9(2) Incident investigator
- GMR 2(1) Supervisor of machinery
- GMR 2(7) Assistant Supervisor of machinery
- CR 4(1)(c) Principal Contractor
- CR 8(1) Construction Manager
- CR 8(2) Assistant Construction Manager
- CR 8(7) Construction Supervisor
- CR 8(8) Assistant Supervisor of construction work
- CR 8(5) Construction Health and Safety Officer
- CR 9(1) Construction Risk Assessor

- CR 10(1)(a),(b) Fall protection plan
- Developer
- CR 10(2)(d) Inspector of fall arrest system
- CR 14(2) Scaffolding Supervisor
- DMR 17(2),18 Inspector of lifting machinery
- CR17(8) Material hoist Inspector
- CR 19(2)(g)(i) Explosive powered tool issuer
- CR 23(1)(k) Construction vehicle and mobile plant Inspector
- CR 24(d) Temporary Electrical Installation Controller
- CR 24(e) Temporary Electrical Installation Inspector
- CR 28(a) Stacking and storage Supervisor
- CR 29(h) Fire extinguisher inspector
- EMR 8(8) Appointment for electrical installation in hazardous location- Master Electrician (Inspector)
- EIR 9 Installation Electrician appointment

## **11. Safety Agents in Project Stages**

The safety agent, must be involved in all stages of project management and take charge of all the health and safety related matters.

### **11.1 Stage 1 – Project Initiation and Briefing**

The deliverables at this stage shall include agreeing client requirements and preferences, assessing user needs and options, appointment of necessary consultants in establishing project brief, objections, priorities, constraints, assumptions and strategies in consultation with client.

Standard Services:

- Demonstrate the Construction Health and Safety Agent competency and resource;
- Assist in developing a clear construction project health and safety brief;
- Attend the construction project initiation meetings;
- Conclude the terms of the agreement with the client;
- Advise on the necessary surveys, analyses, tests and site or other investigations where such information will be required for the next stage of the project;
- Advise the client on the adequacy of health and safety competency and resources of the other consultants
- Identify construction project health and safety risk profile
- Provide necessary information within the agreed scope of the construction project to the other consultants;
- Define the Construction Health and Safety Agent scope of work and services;

### **11.2 Stage 2 – Concept and Feasibility**

Finalisation of the project concept and feasibility.

Standard Services:

- Agree the documentation programme with the principal consultant and other consultants
- Attend design and consultants meetings;
- Review and evaluate design concepts and advise on construction project health and safety in conjunction with the other consultants;

- Review, update and agree the construction project health and safety risk profile and prepare the construction health and safety policy for the construction project;
- Advise on preliminary cost estimates/budgets for construction project health and safety
- Prepare draft construction project baseline risk assessment;
- Assist the client and principal consultant in the procurement of the necessary and appropriate specialists, including a clear definition of their roles, responsibilities and liabilities;
- Advise the client on the adequacy of the health and safety competency and resources of the appropriate specialists;
- Assess and approve the appropriate specialists health and safety plans;
- Monitor the implementation of the appropriate specialists health and safety plans, including periodic audits;
- Prepare the draft construction project health and safety specification;
- Agree the format and procedures for health, safety and hygiene construction project control
- Advise and agree with the other consultants regarding their construction project health and safety requirements and related design risk management responsibilities;
- Liaise, co-operate and provide necessary information to the client/principal consultant and the other consultants;

#### Construction Health and Safety Agent Deliverables

- Updated construction project health and safety risk profile;
- Agreed construction project health and safety policy for the project;
- Draft construction project baseline risk assessment;
- Draft construction project health and safety specification;
- Record of appropriate specialists health and safety competency and resource assessments;
- Schedule of required surveys, tests and other investigations and related reports;
- Record of construction project health and safety risk communication;
- Design risk management process;
- Preliminary cost estimates/budgets for construction project health and safety;
- Approved specialists health and safety plans;
- Specialists health and safety audit reports and records;

### 11.3 Stage 3 – Design Development

Manage, coordinate and integrate the detail design development process within the project scope, time, cost and quality parameters.

#### Standard Services

- Review the documentation programme with the principal consultant and the other consultants
- Attend design and consultants meetings;
- Finalise the construction project health and safety risk profile;
- Advise designers of their health and safety legal liabilities and responsibilities for constructability, maintainability and operation ability of the structure;
- Manage, co-ordinate, integrate and record the design risk management process with the other consultants in a sequence to suit the documentation programme;
- Monitor the integration of health and safety aspects for constructability, maintainability and operation ability of the structure during the design process and finalise the construction project baseline risk assessment;

- Identify and implement precautions necessary for construction project health and safety control and update the construction project tender health and safety specifications;
- Agree on a format for the health and safety file;
- Assess and approve necessary construction project health and safety plans for early works;
- Monitor the implementation of necessary construction health and safety plans, including periodic audits for early works;
- Assist the cost consultant with detailed information for initial construction project health and safety cost estimates/budgets;
- Liaise, co-operate and provide necessary construction project health and safety information to the client, principal consultant and the other consultants;
- Construction Health and Safety Agent Deliverables;
- Final construction project health and safety risk profile
- Record of construction project health and safety risk communication;
- Final construction project health and safety baseline risk assessment;
- Updated draft construction project health and safety specification;
- Design risk management records;
- Schedule of precautions necessary for construction project health, safety and hygiene control;
- Approved early works health and safety plans;
- Early works audit reports and records;
- Initial schedule of construction project health and safety cost estimates/budgets;
- Template for health and safety file.

#### **11.4 Stage 4 - Tender Documentation and Procurement**

The process of establishing and implementing procurement strategies and procedures, including the preparation of necessary documentation for effective and timeous execution of the project.

##### **Standard Services**

- Attend design and consultants meetings;
- Assist in developing a clear construction project health and safety procurement process;
- Finalise construction project tender health and safety specifications and integrate with procurement documentation;
- Provide and record construction project health, safety, hygiene and design risk information to the principal consultant and other consultants;
- Prepare construction project health and safety documentation for submission to authorities;
- Participate in construction project tender clarification meetings;
- Assist with the evaluation of tenders and verify the contractors competencies, knowledge and resources to carry out the construction works in a safe and healthy manner;
- Assist the cost consultant in the finalisation of the construction project health and safety cost estimate/budget;
- Assist with the preparation of contract documentation for signature;
- Prepare construction project health and safety mobilisation and access plans for the construction work;
- Assess samples, mock-ups and products for construction project, structural maintainability and operability health and safety compliance.

##### **Construction Health and Safety Agent Deliverables**

- Final construction project tender health and safety specifications;

- Records of construction project health and safety procurement process;
- Construction project health and safety tender evaluation and records;
- Finalised schedule of construction project health and safety cost estimate/budget;
- Construction project health and safety contract documentation;
- Construction project health and safety mobilisation and access plans;
- Design risk management records;
- Record of construction project health and safety risk;
- Construction project health and safety documentation for authorities;
- Evaluation schedule of samples/mock-ups and products.

### 11.5 Stage 5 - Construction Documentation and Management

The management and administration of the construction contracts and processes, including the preparation and coordination of the necessary documentation to facilitate effective execution of the works

#### Standard Services

- Assess, discuss, negotiate and approve the contractor(s) construction project health and safety plans;
- Submit necessary construction health and safety documentation to authorities and facilitate permits that may be required to commence the construction work;
- Attend site handover meetings and lead construction project health and safety mobilisation and access plans;
- Attend regular site, technical and progress meetings;
- Prepare revised construction project health and safety risk profile, specifications and cost estimates/budgets where there is scope of work changes;
- Monitor the implementation of the construction project health and safety plans in accordance with the construction project health and safety specification and further scope of work changes and recommend stop work orders where necessary;
- Monitor design risk management;
- Perform incident and accident investigations where necessary;
- Audit compliance with the construction project health and safety plans and brief the project management team and contractor(s) following site audits;
- Conduct construction health and safety management system audits;
- Facilitate construction health and safety system and plans reviews for continual improvement;
- Monitor the compilation of the construction project health and safety file by the contractor(s)
- Prepare and maintain the consolidated health and safety file;
- Prepare the structure commissioning health and safety plans.

#### Construction Health and Safety Agent Deliverables

- Approved contractor(s) construction project health and safety plans, including all construction health and safety appointments;
- Permits to commence construction work;
- Record of meetings, including all construction health and safety matters to be actioned;

- Record of revised changes to the construction project health and safety risk profiles;
- Record of revised changes to the construction project health and safety specifications;
- Record of revised changes and commissioning of the construction project health and safety plans;
- Record of revised construction project health and safety cost estimate/budget;
- Records of design risk management;
- Record of construction project health and safety audit reports;
- Record of contractor(s) construction health and safety performance;
- Record of construction project health and safety work stoppage reports;
- Record of incident and accident investigations and corrective actions;
- Record of interactions with the Compensation Commissioner or similar;
- Record of construction health and safety system and plans reviews;
- Record of construction project health and safety risk communication;
- Interim health and safety file;
- Structure commissioning health and safety plans.

### **11.6 Stage 6 - Project Close - Out**

The process of managing and administering the project close out, including preparation and co – ordination of the necessary documentation to facilitate the effective operation of the project.

#### **Standard Services**

- Review, discuss and approve the health and safety file with the contractor(s) and manage the construction project health and safety during the defects liability period;
- Cancel all construction project health and safety legal appointments;
- Prepare the health and safety operations and maintenance report;
- Prepare the consolidated construction project health and safety close - out report;
- Construction Health and Safety Agent Deliverables;
- Record of audits during the defects liability period;
- Record of construction health and safety risk communication;
- Report on approved health and safety file;
- Health and safety operations and maintenance report;
- Consolidated construction project health and safety close-out report;

### **11.7 Additional Related Services**

- Provide advice to the Client on health and safety competence and resources of up to [number] proposed designers prior to arrangements being made for design work to begin.
- Prepare [number] additional copies of the health and safety file.
- Prepare [number] copies of abstracts of the health and safety file for delivery to tenants by the Client/Owner's (The contents of the abstracts to be determined in consultation with the Client/Owner's legal advisors).
- Seek the co - operation of and co – operate with anyone else involved in a construction project at an adjoining site so far as necessary to enable them to perform their duties under the Construction Regulations.
- Facilitate co – operation and co – ordination in relation to duty holders on adjoining construction sites as it may affect the project; ensuring that suitable arrangements are made and implemented for the co – ordination of health and safety measures during planning and preparation for the construction phase.



- Keep a record of the health and safety file.
- Convert the health and safety files on other projects to match Client/ Owner's electronic format.
- Carry out necessary inspections at the appropriate stages to verify that the construction of the relevant structure is carried out in accordance with the design.
- To stop any contractor from executing any construction work that is not in accordance with the relevant design's health and safety aspects.
- Assist in the development of maintenance schedules for the Client/Owners completed structure.
- Inspect the structure on behalf of the Client/Owner once every six (6) months for the first two (2) years on completion of the structure and then yearly thereafter, to ensure the structure remains safe for continued use and records are kept of such in the structures health and safety file.

## 12. Competence, Training and Awareness

Each employee (including sub-contractor employees) must be suitably trained and competent, and must understand the health and safety hazards, risks and control measures associated with his work as required by the OHS Act 85 of 1993,(14)

The contractor must implement systems and procedures to ensure that:

- The necessary competencies required by employees are identified (by occupation), along with selection, placement and any training requirements;

**Please Note: Specific competency profiles and selection criteria (fitness for work) must be developed for all roles where significant health or safety risk exists.**

**Please Note: A formal training needs analysis must be carried out based on the competency profiles and a training matrix must be developed for the project.**

Roles requiring technical certification, registration or licensing are identified and documented, and these roles are filled only by suitably qualified personnel;

- Minimum core health and safety skills required by employees in leadership and supervisory roles are identified and suitable training is provided including hazard identification and risk assessment, incident investigation, and health and safety interactions (i.e. Observation and coaching techniques);
- Competency-based training is provided and it includes operational controls (procedures and work instructions), management of change, and emergency response;
- All employees hold and maintain the required competencies (including appropriate qualifications, certificates and licences) and are under competent supervision;
- A site-specific induction and orientation programme that highlights health and safety requirements, procedures, and significant hazards, risks and associated control measures is in place for all new employees and visitors (understanding must be assessed);
- Personnel are trained and / or briefed on new or amended standards, rules, safe work procedures, risk assessments, etc.;
- Refresher training is carried out as required (e.g. Re-induction following an absence from site);
- Records of education, qualifications, training, experience and competency assessments are maintained on site for all employees; and
- The effectiveness of training is reviewed and evaluated.

Prior to the commencement of any work, including mobilisation and site set-up activities, the contractor must provide, to the satisfaction of the nominated project management representative, current documentation verifying that the contractor's employees, as well as the employees of any appointed sub-contractors, are competent and have the necessary qualifications, certificates, licences, job skills, training and experience (as required by this specification and applicable legislation) to safely carry out the work that is to be performed.

The Contractor and sub-contractor must ensure that the following training takes place:

- health and safety induction training pertaining to the hazards prevalent on the site at the time of entry
- training for all persons required to erect, move or dismantle temporary works structures and instruction to perform those operations safely
- training of employees working from a fall risk position
- training to work or to be suspended on a platform which includes at least:
  - how to access and egress the suspended platform safely;
  - how to correctly operate the controls and safety devices of the equipment;
  - information on the dangers related to the misuse of safety devices; and
  - information on the procedures to be followed in the case of-
    - o an emergency;
    - o the malfunctioning of equipment; and
    - o the discovery of a suspected defect in the equipment;
    - o an instructions on the proper use of body harnesses.
- Training for all operators of construction vehicles and mobile plant.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor;

**Please Note: Only certified copies of certificates, licences, etc. Will be accepted.**

An Employee Profile (dossier) must be completed for each employee who will be performing work on site. All documentation pertaining to an employee's competence (i.e. certified copies of qualifications, certificates and licences as well as proof of job skills, training and experience) must be maintained in this dossier.

If it is determined through observation that an employee is not yet competent to carry out a particular task in a safe and capable manner, the employee will be required to cease work immediately and must either be reassigned or be retrained at the contractor's expense.

The contractor must provide proof that the training institutions and trainers that are used are appropriately registered with a governing authority (a trainer's registration certificate or registration number alone will not be adequate). The following must be made available for verification purposes:

- Proof of registration of the training institution including the training programmes that the institution is accredited to provide; and



- For each trainer, proof of competency and registration for the specific training programmes presented.

Foreign qualifications held by employees in health and safety critical roles must be verified against the requirements of local legislation.

## 12.1 Induction Training

Each employee must attend all mandatory Induction Training applicable to the project. No employee will be permitted to enter any project work site until he has attended this training. Each employee must carry proof that he has completed the induction training and may be removed from a site if such proof cannot be produced on request, this as required by the Construction regulations of 2014, regulation 7(5).

Furthermore, employees must attend (where applicable) Area-Specific Training pertaining to the particular hazards identified in the area(s) where the employees will be working. No employee will be permitted to enter a work area until he has attended the relevant area-specific training.

All visitors must receive a visitor induction briefing before entering any project work site. However, this induction does not permit a visitor to enter a site unescorted. Visitors must be accompanied at all times by an appropriately senior employee who has been fully inducted.

## 12.2 Specific Training and Competency Requirements

The following specific training and competency requirements must be complied with.

**Please Note:** An employee must be trained, assessed and found competent before he will be given authorisation to perform certain tasks or fill certain roles.

**Table 11-1: Specific Training and Competency Requirements**

Training	Applicable To
Health and Safety Induction	All employees
Safety Observations and Coaching (Safety Interactions)	All employees
Risk Assessment	All managers and supervisors
Incident Investigation	All managers and supervisors
Safety Leadership	All managers and supervisors
Legal Liability*	All managers and supervisors
Health and Safety Rep*	All elected Health and Safety Representatives
First Aid Levels 1, 2 and 3*	All nominated First Aiders
Fire Fighting (Fire Extinguisher Use)*	All employees
Working at Height*	All employees using a safety harness
Confined Spaces	All Confined Space Entry Officers and Standby Persons
Permit to Work	All Authorised Persons (i.e. Permit issuers) and all Applicants (i.e. Employees who will be applying for permits)
Isolation and Lockout	All Authorised Persons (i.e. Persons who authorise work that requires Isolation and Lockout), all Isolation Officers, and all Applicants (i.e. Persons who request permission to work on systems or equipment requiring Isolation and Lockout)

Training	Applicable To
Defensive Driving*	All drivers of light motor vehicles (for work purposes)
Gravel Road Driving*	All drivers of light motor vehicles driven on gravel roads (for work purposes)
Off Road Driving*	All drivers of four-wheel drive vehicles driven off road (for work purposes)
Mobile Equipment Site Licence	All mobile equipment operators

Training requirements marked with an \* must be arranged through accredited external training institutions by the contractor. All other training will be provided by Transnet.

### 13. Communication, Participation and Consultation

The contractor must establish and maintain effective communication and consultative processes (allowing for a two-way dialogue) for the duration of the project to ensure that:

- All personnel are kept up to date with regard to health and safety matters (e.g. Hazards and risks, incidents and lessons learnt, leading practices, performance against objectives, etc.);
- General health and safety awareness levels are kept high;
- Prompt feedback is given to personnel with regard to health and safety issues or concerns that they raise; and
- Relevant, and often critical, health and safety related information (e.g. Design changes, instructions, reporting of hazardous conditions or situations, etc.) Is effectively disseminated.

This must be achieved as follows:

conditions.

#### 13.1 Toolbox Talks

The contractor must prepare a Toolbox Talk on a weekly basis and must share it with all personnel for which the contractor is responsible (including all sub-contractors). Toolbox Talks must address health and safety issues that are relevant to the work performed on the project site(s) and must include information and / or knowledge sharing, lessons learnt from incidents that have occurred, information concerning specific hazards and / or risks and control measures to prevent injury, etc.

Attendance records must be kept and maintained in the contractor's health and safety file.

#### 13.2 Daily Safe Task Instructions (DSTI's)

A Daily Safe Task Instruction (DSTI) is a pre-start discussion amongst the members of a work team, led by the appointed supervisor, aimed at anticipating hazards and potential risks associated with the activities planned for the day or shift, and ensuring that the necessary control measures are in place to prevent incidents.

At the start of each day or shift, prior to the start of any work, each appointed supervisor must inspect the work area for which he is responsible and ensure that it is safe. He must then conduct a DSTI with his work team specifically concerning the tasks that they will be performing during the course of the day or shift. The relevant Task-Based Risk Assessment for the activity must be used as the basis for the discussion. The correct work method must be reiterated and the identified hazards, risks and control measures must be

discussed with the team (each team member must be given the opportunity to contribute and participate in the discussion).

Any team member arriving late must first be taken through the information that was discussed (work method, hazards, risks and control measures) before being permitted to start working. If the work method changes after activities have already begun, the DSTI must be revisited and updated with the team, and the changes must be signed off by the relevant Contractor Health and Safety Officer.

Every member of the work team must sign the DSTI attendance register. The attendance records must be kept and maintained in the contractor's health and safety file.

The contractor's Health and Safety Officer must evaluate the content of the DSTI's daily to ensure that they are task-specific. Furthermore, the Health and Safety Officer must attend at least one DSTI per day prior to the start of work. The Health and Safety Officer may not lead the DSTI discussions, as this is the responsibility of the appointed supervisor.

### **13.3 Suggestions**

All employees must be encouraged to submit suggestions to enhance health and safety management on the project site(s). A process must be in place for documenting, evaluating, implementing (as appropriate), archiving and recognising the improvement ideas.

### **13.4 Meetings**

#### **13.5.1 Contractor health and safety (OHS Act Section 19)**

The contractor must schedule and consistently hold monthly health and safety meetings. These meetings must be chaired by the contractor's Project Manager and the following persons must be in attendance:

- Contractor and sub-contractor management representatives;
- Contractor and sub-contractor supervisors;
- Contractor and sub-contractor appointed Health and Safety (Employee) Representatives;
- Contractor and sub-contractor Health and Safety Officers; and
- The relevant Project Health and Safety Advisor.

The meeting must address the following as a minimum:

- New incidents for the period and corrective actions taken or to be taken;
- Implementation status of outstanding actions associated with previous incidents;
- SOC's, PTO's and DSTI's carried out for the period and action required to correct trends identified;
- Results of any audits, inspections (including H&S Rep inspections) or site visits carried out;
- A look ahead to ensure that appropriate health and safety planning and preparation is done for upcoming work;
- Risk Assessments, Safe Work Procedures, etc. That are outstanding or due for review (as well as the quality of these documents); and
- Any other health and safety related matter.

The contractor must compile minutes of each meeting and attendance records must be kept. These records must be maintained in the contractor's health and safety file.

#### **13.5.2 Site Meetings**

In addition to the Contractor Meetings, the Project will schedule monthly Site Meetings that the contractor must attend. These meetings will be chaired by the Contract Manager and the following persons must be in attendance:

- Contractor management representatives;
- Contractor Health and Safety Officers;
- Contractor Environmental Officer
- Contractor Quality Management
- The Project Health and Safety Manager;
- Project Health and Safety Advisors; and
- Client representatives (ad hoc).

The meeting will address the following as a minimum:

- Feedback from the contractor concerning health and safety performance for the period;
- New incidents for the period and corrective actions taken or to be taken;
- Implementation status of outstanding actions associated with previous incidents;
- SOC's, PTO's and DSTI's carried out for the period and action required to correct trends identified;
- Results of any audits, inspections or site visits carried out;
- A look ahead to ensure that appropriate health and safety planning and preparation Is done for upcoming work;
- Risk Assessments, Safe Work Procedures, etc. That are outstanding or due for review (as well as the quality of these documents); and
- Any other health and safety related matter.

### **13.5 Performance Boards**

The contractor must provide and maintain a Performance Board to be approved by the nominated project management representative and to be positioned at the entrance to the contractor's site office area. This board must display the following information as a minimum:

- The contractor's logo;
- Current manpower (heads) on site;
- Man-hours worked for the current month and project to date;
- Lost Time Injury Frequency Rate (LTIFR);
- Dates of last injuries (FAI, MTI and LTI);
- Number of hours worked since the last recorded LTI; and
- Names and contact telephone numbers for the appointed Project Manager and the Health and Safety Officers.

### **13.6 Management Information Notice Boards**

The contractor must provide, for each appointed supervisor, a portable Health and Safety Management Information Notice Board to be placed in the work area. The following information and documentation, as a minimum, must be posted on these boards:

- The relevant Method Statements, Risk Assessments and Safe Work Procedures for the work that is being performed that day;
- The DSTI for the day;
- The most recent Toolbox Talk;
- Where applicable, all required permits and permissions for the work that is being performed;



- Material Safety Data Sheets (MSDS's) for any chemical substances being used;
- The health and safety objectives for the work team;
- Details of the last incident involving the work team;
- The most recent weekly health and safety report (refer to Section 20);
- Emergency procedures;
- A site plan indicating evacuation routes and emergency assembly point locations;
- First Aider names and contact telephone numbers; and
- The appointed supervisor's contact details.

### **13.7 Involvement (Other)**

The participation of all contractor (and sub-contractor) employees in activities that promote improvements in health and safety performance must be encouraged. In particular, this must include their appropriate involvement in:

- Hazard identification, risk analysis and determining control measures;
- Incident investigation; and
- Reviewing policy and objectives.

All regulations, instructions, signage, etc. Must be communicated in a language understood by all employees.

Health and safety personnel must be actively involved in planning activities so that they have the opportunity to highlight hazards and risks associated with upcoming work well in advance to ensure sufficient time to arrange and / or implement the necessary control measures.

## **14. Documentation and Document Control**

The contractor must develop and maintain project-specific documentation required for the effective management of health and safety on the project.

All documents related to the contractor's health and safety management system must be effectively controlled.

The document control process must:

- Provide for the review, revision and version control of documents;
- Uniquely identify documents (as appropriate) to control their use and function;
- Require approval of the documents for adequacy prior to issue;
- Clearly identify changes and record the status of any revisions to documents; and
- Provide for the effective distribution of documents to, and where necessary the timely removal of obsolete documents from, all points of issue and use.

The contractor must establish a process for the systematic control of health and safety records and related data. Controls must be in place for the creation, receipt, secure storage, maintenance, accessing, use and disposal of such records and data.

Each record must be legible, identifiable and traceable, and must contain adequate information and data for its purpose.

The confidentiality and security of records and data must be maintained in a manner that is appropriate for the nature of the records and data, and in accordance with any applicable data or privacy protection legislation.

Personal information originating

From medical surveillance and occupational hygiene monitoring must be reported in a form that respects the privacy of the individual, but enables management to fulfil their

duty of care obligations to employees. The names of individuals must not be disclosed without their written authorisation.

Retention periods for all records (based on legal requirements and / or knowledge preservation considerations) must be established and documented in accordance with applicable legislation.

## 14.1 Contractor compliance File Requirements

The contractor must compile and maintain a file containing all necessary compliance related documentation. The client should provide construction work permit and to be kept on site at all times. The contents of the file will be audited by a Project SHE Advisor on a monthly basis.

Required documentation includes, but is not limited to, the following:

- Letter of Good Standing from the Workman's Compensation Commissioner (where applicable) must have dol stamp;
- Proof of Public Liability Insurance;
- Scope of Work under the contract;
- List of Contacts and their Telephone Numbers;
- Health and Safety Policy;
- SHE Management Plan;
- Legal Register;
- Organisational Chart for the project;
- Appointment Letters (appointment of the contracting company, and appointments for all persons with health and safety related responsibilities);
- Notifications to the relevant authorities that construction work is in progress;
- Baseline and Task-Based Risk Assessments;
- Health and Safety Objectives, and associated Improvement Action Plans;
- Safe Work Procedures, Work Instructions and Work Method Statements;
- Planned Task Observations;
- Fall Protection Plan (for work at height);
- A dossier (Equipment Profile) for each fuel-driven vehicle or machine;
- Inspection Registers, Forms and Checklists (e.g. For portable electrical tools, ladders, safety harnesses, light vehicles, mobile equipment, lifting equipment and lifting tackle, first aid boxes, fire extinguishers, etc.);
- PPE Issue Registers;
- Material Safety Data Sheets;
- Emergency Response Procedures;
- Incident Records;
- A dossier (Employee Profile) for each employee containing:
- A copy of the employee's Identity Document or Passport;
- Certificate of Fitness (Pre-Employment Medical Examination);
- Proof of Induction Training;
- Other Training Records;
- Copies of Qualification Certificates and / or Certificates of Competency; and
- Copies of Licences;
- Meeting Minutes;
- HEALTH AND SAFETY Performance Reports;
- Copies of Inspection and Audit Reports; and
- Daily Safe Task Instructions (DSTI's) and Toolbox Talks.

The contractor must ensure that an equivalent file is compiled and maintained by each appointed sub-contractor.

## **15. Notification of Construction Work**

A contractor who intends to carry out any construction work other than work contemplated in CR regulation 3(1), must at least 7 days before that work is to be carried out notify the provincial director in writing in a form similar to Annexure 2 if the intended construction work will—

- include excavation work;
- include working at a height where there is risk of falling;
- include the demolition of a structure; or
- include the use of explosives to perform construction work.

A contractor who intends to carry out construction work that involves construction of a single storey dwelling for a client who is going to reside in such dwelling upon completion, must at least 7 days before that work is to be carried out notify the provincial director in writing in a form similar to Annexure 2 of the CR regulations.

## **16. Operational Control**

For project operations and activities, the contractor shall implement and maintain:

- Operational controls, as applicable to the organization and its activities;
- The organization shall integrate those operational controls into its overall OH&S Management System;
- Controls related to purchased goods, equipment and services;
- Controls related to contractors and other visitors to the workplace;
- Documented procedures, to cover situations where their absence could lead to deviations from the OH&S policy and the objectives;
- Stipulated operating criteria where their absence could lead to deviations from the OH&S policy and objectives.

### **16.1 Project-Specific SHE Standards**

For all site health and participation specific this will serve as a guideline

Project-specific SHE standards, incorporating leading practices, legal requirements, and client requirements will be developed and implemented to manage critical risks on the project.

The contractor must comply fully with the requirements of these standards.

The Safe Work Procedures required of the contractor must be aligned with the requirements of these standards.

### **16.2 Safe Work Procedures**

Procedures to be developed and maintained on site

The contractor must develop, document and implement Safe Work Procedures for all activities involving significant health or safety risk. These procedures must detail the control measures required to effectively manage the health and safety risks associated with the work activities.



Each Safe Work Procedure must be consistent with the Task-Based Risk Assessment completed for the activity.

Every person engaged in an activity for which a Safe Work Procedure has been developed must receive suitable training on the procedure.

Furthermore, the contractor must develop, document, communicate and implement formal procedures, work instructions and / or programmes for the operation, maintenance, inspection and testing of all plant and equipment (including protective systems and devices) brought onto the project site(s).

### **16.3 Management Participation and involvement CR 8**

#### **16.4 Planned Task Observations**

All contractor, management supervisors must perform Planned Task Observations (PTO's) to verify that the control measures that have been identified in Safe Work Procedures (and associated Risk Assessments) are being adhered to and are being properly implemented, and to provide guidance where deviations are noted.

Each supervisor must complete at least one PTO per day involving one or more employees in his work team.

When an unsafe act or condition is identified, the supervisor must coach the work team to correct the act or condition in line with the Safe Work Procedure.

Where valid changes to the work method are identified, the supervisor must ensure that the Safe Work Procedure and Risk Assessment are updated to reflect the current practice.

Project representatives will carry out PTO's on contractor employees on an ad hoc basis. Should deviations from the contractor's Safe Work Procedures be observed, the work may be stopped until these deviations are rectified.

#### **16.5 General Rules of Conduct**

All persons are required to conform to the following rules of conduct while on the site.

The following acts are prohibited:

- Engaging in practical jokes, horseplay, scuffling, wrestling, fighting, or gambling;
- Assault, intimidation, or abuse of any person;
- Insubordination towards any supervisor or manager;
- Refusing to carry out a reasonable and lawful instruction concerning health and safety;
- Entry into any restricted area (including barricaded areas), unless authorised to do so by the responsible person;
- Unauthorised use / operation of any equipment or machinery;
- Negligently, carelessly or wilfully causing damage to any property;
- Destroying or tampering with safety devices, signs, or signals;
- The use of water from fire hydrants or hose reels for any purpose other than extinguishing a fire;
- The wilful and unnecessary discharging of fire extinguishers;
- Refusing to give evidence or deliberately making false statements during incident investigations;
- Bringing alcohol, drugs, or any other intoxicating substance onto site;
- Bringing a firearm, ammunition, or any other offensive weapon onto site;
- Bringing animals onto site;
- Running, except in an emergency;
- The use of an ipod (or similar) whilst working on site;



- Sleeping on the job;
- Building fires on site, unless in a suitably constructed barbequing facility; and
- Pouring / pumping / flushing any substance (chemical / hydrocarbon / waste water) into a storm water drain, onto bare soil, or into any area where the substance is not effectively contained.

Any of the above actions may result in the temporary or permanent removal of the offending person(s) from site, as well as possible prosecution. The decision of the nominated project management representative shall be final and binding in respect of any dispute that may arise from the interpretation of these requirements.

Transnet will not get involved in contractor disciplinary rules and procedures. The contractor will simply be informed (with reasons) that the offending employee(s) will be denied access to the project site. Once the contractor has been informed, the employee(s) must be removed from the site immediately.

## 16.6 Site Access

The contractor may not hire any security services for the project site unless authorisation has been obtained in writing from a nominated project management representative.

### 16.6.1 Access Control

The contractor must comply with all access control, procedures and systems applicable to the project site.

Failure to comply with these requirements will be viewed as a serious safety breach and may result in the permanent removal of the individual(s) / contracting company from site or suspension without payment.

Access will be controlled as follows:

- The access will be strictly controlled and managed
- Contract period access – an access card valid for the full contract period will be issued to an individual once the following requirements have been met:
  - ♦ Completion of a pre-employment medical examination;
  - ♦ Completion of all required project induction training;
  - ♦ Completion of special training / licensing if applicable (e.g. Driving/operating Licence); and
  - ♦ Provision of proof of job / trade-specific qualifications, licences, training,

Experience and competency (as required).

**Note:** No access card will be issued unless proof of identification is provided (i.e. an identity document or a valid passport). For foreign labour, an access card will only be issued if a valid work visa is produced.

**Note:** A driving licence will not be accepted as proof of identification.

### 16.6.2 Trespassing

The contractor must ensure that no employee (including sub-contractor employees) trespasses on any land lying beyond the boundaries of the project site.

If instructed by a nominated project management representative to do so, the contractor must remove any employee who fails to comply with this requirement from the project.

The contractor's activities must be confined to the specified construction areas, and access to these areas may only be by means of specified routes.

All required barricading (fencing) must be erected and maintained by the contractor.

### 16.6.3 Visitors

Visitors (including reps and suppliers) must be advised in advance of the mandatory Personal Protective Equipment (PPE) requirements for the site, and must arrive with all of this PPE.

Upon arrival, all visitors must report to the Security Office where they must sign in.

All visitors must undergo a visitor induction briefing before entering the site.

A visitor access card will be issued to each visitor on conclusion of the induction briefing.

Whilst on site, visitors must be accompanied at all times by an appropriately senior employee who has been inducted fully. The visitor(s) must be met at the Security Office, and when the visit is over, must be escorted back to the Security Office.

When leaving the site, each visitor must return his or her visitor access card to the security personnel posted at the entrance / exit. A visitor will not be permitted to leave the site until he or she produces the access card that was issued.

**Note:** Visitors are not permitted to perform any work on site.

**Note:** Any request (typically made by a government official) to carry out a site inspection must be referred to the nominated project management representative. The contractor must not arrange any such inspection without prior approval from the nominated project management representative.

### 16.6.4 Alcohol, Drugs and Other Intoxicating Substances

The contractor must ensure that all personnel under his authority do not at any time enter the site or perform any work whilst under the influence of alcohol, a drug, or any other intoxicating substance.

Selling or possessing drugs, alcoholic beverages or any other intoxicating substance on the site is strictly prohibited.

A drugs and alcohol testing program will be implemented. Persons entering the site will be randomly tested. Any person who tests positive for alcohol or drug consumption will be subject to disciplinary action and shall be permanently removed from the site.

Any person have the opportunity to rather report that he/she is under the influence before accessing the project site – in these case the employee may only be send home for the day by the responsible project manager representative but will then be tested for the following five days (each day) on his return to the project site. If it is found that the same person is frequently reporting that he/she is under the influence before even accessing the project site. It shall be the responsibility of the nominated project management representative to take disciplinary action and remove such a person's form the project site.

Should the actions and / or demeanour of an employee suggest possible narcosis or drunkenness, the employee must be removed from the site. This may be done without testing.

**Note:** All personnel involved in an incident / accident must immediately be subjected to an alcohol test and a drug test as part of the investigation.

### 16.6.5 Firearms, Ammunition and Offensive Weapons

Firearms, ammunition, and offensive weapons of any kind are strictly prohibited. No person may enter /shall not be permitted to enter the site carrying any such item.

#### **16.6.6 Vehicles**

All vehicles brought onto site must meet the safety requirements stipulated in Section 14.6.

Each vehicle to be used on site must be inspected and approved by the nominated project management representative before a site access permit will be issued for the vehicle / equipment.

No vehicle shall be permitted to enter the site unless it is duly authorised. Access permits are vehicle-specific and may not be transferred between vehicles.

The contractor must allow any vehicle that is brought onto site (including privately owned vehicles) to be searched at any time while on the premises, or when entering or leaving the premises.

The contractor is solely responsible for the safety and security of all vehicles (including private vehicles) that he brings onto the site.

All road-going vehicles used by the contractor on the site must be roadworthy and registered with the relevant traffic authority.

A vehicle will not be permitted to enter the site in an un-roadworthy condition. Access will be denied if, for example:

- The vehicle has a defective exhaust system;
- A serious oil or fuel leak is evident;
- The vehicle has unsafe bodywork or is carrying an unsafe load;
- The vehicle is fitted with extraneous or non-standard equipment;
- Passengers are not seated properly;
- The vehicle is not fitted with a seat belt for each occupant; or
- The vehicle has any obvious mechanical defect;
- Pre-inspection requirements are not met.

Overloaded vehicles will not be permitted to enter the site.

The driver / operator of any vehicle / mobile equipment must carry a copy of his appointment with him at all times. Each driver / operator must:

- Comply with all site / project rules and regulations pertaining to traffic and the safe operation of vehicles / mobile equipment;
- Obey all road signs;
- Obey all instructions given by security or emergency services personnel;
- Remain within the boundaries of the site; and
- Ensure that the vehicle that he is operating is never overloaded, and that loads are always properly secured.

In the interest of safety, only the minimum number of vehicles required by the contractor to complete the work under the contract will be permitted to enter the site.

When not in operation, the contractor's vehicles / mobile equipment must be parked within the boundaries of his lay-down area or yard.

Parking is only permitted in designated parking areas.

All cars are parked on site at the owner's risk.

In the event of a vehicle accident on site, the driver(s) must report the incident immediately and must remain at the scene until a nominated project management

representative arrives, or until a nominated project management representative authorises him to leave (unless, of course, the driver requires medical attention).

## **16.7 Mobile Equipment and Light Vehicles**

All Contractors must ensure all applicable legislation concerning mobile equipment and light vehicles are complied with at all times.

Each contractor must provide evidence to the nominated project management representative that all light vehicles and mobile equipment to be used on the project (including, but not limited to, lift and carry cranes (or mobi-lifts), mobile cranes, forklifts, mobile elevating work platforms (e.g. Cherry pickers), tractors, dozers, dump trucks, haul trucks, graders, excavators, loaders, back-actors, drill rigs, and road-going cars, light delivery vehicles, and trucks) comply with the requirements of all applicable legislation. This evidence must be provided prior to the equipment being brought onto the project site. The contractor remains responsible for meeting this requirement even if the equipment to be used is leased or provided by a sub-contractor (i.e. not owned directly by the contractor).

An Equipment Profile (dossier) must be compiled for each light vehicle and each item of mobile equipment to be used on the project site.

All mobile equipment and light vehicles (used for work purposes) must be subject to a risk assessment compiled. The assessment must:

- Involve operators and maintenance personnel who will use and work on the equipment; and
- Address all aspects of safe operation including handling, driver vision, brake failure, tyre blow out, and access and egress for operators and maintenance personnel.

Each light vehicle and each item of mobile equipment must be serviced and maintained as prescribed by the manufacturer of the vehicle or equipment.

No major repairs or services may be carried out on site.

No repairs may be carried out by a driver or operator. Only suitably qualified and competent persons may carry out repair work.

An appropriate pre-operation safety check based on a risk assessment must be carried out for each light vehicle or item of mobile equipment driven or operated for work purposes. For each vehicle or equipment type, an approved checklist must be in place (and must be used). The pre-operation check must include, but not be limited to, inspection and / or testing of the following safety critical features:

- Brakes (testing method must be provided);
- Wheels and tyres (including the spare);
- Lights and indicators;
- Steering;
- Seats and seat belts; and
- Windscreen and windows, including windscreen wipers and washers.

Should any critical feature be defective or damaged, the vehicle or equipment may not be operated until it has been fully repaired.

Supervisors must review the completed checklists on a daily basis to satisfy themselves that there are no major deficiencies that could place a driver or operator at risk.

No person may drive or operate any light vehicle or item of mobile equipment without authorisation.

All drivers and operators must be appointed in writing by the contractor's Project Manager.

No driver or operator may be appointed without proof that the individual has been trained, tested and found competent, or is currently licensed.

The appointment letter must specify the type of vehicle or equipment for which authorisation is being given and must clearly confirm that the driver or operator:

- Is 18 (eighteen) years of age or older;
- Has undergone a medical examination and has been declared fit for work by an occupational medical practitioner; and
- Has received suitable training and has been found competent, or is in possession of a valid driving licence issued by a state, provincial or civil authority that is applicable to the class of vehicle or equipment that is to be driven or operated.

The principal accountability for preventing accidents and incidents lies with the driver or operator of a light vehicle or item of mobile equipment, as he is in full control of any given situation at any given time. It must be stressed to each driver and each operator that safety is his prime responsibility – this must be clearly instructed and understood.

Drivers and operators must be empowered to stop driving or operating immediately should an unsafe condition arise, and refuse to drive or operate any light vehicle or item of mobile equipment that is defective and / or has any inoperative safety features. Similarly, a supervisor must never force a driver or operator to drive or operate a defective vehicle or item of equipment.

If a driver or operator does not adhere to the site rules and regulations, his appointment must be withdrawn and he must not be permitted to continue with his duties. If necessary, site access will be denied (either temporarily or permanently) to any driver or operator who is deemed to not be adhering to site requirements.

No person may drive or operate a light vehicle or item of mobile equipment if he suffers from a medical condition that places both him and those around him at risk of injury.

A fit-for-work policy must be in place, incorporating clearly defined maximum levels of drugs (including prescribed medication) and alcohol permitted in the system of a driver or operator.

Daily alcohol testing and random drug testing must be carried out.

Supervisors must regularly check on the physical condition of drivers and operators during the course of a shift.

A system must be in place to manage driver fatigue.

No eating or drinking is permitted while driving or operating a light vehicle or item of mobile equipment.

A mobile phone, whether hands-free or not, may only be used by the driver or operator of a light vehicle or item of mobile equipment when the vehicle or equipment is stationary and in a safe location.

Behaviour-based observations and coaching must include the operation of light vehicles and mobile equipment.

A site-specific traffic management plan must be compiled and submitted to the nominated project management representative for approval. The plan must include, but not be limited to, the following:

- Segregation of pedestrians, light vehicles, and mobile equipment where possible (using barriers where feasible);
- Systems to control the movement of mobile equipment in areas accessible to pedestrians, the movement of mobile equipment into and out of workshops, and pedestrian and light vehicle movement around mobile equipment;
- Setting of appropriate speed limits for vehicle types, road surfaces and environmental conditions;
- Installation and maintenance of road traffic control signs;
- Right-of-way rules (including overtaking restrictions);
- Overtaking protocols;
- Clear communication protocols for interactions between all vehicles and equipment;
- Procedures for light vehicles and / or mobile equipment entering hazardous or restricted areas;
- Standards for safe following distances based on operational circumstances, environmental conditions and near sight (blind spot) limitations of mobile equipment;
- The minimum safe distance to be maintained between light vehicles and mobile equipment (i.e. 50 metres unless positive contact is made);
- Designated parking areas for mobile equipment and light vehicles, including parking associated with maintenance areas;
- Parking procedures (e.g. Safe parking distances, safe parking locations, requirements for reverse parking, etc.);
- Systems to control approaching, refuelling, parking, boarding and disembarking mobile equipment (a driver or operator must exit the cabin and must disembark the vehicle or equipment entirely when his direct involvement with maintenance or servicing is not required);
- Guidelines for abnormal road conditions (e.g. Heavy rain, fog, or high winds) providing "go / no go" criteria and contact details for the person(s) responsible for making the "go / no go" decisions;
- Truck loading and unloading procedures to avoid material or objects falling from the vehicle;
- Guidelines for wide or abnormal loads including offsite transport; and
- Systems to control mobile equipment use in the vicinity of overhead power lines.

The design and layout of the road system (including entrance and exit points, intersections and other potential points of interaction between pedestrians, light vehicles and mobile equipment) must be reviewed periodically.

A risk assessment must be carried out prior to any changes being made to traffic movements or road systems.

Designated walkways (both indoors and outdoors) must be provided for pedestrians, and pedestrians must make use of these walkways. Good lighting must be provided along all walkways, particularly at road junctions. Wherever possible, rigid barricading must be used to separate pedestrians from moving light vehicles and / or mobile equipment.

No pedestrians are permitted on haul roads (or as far as this can reasonably be achieved in situations where a haul road runs through an area occupied by a local community). All personnel must be transported to site and must be dropped off at a designated area.



Controls must be in place to ensure the safety of people working on roads, including those working on broken-down vehicles.

High visibility clothing must be worn by all persons at all times whilst on the project site. Speed limits and traffic rules must be reviewed regularly and must be rigorously enforced. Local traffic rules must be complied with at all times.

Pedestrians and cyclists must give way to light vehicles and / or mobile equipment except at pedestrian crossings.

All light vehicles and mobile equipment must give way to emergency vehicles. Pedestrians and light vehicle drivers must be made aware of the blind spots associated with mobile equipment.

The driver or operator of a light vehicle or item of mobile equipment must stop the vehicle or equipment and sound the horn before proceeding at blind corners, where his view of the path or intended path is obstructed, and when entering or leaving a building. Whenever a light vehicle or item of mobile equipment is stopped or parked, the handbrake (if applicable) must be applied.

Measures (such as chocking or the use of ditches or trenches) must be in place for the immobilisation of parked mobile equipment.

A parked light vehicle must be chocked in situations where the vehicle would roll forwards or backwards if placed in neutral with the handbrake disengaged.

No light vehicle or item of mobile equipment may be left unattended with the engine running or with a key in the ignition.

No light vehicle or item of mobile equipment may be parked so as to cause an obstruction to any roadway, passage or access way.

No light vehicle or item of mobile equipment may be parked within 50 metres of a loading or off-loading point.

Light vehicles and mobile equipment must be loaded safely. All loads must be secure and must be within the load limit of the vehicle or equipment. A load must be properly secured before the vehicle or equipment is set in motion. Adequate precautions must be taken for any overhanging load.

No unauthorised light vehicle or item of mobile equipment may enter a restricted area or building.

### **16.7.1 Light Vehicles**

All Contractors must ensure that Light vehicles have the following minimum safety features:

- Fixed seats and suitable seat (safety) belts for all occupants (i.e. Driver and all passengers);
- Roll-over protection for all vehicles intended to be driven on dirt or steep roads;
- Cargo barriers and load restraints for all vehicles designed for carrying loads (other than passengers), or that are unable to have cargo separated from the occupant-carrying space of the vehicle; and
- An air bag on the driver's side, and where available as a manufacturer fitted item, a passenger's air bag;
- A Reverse Alarm.

All Contractors must ensure that Light vehicles that interact with mobile equipment are equipped or fitted with:

- Systems that enable positive communication with the equipment operators (e.g. A two-way radio);
- A high visibility flag (e.g. A whip flag or buggy whip);
- An amber flashing light (revolving or strobe);
- Reflective taping; and
- High visibility signage (i.e. Vehicle call numbers) facilitating easy and positive identification from a reasonable distance.

**Note:** Call number signs and reflective tape (magnetic or adhesive) must be applied to the front, back and sides of each vehicle.

All Contractors must ensure that Light vehicles carry:

- Emergency roadside triangles or beacons (three of either);
- Chock blocks for preventing uncontrolled movement of the vehicle when parked;
- A flashlight;
- A fire extinguisher (2.5kg DCP);
- A first aid kit; and
- Survival or emergency equipment (e.g. a vehicle recovery kit) suitable for the operating environment.

A change management process must accompany all vehicle modifications, including the attachment of any equipment. Examples of changes or modifications include, but are not limited to, any change or modification:

- Made to the overall structure or design of the vehicle body;
- Made to the original manufacturer-fitted type of tyres or wheels;
- Made to the suspension system of the vehicle;
- Made to the mechanical system of the vehicle;
- That may adversely alter the centre of gravity of the vehicle;
- That alters the load carrying capacity of the vehicle; and
- That may affect the ability of the vehicle to withstand a crash (e.g. the fitment of a "bull bar").

Vehicle selection must be based on a risk assessment where consideration is given to the tasks, the application, the environment, roll-over protection and the rating of sturdiness in the event of a crash.

All Contractors must have a formal inspection and preventative maintenance system in place to ensure that vehicles are maintained in a safe and roadworthy condition at all times and, as a minimum, are serviced in line with the vehicle manufacturer's service schedule.

Should any safety critical feature be defective or damaged, the vehicle must be withdrawn from service until it has been fully repaired. Inspection and maintenance must be undertaken on critical features such as:

- Wheels and tyres (including the spare);
- Steering, suspension and braking systems;
- Seats and seat belts;
- Lights, indicators and reflectors;
- Windscreen and windows, including windscreen wipers and washers;



- The vehicle structure itself; and
- Other safety-related items on the vehicle body, chassis or engine, including instrumentation.

Persons may only be transported in vehicles equipped with manufacturer fitted or approved seats and seat belts.

Seat belts must be worn by all occupants of a light vehicle (i.e. the driver and all passengers) at all times.

Only the driver and one passenger are permitted in the cab (front) of a light delivery vehicle.

No personnel may be transported in the load-bin of a light delivery vehicle, even if the vehicle is fitted with a canopy. Only tools and equipment may be transported in the load-bin. Furthermore, no persons may be transported in a trailer behind a vehicle.

A pre-operation vehicle safety check and familiarisation system must be in place and must be used by the driver. An approved checklist must be used. All vehicle faults that are recorded must be attended to immediately.

All Contractors must have systems in place to ensure that risks associated with vehicle journeys are managed and controlled. The systems must include, but not be limited to:

- Formulation of journey management plans prior to the commencement of new or changed travel activities;
- Identification and monitoring of the risks associated with the various routes, intersections, etc. In order to minimise the overall exposure;
- Assessment and communication of changed environmental and road conditions at the time of travel;
- Outlining of actions required in the event of an emergency (e.g. Collision or breakdown); and
- Provision to manage driver fatigue.

Light vehicle running lights (low-beam headlights) must be switched on at all times when the vehicle is in operation.

All Contractors must have a system in place to ensure that drivers receive adequate training to ensure that the vehicle intended to be operated or driven can be operated or driven safely. As a minimum, training must include:

- Behaviour-based defensive driving principles;
- Vehicle familiarisation, taking into account the handling dynamics of the vehicle, maximum number of passengers, load limits and various features;
- Loading and restraining principles where the vehicle to be operated is designed for carrying cargo loads;
- Education and awareness concerning driving and travel risks that may be encountered within the environment where the vehicle may be operated or driven, and the requirements pertaining to traffic rules and speed limits;
- Securing (locking) equipment to prevent unauthorised use;
- Emergency crash and breakdown procedures; and
- Basic mechanical principles, including how to change a tyre and perform an adequate pre-operation check.

A system must be in place to ensure that persons operating any equipment associated with a light vehicle (e.g. Vehicle-mounted cranes and winches) are suitably trained and competent.

### 16.7.2 Mobile Equipment

All Contractors must ensure that Mobile equipment have the following minimum safety specifications:

- Fixed seats and seat belts for all occupants;
- Adequate lighting, including headlights, tail, turn and brake lights, and an amber flashing light (revolving or strobe);
- An identified isolation and lockout point;
- Adequate walkways, railings, steps and grab handle combinations, and boarding facilities including an alternative path of disembarking in the event of an emergency;
- Collision-avoidance technology and / or procedures;
- A reversing alarm or warning device;
- Chock blocks for preventing uncontrolled movement of rubber-tyred equipment when parked;
- A horn;
- Effective windscreen wipers;
- Effective guarding on accessible moving parts;
- A speedometer (if the mobile equipment is capable of exceeding the lowest applicable speed limit);
- High visibility signage (i.e. Mobile equipment call numbers) facilitating easy and positive identification from a reasonable distance; and
- A security system to prevent unauthorised operation.

Mobile equipment must have the following minimum safety specifications, unless a risk assessment stipulates otherwise:

- Approved or certified roll-over protection;
- Fail-to-safe brakes;
- A fire detection and suppression system capable of being activated from both ground level and cabin level (for certain types of mobile equipment, a suitably sized fire extinguisher may be adequate);
- A non-handheld two-way radio or another form of communication;
- Falling object protection (a protective structure over the operator cabin);
- An enclosed and tight-sealing air-conditioned cabin with suitable protective glass; and
- A means of moving supplies and personal items into and out of the operator cabin that enables an operator to continuously maintain three points of contact while boarding and disembarking the equipment (e.g. A backpack or shoulder strap bag).

When purchasing or hiring equipment, the ergonomics of the cabin must be considered, specifically with regard to the seating, operator controls and retrofitted devices.

Fleet and control consistency must be considered in order to minimise the possibility of operator error when changing machines.

For all new (to site) and modified mobile equipment, a formal risk-based selection and acceptance process must be followed prior to the equipment being used on site.

Selection of equipment, and any modification, must be subject to a rigorous change management process.

An inspection and maintenance programme must be in place for all mobile equipment. A procedure and checklist system, including a brake functionality test, must be in place for pre-operation inspection by the operator. Registers must be maintained and audited, and must be kept on the machine.

Procedures must be in place to ensure that mobile equipment is only operated on sufficiently stable surfaces and on gradients that are within the limits of safe operation.

Seat belts must be used in all cases, by all occupants. Apart from the driver or operator, only an appointed flagman may be transported in mobile equipment (with the exception of buses) and **only if** the equipment is fitted with a passenger seat. No passengers are permitted on a lift and carry crane (or mobi-lift), mobile crane, forklift, mobile elevating work platform (e.g. A cherry picker), tractor, dozer, dump truck, grader, excavator, loader, back-actor, drill rig, or similar.

Risk assessments must be carried out as part of the planning process for mobile equipment operations and associated activities, and must consider the following:

- Maintenance activities;
- Risks associated with loading, unloading, towing and recovering mobile equipment; and
- The risk of fire.

Procedures must be in place for the safe isolation and lockout of mobile equipment.

Where two or more items of mobile equipment must be operated in proximity to each other, or where an item of mobile equipment must be operated in proximity to persons on foot, a risk assessment involving all persons who will be working in the area must be conducted prior to the work commencing. The risk assessment must be approved by the nominated project management representative. In such a work area:

- No item of mobile equipment may be driven to within 5 metres of another item of mobile equipment without the operator first making eye contact with, and signalling his intentions to, the other operator who must acknowledge that he understands and that it is safe to proceed.
- No person on foot may work or be positioned within 5 metres of an item of mobile equipment that is in operation. Before approaching mobile equipment on foot, a person must make eye contact with, and clearly signal his intentions to, the operator of the equipment. The operator must cease to operate the equipment, and must indicate that he understands and that it is safe to approach.

In certain circumstances (determined through risk assessment), mobile equipment may only move and operate with dedicated flagmen in place:

- Where flagmen are used, it must be ensured that the flagmen, mobile equipment operators, and all other personnel working in the vicinity of the mobile equipment, receive suitable training with regard to signals and signalling to ensure effective communication. The training must be formal and recorded, and competency must be tested.



- A flagman and the mobile equipment operator that he is directing must maintain eye contact. The flagman must never position himself where the equipment operator cannot see him.
- Should a mobile equipment operator lose sight of his flagman, he must stop his activities immediately until contact has been re-established.

A tyre management system must be in place to address issues including fire, heating, explosion, electrical contact, separations, maintenance, tyre changes, etc.

Site-specific induction must be carried out prior to a mobile equipment operator starting work on site. Area-specific induction must be carried out prior to an operator starting work in a new area on site.

Operators must report conditions and practices that do not conform to procedure.

### **16.7.3 Training and Licensing**

No person may drive a light vehicle or operate an item of mobile equipment unless he has been trained, tested and found competent, or is currently licensed to drive or operate that specific vehicle or item of equipment.

The training must address hazards and risks assessed for:

- That vehicle; and
- The tasks for which it is to be used.
- 

No person may be appointed to drive a light vehicle or operate an item of mobile equipment unless he is in possession of a valid medical certificate of fitness (issued by an occupational medical practitioner).

Each person required to drive a light vehicle or operate an item of mobile equipment on the project site must have a project-specific site licence or appointment to drive or operate that vehicle or item of equipment.

A system must be in place to ensure that the renewal of licences is based on an assessment of competency to drive and / or operate the vehicle or equipment. The frequency of assessment must either be annual, or derived from a risk assessment for each vehicle or equipment type.

No training of drivers or operators may be carried out on site unless authorised by a nominated project management representative.

Each person working on or visiting the project site must receive appropriate project-specific induction training concerning road safety and site vehicle hazards.

Driver must be in possession of valid certificate, licence and trained by an accredited service provider.

### **16.7.4 Tyre and Rim Safety**

These requirements apply to tyres and wheels and safety with a rim diameter of 60cm (24 inches) or greater.

A Tyre Management Plan must be established and reviewed every twelve months.

Safe Work Procedures must be in place for all tyre maintenance and servicing activities and for tyre fire emergency response.

All persons who will be carrying out tyre maintenance and servicing work and / or responding (potentially) to tyre fire emergencies on site must be certified against the

requirements of job-specific competency standards for the project, which must address job-specific Safe Work Procedures.

No person may approach a light vehicle or item of mobile equipment within 24 hours of:

- The vehicle or equipment being struck by lightning;
- The vehicle or equipment making contact with high voltage electricity; or
- A tyre fire.

In the event of a tyre fire, an exclusion zone of 300 metres must be established and may only be accessed by emergency services personnel who are shielded while fighting the fire.

Restricted Work Zones must be established for tyre installation, removal and handling processes.

All tyre and rim handling equipment must have fall back prevention in place prior to anyone entering the Restricted Work Zone.

Tyres with split rhealth and safety must be deflated to zero and other tyres to a nominal pressure no greater than 5psi prior to removal of any retaining devices. In a dual assembly both tyres must be deflated.

Tyre inflation is subject to the following requirements:

- All tyre inflation must be carried out remotely;
- Where the risk of ejection of components exists, barricading must be in place;
- A tyre must not be left unattended during inflation; and
- Tyres that have run at less than 80% cold inflation pressure must not be re-inflated. Both tyres in a dual assembly must be dismantled and inspected.

No hot work (e.g. Welding or cutting) may be carried out on a rim (wheel) while the rim is fitted with a tyre – whether inflated or deflated.

A periodic testing and / or inspection regime must be in place for tyres, rhealth and safety (wheels), and assemblies.

All tyres and rhealth and safety (wheels) must be made unserviceable when deemed unfit for service or before being sent off site for disposal.

A tracking system must be in place to track the lifecycle of tyres and rhealth and safety (wheels).

#### **16.7.5 Roads**

Design, inspection and maintenance requirements must be in place for all roadways.

Every haul road must have two dedicated and clearly demarcated lanes so that vehicles travelling in opposite directions are safely separated (lane demarcation is not applicable to dirt roads).

Systems (such as safety berms) must be in place along roadways and around excavations, dump areas, etc. To prevent vehicles from leaving a roadway or entering a dangerous area.

A storm water management plan must be in place for the site and, in particular, for all roads. Extreme wet weather must be considered. Contractors must ensure that all roads are equipped with drainage system.

Roads with high risks activities and traffic interface shall be controlled by trained flagman

A dust control plan must be in place for the site and, in particular, for all roads. Where required, contractors must ensure that roads are wetted (using a water cart) at regular intervals and whenever instructed by a nominated project management representative. The over-watering of roads must be prevented.

No road may be closed without permission from a nominated project management representative.

Any large rocks in a roadway must be removed immediately. Any spillage in a roadway must be cleaned up immediately.

Ground pollution (e.g. Oil, diesel or hydraulic fluid spillages) must not, and will not, be tolerated. If substances are spilled on a road or any other portion of the site, the contaminated ground must be dug out and the resulting hole back-filled with clean material which must be suitably compacted. The contaminated soil must be disposed of as required by the applicable legislation.

### **16.8 Signs and Notices**

The contractor must ensure that all required safety signs and notices are prominently displayed in accordance with the applicable legislation and good safety practice.

Signs and notices must be in English as well as any other language(s) commonly spoken on the project site.

All symbolic signs must comply with the applicable national standards.

No person may deface or damage any safety sign or notice. No person may remove or alter any safety sign or notice unless authorised to do so.

### **16.9 Machinery**

The contractor must ensure that all plant and equipment brought onto the site is:

- Appropriate for the type of work to be performed
- Approved, inspected, tested, numbered and tagged (if appropriate) before being brought onto site
- Properly maintained in accordance with the manufacturer's recommendations; and
- Placed on a register and checked at least once per month or as required by the applicable legislation.

The contractor must supply, at his cost, all items of plant and equipment necessary to perform the work and must maintain all items in good working order.

Should any plant or equipment become inoperable for a period that is having or will have a significant impact on the work schedule, the contractor must, on instruction from the nominated project management representative, remove the out of service plant or equipment and replace it with similar fully operational plant or equipment at no additional cost.

No item of plant or equipment delivered to site for use on the contract may be removed from the site prior to the completion of the contract without approval in writing from the nominated project management representative.

Items of plant or equipment brought onto site by the contractor or his sub-contractors may be inspected by a nominated project management representative. Should the nominated project management representative determine that any item is inadequate, faulty, unsafe or in any other way unsuitable for the safe and satisfactory execution of the work for which it is intended, the contractor must, on instruction from the nominated

project management representative, immediately remove the item from the site and replace it with a safe and adequate substitute. In such a case, the contractor or his sub-contractor shall not be entitled to additional payments or deadline extensions in respect of any delay caused.

### 16.10 Barricading

All applicable legislation concerning barricading must be complied with at all times.

Each contractor required to erect barricading on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard.

Barricading must be erected to:

- Prevent persons from making contact with an identified hazard;
- Provide warning of the existence of a hazard;
- Prevent unauthorised access (by people, vehicles and mobile equipment) into an area where a hazard exists or where a hazardous activity is being carried out;
- Define the boundaries of a hazardous location and / or restricted area; and
- Allow a work team to perform hazardous tasks without persons unfamiliar with the hazard(s) accessing the area.

Although not limited to these situations, barricading must be erected or installed:

- Around excavations (trenches, pits, etc.) (refer to the Excavation Standard);
- To protect openings and edges (to prevent persons from falling, all openings and edges associated with floors, stairs, and the open sides of buildings and structures during the course of construction must be protected by sturdy, rigid barriers capable of withstanding a force of at least 110 kilograms applied in any direction at any point) (refer to the Working at Heights Standard);
- To prevent access into areas where overhead work is in progress;
- To route vehicles safely through (or around) construction areas; and
- To protect members of the public who may be in the vicinity of a work or construction site (by preventing access).

In all cases, the erection of barricading must be a temporary measure. It must only remain in place until the hazard is eliminated or the potentially dangerous situation is rectified.

A barricade must present a sturdy physical barrier to entering an area. Therefore, plastic cones, post and chain systems, "danger tape" and "snow netting" will not be accepted as barricading and may only be used for the purposes of low risk demarcation.

For example, snow netting may be used for the demarcation of lay down areas.

Acceptable forms of barricading include:

- Hoarding panels (no less than one metre in height) that can be securely fastened together to form a fence line may be used. Hoarding panels may be constructed from a variety of materials (e.g. wooden board, steel sheeting, wire mesh on a steel frame, etc.)
- Wire mesh fencing (no less than one metre in height with sturdy posts spaced at intervals of no more than 3 metres) may be used in certain circumstances, e.g. Around excavations.
- Sturdy, rigid, and securely fixed (i.e. bolted, welded, clamped, etc.) Metal guard rails may be used, particularly for protecting openings, holes and edges associated with



floors, platforms, walkways, etc. The top rail must be positioned at a height of one metre above the working surface, and a mid-rail must be provided.

- Concrete Jersey barriers must be used for the routing of traffic and when work is being conducted in or alongside a roadway.

Regardless of the type of barricade used, the following requirements must be met:

- The installation, alteration and removal of barricades must be supervised by a competent person;
- The barricading must be uniformly and intelligently configured;
- The barricading must be stable, conspicuous and effective;
- The barricading must completely surround the work or hazardous area;
- General access requirements around the work or hazardous area (such as pedestrian walkways, operational access, or general thoroughfares) must be taken into consideration when erecting a barricade;
- The extent of the area that is barricaded must be kept to a minimum so as not to unnecessarily restrict access to other areas. If access routes to other areas are blocked by the barricade, alternative routes must be identified and signposted
- All barricaded areas must have properly designated points of entry and exit for persons and / or vehicles. Each pedestrian access point must be fitted with a self-closing gate. A sign indicating, "DESIGNATED ACCESS POINT – AUTHORISED PERSONNEL ONLY", must be fitted to each gate;
- Additional signage providing warning of specific hazards (e.g. falling objects, electricity, etc.) Including, "NO UNAUTHORISED ENTRY", must be attached to all gates and, where required, to the barricading itself. The signage must be visible from all angles and must be large enough to be read from a distance of 10 metres;
- Barricading must be clearly visible at all times (day and night). If necessary, flashing warning lights must be used;
- Tags must be attached to the barricading displaying the name and cell phone number of the person responsible for the barricade, and specifying the reason for the barricading and the date on which it is scheduled to be removed;
- Should a person require access to a barricaded area, authorisation must be obtained from the person responsible for the erection of the barricade. The hazards that are present and the Personal Protective Equipment that must be worn within the barricaded area must be communicated to the person seeking access;
- Each barricade must be listed in a register, and each must be inspected daily to ensure that it is still intact and that its positioning is still effective;
- All barricades must be properly maintained and repaired as required;
- When the work has been completed and the hazard has been eliminated, all barricading must be removed without delay. A barricade may not be left in place if no hazard exists;
- Before a barricade is removed (allowing general access), the area must be inspected by the person responsible for the work that was carried out, to ensure that the area is once again safe. If applicable, the person accepting the area back for general use shall do so on completion of his own safety inspection;
- Authorisation to remove (or modify) a barricade may only be granted by the person responsible for the erection of the barricade.

### 16.11 Excavations

All applicable legislation concerning excavation work must be complied with at all times.



Each contractor carrying out excavation work on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard.

All excavation work must be properly planned. Site-specific conditions and hazards must be considered, including traffic, overhead and buried utilities, proximity to nearby structures, soil properties, presence of surface and / or ground water, position of the water table, and weather conditions.

Excavation work may only be carried out under the personal supervision of a competent Excavation Supervisor who has been appointed in writing.

Before any excavation work is carried out, a Permit to Work authorising the activities must be obtained.

Similarly, no person may enter an excavation unless a Permit to Work has been issued providing authorisation for specific tasks to be carried out within the excavation.

Before issuing a Permit to Work for excavation works, the Authorised Person (i.e. Permit issuer) must verify that:

- A detailed Risk Assessment has been conducted for the work to be performed;
- A Safe Work Procedure is in place; and
- No buried services are present in the area where the excavation works are to be carried out.

As a minimum, the Risk Assessment must consider hazards and risks associated with:

- A person being trapped or buried as a result of an excavation collapsing;
- A person being struck by an object falling into an excavation;
- A person falling into an excavation;
- A person being exposed to a hazardous atmosphere within an excavation (i.e. An oxygen deficiency, explosive or flammable gases, and / or harmful concentrations of a contaminant);
- Contact with belowground services; and
- Mobile equipment and / or light vehicle movement in proximity to an excavation.

On a plan (drawing) of the work area, the contractor must accurately indicate the position and dimensions of each intended excavation in order for it to be determined whether or not buried services would (or may) be encountered, such as electrical cabling, communications cabling, gas, fuel, potable water, fire water, effluent, sewage, or storm water pipelines.

In addition to a desk top review of existing drawings, a field survey must be carried out to verify the presence or absence of buried services. The positioning of all known belowground services must be accurately demarcated in the field before any excavation work commences.

Should there be any uncertainty, a pipe or cable locator must be used to determine if buried services are present, and if so, the positioning of the services.

If buried services are identified (or are suspected to be present) then the excavation plan must be altered if necessary to avoid these services. If the excavation plan cannot be altered then safe work methods (e.g. careful excavation by hand) must be specified and

measures (e.g. Isolation and lockout of the service) must be put in place to minimise risk to personnel and prevent damage to the service(s).

Machinery may not be used to excavate material lying within one metre of any belowground service (i.e. Cable or pipe).

Excavation work that is carried out must be limited to what is described in the Permit to Work. All controls, precautions and restrictions identified in the Permit to Work (and Risk Assessment) must be strictly observed and fully implemented. The Excavation Supervisor must discuss these controls, precautions and restrictions with all persons who will be carrying out the work.

All excavation work must be carried out by persons who have been trained and are competent to perform the work.

All personnel working in or near any excavation must wear high visibility protective clothing.

Unexpected structures (e.g. Tanks, brick work, concrete work, etc.) Or services (e.g. Cables, pipe lines, etc.) As well as unusual conditions (e.g. inconsistent materials, voids, etc.) That are encountered during excavation work must be reported immediately. All work must cease until the nominated project management representative provides authorisation to continue.

If an excavation is more than 1.2 metres deep and people have to enter it, then the sides of the excavation must be suitably battered, benched, or shored, unless a registered professional geo-technical engineer confirms in writing that there is no risk of the excavation collapsing (i.e. That the sides of the excavation are stable without battering, benching or shoring).

If the sides of an excavation are battered (sloped), then this must be done at an angle that is suitable for the given soil conditions (to be determined by a registered professional geo-technical engineer).

When it is not possible to batter (or bench) the sides of an excavation to a safe angle, then the sides of the excavation must be suitably shored. Shoring may only be installed, altered or removed under the personal supervision of a competent person using a predetermined safe method. Only approved shoring systems and equipment may be used. Shoring requirements must always be determined and designed by a competent person for the specific conditions encountered at the excavation site.

All material removed from an excavation (spoil) must be placed no closer than three times the depth of the excavation away from the edges of the excavation.

The profile of this spoil must be flattened out to prevent the material from being washed back into the excavation by rain water.

Scaling must be carried out on the sides of all excavations to remove loose material.

Protective shields or barriers must be erected (when required) between the sides of an excavation and the work area in order to protect employees from falling, rolling or slumping rock, soil, or materials.

Persons may not work on the faces (sides) of battered (sloped) or benched excavations at levels above other persons.

Tools, equipment and materials may not be placed within two metres of the edges of an excavation. Alternatively, a suitable retaining device may be used to prevent tools, equipment and materials from falling, rolling or sliding into an excavation.

No vehicle or item of mobile equipment is permitted near an edge of an excavation.

Mobile equipment may not operate in or near an excavation whilst persons are working within the excavation.

To ensure that adjacent structures (such as buildings, walls, or sidewalks) remain stable during excavation work, support systems such as shoring, bracing, or underpinning must be provided if required. Excavation below or near the base or footing of any foundation or retaining wall is prohibited unless:

- A support system (designed by a registered professional geo-technical or Structural engineer) is provided, such as underpinning; or
- A registered professional geo-technical engineer determines that the structure is far enough away from the excavation that no hazard exists.

To prevent persons and / or mobile equipment from accidentally falling into an excavation and to prevent unauthorised entry into an excavation, rigid barricading must be erected around every excavation that is deeper than 500mm. Warning signage must be prominently displayed and, if necessary, flashing warning lights must be used at night.

The barricading must remain in place for as long as the hazard (i.e. the excavation) exists. Sections of barricading around an excavation may only be removed (and then only temporarily) to enable excavation work to continue (refer to the Barricading Standard).

For each excavation more than 1.2 metres deep, safe means of access and egress (e.g. Ladders, steps or ramps) must be provided for persons working in the excavation. Safe entry and exit points must be located every 15 metres along the side(s) of an excavation (i.e. an exit point must not be more than 7.5 metres away from any person working in the excavation).

If a hazardous atmosphere exists within any excavation (i.e. an oxygen deficiency, the presence of explosive or flammable gases, and / or harmful concentrations of a contaminant) or if there is a possibility that a hazardous atmosphere may develop, then the excavation must be declared a confined space. Furthermore, an excavation must be considered a confined space if any risk of entrapment or engulfment exists. If an excavation is declared a confined space then all precautions and requirements pertaining to confined spaces must be implemented and complied with (refer to the Confined Spaces Standard).

Internal combustion engines may not be used in or near the edge of an excavation unless the exhaust emissions are ducted away or suitable mechanical (forced air) ventilation is used to maintain a safe atmosphere within the excavation.

Any water and / or sludge present within an excavation must be removed completely before any work commences in the excavation.

Using ditches, dykes, sumps and pumps, or other suitable means, surface water must be prevented from entering an excavation and areas lying adjacent to an excavation must be adequately drained.

If equipment is used to prevent water from entering an excavation or to prevent water accumulation within an excavation, then the equipment must be monitored by a competent person to ensure that it remains operational and effective.

Suitable lighting must be provided in and around any excavation in which work must be carried out at night.

A high standard of housekeeping must be maintained in and around all excavations.

Tools that are not in use, and materials that are no longer required, must be removed from an excavation to prevent these items from causing injury or being lost (buried).

A register of all excavations must be compiled and maintained.

A competent person (i.e. an appointed Excavation Supervisor) must inspect each excavation as well as the areas around it:

- At the start of each day (or shift) before work commences within the excavation;
- After any alteration is made to the excavation or shoring;
- After rainfall;
- After any blasting activity carried out in the vicinity of the excavation; and
- After any event that may have affected the strength or stability of the excavation or the shoring.

An excavation must be inspected for collapses, signs of instability, failures or signs of overloading of protective systems and equipment, hazardous atmospheres, water accumulation, and any other hazardous condition that may arise.

The sides of an excavation as well as the surface of the ground around the excavation must be carefully inspected for signs of instability including fissures (cracks), slumping, and bulging. Shoring must be carefully inspected for signs of overloading (e.g. Distortion).

If a hazardous condition is identified, no person may enter the excavation until suitable corrective actions have been taken and / or suitable controls have been put in place to either eliminate the hazard or reduce the risks to acceptable levels.

A record of each inspection (including date, time, findings, and signature of the Excavation Supervisor who carried out the inspection) must be captured in the excavations register. Each inspection record must include a declaration as to whether the excavation is safe to work in or not.

All excavations must be monitored closely throughout each work day (or shift) by the Excavation Supervisor.

If an excavation has been declared a confined space, a safety observer (who will be able to initiate emergency response procedures if required and identify the location of any trapped or buried persons in the event of a collapse) must be stationed at ground level outside of the excavation whenever work is being carried out in the excavation.

If a hazardous condition is identified while work is being carried out in an excavation, then all persons in the excavation must be evacuated to safety without delay.

Under no circumstances may a person work alone in an excavation that is more than 1.2 metres deep without at least one other person being present in the immediate vicinity of where the work is being carried out.

Excavations must be backfilled as soon as possible, and the material used (usually the original material) must be properly compacted.

Where belowground services are present, the material used to backfill an excavation must be such that the services will not be damaged.

A layer of a material that is dissimilar to the general backfill material must be placed immediately above any buried service.

An excavated area must be restored to its original condition if at all possible.

#### Use of Explosives

All excavation work must be carried out without the use of explosives.

Explosives may not be brought onto the site or be used without written authorisation from the nominated project management representative.

If blasting operations are unavoidable, the contractor must:

- Provide a justification and obtain approval from the nominated project management representative;
- Strictly observe the provisions of all applicable legislation; and
- Carry out a detailed risk assessment covering the transportation, handling, storage and use of the explosives.

No explosives or detonators may be stored on site.

Detonators and other explosives must never be carried in the same box.

### 16.12 Cranes and Lifting Equipment

All applicable legislation concerning cranes and lifting equipment must be complied with at all times.

Each contractor carrying out lifting operations on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard.

#### 16.12.1 Design, Manufacturing and Safety Features

Before any crane or hoist is operated on the project premises (i.e. New to site), it must be formally accepted (authorised) by the nominated project management representative. The acceptance process must be based on an inspection and risk assessment, and must take the crane's or hoist's safety features and cabin ergonomics (if applicable) into account. The same process must be followed before any crane or hoist is returned to service following any modification or repair.

**Note:** An Equipment Profile (dossier) must be compiled for each crane.

As a minimum, the design and manufacturing of each crane or hoist used on the project premises must comply with the requirements of the relevant ISO standard. In countries where the requirements of a national standard are more stringent than the requirements of the relevant ISO standard, the national standard must apply.

The Safe Working Load (SWL) must be clearly indicated on each crane, hoist, and item of lifting equipment.

If the safe working load (rated capacity) of a crane varies with the conditions of use (i.e. varies with the angle of the boom and the boom length) then the manufacturer's load chart(s) indicating the crane's rated capacity at various boom lengths and angles must be available in the crane cabin. If the crane has a single load chart, it must be displayed in a

position visible to the crane operator. If the crane has numerous load charts, they must be easily accessible to the operator.

For each crane or hoist, the manufacturer's operating manual must be available to the operator.

The load chart(s) and operating manual for a crane or hoist must be in a language understood by the operator.

All lifting hooks must be fitted with a safety latch to prevent the load from accidentally detaching.

Each crane or hoist must be fitted with a load cell (with the mass of the load displayed in the visual range of the operator) and a load limiting device to prevent the crane or hoist from being operated outside of its safe working limits.

Where practicable, each crane must be equipped with an upper hoist limit switch (or anti two-block device) to prevent the hook block from colliding with the drum, and a lower hoist limit switch to prevent the rope on the drum from unwinding completely. These systems must provide both a visual and an audible alarm to the operator.

Under no circumstances may any limit switch or warning device be bypassed, disconnected, or adjusted in order to lift a load higher (or to lower a load lower) than the respective switches allow. Limit switches MAY NOT be adjusted to stop the hoist at a particular height under normal operating conditions – these are safety devices, and as such, should not be used as operating tools.

Under no circumstances may a load limiting device be bypassed or disconnected in order to lift a load that exceeds the rated capacity of the crane. Load limiting devices MAY NOT be used to "measure" or "test" the mass of a load – these are safety devices, and as such, should not be used as operating tools.

Each overhead travelling crane (including cranes operated using a manual chain drive) must be fitted with an audible travel alarm or an equivalent warning device.

Anti-collision devices must be fitted to prevent motorised overhead travelling cranes from colliding with each other (where two or more cranes run on the same track) and from colliding with the track end stops or other structures.

For a vehicle-mounted crane, the operator control station must be located in a position protected from swinging loads and from the crane jib.

A fall protection system must be provided for the assembly, dismantling, operation, maintenance and inspection of any crane where falling from height is identified as a hazard.

Each crane should be fitted with a stability monitoring device to prevent it from toppling over.

Only items of lifting equipment (tackle) that have been designed and manufactured with adequate factors of safety may be used on site. The following minimum factors of safety (with respect to the Safe Working Load) must be met:

- Ten (10) for natural-fibre ropes;
- Six (6) for synthetic-fibre ropes or woven webbing;
- Six (6) for steel-wire ropes;



- Five (5) for steel chains; and
- Four (4) for high-tensile or alloy steel chains.

**Note:** An excavator may not be used to lift a load unless all of the requirements of this standard (as would apply to a crane) have been met, and authorisation has been granted by the relevant Project Manager and Health and Safety Manager.

### 16.12.2 Planning and Risk Assessment

For each critical lift that must be carried out on site, a documented and detailed lift plan and risk assessment must be prepared to address all associated hazards.

Only suitably qualified, competent and experienced persons (lift planners) may evaluate critical lifts and prepare lift plans.

The lifting supervisor, crane operators, riggers and spotters responsible for carrying out a critical lift must have input into the lift plan and risk assessment and must be consulted before these documents are finalised.

All lift planners, lifting supervisors, crane operators, riggers and spotters (safety observers) must be appointed in writing.

No critical lift may commence until the lift plan and risk assessment have been authorised by the nominated project management representative and a Permit to Work has been issued.

Critical lifts include:

- All multiple (including dual) crane lifts;
- Lifts where the operational arcs of two or more cranes can overlap;
- Lifts over operating facilities where this may endanger personnel;
- Lifts over or adjacent to power lines;
- Any lift carried out in close proximity to equipment or a vessel containing a flammable or toxic substance;
- Lifts where the centre of gravity of the load could change;
- Any lift where the total weight on the hook exceeds 20 tonnes;
- Lifts near the rated capacity of the crane (i.e. Exceeding 85% of the rated capacity at the working radius);
- Any lift when the wind speed (including gusting) exceeds 30 kilometres per hour;
- Lifts involving a man basket (safety cage);
- Lifts to and from water;
- Lifts requiring specialised equipment or involving complicated lifting or rigging configurations;
- Lifts requiring non-standard rigging or slinging techniques;
- Lifts involving the simultaneous use of more than one hoist on the same crane;
- Any other lift deemed to be critical by the nominated project management representative, or assessed as critical during a risk assessment.

The lift plan for a critical lift must include:

- General Information – crane manufacturer, crane model, items to be lifted, and reason for lift;
- Lift Data – load weight, lifting block and hook weight, hoist rope weight, rigging weight, total weight, height of lift, radius of lift, surface area of load, and centre of gravity of load;



- Rigging Data – sling material (chain, wire rope, or synthetic), sling diameter, sling length, sling configuration, sling capacity, hook type, shackle size and capacity;
- Lift Computation – boom length, jib length, radius of lift, crane capacity as configured, size of outrigger footplates, and wind speed;
- Proximity to Power Lines and Process Areas – mobile cranes working in proximity to energised power lines must operate under a Permit to Work, which must define exclusion zones and spotter duties;
- Local Hazards and Controls – including the route for the crane, ground stability, proximity of people or equipment, and agreed communication method; and
- Diagrams (sketches) – a rigging diagram, and a crane set-up diagram illustrating the positioning of the crane(s) in relation to surrounding structures and the initial and final positions of the load (including crane boom movement).

Lifts that are not subject to detailed lift plans (i.e. Lifts that are not considered critical) must nevertheless be subject to a risk assessment, and be properly planned and executed. The use of a crane-suspended man basket (safety cage) may only be considered when all other avenues to safely perform the work (e.g. Scaffolding, mobile elevating work platform, etc.) Have been exhausted (refer to the Working at Heights Standard).

Cranes used to lift or suspend personnel must be approved as suitable for this purpose. If a crane must be operated in proximity to energised overhead power lines (or any other exposed electrical conductors) then minimum clearance distances (specified by the electrical power utility or the nominated project management representative) must be observed. Whenever possible, power lines must be de-energised and isolated while lifting operations are carried out (refer to the Electrical Safety Standard).

### 16.12.3 Operation

At the start of every day or shift, the operator of a crane or hoist must carry out a pre-operation safety check using a prescribed checklist.

The specific requirements of the pre-operation safety check (and associated checklist) must be based on:

- A risk assessment that addresses all aspects of safe operation of the crane or hoist; and
- The inspection recommendations of the manufacturer.

As a minimum, the pre-operation safety check must include:

- A thorough visual inspection of all wire ropes, chains, hooks and safety latches, hook blocks, sheaves, hydraulic hoses, electrical cables, and the general condition of the crane or hoist;
- Checks to confirm the serviceability of the operating controls;
- Tests to confirm the correct operation of all limit switches, emergency shutdowns, load indicators, alarms and other safety devices; and
- A thorough visual inspection of all lifting equipment (tackle) to be used.

The operator must:

- Check for any loose or missing parts;
- Make sure that the wire rope (or chain) of the hoist is properly seated in its drum and sheave grooves without any slack or overlapping;
- Operate each control to make sure it functions properly, releases immediately, and does not stick. Each control must be labelled to indicate its function;





- Listen for any unusual mechanical noises and look for any jerky movements while operating the crane and / or hoist several feet in each direction that it travels;
- Check the functionality of the upper and lower hoist limit switches (if applicable) by slowly raising and then lowering the block to trip the respective switches;
- Check all hooks. Hooks must not be cracked, stretched, bent or twisted. Each hook must have a safety latch that automatically closes the throat of the hook. If the latch is bent, has a broken spring, or is otherwise damaged, it must be repaired before use. Hooks must rotate freely in the block assembly without any “grinding” felt or heard;
- Check the wire rope by lowering the block to its lowest level and looking for the following signs of damage:
  - ♦ Reduced rope diameter. This may indicate that the rope has been stretched, has lost its inner core support, or has worn outside wires;
  - ♦ Broken wire strands (any number);
  - ♦ Kinked, crushed, cut, or “bird caged” wiring, or wiring with heat damage.
- Check all chains for damage including wear at contact points, cracks, or distorted links (bent, twisted or stretched). All mechanical coupling links must be inspected to ensure that the linking pins are secure and in good condition. The capacity rating of each chain must be adequate for the load and the attachment method;
- Check the condition and capacity of wire rope and synthetic web slings. Capacity ratings must be legible on the manufacturer’s label. The capacity of the sling being used must be adequate for the load and the attachment method. A sling must be replaced immediately if it is excessively worn.

The operator must report any fault, defect or damage to his supervisor immediately.

A crane or hoist must not be operated if any safety device is out of order or defective, or if any rope, chain, hook or other component is worn or damaged.

Completed checklists must be made available (on request) for inspection by the nominated project management representative. Wherever possible, these checklists must be kept with the crane or hoist.

All lifting operations must be supervised by suitably qualified, competent and experienced supervisors.

An effective method of communication between the crane operator and those assisting with the lift must be in place. This must be documented and approved by the nominated project management representative.

Documented Safe Work Procedures must be in place to ensure the following:

- Access into an area where lifting operations are being carried out must be restricted. Such an area (i.e. where there is a risk of a load falling and striking a person) must be barricaded and only authorised persons may enter (i.e. those directly involved with the lifting operations). Warning signage must be conspicuously displayed;
- Where a load is being moved from one location to another (i.e. The lifting operations are not being carried out in a discrete area that can be barricaded), measures must be taken to ensure that all persons in the path of the suspended load are made aware of the approaching hazard and that they move, and remain, well clear of it. All persons potentially affected must be given warning before the load is lifted;
- A lift must be directed and controlled by a single person (a suitably qualified, competent and experienced rigger);



- Dedicated spotters must be in place during lifting operations to observe and provide warning (if necessary) to prevent incidents and ensure that safety protocols are adhered to;
- Before commencing with a lift, it must be verified that the load being lifted is both within the rated capacity of the crane (or hoist) and lifting equipment and within the limits set out in the lift plan and / or risk assessment. The rated load capacities of the crane, hoist, rope, chains, slings or other components may never be exceeded;
- Only certified lifting equipment (tackle) may be used to lift a load;
- No equipment (tackle) that has been used for towing may be used for lifting operations;
- Only an approved material box (skip box) may be used for lifting loose items or materials;
- Before commencing with a lift, it must be verified that no safety devices (including load limiting devices) have been bypassed, overridden or disconnected;
- To prevent the load from swinging as it is lifted, the hoist must be centred over the load (when using slings or chains) or positioned directly above the lifting point of the load;
- Hoisting ropes must be kept vertical. No side loading of a crane boom is permitted (i.e. A crane may not be used to make a side pull);
- Two full wraps of rope must remain on the hoisting drum at all times. If a lower hoist limit switch has been fitted, and it is working correctly, it should not be possible to lower the block below the point where less than two full wraps of rope are on the drum;
- Before commencing with a lift, it must be verified that all rigging connections are correct and secure. Slings, chains, or other lifting devices must be fully and securely seated in the saddle of the hook;
- Slack must be removed from the slings, chains and / or hoisting ropes before lifting the load. It must be ensured that multiple lines are not twisted around each other and that the hoist rope is not wrapped around the load;
- To ensure that the load is properly secured and balanced, it must initially only be lifted a few centimetres. Slings must be repositioned if required;
- Before moving a suspended load, it must be lifted high enough to clear all obstructions. The load must only be lifted to the height necessary to clear obstructions, and no higher;
- Directional movement must be made smoothly and deliberately (there must be no sudden acceleration or deceleration of the moving load). Abrupt, jerky movements of the load in any direction must be avoided;
- Tag lines must be used in situations where a load needs to be steadied or guided while suspended;
- When using tag lines to steady or guide a suspended load that is being moved using a mobile crane, personnel on foot must remain in sight of and in communication with the crane operator at all times, must never walk between the crane and the load, and must remain clear of the load and the crane at all times (at least 5 metres). The load must be moved at a slow walking speed;
- A suspended load must be monitored closely at all times;
- If a crane operator's view of a suspended load is unavoidably obscured (completely or partially), or if a suspended load is unavoidably obscuring (completely or partially) a crane operator's view, then suitably positioned spotters must be in place to provide guidance to the crane operator;

- A load MAY NOT be moved over, or be suspended above, any person or any occupied building. No person may walk beneath, or position himself below, a suspended load;
- No person may pass or work beneath the boom of a crane;
- No person may be positioned between a suspended load and a solid object where there is a risk of being crushed should the load swing;
- No person may be positioned within the radius of the boom of a crane unless directly involved with the lift;
- Under no circumstances may any person ride on a crane's hook or on a load;
- No load may be left suspended unless the operator is at the controls and is monitoring the load. In such a situation, the load must be kept as close as possible to the ground or floor to minimise the possibility of injury should the load drop;
- The controls of a crane or hoist may never be left unattended while a load is suspended. If it becomes necessary to leave the controls, the operator must lower the load to the ground or floor;
- With the exception of pick-up and carry operations, no lifting may be carried out using a mobile crane unless the outriggers have been deployed and are locked in position;
- Load spreaders or packing under the outriggers must be used irrespective of the underfoot conditions;
- Before a mobile crane is moved into position to carry out a lift, the area must be inspected by a suitably qualified person who must verify that the underfoot conditions are satisfactory;
- When using a mobile crane, slewing to test the effectiveness of the outriggers must be carried out prior to commencing with a lift;
- Slew pins must be securely in place while a mobile crane is travelling;
- Unauthorised use of a crane or hoist must be prevented by removing the keys, locking the cabin, isolating the controls, etc. When lifting operations have been completed;
- When not in use, lifting equipment must be stored off the ground and must be protected from the elements (rain, harsh sunlight, etc.) And contamination (dust, solvents and other chemicals) in order to prevent damage and / or deterioration.

A crane or hoist or an item of lifting equipment may only be used for the purposes for which it was designed.

#### **16.12.4 Inspection, Testing and Maintenance**

Any crane or hoist brought onto the project premises must have a current test certificate and record of inspection as well as a suitable checklist (derived from the crane or hoist manufacturer's inspection recommendations) for use by the operator(s) when carrying out pre-operation safety checks.

An Equipment Profile (dossier) must be compiled for each crane.

A register of all cranes, hoists and lifting equipment (tackle) brought onto the project premises must be compiled and maintained.

Each crane, hoist and item of lifting equipment must have a unique identification code or number, which must be referenced in the register.

For each crane, hoist and item of lifting equipment, the following documentation must be kept on site and must be made available (on request) to the nominated project management representative for inspection:

- Test records and certificates;
- Inspection records;
- Maintenance records; and

- Details of any modifications or repairs made.

All cranes, hoists and lifting equipment must be inspected, tested and confirmed fit for purpose (i.e. Safe for use):

- Before being operated or put into service;
- Before being returned to service following any repair or modification; and
- Periodically as follows (unless local regulations require examination more frequently):
  - Each crane or hoist (including all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices that form an integral part of the crane or hoist) must be thoroughly examined by a competent, experienced and appointed person every 6 months;
  - Each crane or hoist must be subjected to an annual performance test (i.e. A load test) by a competent, experienced and appointed person; and
  - All lifting equipment (tackle) must be thoroughly inspected by a competent, experienced and appointed person every 3 months.
  - The system of inspection and testing must provide verification that each crane or hoist is able to function to its design specifications, and must verify the integrity of:
    - Mechanical and electrical components;
    - Controls;
    - Cables and all lifting attachments;
    - Structural components including boom, hoist, brakes, wheels, hooks, baskets, outriggers, hook-blocks and rails; and
    - Load limiting devices, hoist limit switches, alarms or warning devices, and other safety devices and control systems (including independent fail-safe braking systems, devices to stop the crane or hoist such as a dead man's switch, and emergency shut-off switches).

A preventative maintenance system must be in place to ensure that all cranes and hoists are maintained in a safe and serviceable condition.

For any crane or hoist, all inspections, testing, maintenance and repairs must, as a minimum, be carried out in compliance with the requirements and specifications of the manufacturer as well as all applicable regulatory requirements (in terms of both the frequency of inspection, testing and maintenance, and the physical condition of the crane or hoist).

Repairs to a crane or hoist may only be carried out by competent persons. After repairs have been made, the crane or hoist must be tested and recertified fit for purpose (unless the repairs did not affect the integrity of the lifting mechanism).

Any modification to a crane or hoist must be subject to the approval of the original equipment manufacturer and a rigorous change management process.

Each item of lifting equipment (tackle) must be tagged following each quarterly (3-monthly) inspection. Details of these inspections must be recorded in the lifting equipment register which must be made available to the nominated project management representative on request.

The following colour coding system must be used for the tagging of all lifting equipment:

**Table 16-1 colour coding system for lifting equipment**



Quarter	Tag colour
January – march	Blue
April – June	Red
July – September	Green
October – December	Yellow

The tag placed on an item of lifting equipment must be traceable to an entry in the lifting equipment register where the following information concerning the inspection of that item of equipment must be recorded:

- Item description;
- Unique item identification code or number;
- Item owner;
- Item location;
- Date of inspection;
- Name and signature of competent person who carried out the inspection; and
- Any comments concerning the inspection.

Any item of lifting equipment that is found to be damaged or defective must be removed from service (and tagged, “out of service”) immediately and must then either be repaired and recertified (if possible) or destroyed to prevent further use.

Similarly, any lifting equipment that is known (or is suspected) to have been overloaded must be removed from service immediately and destroyed to prevent further use.

If an item of lifting equipment is removed from service or destroyed (scrapped), this must be indicated in the lifting equipment register.

Any item of lifting equipment without a tag or with an out-of-date inspection may not be used.

#### **16.12.5 Training and competency**

Only suitably trained, competent and experienced persons who have been authorised in writing by the contractor’s project manager are permitted to:

- Evaluate and plan critical lifts;
- Supervise lifting operations;
- Operate cranes and hoists;
- Use lifting equipment, and rig (sling) loads;
- Provide signals for controlling lifts; and
- Inspect, maintain or test cranes, hoists and lifting equipment.

Each operator must meet the competency requirements for the particular class or type of crane or hoist to be operated. Depending on the project location and applicable legislation, operators may need to hold a certificate of competency issued by a recognised training institution.

#### **16.13 Working at heights**

All applicable legislation concerning work performed from an elevated position must be complied with at all times.

Fall prevention or fall protection measures must be in place whenever the potential exists for a person to fall 2 metres or more.

### **16.13.1 Fall prevention**

#### **16.13.1.1 Work platforms**

Wherever practical, a safe working area must be provided in the form of a work platform with fixed edge protection. This may include:

- a permanent work platform or walkway (i.e. A fixed steel structure);
- a fixed or mobile scaffold; or
- an elevating work platform such as a scissor lift, man lift, boom lift or cherry picker.

All work platforms and walkways elevated one metre or more must have complete floors, and edge protection must be in place in the form of toe boards and sturdy guard rails properly secured (i.e. bolted, welded, clamped, etc.) To prevent accidental displacement. Safe means of access and egress must be provided.

Guard rails must be capable of withstanding a force of at least 100 kilograms applied in any direction at any point.

The top rail must be positioned at a height of one metre above the working surface, and a mid-rail must be provided.

#### **16.13.1.2 Floor openings, holes and edges**

Any opening or hole (temporary or permanent) in a floor, platform or walkway must be protected by sturdy guard rails (removable if required) or a cover to prevent a person from stepping into or falling through the gap. Covers must be strong enough to support the loads that will be imposed on them and must be secured to prevent accidental displacement.

Ladder way floor openings and platforms must be protected by guard rails of standard construction and toe boards must be fitted along all edges, except at the entrance to an opening where a gate must be installed and so arranged that a person cannot walk directly into the opening.

When open, hatchways and floor openings must be protected by removable guard rails and toe boards of standard construction. When these openings are not in use, covers of adequate strength must be put in place and must be secured to prevent accidental displacement.

Where doors or gates open directly onto a stairway, a platform must be provided and the swing of the door or gate must not reduce the effective width of the platform to less than 500mm.

#### **16.13.1.3 Wall openings**

Wall openings, from which there is a drop of more than one metre, must be guarded as follows:

- When the height and position of the opening in relation to the working surface is such that standard guard rails will effectively eliminate the risk of accidentally falling through the opening, then these must be provided. The bottom edge of the opening must be fitted with a toe board. The guard rails and toe board may be removable if required;
- Alternatively, the opening may be closed using a screen. Wall opening screens must be of such construction and mounting that they are capable of withstanding a force of at least 100 kilograms applied horizontally at any point on the near side of the screen. A screen may be of solid construction, of grillwork, or of slat work.



An extension platform outside a wall opening, onto which materials can be hoisted, must have sturdy guard rails (or equivalent edge protection) on all sides. One side of the extension platform may have removable railings in order to facilitate the handling of materials.

#### **16.13.1.4 Stairways**

Each flight of stairs having four or more risers must be fitted with handrails.

Handrails must be installed on both sides of every stairway.

Riser height and tread width must be uniform throughout any flight of stairs, including any foundation structure used as one or more treads.

Stairways must be free of hazardous projections, such as protruding nails. No materials, equipment or waste may be placed on or beneath any stairway.

All stairways must be well lit.

#### **16.13.2 Fall protection**

Whenever there is a risk of falling 2 metres or more, whenever there is a risk of falling onto dangerous equipment or machinery even if the potential fall distance is less than 2 metres, or whenever work must be carried out within 2 metres of an opening through which (or an edge over which) a person could fall, no work may commence unless:

- a fall protection (and rescue) plan is in place (prepared by a competent person, approved by the nominated project management representative, and implemented by the contractor);
- A detailed task-specific risk assessment has been carried out;
- A safe work procedure is in place for the task to be performed;
- A permit to work has been obtained; and
- Each person has been provided with suitable fall protection equipment.

Fall protection equipment (either fall restraint or fall arrest equipment) must be used at all times whilst the work is being carried out.

To prevent persons from falling, fall restraint equipment must be used whenever work must be carried out within 2 metres of an opening through which (or an edge over which) a person could fall.

Fall arrest equipment must be used whenever the potential exists for a person to fall 2 metres or more.

A person has been provided with suitable fall protection equipment if he is secured by means of an approved full body harness (well fitted) with two shock absorbing lanyards or an inertia reel (when fall arrest equipment is required) or two short restraining lanyards (when fall restraint equipment is required), double or triple action snap hooks (or karabiner type rings), and secure anchorage points (a person's lanyard may be attached either directly to an anchorage point or indirectly through the use of a variety of systems that incorporate a lifeline).

A dual lanyard system must be used to ensure that at least one connection point is maintained at all times.

**Note:** When selecting fall arrest equipment, care must be taken to ensure that the potential fall distance is greater than the height of the person plus the length of the lanyard with its shock absorber deployed (taking the height of attachment into account).

Anchorage points must, where practical, be above the head of the person, and must ensure that in the event of a fall the person will neither swing nor touch the ground.

All permanent anchorage points must be designed and approved by a professional structural engineer.

All anchorage points must be periodically inspected and tested by a competent person to ensure that they are secure and can support the required load. A system must be in place to identify anchorage points as authorised for use.

Temporary anchorage points (and lifeline systems) may only be used if a competent person has certified them safe to use.

If an elevating work platform is used, such equipment must be fitted with a fixed anchorage point for the attachment of fall protection equipment.

The use of fall protection (fall restraint or fall arrest) systems must be avoided wherever and whenever possible through design, the installation of physical barriers that protect persons from falling, and employing alternative methods of working. Only if physical barriers protecting against free falls cannot be installed must fall protection equipment be used.

Fall protection (fall restraint or fall arrest) systems are items of personal protective equipment and, if required, must be purchased, installed and provided to employees. Prior to commencing with any work at height, an assessment must be conducted to determine if the work requires the use of fall protection equipment, and if so, which fall protection system is the most appropriate for the work.

There must be a system for ensuring that fall protection equipment is:

- Tested and certified for use;
- Inspected by the user before use; and
- Destroyed following a fall or where inspection has shown evidence of excessive wear or mechanical malfunction.

All persons that are required to work at height (in order to carry out routine or non-routine tasks) must first be trained and certified competent to do so. Furthermore, each person must be in possession of a valid medical certificate of fitness specifically indicating that the person is fit to work at height.

All persons required to use personal fall protection equipment must be trained and certified competent in the correct selection, use, maintenance and inspection of such equipment.

All fall protection equipment must be thoroughly inspected on a monthly basis by competent persons appointed in writing and each item of equipment must be tagged to show when it was last inspected. All inspections must be recorded in a register. On finding defective or damaged equipment, appropriate action must be taken by the competent person (i.e. the destruction of the equipment to prevent further use).

Persons making use of personal fall protection equipment must do so in strict accordance with the instructions or requirements specified by the manufacturer or supplier of the equipment or system.

Specific pre-use inspection, maintenance and fitting protocols must be established in accordance with the manufacturer's requirements or guidelines and these protocols must be followed by all users of the fall protection equipment.



Solvents may not be used to clean fall protection equipment. Only manufacturer-approved cleaning solutions may be used.

No person required to use personal fall protection equipment may work in isolation (a minimum of two persons working together is required).

Competent supervision must be in place at all times for all work carried out at height. Supervisors must be appointed in writing.

Emergency response (rescue) procedures for the rapid retrieval of suspended persons in the event of a fall from height must be prepared and tested.

**Note:** Even though there is no risk of free fall, fall protection equipment may be required in situations where there is a risk of falling, slipping or sliding down a slope of more than 45 degrees.

**Note:** The maximum service life of fall protection equipment manufactured of synthetic fibre shall be 5 years from the date of first use and / or manufacture unless otherwise specified by the manufacturer.

A person may climb or descend a ladder without fall protection provided that he is able to use both hands and legs to do so, faces the ladder, and uses one step at a time. The ladder must be tied off or supported at its base.

Prior to any roof work being performed, or prior to persons accessing a roof, a structural engineer must verify that the roof is of sound construction and that it is capable of supporting the weight of the persons as well as any equipment that may be required. Should the engineer's findings be to the contrary, alternative methods of performing the work must be found. Particular care must be taken when work is carried out on an asbestos cement roof or a fibreglass roof.

### **16.13.3 Risk Assessment and Permitting**

The following documentation is required for any work where fall protection is required (i.e. where a risk of falling exists):

- A Fall Protection (and Rescue) Plan;
- A Risk Assessment for the task to be performed;
- A Safe Work Procedure for the task to be performed; and
- A Permit to Work.

As part of the Risk Assessment and planning processes, the following must be considered:

- Hazards relating to accessing the location at height;
- The nature of the work location;
- The nature of the work activities to be undertaken at height;
- Environmental and weather conditions;
- The presence of nearby persons who may be at risk due to falling objects (potentially) or who's activities may be affected by the work being performed at height;
- The selection of fall protection equipment (considering fall clearances) and / or access equipment;
- The selection of anchorage points;
- The load ratings of access platforms, work areas, anchorage points, etc.;
- The condition of supporting structures such as roofs;



- The need for the work to be carried out by multiple persons and the means of communication;
- A rescue plan that addresses retrieval or rescue contingencies;
- Working above open furnaces or molten metal;
- Exposure to heat sources;
- The use of a mobile elevating work platform, man basket, suspended scaffold or boatswain's chair; and
- Any other conditions that may affect the safe execution of the task.

#### **16.13.4 Elevating Work Platforms**

Before hiring or purchasing an elevating work platform (e.g. a scissor lift, man lift, boom lift, cherry picker or similar equipment), the certification of the equipment (with regard to suitability of design and construction) must be verified.

Before using an elevating work platform, it must be verified that the equipment is in good working order and has been serviced regularly. The service record and instruction manual must be kept on site. A system must be in place to ensure that the equipment is maintained and inspected as required by the manufacturer and / or local regulations.

Persons (operators) must be formally trained through an accredited training provider and certified competent in the operation of the equipment. Once a person has been issued with the necessary licence or qualification as required under local regulations, he must be appointed in writing to operate the equipment.

Before using an elevating work platform, the operator must inspect the equipment and a pre-use checklist must be completed.

The operator of an elevating work platform must be in the "basket" unless it can be demonstrated to the satisfaction of the nominated project management representative that this is not possible or practical.

Every person in the "basket" must keep his feet on the floor at all times.

Every person in the "basket" must be secured at all times by means of personal fall protection equipment attached to an approved anchorage point, and systems must be in place to prevent tools and equipment from falling.

A mobile elevating work platform must not be driven unless the "basket" has been lowered and secured in a stable position.

Every elevating work platform that is used must be equipped with a dead man's switch or foot pedal at the operator controls.

An elevating work platform must only be operated on a firm surface with the outriggers extended (where fitted).

An elevating work platform must not be operated on a grade or slope beyond the capability of the machine (every mobile elevating work platform that is used must be fitted with an inclinometer which sounds an audible alarm before the maximum safe incline has been reached).

The area beneath the "basket" and the boom must be barricaded.

A second competent operator of the mobile elevated work platform to be in place on the ground level – to ensure that the elevated work platform could be lowered in case of an emergency.

A spotter must be used at all times when moving a mobile elevating work platform and when the "basket" is in an elevated position.

#### **16.13.5 Man Baskets, Suspended Scaffolds and Boatswain's Chairs**

The use of a man basket, suspended scaffold or a boatswain's chair may only be considered when all other avenues to safely perform the work (e.g. ladder, scaffolding, mobile elevating work platform, etc.) have been exhausted. Authorisation to use a man basket, suspended scaffold or a boatswain's chair must be obtained from the nominated project management representative. If permission is granted, the use of such equipment must be in strict compliance with all applicable legislation.

A person working from a man basket or a suspended scaffold must remain within the basket and must keep his feet on the floor at all times.

Each person working from a man basket, suspended scaffold or a boatswain's chair must be in possession of a valid medical certificate of fitness and must be trained (and assessed competent) in the Safe Work Procedures pertaining to the use of the equipment, as well as the Fall Protection Plan.

Each person working from within a man basket or suspended scaffold or from a boatswain's chair must wear personal fall protection equipment at all times (i.e. an approved full body harness connected by means of a shock absorbing lanyard to an anchorage point or lifeline that does not form part of the basket or chair).

If suspended using a crane, the man basket, suspended scaffold or boatswain's chair must be visible to the crane operator at all times. A suitable means of communication must be in place to ensure that the suspended person(s) are able to communicate with the crane operator and personnel on the ground.

The crane operator must remain at the controls at all times while the man basket, suspended scaffold or boatswain's chair is occupied.

Where feasible (and if it is safe to do so), tag lines must be used to stabilise the man basket, suspended scaffold or boatswain's chair.

A man basket or suspended scaffold (including the suspension system) must be designed by a qualified engineer.

Only an approved and certified man basket or suspended scaffold may be used. Regulations may require approval by an authority or certification to a national or international standard. The manufacturer's procedures and conditions for use must be strictly complied with at all times.

Each man basket or suspended scaffold must be fitted with an information plate indicating the maximum weight and number of persons that may be lifted. Copies of the welding x-rays and engineering drawings must be kept on site.

Any work involving the use of a man basket, suspended scaffold or boatswain's chair must be carried out under the supervision of a competent person who has been appointed in writing.

A man basket, suspended scaffold or boatswain's chair must be thoroughly inspected (examined for damage) by a competent person prior to use (every time the equipment is used) and the results of each inspection must be recorded in a register. The crane or hoist as well as all lifting equipment (tackle) that is used to suspend the man basket, suspended

scaffold or boatswain's chair must be tested and inspected as stipulated in the Cranes and Lifting Equipment Standard.

All suspended scaffold erectors, operators and inspectors must be appointed in writing and proof of competency must be provided.

Persons carrying out welding or flame cutting work from within a man basket or suspended scaffold or from a boatswain's chair must take precautions to ensure that they do not accidentally cut or burn through the cables or wire ropes that are suspending them.

#### **16.13.6 Falling Objects**

In the process of planning work activities, the risks associated with falling objects (i.e. materials, tools or equipment) must be assessed and appropriate control measures must be identified, implemented, and monitored taking the following hierarchy of controls into consideration:

- Preventing objects from falling – by using containment sheeting, toe boards, lanyards to secure tools (to a person or to the structure), ropes or chains to secure equipment (to the structure), lift boxes, brick cages, etc. and by properly securing loads when lifted by crane or hoist;
- Protecting people from falling objects – by establishing barricaded exclusion zones, installing catch platforms or catch nets, displaying warning signage, and posting safety watchers and / or traffic controllers; and
- Personal Protective Equipment (particularly safety helmets and safety boots) – protective equipment is a last line of defence and must be worn.

Where overhead work is being carried out, barricading must be erected around the work area (at the level at which the work is taking place and at every level below including ground level) to prevent persons from entering such an area and potentially being struck by falling objects.

Wherever hazards related to falling objects exist, appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

No items are permitted to lie loose in elevated positions (e.g. nuts and bolts must be securely stored) and good housekeeping standards must be maintained at all times.

No tools, equipment, material, debris, waste, etc. may be dropped from height. Objects must be lowered or chuted to ground level in a safe and controlled manner.

#### **16.13.7 Scaffolding**

##### **16.13.7.1 Training, Competency and Supervision**

Scaffolding may only be erected, maintained, altered or dismantled under the strict personal supervision of a competent Scaffolding Supervisor (or Scaffolding Inspector) who has been appointed in writing.

Scaffolding may only be erected, maintained, altered or dismantled by competent and appointed Scaffolding Erectors (or Scaffolding Builders). It is the Scaffolding Supervisor's responsibility to ensure that all persons carrying out such work are suitably trained and experienced.

A certificate of competency issued by a reputable (i.e. accredited and approved) training provider must be produced for each Scaffolding Supervisor and each Scaffolding Erector.

### 16.13.7.2 Erection and Dismantling of Scaffolding

Only approved scaffolding components may be used to erect a scaffold. Scaffolding must be erected, modified and used in accordance with the manufacturer's guidelines or recommendations, and in strict compliance with all applicable legislation and standards.

A free-standing scaffold must not exceed a height of three times the smallest dimension of its base.

Scaffolds with a height to base width ratio of more than 3:1 must be restrained from tipping over by guying, tying, or bracing.

Guy wires and ties prevent scaffolding from tipping away from the building or structure, and braces are rigid supports that prevent the scaffolding from tipping into the building or structure.

Scaffolding must be secured to the structure every 6 metres vertically and every 9 metres horizontally (as a minimum). Adequate underpinning, sills or footplates must be provided for scaffolds erected on filled or otherwise soft ground (including sand or gravel).

If the scaffolding is to be load bearing (i.e. other than normal access and workplace storage) then full calculations and a design must be prepared and authorised in writing by a structural engineer. The load limits specified by the scaffolding manufacturer may not be exceeded under any circumstances.

Scaffolds must be plumb and level at all times.

All scaffolding components must be in good condition (i.e. undamaged and free of corrosion).

All scaffolding components must be properly connected or secured and scaffolding must be effectively braced (diagonal bracing).

Each person erecting, maintaining, altering or dismantling scaffolding must use fall protection at all times (i.e. a full body safety harness with two shock absorbing lanyards fitted with scaffold hooks). The work must be planned to enable every Scaffolding Erector to be securely anchored at all times. A suitable lanyard length (not exceeding 2 metres) must be selected taking the potential fall distance and height of attachment (height of anchorage point) into account. If the lanyard is too long or the anchorage point is too low, the person may hit the ground, a platform, or objects below him before the lanyard is able to break his fall.

The area around the base of a scaffold must be barricaded to prevent unauthorised access into the work area. When scaffolding is erected or dismantled on a level, platform, or floor lying above ground level and the potential exists for components to fall to levels below the level on which the scaffolding is positioned, then the area directly below the scaffolding on each of those levels must also be barricaded. Appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

Hoists, lifts and approved material baskets must be used (where available) to lift scaffolding components to elevated positions.

Where components are passed from hand to hand during the erection or dismantling of a scaffold, each Scaffolding Erector must always stand on three boards and not directly above the person below him. During this process, each Scaffolding Erector must remain within the confines of the scaffold and must expose as little of his body as possible to

minimise the risk of being struck by a falling component. Good communication between team members must be maintained at all times.

No scaffolding components, tools, or any other material may be dropped from height or thrown from one level to another. Components, tools and materials must be lowered or lifted in a controlled manner. Use may be made of a chute.

Each tool must be secured to the wrist, harness or structure by means of a lanyard. A tool bag (around the waist or over the shoulder) may be used for carrying tools up and down a scaffold structure. Tools or equipment may not be carried by hand up or down a structure, as both hands must be used for climbing. If necessary, a rope must be used for lifting or lowering tools or equipment.

While a scaffold is being erected or dismantled, no scaffolding components may be stacked on the scaffold structure unless it has been designed for that purpose. Any loading of a scaffold structure must be authorised in writing by a structural engineer.

For special scaffolding, a design must be prepared by the appointed Scaffolding Supervisor and this design must be authorised in writing by a structural engineer before the scaffolding is erected.

Scaffolding may not stand on steel grating unless the grating is adequately supported from below. Scaffolding must rather stand on the structure that supports the grating.

Empty drums, crates or bricks may not be used to prop up, support or anchor scaffolding. Before scaffolding is erected in close proximity to an electrical installation or live conductors, an electrical engineer (employed by Project or the client) must inspect the area and determine whether or not the scaffolding must be earthed. Should the scaffolding require earthing, this must be done as soon as possible while the scaffolding is being erected.

Scaffolding may not be erected if it is raining or in winds stronger than 32 km/h.

A green tag (displaying the words, "Scaffold Safe for Use") or a red tag (displaying the words, "Danger: Do Not Use Scaffold") must be prominently displayed on each scaffold at all times. The tag must be positioned close to the base of the ladder or staircase provided for safe access. The wording on the tags must be in English and any other language commonly used on site.

As a minimum, a green tag must display the Scaffolding Supervisor's name, the date that the scaffold was erected, and the date that the scaffold was last inspected.

**Only an appointed Scaffolding Supervisor may attach, change, update the information on, or remove these tags.**

Scaffolding must not be:

- Left partially erected or partially dismantled except for normal work stoppages (for example, over weekends);
- Left in an unsafe condition (if scaffolding is unavoidably in an unsafe condition, barricading must be in place to prevent unauthorised access and the required red tags must be prominently displayed on the scaffold structure); or
- Moved or altered while work is in progress.
-





Mobile scaffolding must be equipped with brakes, which must be engaged at all times when the scaffolding is in use. A scaffold may not be moved if any person is on the structure.

#### **16.13.7.3 Safe Access**

Safe and convenient access must be provided to every scaffold platform by means of properly installed ladders or approved stairways, which must remain unobstructed at all times. Climbing up or down a scaffold on the braces or ledgers is forbidden.

All ladders used to access scaffolding must be securely attached to the scaffold structure. Hook-on and attachable ladders must be specifically designed for use with the type of scaffolding being used.

If a ladder is used to access a scaffold platform at a height greater than 1.5 metres above the ground, then the ladder must be secured internally (i.e. within the scaffold structure) and there must be an opening (closed with a trap-door) in the platform at the top of the ladder.

If the scaffold platform is at a height of less than 1.5 metres above the ground, then the ladder may be attached externally provided the guard rails around the platform are modified to allow access (the opening in the guard rails must be kept closed using a self-closing gate). No person may climb over or through the guard rails to gain access to a platform.

If a vertical ladder used on scaffolding is more than 5 metres in length it must be equipped with a ladder cage extending from a point 2 metres from the base of the ladder to a height of 1 metre above the platform (or the uppermost platform) that the ladder is providing access to.

Circular ladder cages must have an internal diameter of no more than 700mm. Square ladder cages must have internal dimensions of no more than 700mm by 700mm.

The requirement for a ladder cage may be waived if platforms are provided at height intervals not exceeding 4 metres, with the vertical ladder secured on the inside of the scaffolding framework and an opening (closed with a trap-door) in each platform. Vertical ladders must be braced at three metre intervals (as a minimum) to prevent undue movement.

All vertical ladders providing access to a platform must be left in place for as long as the scaffold remains in place and must be inspected as part of the scaffold structure.

Any deviation from the requirements stipulated above must be subjected to a risk assessment and the nominated project management representative must authorise the deviation in writing.

#### **16.13.7.4 Scaffolding Platforms**

Safe work platforms must be provided.

Every work platform must be complete (i.e. from ledger to ledger and from transom to transom without any gaps) in order to prevent personnel, materials, tools, etc. from falling through the platform.

Every work platform must be constructed from manufactured steel scaffold boards (planks) of equal thickness (height). Timber boards are not permitted under any circumstances.

Each steel scaffold board must be securely hooked (fastened) onto the ledgers or transoms that support it.

On all sides except the one facing the structure, every scaffold platform must be provided with:

- Sturdy guard rails positioned 500mm above the platform floor (the mid rail) and 1000mm above the platform floor (the top rail); and
- Steel toe boards that are at least 150mm high and securely attached such that no gap exists between the toe boards and the platform floor.

**Note:** Wire mesh infill panels incorporating a toe board may be used instead of a mid-rail.

Scaffold platforms must be as close to the structure as is practicable (but not closer than 75mm) except where personnel need to sit on the edge of the platform while they work in which case the distance may be increased to no more than 300mm.

Scaffold platforms must, at all times, be kept free of waste, protruding objects, and any other obstructions. Platforms must be cleaned if necessary to ensure that they are maintained in a non-slip state.

#### 16.13.7.5 Inspection of Scaffolding

Every scaffold structure must be inspected by a competent Scaffolding Supervisor:

- Prior to use after erection, and at least weekly thereafter;
- After inclement weather (heavy rain, strong winds, etc.);
- After any incident resulting in jarring, tilting or overloading;
- After any alteration is made; and
- Before being dismantled.

On completion of an inspection, the Scaffolding Supervisor must update the information on the scaffold tag.

A record of each inspection (date and time of inspection, location of scaffolding, findings, etc.) must be captured in a register. The register(s) must be maintained by the Scaffolding Supervisor(s) carrying out the inspections.

#### 16.13.7.6 Using Scaffolding

The user of a scaffold (i.e. the responsible supervisor) must inspect the erected structure prior to acceptance and must ensure, as far as is reasonably possible, that the scaffold is safe and fit for purpose before allowing his team to make use of the scaffold.

In particular, the user must ensure that:

- The scaffold and the platforms have been constructed to meet the loading requirements of the work that is to be carried out (the Scaffolding Supervisor must be consulted in this regard);
- The Scaffolding Supervisor has checked that adequate ties and braces are in place;
- The work platforms are in the correct positions and are complete with toe boards and guard rails;
- Safe and convenient access has been provided (ladders and / or stairways); and
- A green ("Scaffold Safe for Use") tag has been attached to the scaffold by the Scaffolding Supervisor.



Use of an incomplete or unsafe scaffold is prohibited.

Unsteady or non-rigid scaffolds must not be used and inadequacies must be reported to, and rectified by, the responsible Scaffolding Supervisor.

The user of a scaffold must ensure that every person in his team is aware that no alterations to the scaffold may be made by the team during the course of their work, and that if any alterations are required, they must be made by competent Scaffolding Erectors under the supervision of an appointed Scaffolding Supervisor.

A scaffold may not be used:

- If a red tag is displayed indicating that the scaffold is not safe to use; or
- During inclement weather, defined as wind speeds greater than 40km/h, thunderstorms, or heavy rain (in excess of 40mm/h).

**Note:** With due consideration of possible educational limitations, the contractor must ensure that all persons understand what green and red tags mean.

The area around the base of a scaffold must be appropriately barricaded to prevent unauthorised access into the work area. Appropriate warning signage (i.e. "Overhead Work In Progress" and "No Unauthorised Access") must be prominently displayed.

Loose tools and / or materials on scaffold platforms must be secured using lanyards, wire or fibre rope, or must be placed in secured containers.

Where appropriate, "catch nets" deemed may be installed as an additional safety measure to prevent materials or tools from falling to the ground.

The storage or placement of materials on scaffolding platforms must be kept to a minimum. Debris as well as tools and materials that are no longer required must be removed from all working platforms at least once per day.

Scaffolding platforms must be cleaned regularly.

A heavy load may not be placed on a scaffolding platform unless the scaffold has been designed and constructed specifically for that purpose. Any loading of a scaffold structure must be authorised in writing by a structural engineer.

Scaffolds may not be used as hoisting towers or to support piping or equipment.

Each person working from scaffolding must wear fall protection (i.e. a full body safety harness with two shock absorbing lanyards fitted with scaffold hooks) and must be securely anchored at all times.

All work must be carried out from properly constructed work platforms. Standing on railings or braces in order to perform work is forbidden.

Drums, boxes and other makeshift substitutes for scaffolding may not be used under any circumstances.

Where work on an electrical system is to be undertaken from a scaffold, an electrical engineer (employed by Project or the client) must determine whether or not the scaffolding structure requires bonding and earthing. The scaffolding may not be used until this has been determined, and if required, until the structure has been bonded and earthed.

#### **16.13.7.7 Identification and Inspection of Scaffolding Components**

All scaffolding components belonging to a contractor must be properly marked or uniquely coloured to enable positive identification.

Prior to erecting a scaffold, all scaffolding components must be carefully inspected by a competent Scaffolding Supervisor.

Components found to be defective during an inspection must be conspicuously marked and removed to a suitably demarcated quarantine area for destruction, repair, refurbishment or removal from site. Deformed and bent wedges must be straightened and inspected for cracks before being put back into service.

#### **16.13.7.8 Storage of Scaffolding Components**

All scaffolding components must be stored in a demarcated storage area in such a manner that they are not exposed to environmental extremes and will not cause injury to persons. Suitable barricading or fencing must be erected and warning signage must be posted (e.g. No Unauthorised Entry).

Within a storage area, scaffolding components must be stacked such that pathways (750mm in width) are maintained between the stacks. Each stack must be stable and components must be neatly placed to ensure that no ends protrude into any pathway. The various components must be stacked separately.

The weight of scaffolding components must be considered when stacking them in elevated positions.

Any storage area for scaffolding components must be positioned such that it will not interfere with any onsite activity (including the operation of any plant or equipment), block any access way, or obstruct access to any plant or equipment. Before establishing a storage area, the location must be agreed with the nominated project management representative.

#### **16.13.8 Ladders**

All ladders used on site must be of sound construction and adequate strength.

Only non-conductive ladders made of wood or fibreglass may be used for electrical work or work being performed in proximity to energised electrical equipment. Metal ladders and ladders with metal reinforcing may not be used.

The use of makeshift ladders is forbidden.

All ladders must be numbered, listed in a register, and inspected by a competent person on a monthly basis (the results of each inspection must be recorded in the register). Before using a ladder, the user must inspect it for damage.

Ladders with missing, broken, cracked or loose rungs, split stiles, missing or broken spreaders (stepladders) or any other form of damage or defect may not be used. A damaged ladder must be removed from service (and tagged, "Out of Service") without delay and must then either be repaired (if possible) or destroyed to prevent further use. Persons must receive instruction in the correct use and proper care of ladders.

Ladders may only be used as a means of access and egress. The use of ladders as working platforms is prohibited, except for inspection and carrying out minor tasks (i.e. light work and short duration) such as changing a light bulb.

Ladders may not be positioned horizontally and used as walkways or runways or as scaffolding.

All portable ladders must be fitted with non-skid safety feet (or some other means to prevent the base of the ladder from slipping) and the feet must always be placed (stand) on a firm level surface.

The use of bricks, stones, wood or any other material to level the stiles of a ladder is prohibited.

Ladders may not be placed on movable bases such as boxes, tables, trucks, etc.

The base or foot of a ladder must always be secured to prevent it from slipping. The ladder must be held by an assistant if the base cannot be secured in any other way (e.g. tied off).

A straight ladder must extend at least one metre above its support (or above the working platform that it is providing access to). The top of the ladder must be tied off (or otherwise secured to its support) to prevent accidental movement.

A straight ladder must be placed at a safe angle, i.e. tilted at a ratio of approximately 4:1, meaning that the base of the ladder must be one metre away from the wall (or other vertical surface) for every four metres of height to the point of support.

A stepladder may never be used as a straight ladder. A stepladder must be opened fully and the spreaders must be locked securely.

When using an extension ladder, at least four rungs must always overlap at the centre of the ladder.

Ladders may not be joined together unless they have been specifically designed and manufactured for that purpose.

A suspended ladder (i.e. not standing on a base) must be attached in a secure manner to prevent undue swinging or swaying, and to ensure that it cannot be displaced.

A ladder may not be placed against a window, glass or any other material which is unlikely to withstand the force exerted on it by the top of the ladder.

A ladder may not be placed in front of a door or window that opens towards the ladder unless the door or window has been locked or barricaded.

When a ladder is used near an entrance or exit, the base of the ladder must be barricaded. Materials and / or equipment may not be placed in close proximity to the base or landing of any ladder.

When ascending or descending a ladder, a person must always face the ladder and use both hands (i.e. maintain three points of contact).

Nothing may be carried up or down a ladder if it prevents the person from holding on to the ladder with both hands. Tools must always be properly secured. This can be achieved by attaching them to the wrist using lanyards or placing them in a tool belt around the waist. Tools and materials may also be carried in a bag over the shoulder or hoisted to the landing using a tool bag and rope.

Only one person at a time may use (i.e. be positioned on) a ladder.

No person may stand or step above the third rung from the top of a straight ladder or above the second highest step of a stepladder.

Overreaching from a ladder is prohibited. If the target is not within comfortable reach, the person must climb down and reposition the ladder.

No person may run up or down a ladder, or jump from the lower rungs or steps to the ground.

All ladders must be properly maintained and cared for.

Ladders must be stored under cover and should be hung in a horizontal position from several brackets.

No ladder may be left lying on the ground or be left exposed to the weather. A ladder left lying on the ground presents a tripping hazard and it may be damaged by vehicles running over it.

No ladder may be left in such a position where it may fall over, be accidentally knocked over, or be blown over by the wind.

Ladders may not be painted, as the paint may conceal damage, defects, labels or other markings.

Instead of paint, clear varnish or wood oil may be used to preserve wooden ladders.

Ladders must be kept clean, as dirt may conceal damage or defects. Oil or grease accumulation on the rungs of a ladder may cause a person to slip.

Before making use of a ladder, each person must make an effort to remove mud, oil, grease, etc. from his boots.

#### 16.14 Permit to Work

All personnel must comply with the Permit to Work system applicable to the project.

A Permit to Work must be obtained before carrying out any work that involves:

- A hazardous energy source or system, including electricity, compressed fluids (e.g. hydraulics and pneumatics), chemical substances (e.g. toxic, corrosive, flammable or explosive gases and liquids), heat (e.g. steam), radiation, and machinery or materials with potential energy (gravitational and elastic) – isolation and lockout may be required;
- Confined space entry;
- Working at height;
- A critical lift;
- Hot work outside of designated workshops;
- Excavation; or
- A service (e.g. water supply, fire suppression systems, etc.).

**Note:** A Permit to Work may only be issued by an Authorised Person, and may only be received (or accepted) by an appointed Applicant (see Definitions).

Each Permit to Work that is issued must make reference to an approved Task-Based Risk Assessment for the work that is to be carried out.

The Permit to Work system that is employed must incorporate the following basic procedures:

- Prior to meeting with the Authorised Person, the Applicant must familiarise himself with all of the hazards associated with the system, plant, equipment, structure or area on or in which the work must be performed. He must

also consider the risks that may arise as a result of the tasks that will be carried out. A Task-Based Risk Assessment must be in place;

- The Applicant must then request permission to carry out the work and must meet with the Authorised Person to discuss and document the scope of the work as well as the hazards, risks and associated control measures. Isolation and lockout requirements must be identified (if applicable). The isolation and lockout process must be initiated by the Authorised Person who must contact the necessary Isolation Officers.

**Note:** The Applicant must ensure his own safety and that of his team, and has the right to accompany the Isolation Officers to verify that all of the necessary locks have been fitted to all of the isolation and lockout points in accordance with the applicable plant or equipment-specific Isolation and Lockout Procedure.

- Once all of the necessary isolations have been completed and the necessary Clearance Certificates have been issued by the Isolation Officer(s) (if applicable), and the Authorised Person is satisfied that the system, plant, equipment, structure or area is safe to work on or in provided all identified precautions are observed by the Applicant, then he must issue (sign) the Permit to Work to the Applicant;
- The Applicant must accept (sign) the Permit to Work. If equipment has been isolated, the Applicant must attach his Personal Lock to the relevant Isolation Bar (or Local Isolation Point) and must ensure that every other person working on the isolated equipment also attaches his or her Personal Lock to the Isolation Bar (or Local Isolation Point) before starting any work;
- Before commencing with any work, the Applicant must discuss the hazards, risks, control measures, precautions and limitations as stated in the Permit to Work (and associated Task-Based Risk Assessment) with all personnel who will be carrying out the work. A register must be kept and all persons must sign the register once they have been briefed by the Applicant;
- The work performed must be limited to what is described in the Permit to Work;
- When a particular employee has completed his work, he must sign the personnel register to this effect and (if applicable) must remove his Personal Lock from the Isolation Bar (or Local Isolation Point);
- Once all work is complete, the Applicant must:
  - Ensure that all machine guards have been replaced;
  - Ensure that all tools and materials have been removed from the work area;
  - Ensure that the work area is clean and tidy;
  - Ensure that all Personal Locks (including his) have been removed from the Isolation Bar or Local Isolation Point (if applicable);
  - Inform the Authorised Person that the work has been completed; and
  - Sign off the Permit to Work.
- Once the work is complete and the Applicant has signed off the Permit to Work, the Authorised Person must:
  - Ensure that the relevant Isolation Officers perform all of the necessary de-isolations (if applicable);
  - On completion of the de-isolations, sign off the Permit to Work accepting the system, plant, equipment, structure or area back for service; and
  - Inform all relevant personnel that the system, plant, equipment, structure or area is ready to use.

- Where the work must continue over more than one shift, the Permit to Work must be reviewed at every shift change by an Authorised Person. If the scope of work has changed, the permit must be cancelled and a new permit must be issued.

If any of the original conditions or precautions pertaining to the work is not being complied with, is no longer adequate or is no longer applicable, the Authorised Person must cancel the Permit to Work and must ensure that all work stops until full compliance with either the original or amended (as required) conditions and precautions is achieved and a new permit has been issued.

The Applicant must ensure that the Permit to Work (including the personnel register) is kept where the work is being carried out (i.e. posted on a portable Health and Safety Management Information Notice Board) and that the work is monitored against the permit conditions.

All Permit to Work records must be retained and must be made available for inspection when required.

The implementation of the Permit to Work system applicable to the project must be audited on a regular basis by a nominated project management representative. Furthermore, planned task observations must be carried out periodically.

**Note:** In addition to obtaining Permits to Work as and when required for specific hazardous activities (identified in this standard), each contractor must obtain a General Work Authorisation from a nominated project management representative on a monthly basis. A General Work Authorisation is valid for one calendar month and authorises the contractor's planned work activities. In order to obtain a General Work Authorisation, the contractor must provide a documented work plan for the month together with the necessary Task-Based Risk Assessments.

### 16.15 Isolation and Lockout

Isolation and lockout procedures that make it impossible to inadvertently energise any system, plant or equipment so isolated, must be in place for all work where hazardous energy sources exist, including electricity, compressed fluids (e.g. hydraulics and pneumatics), chemical substances (e.g. toxic, corrosive, flammable or explosive gases and liquids), heat (e.g. steam), radiation, and machinery or materials with potential energy (gravitational and elastic). These procedures must be strictly enforced.

All personnel must comply with the isolation and lockout system and procedures applicable to the project.

All Isolation and Lockout Procedures must incorporate the following basic requirements:

- The issuing of a formal Permit to Work for any work that requires the isolation of any system, plant or equipment;
- The use of defined Equipment, Discipline and Personal Locks (see Definitions), and multiple lockout systems (i.e. Isolation Bars and lockout hasps);
- Clear identification of all isolation and lockout points ensuring there is no duplication;
- Isolation of the main energy source;
- The use of slip plates or the blanking off of pipelines or ducting, in addition to the chaining and locking of valves, as determined by a risk assessment;
- Suitable methods of preventing the movement of equipment; and
- Methods to test the effectiveness or completeness of the isolation.



**Note:** No work may commence on a system, plant or equipment until a Permit to Work has been issued by an Authorised Person.

**Note:** A Permit to Work may only be issued by an Authorised Person once all required Clearance Certificates have been issued by appointed Isolation Officers.

The isolation and lockout system that is employed must incorporate the following basic procedures:

- In accordance with a system, plant or equipment-specific Isolation and Lockout Procedure, an appointed Isolation Officer(s) must isolate all points that need to be isolated in order to render the system, plant or equipment safe to work on. An Equipment Lock (and a suitable, highly visible warning tag) must be attached to each isolation point;
- On completion of an isolation (and lockout), the Isolation Officer must clear the area of all persons and must then carry out tests to ensure that the isolation is effective. This may be done by pressing a start button or by asking a control room operator to try to start the equipment. Special care must be taken to ensure that the attempted starting of the equipment has not been deactivated by another interlock forming part of the system, or by a different up-stream isolation. Alternatively, appropriate equipment may be used to test for energy (e.g. voltage verification or continuity tests).

**Note:** In the case of electrical isolation, a test for voltage must be carried out, after the switching device, to ensure the absence of voltage.

- The Isolation Officer must place the key to the Equipment Locks on an Isolation Bar (at a Lockout Station) and must then attach a Discipline Lock (to prevent the key from being removed) before issuing a Clearance Certificate;
- The Discipline Lock must remain in place when handing over to subsequent shifts. All Discipline Locks for a particular discipline (e.g. low voltage electricity) must be keyed-alike so that any Isolation Officer appointed for that discipline (and issued with a key) can open any of the Discipline Locks used for that discipline. This enables an Isolation Officer to de-isolate equipment that may have been isolated by another Isolation Officer during an earlier shift. Appointed Isolation Officers for a particular discipline are the only persons permitted to hold keys to the Discipline Locks used for that discipline.

**Note:** Local isolations do not require the use of Equipment Locks (a Discipline Lock may be attached to the Local Isolation Point by the Isolation Officer, followed by the necessary Personal Locks).

**Note:** For local isolations, if the Isolation Officer is the only person who will be working on the isolated equipment, then he must attach his Personal Lock to the Local Isolation Point.

- Once all required Discipline Locks are in place (i.e. attached to the Isolation Bar) and all Clearance Certificates have been issued, the Permit to Work may be issued by the Authorised Person;



- Each person who will be working on the isolated system, plant or equipment must then attach his or her Personal Lock to the Isolation Bar before starting any work (including the Isolation Officer, if he intends to work on the isolated unit);
- The attachment of a Personal Lock to the Isolation Bar prevents the removal of the key to the Equipment Locks even if the Discipline Lock is removed;
- When called (by an Authorised Person) to de-isolate the system, plant or equipment (on completion of the work under the Permit to Work), the Isolation Officer must ensure that all Personal Locks have been removed from the Isolation Bar before removing the Discipline Lock and the key to the Equipment Locks;
- Before removing the Equipment Locks and de-isolating the energy source, the Isolation Officer must inspect the system, plant or equipment that was worked on to ensure that it is safe to perform the de-isolation. This includes guard inspections, housekeeping, ensuring that all doors and covers are in place, and most importantly, ensuring that no persons are present;
- Once all Equipment Locks have been removed and the system, plant or equipment is safe for use, the Isolation Officer must cancel the Clearance Certificate and inform the Authorised Person that the unit has been de-isolated.

Where a system, plant or equipment is sequence interlocked and a hazard could be created through the inadvertent start up or shut down of a system, plant or equipment lying before or after the unit to be worked on, then that system, plant or equipment must also be isolated and locked out.

Redundant or out of service equipment must, in addition to being isolated and locked out using the relevant Discipline Lock, be fitted with a tag indicating why it is out of service, who performed the lockout, and the hazards associated with that equipment.

Where it is necessary to work on live equipment for the purposes of commissioning, testing, adjusting and sampling, such work must be carried out in accordance with a written Safe Work Procedure and controls must be in place to prevent unauthorised access into the work area.

The implementation of the isolation and lockout system and procedures applicable to the project must be audited on a regular basis by a nominated project management representative. Furthermore, planned task observations must be carried out periodically.

#### **16.15.1 Personal Locks**

A Personal Lock must be such that it can only be unlocked by the person to whom it belongs. Combination locks may not be used.

A Personal Lock, as well as the key(s) to the lock, must be kept under the exclusive control of the person to whom the lock belongs.

A Personal Lock must be issued to each person who requires one, and the person's details must be clearly and permanently engraved directly onto his Personal Lock. Alternatively, a thick durable plastic identification tag may be used that clearly displays the company's name, the employee's name, the employee's company number, and a contact telephone number (the tag must be securely fastened to the Personal Lock). Where the above is hand written, it must be done using a permanent marker pen and it must be legible.

Each person issued with a Personal Lock must be trained and certified competent in the correct use of such a lock.





A Personal Lock may NEVER be removed by anyone other than the person to whom it belongs, except if the removal (cutting) of the lock is authorised by the nominated project management representative (in the absence of this person, authorisation can only escalate upwards). Furthermore, the removal of the lock must be done under the personal supervision of the nominated project management representative, and in accordance with a written procedure. The removal (cutting) of a Personal Lock may be required if the person who applied the lock is unable or unavailable to remove it on completion of the work (e.g. lost his key, failed to remove his lock before going home, etc.).

#### **16.16 Electrical Safety**

All electrical work must be carried out by competent personnel in accordance with all legal requirements, codes, design criteria and safety standards applicable to the project.

Each contractor carrying out electrical work on the project site(s) must develop, document and implement Safe Work Procedures that are aligned with the requirements of this standard.

All persons who will be carrying out electrical work must be certified against the requirements of job and equipment-specific electrical competency standards for the project, which must address job and equipment-specific Safe Work Procedures.

Each person potentially exposed to electrical hazards must receive electrical hazard training at the commencement of his employment on site and thereafter on an annual basis. The training must address the equipment and conditions specific to the area where the individual will be working. The training material must be documented and training records must be kept.

### 16.16.1 Electrical Installations

Each electrical installation (temporary or permanent) installed or worked on by a contractor must be inspected by a nominated project management representative to ensure that the installation complies with all statutory requirements, codes, design criteria and safety standards applicable to the project.

A nominated project management representative must approve all electrical work before the installation is energised. Any installation deemed unsatisfactory by a nominated project management representative must be removed, repaired or modified by the contractor at his expense.

For every permanent or temporary electrical installation, a certificate of compliance must be issued by a competent and appropriately qualified electrician. These certificates must be available for inspection.

Single line diagrams (with supporting documentation) must be produced and maintained for all electrical installations. This information must include system fault calculations, equipment details, electrical protection discrimination curves, and cable ratings.

Work on electrical installations (new installations, and modifications or repairs to existing installations) may only be carried out by qualified and authorised personnel (i.e. electricians).

Electrical safety devices (specifically, earth leakage protection and overcurrent protection) must be installed on all distribution circuits and the settings must be established by suitably qualified personnel.

A suitable numbering and / or labelling system must be used so that each circuit breaker or earth leakage device can be clearly and readily matched with the outlet or equipment that it protects.

To ensure the safety of the user, each distribution panel must be completely enclosed, must be of the dead-front type, and must be properly constructed and earthed.

All electrical cabling must be covered (e.g. in cable trenches) or elevated (in cable trays) to protect it from damage and to eliminate tripping hazards.

All permanent and temporary electrical installations (cabling, sockets, distribution panels, transformers, switchgear, etc.) must be inspected and tested by a competent and suitably qualified electrician on a monthly basis. The testing must include a grounding (earthing) continuity test and testing of the electrical safety devices. Details of these inspections and tests must be recorded in a register which must be made available to the nominated project management representative for inspection.

A rigorous Isolation, Lockout and Permit to Work system must be applied to all electrical work (i.e. work on electrical installations, machinery or equipment). All personnel must comply with the system and procedures applicable to the project.

Before any work on an electrical installation or equipment is carried out, the installation or equipment must be de-energised.

No electrical work may be performed live, regardless of the voltage, unless written approval is obtained from the nominated project management representative (a

justification as to why it is necessary for the work to be carried out with the equipment in an energised state must be provided).

For all energised electrical work, a Safe Work Procedure must be in place and, with the exception of voltage testing and where no tools are used, a Permit to Work (specifically authorising energised electrical work) must be issued.

When carrying out any energised electrical work, approved electrically insulated gloves, blankets, mats and other protective equipment must be used.

Control centres, switchgear rooms, substations, generators, transformers, capacitor banks, and other similar electrical plant and equipment must be appropriately guarded and labelled and, with the exception of emergency shut-off mechanisms, must be made inaccessible to unauthorised personnel (i.e. plant or equipment of this nature must be positioned within rooms or fenced enclosures which must be kept locked).

Appropriate warning signage must be prominently displayed within, and at all entrances to, these rooms or enclosures. The signage must indicate that unauthorised persons are prohibited from entering, that unauthorised persons are prohibited from handling or interfering with any electrical plant or equipment, the procedure to be followed in the event of a fire, and the first aid procedure to be followed should a person suffer electric shock. Suitable fire-fighting equipment must be provided in all such rooms or enclosures.

All electrical panels must be kept locked (using keyed-alike padlocks). Keys may only be issued to authorised personnel.

All un-insulated (bare) or partially insulated conductors must be enclosed and protected to prevent accidental contact therewith. Measures must be taken to prevent unauthorised access and appropriate warning signage must be conspicuously displayed.

Only authorised persons may enter rooms or enclosures housing electrical plant or equipment, and only authorised persons may access electrical panels or cabinets, and cable ducts or trenches. If any work must be carried out in such an area or on such equipment, a Permit to Work must first be obtained from the nominated project management representative.

No connection to any electrical system may be made without prior approval and a valid Permit to Work from the nominated project management representative.

No electrical equipment or apparatus may be modified without written authorisation from the nominated project management representative.

Conductive ladders may not be used in proximity to non-insulated electrically energised lines or equipment.

All permanent and temporary electrical cables, whether energised or not, must at all times be handled as if they are energised.

Only appropriately certified intrinsically safe electrical equipment may be used in flammable or potentially explosive atmospheres such as in confined spaces.

Any equipment or structure on which electric charges may accumulate (such as storage tanks) must be grounded (earthed).

Lightning protection must be provided on all tall structures and buildings.

Grounding (earthing) and lightning protection systems and devices must be designed, engineered, selected and installed based on site-specific requirements.

Before carrying out any excavation work, a Permit to Work (specifically authorising the excavation activities) must be obtained from the nominated project management representative. Such a permit must not be issued until it has been verified that no buried hazards or services exist where the excavation work is to be carried out (refer to the Excavation Standard).

#### **16.16.2 Arc Flash Safety**

Depending on the scope and nature of the work, a documented arc flash protection programme must be in place that specifies:

- The methodology for calculating incident energies and determining flash protection boundaries; and
- The PPE required (specific to a task and the equipment on which the task is performed) and associated procedures to mitigate the hazard.

The method of calculation must be based on regional electrical code requirements, or if none exist, the Institute of Electrical and Electronics Engineers (IEEE) Standard 1584, or the United States National Fire Protection Association "Standard for Electrical Safety in the Workplace" (NFPA 70E), or published equivalent.

An Arc Flash Hazard Assessment must be carried out based on accurate and current data. All electrical cabinets where the potential for an arc flash hazard exists must be labelled in accordance with the hazard assessment and the potential incident energies calculated.

A process must be in place for updating the Arc Flash Hazard Assessment and labelling as changes and electrical upgrades occur that might affect the available short circuit current on the system.

In order to mitigate the hazard, Safe Work Procedures must be in place and all persons potentially exposed to arc flash hazards must be trained in these Safe Work Procedures and must be supplied with appropriate arc flash PPE.

#### **16.16.3 High Voltage Power Lines**

Before any mobile equipment (such as a crane, bulldozer, back-actor, boom truck or drill rig) is mobilised to a work site, an assessment must be carried out (including a thorough inspection of the work site and the access route) in order to clearly identify any overhead or underground power lines.

A system must be in place to mitigate the risks associated with working in close proximity to power lines and suitable measures must be taken to prevent personnel or equipment from coming into contact with power lines. Extreme caution must be exercised.

Where possible, exclusion zones (based on minimum clearance distances specified by the electrical power utility or the nominated project management representative) must be created with rigid barriers and warning signs.

Only in exceptional circumstances, and then only after a detailed method statement and risk assessment has been approved, all necessary mitigation or control measures are in place (including the use of a spotter), and a Permit to Work has been issued by the nominated project management representative, may equipment be operated within one boom length of energised overhead power lines. Suitable protective insulating barriers may need to be used.

If possible, the power lines must be de-energised and isolated while the work is carried out.

All equipment operators and rigging personnel must be trained in the hazards and the applicable safe approach distances (exclusions zones) associated with overhead power lines.

A procedure must be in place for the evacuation of mobile equipment or a vehicle in the event of accidental contact with power lines. All operators must be trained in this procedure and must follow it implicitly.

Scaffolding may not be erected within 5 metres of power lines or overhead track equipment.

#### **16.16.4 Portable Electrical Equipment**

Prior to site establishment, each contractor must provide a complete inventory of all portable electrical equipment that he and his sub-contractors intend to use on the site (including plant, machines, appliances, generators, hand tools, lighting, extension cords, etc.). The nameplate data for each item of equipment must be included.

All portable electrical equipment to be used on the site must be supplied and maintained in a serviceable condition.

Any electrical equipment that is in poor condition or is not in proper operating order may not be used. Any electrical equipment that a nominated project management representative deems to be unsafe or unsuitable must be removed from site.

Electrical repair work or diagnostic work on electrical equipment may only be performed by personnel who are competent and authorised to perform this work (i.e. qualified electricians).

With the exception of double-insulated equipment, all electrical equipment must have an equipment grounding (earthing) conductor that connects the frame of the equipment being utilised to the grounding (earthing) conductor of the electricity supply system.

All electrical equipment and all electricity supply systems used (including generators) must be inspected and tested by a registered and competent electrician to ensure that all equipment is properly grounded (earthed).

All electrical equipment used on site must be supplied electricity through (i.e. must be protected by) an approved and tested residual current device (or earth leakage device or unit). If a socket outlet does not have a residual current device in the circuit, a portable residual current device must be used. Outlets without residual current device protection must be labelled as such.

Any electrical equipment that causes an earth leakage device to trip or deactivate the circuit may not be used again until an electrician has inspected and tested the equipment and has recorded in a register that the equipment is safe to use.

Interlocks may never be removed or modified, and fuse terminals may never be bypassed to keep current flowing in any circuit.

All generators must be fitted with suitable overcurrent protective devices (i.e. circuit breakers or fuses).

All generators must be used in compliance with the manufacturer's requirements. Any proposed modification to a generator must be authorised in writing by the manufacturer prior to the modification being made.

Each welding machine used on site must be fitted with a Voltage Reduction Device (VRD). If this is not practical (i.e. for arc welding processes other than stick welding), a dead man's (isolation) switch in the electrode circuit (operated by a trained observer) may be used as an alternative. All welding machines must be properly grounded (earthed).

All portable electrical hand tools used on the site must be double-insulated. Electrical equipment must be disconnected or unplugged when not in use. Portable lights must be stable and each light bulb must be protected by a substantial guard. Temporary festoon lighting must be double-insulated and must be supported at least 2.5 metres above the floor, if possible.

Handheld lights must be of the all-insulated type and must be extra low voltage (i.e. not exceeding 32V). 120V or 240V handheld lights are not permitted. Any lighting used in hazardous locations (i.e. potentially explosive atmospheres, confined spaces, and damp or wet areas) must be operated at a maximum of 32 volts, unless earthed and protected by earth leakage devices. No person may wear a watch or any jewellery, or carry any metal objects such as a lighter or keys, while working on any electrical system or equipment. No person may work on or use electrical equipment if his clothing is wet or any part of his body is in contact with water.

No person may handle electrical equipment, equipment cords or extension cords with wet hands or if the floor or ground surface is wet. Fire extinguishers filled with carbon dioxide must be used to fight electrical equipment fires (water may never be used). If possible, the electrical equipment should be de-energised before fire-fighting activities commence (refer to the Fire Protection and Prevention Standard). When cleaning or performing maintenance work on an item of electrical equipment, the equipment must be unplugged.

Equipment may not be unplugged while that equipment is switched on. Nor may equipment be plugged into a receptacle (socket) with the equipment's switch turned on. Electrical equipment that has a defective plug or wiring may not be used. Repair work to defective or damaged electrical equipment may only be carried out by a qualified electrician. Extension cords may be used for temporary applications only. Permanent cabling must be installed for long-term needs.

Extension cords may not be run through doors, windows, ceilings or holes in walls. An extension cord must be uncoiled completely before it is used. An extension cord must be of sufficient current-carrying capacity to power the equipment that it is supplying electricity to. Cords must not be overloaded. Extension cords must be unbroken and continuous (i.e. no joins or splices in the cord are permitted).

Extension cords may not be daisy-chained (i.e. one extension cord plugged into another extension cord). Extension cords and equipment cords may not be modified to fit a receptacle (socket).

Two-conductor extension cords may not be used. A three-conductor extension cord (i.e. a grounded or earthed cord) must be used even if the equipment that it is supplying electricity to uses a two-prong plug.

Extension cords that are frayed, have insulation tears, cracks or abrasions, have exposed conductors, or have bent, broken or "spread" plug prongs may not be used.

Extension cords that will be used outdoors must have heavy duty insulation and must be weather and UV resistant.

All electrical equipment cords and extension cords must be covered or elevated to protect them from damage and to eliminate tripping hazards.

Each contractor is responsible for protecting his electrical equipment from the weather and from possible mechanical damage.

All portable electrical equipment (including generators) must be inspected, tested and tagged by a competent and appropriately qualified electrician on a monthly basis. Details of these inspections and tests must be recorded in a register which must be made available to the nominated project management representative for inspection.

The inspection and testing must include a continuity test of the grounding (earthing) conductor (as applicable) and a complete examination of the equipment or system to assure safe use.

The following colour coding system must be used for the tagging of all electrical equipment:

**Table 16-2 Colour Coding System for Electrical Equipment**

Month		Tag Colour	Month	Tag Colour
January		Red	July	Red
February		Blue	August	Blue
March		Orange	September	Orange
April		Green	October	Green
May		White	November	White
June		Yellow	December	Yellow

The tag placed on a piece of equipment must be traceable to an entry in a register where the following information concerning the inspection and testing of that piece of equipment must be recorded:

- Date of inspection and testing;
- Equipment description;
- Equipment owner;
- Equipment location;
- Name, signature and licence number of the electrician who carried out the inspection and testing; and
- Comments concerning the inspection and testing, and details of any repair work carried out or required.

Any item of electrical equipment that does not pass an inspection or test must be removed from service (and tagged, "Out of Service") immediately and must then either be repaired (if possible) or removed from site.

Any item of electrical equipment without a tag or with an out-of-date inspection or test may not be used.



Any item of electrical equipment found without a tag or with an out-of-date inspection or test must be removed from service until it has been inspected and tested. If it is found that more than one item of equipment being used by a contractor has not been inspected and tested as required, all work with electrical equipment must be stopped until it can be demonstrated to the satisfaction of the nominated project management representative that the contractor's systems and controls are adequate and fully implemented.

In addition to the formal monthly inspections and testing carried out by an electrician, electrical equipment (particularly extension cords, portable hand tools, welding machines, compressors and pumps) must be visually inspected by the user on a daily basis prior to use. Users must be trained to look for cracks in casings, loose casings, outer cord sheathing that is not being held firmly in position at the equipment, cuts or cracks in cord or cable insulation, exposed conductors, damaged plugs or sockets, and missing covers. Damage and / or defects must be reported immediately.

Personnel must immediately stop using and report any electrical equipment or machinery that is shocking, sparking, overheating or smoking. Corroded outlets, switches and junction boxes must also be reported.

## **16.17 Confined Spaces**

Entry into a confined space occurs when a person's whole body, upper body or head is within the confined space. This is not intended to prevent an authorised, competent person from inserting only his arm into the space to test for hazards using appropriate monitoring equipment. Precautions must be taken to prevent persons from being overcome by atmosphere escaping from the confined space.

Before any person enters a confined space, a detailed risk assessment must be carried out, including the need for an authorised person to assess such things as oxygen levels, contaminants, temperature extremes and concentration of flammable substances.

As a minimum the risk assessment shall address the following:

- Isolation and lockout procedures required for chemical substances, mechanical or electrical energy, steam, pressure, heat, gases, liquids and solids;
- Venting, purging, draining and cleaning prior to entering the confined space;
- Hazards created by carrying out particular tasks or through the use of chemical substances in the confined space. Task-Based (or Issue-Based) Risk Assessments and/or Written Safe Work Procedures must be available for work in confined spaces
  - in particular for abrasive blasting, welding, flame cutting, grinding, chemical/steam cleaning, rubber lining and painting;
- Entry, exit and escape routes as well as barricading;
- The electrical safety, intrinsic safety and other safety specifications of equipment to be used in the confined space (explosive atmospheres must be considered);
- The need to test for presence of toxic/asphyxiant substances, radioactivity, oxygen, temperature extremes and flammable substances prior to entry and during the performance of work;
- Provision of suitable mechanical ventilation and personal protective equipment e.g. lifejackets etc. and in particular the use of respiratory protection such as compressed air breathing apparatus; and
- A ventilation rate suitable for general use must take into account factors such as air contaminant type, rate of generation, rate of oxygen depletion, temperature,



efficiency of ventilation distribution and contaminant removal from the breathing zone. Therefore each situation needs to be evaluated on its own merit by a risk assessment that will select a combination of ventilation method and respiratory protection that suits the particular circumstances. This must be achieved by consultation between competent operations personnel, engineers and a ventilation specialist.

Entry and work inside a permitted confined space must be controlled and regulated by the project Isolation / Lockout and Permit to Work control systems. The Authorised Person issuing the Permit to Work may only do so if the conditions applying to the specific confined space entry have been satisfied and documented.

As a minimum, the following must be included in the permitting process:

- Access barriers to prevent unauthorised entry;
- Isolation procedures for contaminants and other energy sources;
- The need for breathing apparatus / ventilation requirements;
- The sign-in and sign-out of all persons entering the confined space;
- Display of the permit;
- Communication procedures and/or equipment;
- Safety specifications of equipment to be taken into the confined space;
- Barricading of entrances and exits;
- Rescue plan and equipment;
- Standby person(s); and
- A completion and lock-in procedure (to ensure that space is evacuated and adequately secured).

The Permit to Work process must require competent rescue persons with suitable communication, rescue and firefighting equipment to be present where any of the following may exist:

- Compressed air breathing apparatus is required;
- There is a high risk of fires or explosions;
- The atmosphere can rapidly become unsafe for breathing purposes if the mechanical ventilation fails;
- There is a high risk of flooding or engulfment;
- Narrow tunnels or pipes are entered or where exit or escape routes cannot readily be accessed
- Work is done in remote areas; and
- A single person, who cannot be observed directly or is isolated from other workers, does the work.

Where testing for toxic/asphyxiate substances, radioactivity, oxygen, temperature extremes and other health hazards as well as for flammable substances is carried out, it may only be done by persons trained, tested and certified competent in writing to do so. The ventilation method and quantity must be adequate to ensure oxygen levels and explosive or toxic gas levels remain within acceptable defined limits. Where ventilation is required, this must be covered by an approved documented procedure.

As a minimum standard, the volume of air pumped in and circulated in a confined space needs to be equivalent to 20 times the volume of the space per hour.

Where breathing apparatus or respiratory equipment is required, the contractor's Health and Safety Officer must be consulted with regard to the specification and selection of suitable equipment.

All persons required to use respiratory protection must be medically fit and trained in the correct use of the equipment.

Safe and convenient entry, exit and escape routes from the confined space must be provided where possible and practical. Where this cannot be achieved effectively, the risk assessment must determine if a competent rescue person must be on duty at the confined space when work is in progress.

Where a standby/rescue person is required, they will have no other duties and will be positioned outside the confined space entry point at all times while personnel are within the space.

### **16.18 Conveyors**

The contractor must ensure that no person attempts to cross / climb over or under any conveyor. Instead, a safe passageway (a crossover or an underpass fitted with safeguards) must be used.

No person may climb onto, sit on, stand on, or walk on a conveyor at any time. Riding a conveyor belt is strictly forbidden.

No person may operate a conveyor other than trained, competent and appointed conveyor operators.

Only authorised maintenance personnel are permitted to work on conveyors and only if all energy sources have been effectively isolated and locked out and a Permit to Work has been issued by an Authorised Person.

Working on an operational conveyor is strictly prohibited.

No work may be carried out within three metres of an operational conveyor.

### **16.19 Arc Welding**

All welding machines must be fitted with voltage reducers.

The supply cable to every welding machine must be correctly rated and fitted with an approved plug to be used only with an approved matching plug socket.

The electrical circuit to every plug socket must be protected by a correctly rated circuit breaker and a supply voltage rated earth leakage unit.

Welding cables must be properly insulated and correctly rated for the welding machines on which they are to be used.

Welding cable terminals must either be covered with a properly designed, constructed and installed cover so that inadvertent human contact with the terminals is impossible, whether the cables are connected or not, or the welding cables must be fitted with insulated plugs so that inadvertent human contact with any live part is impossible when the cables are plugged into the machine. Also the plug socket should be such that when the cables are not plugged in, inadvertent contact with a live part of the socket is impossible.

Earth cable clamps and electrode holders must be of an approved type. Earth clamps and electrode holders must be fixed to welding cables with eye terminals and bolts.



All welding machines and safety devices must be subjected to regular planned maintenance and a monthly electrical inspection. The inspection must include a test to ensure that the voltage reducer is functioning properly, by measuring and confirming that the open circuit output voltage is reduced.

Before using a welding machine, the welder must ensure that he is wearing all the required and approved protective clothing and equipment:

- Persons assisting the welder must also wear all of the required personal protective Welding hood;
- Leather welding gloves;
- Safety boots with steel toe protection;
- Flame resistant overalls; and
- Any other clothing or equipment necessary to perform his work safely and efficiently.
- equipment.

When changing electrodes or moving the earth clamp, the welder or his helpers must wear gloves to avoid possible skin contact with live electrical parts and to prevent burns. When attaching welding cables to the terminals of the welding machine, the welder or his helpers must wear gloves, or preferably, the machine should be switched off to avoid possible electric shock.

Helpers who may be holding the work piece being welded must wear gloves and protective goggles.

Where practicable the welder should place protective screens around the area where he is welding, to prevent injury to the eyes of passers-by.

The welder must ensure that the earth cable follows the shortest practical route between the welding machine and the work piece. The earth connection must be directly between the welding machine and the work piece and no building or other structure must form part of the earth return path.

As far as is practicable, the welder should avoid welding under wet or damp conditions. If this is unavoidable, the following precautions should be taken:

- Use only oil filled or other watertight type welding machine;
- Keep the electrode holder as dry as is practical;
- Keep as dry as possible. Stand on an elevated surface out of the water and wear watertight boots and a rain suit. Also ensure that the gloves are in good condition, free of holes.
- Under conditions that result in high perspiration levels, the following measures should be implemented:
  - Use an insulated electrode holder;
  - Change clothing regularly (if possible);
  - Use insulated material like rubber mats and/or timber tuck board to separate yourself from the work piece;
  - Wear dry gloves on both hands during welding;
  - Use fans and air-conditioning to reduce humidity and temperature; and
  - Use an observer capable of responding in an emergency.

When working inside metal vessels or under other conditions where parts of his body may come into contact with conducting surfaces, the welder must take precautions to insulate himself from such surfaces.

When working in confined spaces, the welder must take steps to ventilate the area to prevent inhalation of fumes, which may endanger his health and the health of any assistants.

Engine powered welding machines must not be used in any place that is not very well ventilated since the welder and his helpers may be overcome by carbon monoxide fumes.

The welder should take the necessary precautions when welding objects that may catch alight, explode or release poisonous fumes or gases.

## **16.20 Gas Welding and Burning**

Welding or cutting torches and hoses shall not be connected to cylinders when stored. When work is stopped and equipment is unattended, all valves at the gas and oxygen cylinders shall be closed. The hoses shall be bled and a check shall be made later for possible pressure build-up. Torches shall be removed from the hoses prior to putting them into the toolbox. Smoking SHALL NOT be permitted during this stopping procedure.

Special care shall be taken during overhead cutting and welding operations to safeguard and prevent falling sparks from starting a fire.

Warning signs shall be posted around and at each level below the area of each overhead welding or burning operation. Fire extinguishers shall be available and fire blankets shall be used for protection.

When welding or cutting, adequate ventilation must be ensured / provided.

Hoses shall be kept clear from passageways, ladders and stairs. When hoses are subject to damage, they shall be properly protected. Hoses shall be inspected daily.

Fire extinguishers shall be ready for instant use in locations where cutting is performed.

Flash-back arrestors must be fitted to all cutting torches at the torch and at the bottle (a total of four arrestors).

Lighting of the cutting and welding torches must only be done using a striker and not an open flame.

Soap Leak tests must be performed on all flash-back arrestors.

Hoses may only be secured using approved hose clips, and not by wire, cable ties or any other means.

Special care shall be taken when welding with respect to piping that has been painted, as toxic fumes may be emitted in some cases. The supervisor's advice should be sought prior to the above welding operations being carried out.

## **16.21 Compressed Gas Cylinders**

The contractor must establish a suitable storage area for oxygen, acetylene, LPG and argon cylinders in compliance with the following requirements:

- The storage area must be located at least 10 metres away from any building, and must be well ventilated;
- The storage area must have a concrete floor;
- The storage area must be enclosed using wire mesh fencing (as this will ensure adequate ventilation). This enclosure must be kept locked. Access into the storage area must be limited and controlled;
- A protective covering or roof must be fitted to the enclosure to provide shade;

- The enclosure may not be used for the storage of any other materials / equipment, and must be kept completely free of all combustible materials at all times;
- Appropriate warning signage (i.e. "No Smoking" and "No Naked Flames") must be prominently displayed on the enclosure;
- A 9kg dry chemical powder fire extinguisher must be mounted near the entrance to the enclosure
- If electrical lighting is required, it must be of an approved intrinsically safe type;
- Oxygen, acetylene, argon and LPG cylinders must be stored separately in the enclosure. Furthermore, full and empty cylinders must be separated. Separate storage sections must be clearly designated within the enclosure for the different gas types, and for full and empty cylinders, i.e. oxygen – full, oxygen – empty, acetylene – full, acetylene – empty, etc.;
- When a cylinder is empty, the cylinder cap must be replaced to protect the valve. Empty cylinders must be clearly marked (there must be no need to open valves to check if cylinders are full or empty);
- All cylinders must be stored in an upright position and must be secured in this position by chaining, strapping or clamping them individually to a wall, a cylinder trolley, rack or carrier, or some other rigid structure;
- Cylinders must be stored in rows (when necessary due to the number of cylinders) with aisles between the rows to facilitate easy and rapid removal in the event of a fire;
- Oxygen cylinders may never be stored near highly combustible materials, particularly oil and grease, or near fuel gas cylinders. When in storage, oxygen cylinders must be separated from fuel gas (LPG and acetylene) cylinders by a distance of 6 metres or by a 2 metre high wall made of fire-resistant material;
- The total quantity of gases stored on site must be limited to a 2 week supply.

Compressed gas cylinders must always stand upright (i.e. when being used, stored or transported) and must be properly and individually secured to prevent them from falling over.

Cylinders must be protected from flame, heat and from being struck by moving equipment and falling objects.

When handling gas cylinders (whether full or empty), care must be taken to prevent sudden impacts.

Whenever a cylinder is not in use, the protective cap must be in place to prevent the valve from being damaged.

Gas cylinders may not be carried, dragged, rolled or slid across a floor or surface.

When gas cylinders are to be moved / used, they must be placed in a proper cylinder trolley fitted with a 1.5kg dry chemical powder fire extinguisher.

Gas cylinders may not, under any circumstances, be used as rollers or work supports.

If transported by crane, hoist or derrick, compressed gas cylinders must be placed in a suitable cradle, net or skip box. Cylinders may NEVER be lifted using wire rope, fibre rope, a web sling or a chain sling. Before moving / transporting a gas cylinder, the regulator must be removed and the protective valve cap must be replaced.

Gas cylinders may not be taken into a confined space. Gas hoses that are run into a confined space must be removed during breaks.

Gas cylinders may not be placed on scaffolding.

Cylinder valve keys must be in place. If no suitable valve key is available then the cylinder may not be used. Nothing but the manufacturer-supplied key may be used to open the valve.

A flashback arrestor and a check valve (non-return valve) must be installed between the regulator and the hose and between the hose and the torch on the oxygen line and on the fuel (acetylene) line.

Connection fittings may not be forced and safety devices associated with cylinder valves or regulators may not be altered / tampered with.

Gas hoses may not be joined. Only approved hose connectors of the crimp type are permitted. Wire and jubilee clamps are prohibited.

Only high quality ancillary equipment may be used. This includes flashback arrestors, hoses, clamps, spindle keys, nozzles and torches.

Only trained and competent personnel may operate gas welding / cutting equipment and appliances.

When an employee opens the valve to a cylinder, he must stand to one side and open it slowly. Valves may never be left partly open – they must either be closed or be opened fully.

Leaking cylinders must immediately be removed from service and the workplace (if it is safe to do so).

Suitable firefighting equipment must be at hand wherever gas cylinders containing oxygen and / or fuel gas are being used.

Gas cylinders must be prevented from coming into contact with electrical circuits, e.g. welding leads. Never strike an arc on a cylinder.

Oxygen may only be used for the purpose for which it is provided. Do not use oxygen in pneumatic tools or tyres, as an explosion may occur.

Empty cylinders must immediately be marked as such and must be removed to the cylinder storage area at the end of each day / shift.

## **16.22 Electrically Powered Tools and Equipment**

All powered hand tools, such as circular saws, drills, chainsaws, percussion tools, jigsaws etc., must be equipped with a constant pressure switch that will shut off the power when the pressure is released. (Exception: this requirement does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, and similar hand operated power tools).

Electrical power tools must be of the approved double-insulated type. The electric cord, pneumatic or hydraulic supply line of powered tools must not be used for hoisting or lowering of the tool.

Loose clothing, jewellery or gloves that could get caught in the tool must not be worn when operating powered tools. Operators of powered tools who have long hair must keep their hair tied up.

The power source must be disconnected from the tool before making any repairs, servicing, adjustments, or replacing attachments such as drill bits.

### **16.22.1 Angle Grinders**

The following personal protective equipment must be worn when using angle grinders:

- Safety helmet;
- Gloves;



- Safety glasses (or safety goggles) and a full face shield (i.e. double eye protection);
- Overalls with long sleeves and long pants, avoid any form of loose clothing;
- Safety boots with steel toe protection;
- Hearing protection;
- Breathing apparatus where dust or fumes may be generated;
- Where grinding machines are used, a face shield is to be worn as extra protection to the safety glasses; and
- Certain tasks may require the use of a leather apron as determined by a risk assessment.

A 230mm angle grinder may not be used for free cutting purposes. Exceptions may be approved only if alternative methods evaluated proved more hazardous or no alternative exists. The risk assessment for the task must then specifically include mitigating measures to ensure the safest possible way of performing the task.

The use of 230mm angle grinders for grinding purposes is acceptable, however should this form of grinding be required, the 115mm or 125mm grinders would be preferable. All angle grinders must have a dead man switch incorporated, with a pressure switch in the handle.

A 230mm electrical angle grinder unit must incorporate a soft start to reduce the starting strain and a braking system to reduce run on after the unit has been switched off.

All angle grinders must have a spindle lock to assist with changing the disc or grinding wheel.

Anti-vibration handles are recommended to further reduce the stress if used for extended periods.

Angle grinders must be equipped and operated with disc guarding at all times.

Angle grinder must not be stored with fitted discs, as this will lead to damaging of the discs.

Before use and mounting of discs it is essential to check the safety codes and specifications printed on the upper side of the disc. Such specifications include the following:

- Revolutions per minute (RPM). The allowable speed of the disc must be equal to or greater than the maximum achievable speed of the grinder;
- Physical dimensions of the disc must meet grinder specification; and
- The disc must be suitable for the material type to be cut / ground as indicated on the disk. Cutting discs must never be used for grinding and vice versa.

It is critical that the correct disc mounting procedure is followed:

- Check that the machine is plugged out;
- Check the machine spindle, backup washer and thread;
- Check the condition of spindle nut - ensure spanner drive holes are not elongated;
- Ensure spindle nut spanner is the tool recommended by machine manufacturers;
- Do not use a hammer, pipe or chisel to tighten the nut, or apply additional mechanical advantage to nut torque. A firm "nip" is sufficient to retain the disc;
- Ensure the spindle diameter is suited to disc bore. Excessive clearance will cause the machine to vibrate due to eccentricity;
- Check to see that the nut and backup washer do not "bottom out". This will result in the disc not being correctly clamped on the spindle;

- Ensure the spindle speed is marked on the grinder and that it is less than the allowable disc speed; and
- Fit the disc, with the metal ring or writing to the nut side.

### **16.23 Pneumatically Powered Tools and Equipment**

Pneumatic powered tools must only be driven by filtered compressed air with an in-line lubrication system, or be lubricated prior to use if there is no in-line lubrication system. When using pneumatic powered tools the designated tool pressure must be attained by the use of a regulator.

Pneumatic powered tools must be disconnected when not in use. They must not be disconnected from the air supply until all the residual pressure has been released or contained by a shut-off device. Hoses must not be kinked as a means of containment.

Employees operating pneumatic powered tools, and any potentially affected employee in the vicinity of use, must wear suitable personal protective equipment.

All rotary compressed air tools (e.g. drills) must have the rated revolution per minute (RPM) permanently marked on the casing. Only attachments of compatible RPM must be used with these machines.

The actual RPM of the tool must be checked every three months to ensure that the speed is as rated to manufacture specifications.

Pneumatic powered tools must be secured to the air supply hose by an approved positive means to prevent the tool from becoming accidentally disconnected. Safety clips or retainers must be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.

All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 kPa pressure at the tool, must have a safety device on the muzzle to prevent the tool from ejecting fasteners unless the muzzle is in contact with the work surface.

Compressed air must not be used for cleaning purposes except where reduced to less than 30 kPa, and then only with effective chip guarding and personal protective equipment in place. The 30 kPa requirement does not apply to concrete form, mill scale and similar cleaning purposes. The use of compressed air for cleaning purposes must be approved by the nominated project management representative. Compressed air must not be pointed at any part of the body or used for cleaning clothing.

Airless spray guns of the type which atomize paints and fluids at high pressures must be equipped with automatic or visible manual safety devices which will prevent pulling of the trigger to prevent release of the paint or fluid until the safety device is manually released. A diffuser nut which will prevent high pressure, high velocity release while the nozzle tip is removed, plus a nozzle tip guard which will prevent the tip from coming into contact with the operator, or other equivalent protection must be provided in lieu of the above.

Abrasive cleaning nozzles must be equipped with an operating valve, which must be held open manually to enable operation. A support must be provided on which the nozzle may be mounted when it is not in use.

### **16.24 Fuel Powered Tools and Equipment**

Fuel powered tools must be shut down and allowed to cool before being refuelled, serviced, or maintained. Fuel must be transported, handled, and stored in approved fuel



containers. Where possible, diesel driven engines must be used in preference to petrol driven engines. All fuel powered tools must be included on the contractor's Equipment Register and the register must be submitted to the nominated project management representative prior to the relevant work commencing.

When fuel powered tools are used in enclosed spaces, the space must be ventilated and the atmosphere monitored to measure toxic gas concentrations. Persons in the space must wear the necessary personal protective equipment. Confined Space Entry clearance may apply. This type of activity must only be undertaken in exceptional circumstances and requires the approval of the nominated project management representative.

### **16.25 Hydraulically Powered Tools and Equipment**

Hydraulic powered tools must use only approved fluid that retains its operating characteristics at the most extreme temperatures to which it will be exposed. The manufacturer's stated safe operating pressures for hoses, valves, pipes, filters and fittings must not be exceeded.

Only manufacturer approved hoses, valves, pipes, filters and fittings must be used.

### **16.26 Explosive Powered Tools**

All operators shall be trained by the contractor.

The contractor shall ascertain that the explosive charges to be used are of the correct strength for the purpose.

Projectiles from explosive powered tools shall NOT be driven into:

- Tile, terracotta, glazed brick, glass, marble, granite, thin slate or other brittle substances;
- High tensile steel, cast iron or steel hardened by heat treatment; or
- Concrete that contains aggregate that will not pass wholly through 25mm mesh screens.

Under no circumstances shall a tool be fired in such a manner as to cause the projectile to fly free.

Suitable safety glasses and hearing protection shall be worn by operators when firing an explosive powered tool.

At all times when a tool is being used, the operator shall display clearly legible signs at or near the place where the tool is in use. Sign should read: WARNING: EXPLOSIVE POWERED TOOL IN USE – KEEP CLEAR.

The operator shall warn all other employees in the vicinity of the area in which the tool is about to be used.

Tools shall never be stored in a loaded state. Cartridges and tools shall be stored separately in lockable containers.

A logbook must be kept of the number of cartridges used and returned.

### **16.27 Hand Tools**

Employees required to use hand tools must receive training relevant to the tool and have their competency assessed in the operation, inspection and maintenance of the tool. Where necessary, additional applicable personal protective equipment must be worn when using hand tools.

Wrenches, including adjustable, pipe, end, and socket wrenches, must not be used when the jaws are sprung to a point where slippage occurs. Impact tools such as drift pins,

wedges and chisels, must be kept free of mushroomed heads. The wooden handles of tools must be kept free of splinters or cracks.

Adjustable wrenches must not be used in lieu of ring or open-end type spanners, unless a risk assessment has been conducted and the use of the adjustable wrench is approved by the nominated project management representative. Wherever possible, ring spanners must be used in preference to open end spanners.

Correct hand tools for the job must be used, e.g. screwdrivers must not be used as chisels, and pliers must not be used as hammers.

All wedges and drifts that may spring, fly or fall to lower levels upon impact must be fitted with an attachment which attaches a safety "lanyard" to a solid structure to restrain the impact tool from becoming a projectile.

All hand tools used in elevated areas, that may be dropped or fall to lower levels must be fitted with safety lanyards and attached to solid structures or in the case of podges, scaffold keys etc., attached by wrist lanyard to the user.

Purpose built tools and equipment may not be used unless a risk assessment has been conducted and authorised by the nominated project management representative.

#### **16.27.1 Stanley Knives / Utility Knives**

A utility knife must be used as a last resort, when it is the safest tool to use. Always consider alternatives that pose less of a risk to the operator.

Whenever a utility knife is used, ensure that a complete risk assessment is done and that all possible hazards have been addressed.

Only utility knives with retractable blades are to be used. The blade is to be retracted at all times when the knife is not in use or is being stored.

Before using the utility knife, ensure that the tool is in a good condition and the blade is secure in the holder (seated correctly and that there is no play).

Ensure that the blade is always sharp and in good condition. This will prevent the use of excessive force.

Always wear cut resistant gloves and safety glasses when using a utility knife. There is always a risk of the blade breaking under tension and becoming a projectile.

Always ensure that you cut away from your body, and that no part of your body is in the firing line.

Always ensure cleanliness of all equipment in use during the cutting operations.

#### **16.28 Inspection of Equipment and Tools**

All tools must be inspected by the user before, during and after use. If any faults are identified, the tool must be taken out of service and not used until repaired. Faulty tools that are not able to be repaired must be tagged "out of service" and removed from site.

#### **16.29 Manual Handling and Vibration**

Any handling or lifting task that can only be done manually must be planned and rehearsed before the task is done.

If more than one person is involved in a task a communication procedure must be agreed in advance. Lowering the load must be done in a controlled manner. Dropping a load is dangerous and must be avoided.

As a guideline 25 kg is considered to be the limit of what a person can safely handle. Where there are loads exceeding 25 kg the risk of handling the load must be mitigated to assure minimal potential for any injury.

When mechanical lifting aids are provided, they should be used.

Extra care should be taken when lifting awkwardly shaped objects.

Position the feet correctly. The feet should be placed hip-width apart to provide a large base. One foot should be put forward and to the side of the object, which gives better balance.

Bend or 'unlock' the knees and crouch to the load. The weight will then be safely taken down the spine and the strong leg muscles will do the work.

Get a firm grip. The roots of the fingers and the palm of the hand should grip the load. This keeps the load under control and permits it to be distributed more evenly.

The following should be considered with conducting the Risk Assessment with regards Manual Handling and also take into consideration the task factors, physical demands and tools involved in the task:

- Load weight/frequency;
- Hand distance from lower back;
- Asymmetrical trunk/load;
- Postural constraints;
- Grip on the load;
- Floor surface;
- Environmental factors;
- Carry distance; and
- Obstacles en route.

Team Manual Handling:

- Load weight;
- Hand distance from lower back;
- Vertical lift region;
- Trunk twisting/sideways bending;
- Postural constraints;
- Grip on the load;
- Floor surface;
- Environmental factors; and
- Communication, co-ordination and control.

As far as possible, exposure to vibration must be eliminated.

However, if this is not possible, short-term solutions to decrease exposure include:

- Reducing the vibration levels;
- Removing the person from the vibrating equipment / tools;
- Reducing the period of time that the person works with the vibrating equipment / tools (at least 40 minutes break after 20 minutes working with a machine that vibrates excessively).

In order to reduce exposure to vibration:

- Consider buying equipment that operates effectively at lower speeds;
- Buy equipment with built-in damping materials;

- Buy lighter tools if they are available - they require less of a grip;
- Maintain the equipment;
- Make sure equipment is balanced and there are no worn parts;
- Use remote controls when they are available;
- Reduce your grip on the equipment when it is safe. The less time you actually have your hands on the equipment the better. Relax your hands during these brief breaks;
- Take scheduled breaks; and
- Do other tasks that allow you to move away from vibrating tools and equipment.

The workplace must be assessed by a competent person for compliance with good design, layout and practice, to avoid or minimise adverse health consequences due to manual handling and vibration issues.

Quantitative evaluations of vibration produced by specific equipment must include the following measurement parameters: direction of movement, frequency, intensity, and variation with time and duration, as per documented methods.

Employees and contractors must be informed of the results of assessments and instructed in appropriate manual handling techniques, where the risk assessment indicates a need. Workplace vibration sources that could contribute to the exceedance of an Occupational Exposure Limit (hence potential for impact on worker musculo-skeletal fitness) must be identified and adequately characterised.

Manual handling tasks assessed as having the potential to cause a Lost Time Injury (i.e. with potential for impact on worker musculo-skeletal fitness) must be identified and adequately characterised.

Workplace manual / materials handling tasks risk rated as "significant" must be assessed and recorded to include biomechanical factors (e.g. posture, bending, twisting, repetitive motions, working overhead, and exerting force away from the body).

### **16.30 Personal Protective Equipment**

All applicable legislation concerning Personal Protective Equipment (PPE) must be complied with at all times.

As a minimum, the following PPE must be worn by all persons (including visitors) at all times whilst on a project site:

- Safety footwear with steel toe protection;
- Safety glasses (individuals who wear prescription spectacles must be provided with either over-spec safety glasses or prescription safety glasses);
- Safety helmet (hard hat); and
- High visibility protective clothing with reflective taping (long trousers and long-sleeved shirts with collars and cuffs).
- Additional PPE requirements must be determined through hazard identification and risk assessment. This hazard-specific PPE (such as hand protection, hearing protection and respiratory protection) must be worn as required (e.g. when in a certain area, when performing a certain task, or when working with a certain substance);
- The correct PPE must always be worn:
- In accordance with site requirements (as indicated at the entrances to a project site and at the entrances to buildings and / or designated areas on the premises);
- In zoned areas (e.g. noise zones and respirator zones); or
- As required by a Safe Work Procedure, a risk assessment, or a Material Safety Data Sheet (MSDS).

Each contractor must provide each of his employees with all required PPE (at no cost to the employee). The specific PPE that is provided to a particular employee must be based on the nature of that employee's work and the location in which the work is performed (i.e. must be based on the hazards to which the employee is exposed). PPE requirements for a particular job or for a particular area must be determined through a risk assessment for that job or area.

Any employee who does not have all of the PPE that is required for him to perform his duties safely will not be permitted to work.

Each employee must care for his PPE, maintain it in good condition, and inspect it on a daily basis.

If an item of PPE has worn out, has become damaged, or is found to be defective in any way, it must be replaced by the contractor.

PPE must be stored in accordance with the manufacturer's requirements and / or recommendations.

Each employee must receive training in the use, maintenance and limitations of the PPE that is provided to him, and must be made aware of why the PPE is necessary as well as the consequences of not wearing it as instructed (i.e. the potential for injury and / or disciplinary action). Training records must be retained.

Any person who refuses to wear PPE as required must be removed from the site. Symbolic signs indicating mandatory PPE requirements must be prominently displayed at the entrances to a project site and at the entrances to buildings and / or designated areas on the premises where additional PPE is required. These signs must comply with the applicable national standard (if one exists).

Each contractor must appoint an employee to:

- Control the issuing and replacement of PPE;
- Keep an up-to-date register as proof that items of PPE have been issued to individuals (an employee must sign for the items that he receives);
- Ensure that there is an adequate supply of all required PPE (i.e. maintain PPE stock levels on site); and
- Carry out regular inspections to ensure that PPE is being used correctly, is being maintained in a good, serviceable and hygienic state, and is not being shared between employees.

## Head Protection

A safety helmet (or hard hat) worn correctly will help protect the head in the event of:

- An employee being struck on the head by a falling or flying object;
- An employee striking his head against a fixed or protruding object; or
- Accidental head contact being made with an electrical hazard.

A safety helmet must be worn at all times on a project site, with the following exceptions:

- Vehicle and equipment operators inside enclosed cabs;
- In offices and in office or administration buildings; and
- At designated lunch and break areas (provided that no work is in progress in the immediate break area).

A safety helmet must be worn in accordance with the manufacturer's requirements.

A safety helmet must be worn directly on the head. The wearing of a cap or other headgear beneath a safety helmet is prohibited unless the items have been specifically designed to be used in combination (i.e. the arrangement is approved by the safety helmet manufacturer).

The suspension system inside a safety helmet (that acts as a shock absorber) may not be removed.

The painting of safety helmets is prohibited.

Safety helmets may only be cleaned using a mild detergent and water. No solvents may be used.

### 16.30.1 Eye Protection

If an employee is carrying out, assisting with, or working adjacent to any activity where sparks or projectile particles are being generated, where chemical mists or fumes are being generated, where liquids may splash or spray, where harmful electromagnetic radiation (heat or light) is being generated, or where there is a risk of wind-blown particles entering the eyes, then suitable protective eyewear must be worn at all times (i.e. safety glasses, safety goggles, a face shield, a welding helmet, or a combination of these).

Such activities include:

- Working with rotating equipment (e.g. grinders, drills, mills, lathes, and saws);
- Welding and cutting;
- Chipping, chiselling or caulking;
- Using explosive powered tools;
- Abrasive blasting;
- Sanding; and
- Working with chemical substances (e.g. drilling fluids, acids, solvents, paints, pesticides, etc.).

For certain activities, special eye protection is required (e.g. a heat-resistant face shield is required when working near molten metal).

Double eye protection is required for activities such as:

- Grinding, cutting, chipping, chasing and reaming (employees must wear both a full face shield and safety glasses or goggles); and
- Arc welding (welders must wear both safety glasses and a welding helmet).

Screens must be erected to protect passers-by, where practical.

Safety glasses must be worn at all times on a project site, with the following exceptions:

- Vehicle and equipment operators inside enclosed cabs with the windows fully closed;
- In offices and in office or administration buildings;
- At designated lunch and break areas (provided that no work is in progress in the immediate break area); and
- When another form of eye protection is required (e.g. safety goggles).

All safety glasses used on site must have suitable permanent side protection.

In strong sunlight, dark safety glasses should be worn to reduce eyestrain and fatigue. However, caution must be exercised when employees are required to frequently move between outdoor and indoor environments. Dark safety glasses may not be worn indoors or in poor daylight conditions. Prescription spectacles with tinted lenses are prohibited inside buildings or other structures with limited illumination unless the lenses are light-sensing and adjust to changing illumination levels.

Employees who wear prescription spectacles (i.e. require corrective lenses) must make use of either:

- Prescription safety glasses (with permanent fixed side shields) that conform to the requirements of a recognised national or international standard (e.g. CSA, ANSI, or equivalent); or
- Over-spec safety glasses or goggles.

The use of contact lenses in certain areas may not be suitable because of increased risk to the eye due to dust or heat.

### **16.30.2 Hearing Protection**

Local regulations concerning occupational exposure to noise and the use of hearing protection must be complied with as a minimum.

"Low noise" tools and machinery must be used wherever possible to reduce noise levels. Where noise cannot be reduced to an acceptable level through engineering and work practice controls, measures must be put in place to minimise the exposure of employees to the noise (i.e. administrative controls and personal hearing protection).

Areas where it is likely that the 95% upper confidence limit of an eight hour  $L_{eq}$  mean exceeds 85dB(A), or areas where impulse noise exceeds 140dB(C), must be designated as noise zones. These noise zones must be clearly demarcated and mapped, signs must be posted, and all employees must be made aware of the requirements for working in such an area.

Suitable hearing protection must be worn in all designated noise zones and when carrying out (or working in the vicinity of) any activity where the noise level exceeds 85dB(A).

Where hearing protection is required, a hearing conservation programme (applicable to all personnel and visitors) must be implemented. The programme must include training in the correct use and proper storage of hearing protection devices as well as replacement requirements. Training must be provided when hearing protection is first issued to an employee and refresher training must be carried out at least annually thereafter. Training records must be retained.



At least two types of personal hearing protection must be made available to employees. The hearing protection devices provided must have adequate noise reduction ratings (i.e. must be able to attenuate the noise level to below 85dB(A)).

Personal hearing protection must be issued on an individual basis and must not be shared. In addition to personally issued hearing protection, suitable disposable hearing protection must be made available at the entrances to all noise zones.

All Hearing Protection Devices (except for disposable hearing protection) must be properly inspected and cleaned on a regular basis.

### 16.30.3 Respiratory Protection

Designated areas (respirator zones) must be established where:

- It is likely that the 95% upper confidence limit of a Similar Exposure Group's mean exposure concentration exceeds the relevant Occupational Exposure Limit (OEL) for agents resulting in chronic effects, such as total inhalable dust, respirable dust, respirable crystalline silica, PAH, fluorides, lead, mercury, asbestos or non-asbestos fibrous materials; or
- The concentration of an agent (particulate, vapour or gas) with an acute effect exceeds 50% of the relevant OEL.

**Note:** For a particular hazardous agent, the OEL to be adopted must be either the client's OEL or the OEL specified in local legislation, whichever is the most stringent.

These areas must be clearly demarcated and mapped, signs must be posted, and all employees must be made aware of the requirements for working in such an area.

Suitable Respiratory Protection Devices (RPDs) must be worn in all designated respirator zones and when carrying out (or working in the vicinity of) any activity where the risk assessment has identified the need for respiratory protection.

RPD's must be selected based on:

- The type(s) of airborne contaminants that are present (gases, vapours, and particulates and aerosols including dusts, fumes, sprays, mists, and smoke);
- The potential particulate size distribution;
- Substance toxicity; and
- The likely concentrations.

Compatibility with the work tasks and other PPE, comfort (as it affects wear-time), and the ability to communicate adequately, must also be considered.

The risk assessment and method statement for the work to be performed, the information contained in the relevant Material Safety Data Sheets (MSDSs), and the results of any air monitoring associated with the substances to be worked with or activities to be carried out, must be used to ensure that the most suitable RPD is selected.

Only RPDs certified to a recognised standard and approved by the nominated project management representative may be used.

Where respiratory protection is required, a respiratory protection programme (applicable to all personnel and visitors) must be implemented.

The respiratory protection programme must include:



- Periodic inspection of RPDs, including before each use;
- Periodic evaluation (by competent persons) of cleaning, sanitising, maintenance and storage practices;
- Performance of positive pressure and negative pressure fit checks by RPD wearers before each use to ensure that the respirator is functioning properly; and
- Training at first issue of a RPD and regular refresher training thereafter in accordance with regulatory requirements or at least once every two years (the training must cover fit testing, use, cleaning, maintenance, filter cartridge replacement, and storage). Training records must be retained.

RPDs must be used, maintained, and stored in compliance with the manufacturer's requirements as well as the respiratory protection programme.

Suitable facilities must be provided for the cleaning and sanitary storage of RPD's.

As a minimum, qualitative and documented fit testing must be carried out (although quantitative fit testing is preferred) to ensure that the use of negative pressure RPDs (including disposable RPDs) is effective. Fit testing must be performed by a competent person when an RPD is first issued and must be repeated periodically in accordance with legal requirements or every two years as a minimum. A policy must be in place requiring a clean shaven face when using a negative or neutral pressure RPD for routine tasks (otherwise a positive pressure RPD must be used). A medical evaluation including a pulmonary function test may be required to determine whether or not an individual is medically fit to wear a respirator.

For air-supplied RPDs, breathing air must be effectively filtered and / or isolated from plant and instrument air, and isolated from sources of potential contaminants. The supplied air must be tested to determine if the air quality complies with the requirements of applicable standards for breathing air.

For nuisance dust, dust masks with a protection level of at least FFP2 must be worn.

#### **16.30.4 Hand and Arm Protection**

Gloves must be worn when handling or working with equipment, materials or substances with the potential to cause injury or illness.

Suitable gloves must be selected based on the task to be performed and the specific hazard against which the employee requires protection, such as:

- Sharp edges;
- Sharp points and splinters;
- Abrasive surfaces;
- Hazardous chemical substances (toxic, corrosive, sensitising, etc.);
- Extreme temperatures; and
- Viruses, bacteria and parasites.

#### **16.30.5 Foot Protection**

Safety boots must be worn at all times whilst on a project site, with the exception of offices and office or administration buildings in which closed athletic, business or similar shoes may be worn.

Sandals, slaps, slippers, open-toed and high-heeled shoes are not permitted on any project premises.

Safety boots must provide the following protection:

- Steel toe cap to protect against crushing (impact and compression forces);

- Leather uppers that provide resistance against water penetration and water absorption;
- Slip resistant soles;

And where a risk assessment identifies the need:

- Puncture resistant soles (i.e. steel midsoles) for protection against sharp objects;
- Chemical resistant soles for protection against spilt chemical substances (such as solvents, hydrocarbons, acids, and alkalis);
- Heat resistant soles for protection against hot surfaces or molten metal; or
- Electrical shock resistant soles for protection (insulation) against live electrical conductors.
- Gumboots with steel toe caps must be worn when working in water or very wet conditions.

#### **16.30.6 Clothing**

All employees working on a project site must wear high visibility protective clothing with reflective taping. Trousers must be long and shirts must be long-sleeved. Shirts must be buttoned at the neck and wrists.

Protective clothing must preferably be made of natural fibres.

Short pants, short-sleeved shirts, sleeveless shirts, and vests are prohibited as outer garments (with the exception of a high visibility vest worn over a long-sleeved shirt).

Loose clothing may not be worn where it may become caught in moving machinery or equipment.

For hot work (e.g. welding, cutting, etc.), work in the vicinity of molten metal, and any work carried out in the vicinity of an open flame, the protective clothing worn (shirt and trousers) must be made of a suitable fire retardant fabric. Underwear and socks must be made of natural fibres (preferably wool) or fire retardant fabric.

No employee may tuck his trousers into his boots when working in the vicinity of molten metal.

#### **16.30.7 Body Protection**

Suitable body protection must be provided as required to protect employees against specific hazards. A range of work activities require body protection in one form or another, including but not limited to:

- Working in extremes of temperature, such as firefighting, attending to a heating furnace, working with molten metal, working in refrigerated environments, etc.;
- Hot work (e.g. welding, burning, cutting and grinding);
- Working with hazardous chemical substances (e.g. acids, solvents, pesticides, etc.); and
- Clean up and disposal of hazardous materials and wastes (e.g. asbestos, hydrocarbons, etc.).

A wide variety of protective garments are available, such as firefighting suits, furnace suits, freezer jackets, leather aprons, leather spats, laboratory coats, chemical resistant aprons, chemical resistant (or hazmat) suits, and disposable coveralls. Suitable items must be selected to provide protection against the specific hazard(s) to which an employee is exposed. Hazards must be carefully identified and characterised to ensure that the correct protection is used.

Body protection must be sized properly to prevent tearing, the parting of seams, tripping, or restriction of movement.

### 16.30.8 Electrical Protective Equipment

To reduce the risk of electric shock, electrical insulating equipment appropriate for the voltage that may be encountered must be worn when working on energised electrical installations and when working within two metres of exposed energised conductors.

All rubber electrical insulating equipment (including gloves, sleeves, matting, covers, blankets, and line hoses) must be inspected for damage prior to and after each use, and immediately following any incident that can reasonably be suspected of having caused damage.

Rubber insulating equipment with any of the following defects and / or damage may not be used:

- A cut, rip, tear, hole, or puncture;
- Ozone cutting or ozone checking (i.e. the cutting action of ozone on rubber under mechanical stress causing a series of interlacing cracks);
- An embedded foreign object;
- Chemical deterioration (texture changes) such as swelling, softening, hardening, or becoming sticky or inelastic; or
- Any other defect that damages the insulating properties.

Rubber insulating gloves must be electrically tested before first issue and every 12 months thereafter as a minimum. Insulating gloves must also be given an air test along with the daily inspection. Essentially, this involves filling a glove with air and checking for any holes or leakage.

Insulating equipment that fails an inspection or electrical test may be repaired only as follows:

- Rubber insulating line hose may be used in shorter lengths with the defective portion(s) cut off;
- A rubber insulating blanket may be repaired using a compatible patch that results in the patched area having electrical and physical properties equal to those of the blanket;
- A rubber insulating blanket may be salvaged by cutting the defective area off the undamaged portion of the blanket;
- Rubber insulating gloves and sleeves with minor physical defects, such as small cuts, tears, or punctures, may be repaired by applying compatible patches. The patched areas must have electrical and physical properties equal to those of the surrounding material.

**Repairs to gloves are permitted only in the area between the wrist and the reinforced edge of the opening.**

Repaired insulating equipment must be retested before it is put back into use.

Insulating equipment must be cleaned as required to remove foreign substances (using a mild detergent).

Insulating equipment must be stored in such a location and in such a manner so as to protect it from light, temperature extremes, excessive humidity, ozone, and other damaging substances and conditions.

Leather protective gloves must be worn over rubber insulating gloves to provide mechanical protection against cuts, abrasions, and punctures.

Suitable arc flash PPE (e.g. voltage rated gloves, fire retardant clothing, arc rated face shield, arc flash hood, arc flash suit, etc.) must be worn whenever an employee is potentially exposed to an arc flash hazard. The appropriate level of PPE must be worn depending on the task and the potential energy exposure. These PPE requirements must be clearly specified as part of a project-specific arc flash protection programme (refer to the Electrical Safety Standard).

#### **16.30.9 Jewellery**

Necklaces, dangling earrings, and bracelets may not be worn on a project site.

No ring or watch may be worn where there is a risk that it may become caught in machinery or equipment.

No jewellery or other conductive apparel (such as a key chain or watch) may be worn when carrying out energised electrical work.

#### **16.30.10 Hair**

Scalp hair that is longer than the top of the shoulders must be tied up and restrained within the person's safety helmet or within the collar of his or her overalls, shirt or jacket.

For negative or neutral pressure Respiratory Protection Devices, facial hair must not cause the seal between the respirator and facial skin to be broken (or prevent a seal from being formed in the first place).

#### **16.30.11 Task-Specific PPE**

In addition to the standard PPE required for a project site (including a safety helmet, safety glasses, safety boots, and high visibility protective clothing), the following task-specific PPE must be used as a minimum by any person carrying out or assisting with such a task:

- Arc Welding – safety glasses and welding helmet (i.e. double eye protection), respiratory protection against the specific airborne contaminants being generated (fumes, gases, dusts, etc.), leather welding gloves, leather apron, leather spats, leather yoke (for work above shoulder height), and knee pads for welders in kneeling positions;
- Gas Welding, Cutting or Brazing – gas cutting or welding goggles with shade 4 filter lenses and full face shield (i.e. double eye protection), respiratory protection against the specific airborne contaminants being generated (fumes, gases, dusts, etc.), leather gloves (long cuff for welding and cutting, short cuff may be used for brazing), leather apron, leather spats, and leather yoke (for work above shoulder height);
- Grinding – safety glasses or goggles and full face shield (i.e. double eye protection), hearing protection, respiratory protection where dust or fumes may be generated, leather gloves, leather apron, and leather spats;
- Abrasive Blasting – respiratory protection (air-supplied hood), hearing protection, leather gloves, and leather apron;
- Spray Painting – respiratory protection (air-supplied hood for confined spaces), safety goggles (if the respirator design does not provide this protection), hearing protection (where air compressors are used), chemical resistant gloves, and chemical resistant disposable coveralls.

### 16.31 Sun Protection

The contractor must ensure that all personnel are protected in sunlight through the use of long sleeve shirts, long trousers, brhealth and safety to safety helmets and UV factored sunscreen. Shade structures must also be made available to all employees.

The contractor must conduct training and awareness sessions with his employees, advising on the risks associated with working in the heat (including dehydration) and the precautions to be taken (e.g. ensuring adequate fluid intake).

### 16.32 Fuel / Flammable Liquid Storage and Refuelling

No fuel (diesel, petrol, paraffin, etc.) or any other flammable liquid (paints, solvents, etc.) may be stored on site unless approved in writing by the nominated project management representative.

If the on-site storage of a fuel or a flammable liquid is approved, the contractor must ensure the following:

- The quantity of fuel / flammable liquid to be stored on site must be kept to the minimum that is required;
- The storage area must be located in a well ventilated area at least 10 metres away from any building, drain, boundary or any combustible material;
- If more than 200 litres of fuel / flammable liquid is to be stored, the tank must be installed / the containers must be positioned within a bund (see Definitions);
- If the fuel / flammable liquid are to be stored in bulk tanks / vessels, then the minimum capacity of the bund must be 110% of the volume of the largest tank / vessel. If many small containers (e.g. 210 litre drums) are to be stored, the bund must be able to contain 25% of the total volume of the stored products;
- The bund must be impermeable. It must have a solid concrete floor and the walls must be constructed out of brick and must be plastered on the inside;
- The bund must be fitted with a lockable drain valve (for draining away rainwater), which must remain locked in the closed position. The valve may only be opened under supervision and in accordance with a written procedure;
- The fuel / flammable liquid storage area may not be used for the storage of any other materials / equipment, and must be kept completely free of all combustible materials (including rubbish, brush and long grass) at all times;
- Access to the storage area must be controlled (wire mesh fencing and gate);
- Appropriate warning signage (i.e. "Flammable Liquid", "No Smoking" and "No Naked Flames") must be prominently displayed at the storage area. The contents and volume of each tank must be indicated;
- In order to contain spillages, the offloading / refuelling bay at the fuel / flammable liquid storage area must have a solid concrete base surrounded by bund walls, ramps or humps and / or spill trenches (covered with steel grating) that lead into a sump;
- Fuel dispensing pumps must be protected against impact damage;
- All fuel / flammable liquid storage tanks and dispensing equipment must be electrically bonded and properly earthed;
- All electrical installations and fittings must be of an approved intrinsically safe type;
- Two 9kg dry chemical powder fire extinguishers must be mounted in an easily accessible position near the entrance gate to the fuel / flammable liquid storage area. Depending on the size of the storage area, additional fire extinguishers may be required to ensure that an extinguisher is no further than 15 metres away from any point on the perimeter of the storage area;

- A fire extinguisher must be at hand wherever refuelling is carried out;
- Smoking or open flames within 10 metres of a fuel / flammable liquid storage / refuelling area is strictly prohibited;
- No petrol or diesel powered vehicle or equipment may be refuelled while the engine / motor is running;
- Cellular phones must be switched off in fuel / flammable liquid storage / refuelling areas;
- Spill clean-up kits (containing a suitable absorbent fibre product) must be provided;
- Any spillages must be cleaned up immediately and all contaminated cleaning materials must be disposed of in accordance with the applicable legislation;
- If a flammable liquid is spilt or is leaking from a container / vessel, the area must be cordoned off and appropriate warning signage must be displayed to keep unauthorised personnel away from the affected area. Every effort must be made to contain the spillage. All hot work in the vicinity must be stopped immediately. If the spilt product is volatile and the possibility exists that a vapour cloud may form, or if the leak or spillage cannot be contained or stopped, then appropriate emergency response procedures must be activated (refer to Section 14) including the evacuation of all persons in the vicinity. Suitable firefighting equipment must be positioned ready for use should the spilt product ignite;
- The manual decanting of fuel or a flammable liquid from a large container should only be done using a stirrup pump (or similar) or a purpose-made frame which allows the container / drum to tilt for decanting and then return to the upright position;
- Drip trays must be used wherever required;
- All tanks, drums, cans, etc. containing flammable liquids must be tightly closed and properly sealed except for when a container is being filled or when a product is being decanted;
- The transport or storage of corrosive or flammable liquids in open containers is strictly prohibited
- Daily-use quantities of fuel (up to a maximum of 20 litres) must be handled in an approved safety can with a flash arresting screen, spring closing lid and spout cover that will safely relieve internal pressure if the can is exposed to fire;
- Where safety cans may be impracticable, only approved metal containers with screw caps may be used. Each container must be clearly labelled to indicate its contents;
- Only small quantities of flammable liquids (paints, solvents, etc.) may be stored within a building. Each product must be kept either in its original container or in an approved container which must be properly sealed. Each container must be clearly labelled to indicate its contents. When not in use, all such containers must be stored in a well-ventilated steel cabinet which must be kept locked to prevent unauthorised access;
- Not even small quantities of flammable liquids may be stored or dispensed in buildings or places of public assembly, in general warehouses, or in buildings containing sources of ignition such as space heaters, cooking devices, open electric motors, motor vehicles, or where welding, cutting, or grinding activities are being carried out;
- Safe Work Procedures must be compiled for the transportation (including delivery), offloading, storage, handling and use of any fuel / flammable liquid on site;
- All personnel that will be required to work with or may come into contact with a flammable liquid must be made aware of the hazards associated with the product





and must be thoroughly trained in the safe transportation, use, handling and storage thereof.

### **16.33 Fire Protection and Prevention**

The contractor must compile a Fire Protection and Prevention Plan for the work that will be carried out on site.

The contractor must assess / survey his area of responsibility and identify locations where the risk of fire is high. Cognisance must be taken of the fact that certain locations may need to be designated as high risk due to the presence of large quantities of flammable or combustible materials / substances. For all high risk areas, the contractor must ensure that additional precautions are taken to prevent fires and strict control is exercised over any hot work (i.e. welding, cutting, grinding, etc.) that is carried out.

The contractor must supply and maintain all required firefighting equipment. The type, capacity, positioning, and number of firefighting appliances must be to the satisfaction of the nominated project management representative and must meet the requirements of the applicable legislation. Fire mains, hydrants and hose reels will rarely be available on site, so use must primarily be made of portable fire extinguishers.

Firefighting equipment, fixed and portable, must be strategically located with a view to being able to rapidly deploy the equipment in order to bring potentially dangerous and destructive fires under control while still in their infancy.

All fire extinguishers (and any other firefighting equipment) placed on site must be:

- Conspicuously numbered;
- Recorded in a register;
- Visually inspected by a competent person on a monthly basis (the results of each inspection must be recorded in the register and the competent person must sign off on the entries made); and
- Inspected and serviced by an accredited service provider every six months (the nominated project management representative may require that this frequency be increased depending on the environmental conditions (e.g. high dust levels, water, heat, etc.) to which the fire extinguishers are exposed).

Any fire extinguisher that has a broken seal, has depressurised, or shows any sign of damage must be sent to an accredited service provider for repair and / or recharging. Details must be recorded in the register.

Firefighting equipment may not be used for any purpose other than fighting fires. Disciplinary action must be taken against any person who misuses or wilfully damages any firefighting equipment.

Access to firefighting equipment, fixed or portable, must be kept unobstructed at all times. Approved signage must be in place to clearly indicate the location of each permanently mounted fire extinguisher, fire hose reel, etc.

The contractor must ensure that all persons working in / entering his area of responsibility are made aware of where all firefighting appliances and alarm points are located.

The contractor must ensure that his employees (and those of any appointed sub-contractors) are trained in firefighting procedures and the use of firefighting equipment.

The contractor must compile an emergency response procedure detailing the actions that must be taken in the event of a fire or a fire / evacuation alarm (see Section 14).

All personnel working within the contractor's area of responsibility must be trained, and all visitors must be instructed, on this procedure. Copies of the procedure must be prominently displayed in the workplace in all languages commonly used on the site.

A person discovering a fire must extinguish the fire if he can do so safely, and then immediately report the incident to his supervisor. If the person cannot extinguish the fire, he must raise the nearest alarm and then report the fire as quickly as possible to his supervisor, the person responsible for the area, and / or Security.

On hearing a fire / evacuation alarm, all persons must make any operational plant or equipment safe, and then proceed to the nearest emergency assembly point and await instructions.

All incidents of fire (including the use or misuse of any firefighting equipment) must be reported to the nominated project management representative immediately. Used fire extinguishers must be replaced by the contractor without delay.

No hot work (i.e. welding, cutting, grinding, etc.) or any other activity that could give rise to a fire may be performed outside of a designated workshop without a Permit to Work having been issued.

Wherever hot work is being carried out, a fire extinguisher must be at hand. Where the risk assessment determines that it is necessary, a fire watch must be stationed.

Supervisors must carry out workplace inspections regularly to ensure adherence to fire prevention measures and procedures.

At the end of every working period (i.e. before each tea / lunch break and at the end of every shift / day), the workplace must be thoroughly inspected to ensure that no material is left smouldering and no condition / situation exists that could give rise to a fire.

The contractor must ensure that all supervisors and all employees carrying out or assisting with any hot work or any other activity that could give rise to a fire have been trained in firefighting procedures and the use of firefighting equipment. The training must be conducted by an accredited training provider.

When using electrical equipment, all cables must be in good condition and the nearest convenient socket must be used.

No power socket may be loaded beyond its rated capacity through the use of adaptors, etc.

Makeshift electrical connections are not permitted under any circumstances.

Water-based firefighting equipment must not be used on electrical equipment or burning liquids.

Refer to Section 13.16 – Electrical Safety.

Each vehicle used on site for work purposes and each item of mobile equipment with a diesel or petrol engine must be fitted with a permanently mounted fire extinguisher.

Smoking is only permitted in designated smoking areas. Cigarette ends / butts must be properly stubbed out in the ashtrays provided and never thrown into waste bins.

The contractor must ensure that good housekeeping practices are enforced, as this is crucial to the prevention of fires.



All combustible waste materials must be removed from the workplace on a daily basis (at the end of each shift) and placed in waste receptacles located at least 5 metres away from any structure.

The accumulation of waste materials in out-of-the-way places is prohibited.

Offices, desks, cabinets, etc. must always be kept tidy and uncluttered. Waste paper bins must be emptied regularly.

The storage of combustible materials under stairways or in attics is prohibited.

The storage of any materials against the exterior of a building or any other structure is prohibited.

All walkways, passages and stairways must be kept clear (i.e. must be unobstructed) at all times, as they may need to be used as a means of escape.

The areas around and the routes to all exits, fire escape doors, fire hydrants, fire hose reels and fire extinguishers must be kept clear (i.e. must be unobstructed) at all times.

"No Smoking" signs must be conspicuously displayed in and around all storage areas / rooms.

Waste may not be burned under any circumstances.

No flammable liquid (such as petrol, acetone, alcohol, benzene, etc.) may be used for starting fires or as a solvent for cleaning clothes, tools, equipment, etc. Only solvents approved by the nominated project management representative may be used for cleaning purposes.

Whenever any work is carried out involving the use of a flammable substance / material, the area must be cordoned off and appropriate warning signage (i.e. "No Unauthorised Entry", "No Smoking" and "No Naked Flames") must be displayed.

Refer to Section 13.32 – Fuel / Flammable Liquid Storage and Refuelling.

### **16.34 Smoking**

The contractor must not permit smoking on site except within designated smoking areas selected in accordance with the applicable legislation. Such an area must be clearly demarcated and the required signage must be displayed.

Any person found smoking or discarding a cigarette butt outside of a designated smoking area may be removed (temporarily or permanently) from site.

In all designated smoking areas, adequate non-combustible commercial ashtrays and / or cigarette butt receptacles (butt cans) must be provided.

Ashtrays and other receptacles provided for the disposal of smoking materials must not be emptied into rubbish bins or any other container holding combustible materials.

"No Smoking" signs must be strictly observed.

### **16.35 Housekeeping**

The contractor must maintain all work areas in a tidy state, free of debris and rubbish. Unless directed otherwise, the contractor must dispose of all debris, rubbish, spoil and hazardous waste off site in a designated and authorised area or facility. The contractor must familiarise himself with the waste management plan for the site including collection and disposal arrangements, and must align his waste management activities accordingly.

In cases where an inadequate standard of housekeeping has developed and compromised safety and cleanliness, a nominated project management representative may instruct the contractor to cease work until the area has been tidied up and made safe.

Neither additional costs nor contract deadline extensions will be allowed as a result of such a stoppage. Failure to comply will result in a clean-up being arranged through another service provider at the cost of the non-complying contractor.

The contractor must carry out housekeeping inspections on a weekly basis to ensure maintenance of satisfactory standards. The contractor must document the results of each inspection. These records must be maintained and must be made available to the nominated project management representative on request.

The contractor must implement a housekeeping plan for the duration of the contract ensuring that the site housekeeping is maintained. Furthermore, at the end of every shift, the contractor must ensure that all work areas are cleaned, all tools and equipment are properly stored, and construction rubble is removed.

Where the contractor fails to maintain housekeeping standards, the nominated project management representative may instruct the contractor to appoint a dedicated housekeeping team for the duration of the project at the contractor's expense.

Littering is prohibited.

### **16.36 Waste Management**

Waste may not be disposed of unless the disposal of that waste is authorised by law. The contractor must therefore ensure that all waste that is generated is handled, stored, transported and disposed of in accordance with the requirements of the applicable legislation / local authority.

No waste may be removed from the project site to a waste storage or disposal facility unless that facility has been approved for use by the nominated project management representative.

An adequate number of waste bins and skips must be provided by the contractor and suitable arrangements must be made to ensure that these bins and skips are emptied regularly.

Hazardous wastes must be kept separate from general wastes.

Waste disposal service providers must be approved by the nominated project management representative before any waste is removed from site. These service providers must be audited on a two-yearly basis (or more frequently if deemed necessary based on risk) in order to ensure compliance with legislation and to help ensure that no liabilities accrue to the project.

### **16.37 Stacking and Storage**

All irregular shaped items will be stacked at floor / ground level in designated stacking areas on a level, firm base capable of withstanding the weight of the commodities being stacked and stacked in such a manner that the items do not topple over or change position due to subsidence or weight transfer when being moved.

Where these commodities are stacked on shelves or racks, the shelves or racks must be designed to carry the weight of the commodity being stacked.

All racks or shelves where heavy material or commodities are stacked will have a weight carrying limitation clearly marked on the structure and have a safety factor of at least +10% of maximum total carrying capacity.

All materials, commodities or articles, which could be damaged due to inclement weather, must be stored under cover.

Waste material that is combustible must not be allowed to accumulate in sufficient quantities to create a hazard.

No commodities or equipment may be stacked or stored within 500mm of rolling stock tracks or where mobile equipment travels.

The storage of material, small equipment, tools, files and general items in cupboards and on shelves must be neat and controlled at all times. Incompatible substances must not be stored in or on the same cupboard or shelf.

No equipment, tools, files or documents may be stored or stacked on top of cupboards which are higher than 1.5 metres in height.

### **16.38 Demarcation**

No demarcation of floors is required inside offices, training centres and the like.

Where it is impractical to paint floors, yellow lines will be deemed adequate e.g. where heavy traffic necessitates the continual painting of floors.

Temporary demarcation in the form of hazard tape (red and white) may be used to demarcate areas where there is, for relatively simple reasons, restricted access.

Where hazards exist and entry must be specifically excluded for safety or health reasons, hazard tape in any form must not be used in isolation. A robust and substantial barrier of timber, rope or other material must be used in conjunction with barrier tape, to prevent entry to unauthorised persons.

Outside storage areas where it is impractical to use floor demarcation, demarcation may take the form of creosote poles and wire rope or similar. Spans between uprights should be painted yellow.

### **16.39 Facilities**

Sanitary conveniences must be provided and maintained at a rate of at least one shower facility for every 30 workers, at least one toilet facility for every 20 workers, separate male and female changing facilities and sheltered eating areas. (Check SANS 10400 Part F).

Where chemical toilets are provided, one toilet for every twenty five employees must be allocated.

All toilets must be cleaned daily, disinfected and provided with toilet paper.

All employees making use of these facilities have the responsibility to help keep the facilities neat, clean and hygienic.

Washing facilities, including soap and towels, must be made available for use by the contractor's employees.

Drainage from all washing / toilet facilities must be properly designed and constructed to prevent employee exposure to waste water (and the associated biological hazards). Waste water may not accumulate or stand in pools at any location on the project site.

Change rooms must be provided and must be kept clean and free from odours at all times. No chemicals, except those normally used for domestic cleaning of these facilities, may be stored in the facilities.

No equipment or items (other than those normally associated with hygiene facilities) may be stored in the facilities.

All entrances must be constructed in a way to afford privacy to users.

Drinking water must be provided.

A sheltered (covered) area must be set aside on site to be used as a dining facility (eating area). Adequate seating must be provided for the maximum number of employees. The facility must be kept clean and tidy.

A suitably sized, impervious receptacle (bin) must be provided for the disposal of waste food and other refuse generated at the dining facility. This bin must be emptied and cleaned regularly (i.e. promptly after meal times).

Food may only be consumed in authorised sheltered areas.

Adequate refrigerated storage must be provided to the contractor's employees for the storage of food and drinks. Fridges must not be overstocked and must maintain sufficiently low temperatures.

#### **16.40 Occupational Hygiene**

The contractor must ensure that the exposure or potential exposure of his employees to any of the following stressors is assessed and measured (a baseline survey must be carried out by an Approved Inspection Authority - this services to be provided by TCP):

- Noise;
- Thermal stress (heat and cold);
- Particulates (dust);
- Silica (free crystalline silica);
- Asbestos;
- Gases or vapours;
- Lead;
- Chemicals;
- Ionising radiation;
- Non-ionising radiation;
- Vibration (hand / arm vibration and whole body vibration);
- Ergonomics; and
- Illumination.

If it is determined that exposure levels for a particular stressor are unacceptable, then a monitoring and control plan must be implemented to manage any risk of overexposure.

**Note:** Where chemical substances are to be used as part of the construction process, the contractor must ensure that the chemical composition of each substance is known.

Carcinogenic (cancer-causing) ingredients must be specifically identified with due understanding that no chemical known to cause cancer will be permitted for use on site (an alternative will need to be sourced).

#### **16.41 Lighting**

For all work areas and access ways, if the natural lighting available is inadequate it must be supplemented by artificial lighting to meet the minimum levels required.

A lighting survey to determine luminance must be conducted for all work areas, at least once every two years and prior to work commencing for the first time in any area.

Emergency lighting must be provided in all indoor workplaces that do have adequate natural lighting or in which persons work at night. The emergency sources of lighting that are provided must be such that, when activated, an illuminance of not less than 0.3 lux is obtained at floor level, to enable employees to evacuate safely.

Where it is necessary to stop machinery or shut down plant or processes before evacuating the workplace, or where dangerous materials are present or dangerous processes are carried out, the illuminance must be not less than 20 lux.

Windows and translucent sheeting must be kept adequately clean and clear of obstructions as far as reasonably practicable. Light fittings, i.e. lenses and reflectors must be kept clean.

If a light intensity meter is used, a valid calibration certificate must be available.

Neon lights must not be installed in areas where moving parts of machinery or equipment cannot be fully guarded, i.e. lathes, bench grinders, etc. in order to eliminate the stroboscopic effect.

No person may use a portable electrical light where the operating voltage exceeds 50 volts, unless:

- It is fitted with a non-hydroscopic, non-conducting handle;
- All metal parts which may become live are protected against accidental contact;
- The lamp is protected by means of a guard firmly attached to the handle; and
- The cable can withstand rough use.

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No person may use a portable electric light in damp or wet conditions or in closely confined spaces, inside metal vessels or when in contact with large masses of metal, unless:

- The lamp is connected to a source incorporating an earth leakage; and
- The operating voltage of the lamp does not exceed 50 volts. Hearing Conservation

A hearing conservation program must be implemented and protection against the effects of noise exposure must be provided when the noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 decibels measured on the A-weighted scale of a standard sound level meter at slow response.

For the hearing conservation program to be effective it must include as a minimum:

- Monitoring of the workplace to determine the representative exposure of employees to excessive noise levels;
- An audiometric testing program for employees, which must include:
  - ♦ A baseline audiogram for all employees exposed to noise levels equal to or in excess of the standard;
  - ♦ Annual audiograms for each overexposed employee;
  - ♦ Analysis of audiogram results with retesting and/or referral to an otolaryngologist or qualified physician when a significant threshold shift (STS) occurs; and
  - ♦ Written employee notification of the STS.
- A training program for all employees exposed to noise;
- Provision of personal protective equipment to all affected employees when administrative or engineering controls fail to reduce sound levels to within the levels of the standards.

Monitoring of employee exposures to noise shall be conducted by an Approved inspection Authority.

The monitoring requirement may be met by either area monitoring or personal monitoring that is representative of employee exposures. Personal monitoring is preferred, and may be required based on the type(s) of noise sources.

For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with local legislation.

A person-task specification shall be available for every job category and shall be submitted with an employee for audiometric testing.

Audiometric testing and an annual audiogram shall be provided as part of the regular medical examinations.

Audiometric test results obtained from the pre-employment medical examination for a new employee shall be used as the baseline audiogram.

Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise.

Hearing protectors shall not be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise.

Employees shall be notified of the need to avoid high levels of non-occupational noise exposure during this 14-hour period.

Record-keeping for the audiogram shall include:

- Name and job classification of the employee;
- Date of the audiogram;
- The examiner's name;
- Date of the last acoustic or exhaustive calibration of the audiometer;
- Employee's most recent noise exposure assessment.

Audiometric test results shall be maintained in the employee's medical file.

To control noise exposure, its three basic elements shall be examined, i.e. source of the sound, travel path, and effect on receiver or listener. Solution of a given noise problem might require alteration or modification of any or all of these three basic elements.

2) Controlling noise at the noise source can be achieved by the following:

- Select quiet equipment initially. In selecting quiet equipment the following features shall be considered:
  - Low-noise certification;
  - Advertisement of "quiet" operation, evidence of noise control design;
  - Evidence of "lower" and "slower" operating characteristics;
  - Side-by-side noise testing of equipment; and
  - "On-site" or "in operation" inspection of mechanical equipment before purchase.
- Reduce operating noise by considering the following control measures:
  - Reduce impact or impulse noise by reducing weight, size, or height of fall of impacting mass;
  - Reduce speed in machines and flow velocities and pressure in fluid systems;
  - Balance rotating parts – to control machinery noise and vibration of fans, fly wheels, pulleys, cams, etc.
  - Reduce frictional resistance between rotating, sliding or moving parts in mechanical systems: frequent lubrication, proper alignment of moving parts; static and dynamic balancing of rotating parts; correction of eccentricity or "out-of-roundness" of wheels, gears, rollers, pulley, etc.;
  - Reduce resistance in air or fluid systems: use of low flow velocities, smooth boundary surfaces of duct or pipe systems, and long-radius turns and flared sections in pipes, etc., to reduce turbulence noise;





- Isolate vibration elements in machinery; install motors, pumps, etc. on most massive part of machine; use belt or roller drives in place of gear trains; use flexible hoses and wiring instead of rigid piping and stiff wiring, etc.
- Apply vibration damping materials such as liquid mastic; pads of rubber, felt, foam or fibrous blankets; or sheet metal visco-elastic laminates or composites to vibrating machine surfaces; and;
- Reduce noise leakage from the interior of machines such as compressors by sealing or covering all openings or applying acoustical materials to machine interiors.

3) Controlling noise in the transmission path can be achieved by the following:

- Separate the noise source and receiver as much as possible;
- Use sound-absorbing materials on ceiling, floor or wall surfaces as close to the machine as possible;
- Use sound barriers and deflectors in the noise path;
- Use acoustical lining on inside surfaces of such passageways as ducts, pipe chases, or electrical channels;
- Use mufflers, silencers or snubbers on all gasoline or diesel engines, regardless of size; and particularly on equipment when large quantities of high-pressure, high-velocity gases, liquids, steam or air are discharged into the open air; and
- Use vibration isolators and flexible couplers where the noise transmission path is structure borne in character.

4) Protection for the receiver – when engineering controls fail to reduce the levels to within the levels specified in local legislation, the following measures shall be implemented:

- Personal protective equipment shall be provided and replaced as necessary at no cost to employees;
- Supervisors shall ensure that hearing protective devices are worn by all employees who are exposed to a time-weighted average of 85 decibels or greater and who have experienced a significant threshold shift;
- Employees shall be given the opportunity to select their hearing protectors from a variety of suitable protectors; and

Noise zones shall be indicated by means of signs at every entrance to such zones.

When noise levels exceed 100 dB(A), a combination of earplug and earmuff may be required to achieve protection of the worker.

It is important to note that using double protection will add only 5 to 10 dB of extra attenuation above that of a single Hearing Protection Device.

Where an earmuff and earplugs are used together, OSHA recommends using this simple calculation: Take the higher rating of the two devices, and add five.

Hearing Protection Devices should be worn for the full noise exposure period.

Where an audiometry programme is required, it must meet the following standards:

- All testing must be by pure tone audiometry in an audiometry booth or quiet room, with measured noise levels less than 40 dB(A);
- The initial audiogram must be taken prior (minimum of 24 hours) to exposure to significant noise. Further audiograms must be taken periodically; annually where exposures are over 85 dB(A) Leq or where continued deterioration to hearing is occurring;
- Testing must be performed by trained and competent personnel;



- Audiometers must be calibrated according to the manufacturer's guidelines. As a minimum these will be a weekly biological calibration using an employee unexposed to noise, or a bio-acoustic simulator, and an annual quantitative check. All results must be documented; and
- Audiograms must be read by trained persons who will identify any increasing hearing loss and then determine if this is noise induced. Any employee with a significant downward shift in one or both ears (measured as an average non age-adjusted loss from baseline of 10 dB at 2, 3 or 4 kHz) must be retested following removal from noise for a minimum of 24 hours, usually after a days-off period. If the downward shift persists the employee must be reviewed by a physician and improved hearing protection considered.

#### 16.42 Particulate and Gas / Vapour Exposures

Designated areas must be created where:

- It is likely that the 95 per cent upper confidence limit of a Specific Exposure Group's (SEG) mean exposure concentration for agents resulting in chronic effects (such as total inhalable dust, respirable dust, respirable crystalline silica, PAH, fluorides, lead, mercury, asbestos or non-asbestos fibrous materials) exceeds the relevant OEL; and
- Agents with an acute effect, such as particulate hazards, or gases (e.g. CO, SO<sub>2</sub>, NH<sub>3</sub>, HF, etc.), or vapours exceed 50 per cent of the relevant OEL.

Designated areas must:

- Be identified and mapped, signposted or otherwise clearly communicated to employees working in the area. Signposting, where necessary, must use appropriate wording or symbols on signs to identify the hazard;
- Have a documented respiratory protection programme based on suitable risk assessment and standards, which is applied to employees, contractors and visitors;
- Have regular monitoring of SEGs working in the area; and
- Have a formal review of the practicality of engineering controls at least every two years, or less where it is a critical control for a significant risk.

Particulate and gas / vapour monitoring must be appropriate to the exposure conditions and toxicants, and based on the use of equipment approved by local regulatory authorities, as per documented methods.

Where risk assessment indicates the possible presence of levels of gas or vapour sufficient to cause health effects in less than one shift (e.g. confined space entry), continuous monitoring is required as long as the potential for harm exists.

Employees and contractors must be covered by a medical surveillance programme when:

- Their Specific Exposure Group TWA mean exposure to respirable crystalline silica, total inhalable dust, respirable dust, lead or asbestos is greater than 50 per cent of the relevant OEL;
- The medical adviser considers that it is advisable; or
- There is a legal requirement for medical monitoring.

Where risk assessment indicates a risk of a respiratory condition, assessment programmes must include chest x-rays and / or lung function tests. The test or tests chosen must enable the earliest detection of adverse effects from the exposure of concern. Where indicated, they must meet the following standards:

- High quality chest x-rays will be taken every five years, unless local legislation requires these to be more frequent;





- All chest x-rays for pneumoconiosis surveillance will be read to International Labour Organisation (ILO) standards by an ILO B reader, wherever possible, and if not, by a competent radiologist using verifiable quality criteria;
- Any progression of more than one step on the ILO extended scheme to a reading above 1/0 will be reviewed by a physician;
- Any reading suggesting active lung disease will be reviewed by a physician; and
- All spirometry will be performed by trained staff following the American Thoracic Society guidelines or equivalent and be offered at a frequency determined by the likely rate of detectable change in lung function.

Controls must be of an adequate standard such that surfaces are adequately cleaned to avoid:

- Dust generation due to material dislodgment (e.g. windblown), where practicable; or
- Fume generation from accumulated dust during welding / heating or cutting operations.

Where risk assessment indicates the need to reduce exposures to toxic substances for employees or their families, good personal hygiene must be enforced. The programme must include:

- No smoking, eating or drinking in designated hazard areas;
- Washing of hands and face prior to drinking, eating or smoking;
- Showering at work post shift or after exposure to 'dirty' conditions; and
- Laundering of contaminated clothing by the contractor.

Abrasive blast cleaning must be conducted so as to protect worker health and minimise dust emissions. Substitutes must be used whenever practicable for abrasives containing crystalline silica. However, if such abrasives are used, workers must be aware of the hazards and exposure monitoring conducted. The hazardous properties of alternative materials must be considered before use.

Where required, training in the recognition of signs and symptoms of hazardous particulate and gas / vapour exposure, emergency procedures and preventative measures must be provided.

#### **16.42.1 Respiratory Protection Devices**

The selection of Respiratory Protection Devices (RPD's) must be based on:

- The potential particulate size distribution, gas / vapour types, substance toxicity and likely concentrations;
- Compatibility with the work tasks and other PPE; and
- Comfort (as it affects wear-time) and allowance for adequate communication.

Only RPD's approved by the nominated project management representative may be used. Suitable facilities must be available for cleaning and sanitary storage of RPD's.

Half-mask and full-face air-purifying respirators must NOT be used where:

- The atmosphere is oxygen deficient (< 19.5 per cent);
- The atmosphere is immediately dangerous to life or health (e.g. in areas where CO concentrations are > 1500 ppm, HF > 30 ppm or NH<sub>4</sub> > 300 ppm);
- Gases and vapours are more than ten times their OEL or greater than 1000 ppm for half-mask respirators, or more than 100 times their OEL for full-face respirators; or

- Particulates are more than five times their OEL for half-mask respirators, or more than 50 times their OEL for full-face respirators.

For atmospheres that are oxygen deficient, or contain unknown hazards, or have concentrations of gases and vapours that are unknown, or could potentially exceed levels that are immediately dangerous to life or health, an air-supplied type respirator must be worn.

For effective use of negative pressure RPD's (including disposable RPD's), fit testing must be qualitative and documented as a minimum, although quantitative fit testing is preferred. Fit testing must be performed by a competent person when RPD's are first issued and must be repeated periodically according to legal requirements or two-yearly as a minimum frequency. There must be a policy requiring a clean shaven face when using a negative or neutral pressure RPD for routine tasks, or the use of a positive pressure RPD will be required. A pulmonary function test and medical evaluation may be required to determine whether or not an individual is medically fit to wear a respirator.

For air-supplied RPD's, breathing air must be effectively filtered and / or isolated from plant and instrument air, and isolated from sources of potential contaminants. The quality of the breathing air must be checked for conformance with applicable standards.

The respiratory protection programme must include:

- Periodic inspection of RPD's, including before each use;
- Periodic evaluation of cleaning, sanitising, maintenance and storage practices by competent persons;
- Performance of positive and negative fit checks before each use by RPD wearers to ensure that the respirator is functioning properly; and
- Training at first issue of a RPD and regular refresher training thereafter in accordance with regulatory requirements or at least once every two years.

#### **16.42.2 Asbestos and Non-asbestos Fibrous Silicates**

This section applies to asbestos and bio-persistent non-asbestos fibrous silicates that may display asbestos-like toxicity, related to fibre diameter and length. Local regulations must be followed as a minimum. The following requirements must be met:

- A management program must be in place and actively pursued;
- No new products containing these materials may be purchased;
- Installed materials of this type must be identified and assessed annually for current safety. Where 'safe in place', it should not be removed, unless there is an opportunity for removal during renovation or construction of buildings or equipment;
- Work areas must be barricaded off and signposted to restrict entry; and
- Contaminated material must be promptly placed in appropriate marked plastic disposal bags or covered containers for disposal to an approved landfill.

All workers exposed to these materials must be on a register. "Exposed" means working on or near such material that has been disturbed, abraded or cut. The register must contain details of their annual medical examination and the results of occupational hygiene monitoring.

Asbestos contractors must be competent, registered and have adequate equipment, procedures and monitoring.

Where required, the asbestos / bio-persistent non-asbestos fibrous silicates management programme must cover work practices, training, monitoring, medical surveillance, and waste handling and disposal.

Maintenance operations must be made aware of potential cristobalite exposure hazards when disturbing non-asbestos fibrous silicates that have undergone high temperature conditions.

The potential for occurrence of naturally occurring asbestiform materials in exploration or mining production activities must be assessed, the risk of exposure determined and appropriate control measures implemented where required.

#### **16.43 Hazardous Chemical Substances**

No chemical substance may be brought onto site unless it has been approved for use by the nominated project management representative and it appears on the Approved Chemical Substances Register which will be made available to all contractors.

The register will contain the following information:

- Trade name / product name of substance;
- Manufacturer / supplier of substance;
- Maximum inventory;
- Storage requirements and precautions;
- Inventory of special emergency items held for handling spillages, fires, etc. (e.g. reagents to neutralise spillages, firefighting foam, etc.); and
- Approved disposal methods.

If the contractor wishes to make use of a chemical substance that does not appear on the register, then the contractor must provide the following information to the nominated project management representative for review PRIOR to bringing the substance onto site:

- A detailed 16-point Material Safety Data Sheet (MSDS) issued by the manufacturer / supplier of the substance;
- The reason for wanting to bring the substance onto site (i.e. the intended use of the substance);
- The proposed method of transportation;
- The proposed arrangements for the safe storage of the substance;
- The quantity to be stored on site;
- The proposed methods for handling / using the substance (including PPE);
- The proposed method of disposal of the waste;
- Proof that the contractor is able to readily provide the necessary first aid measures as specified in the MSDS; and
- A risk assessment covering the transportation, use, handling, storage and disposal of the substance with specific reference to the substance's compatibility with other chemicals.

This information must be provided at least five (5) working days prior to the date on which the contractor intends to bring the substance onto site for use.

Any chemical substance brought onto site without adherence to the requirements stipulated above shall be removed from site immediately.

If the nominated project management representative approves the substance for use, the contractor must ensure that all necessary precautions are taken concerning the transportation, use, handling, storage and disposal of the substance, and that all required PPE and first aid materials / equipment (as stipulated in the MSDS) are readily available on site.

The contractor must ensure that a Material Safety Data Sheet (MSDS) is obtained for each chemical substance brought onto site. A file, or files, containing all of the MSDS's must be maintained and must be readily available to all personnel on site (particularly first aiders) as well as other potentially affected parties (e.g. emergency services personnel, persons from the local community, etc.). The MSDS's must be in the language(s) commonly used on site.

The contractor must appoint a trained and competent Hazardous Chemical Substances Coordinator who understands and is able to evaluate the risks associated with a wide variety of substances. This person shall be responsible for:

- Assessing the hazardous properties and risks associated with all chemical substances brought onto site by the contractor and appointed sub-contractors (using the MSDS's);
- Determining precautions and safe practices for transportation, use, handling, storage and disposal (including PPE requirements) (using the MSDS's);
- Determining first aid and emergency response requirements / procedures (using the MSDS's);
- Maintaining the MSDS file;
- Managing and monitoring the consumption of inventory; and
- Providing an "as needed" service to site personnel and suppliers.

The risks associated with the transportation, use, handling, storage and disposal of all hazardous chemical substances brought onto site must be assessed and managed by the contractor through a process that incorporates risk reduction using the hierarchy of controls as described in Section 6.

Whenever a task-based risk assessment is carried out, consideration must be given to the use of chemical substances (e.g. greases, solvents, etc.).

The contractor must provide Safe Work Procedures for the transportation, use, handling, storage and disposal of all hazardous chemical substances to be used on site.

The contractor must provide his employees with all of the Personal Protective Equipment that is necessary to prevent exposure / injury while handling / using the hazardous chemical substances that they will be required to work with. Appropriate PPE must be selected with consideration given to the potential hazards, permeability, penetration, resistance to damage and compatibility with the work tasks.

The contractor's employees must be trained in the safe transportation, use, handling, storage and disposal of the hazardous chemical substances that they will be required to work with or may come into contact with. The training must specifically address PPE requirements (including the correct selection, fitment and use thereof).

All personnel must be trained to understand the potential health effects associated with exposure to hazardous chemical substances and therefore the importance of Safe Work Procedures and PPE. All personnel must be trained on emergency response procedures and first aid measures.

Behaviour-based observations and coaching must include the use / handling of hazardous chemical substances.

An appropriate occupational exposure monitoring and medical surveillance programme must be in place for all personnel potentially exposed to hazardous chemical substances which have the potential to cause immediate or long-term harm.

Emergency showers and eyewash stations must be provided where required by law, or where a risk assessment indicates a need. The emergency showers and eyewash stations must be appropriately located, signposted, and regularly tested and maintained. Employees must receive training on the location and use of the showers / eyewash stations.

An emergency response plan for incidents involving hazardous chemical substances must be in place. Regular and appropriately staged emergency drills (possibly involving external spill response and ambulance support services) must be held and lessons learnt must be incorporated into the emergency response plan.

The contractor must provide appropriate storage facilities for all hazardous chemical substances to be used on site. The storage facilities must be secure and protected from damage. They must also be designed for easy access for firefighting purposes. Where applicable, the storage facility must protect chemical containers from physical damage due to temperature extremes, moisture, corrosive mists or vapours, and vehicles.

The inventory of hazardous chemical substances stored on site must be kept to a minimum. The quantity of each chemical stored must be justifiable.

Storage and segregation requirements for all hazardous chemical substances to be used on site must be based on:

- The quantities of the substances stored;
- The physical state of the substances (solid, liquid or gas);
- The degree of incompatibility; and
- The known behaviour of the substances.

Access to areas where hazardous chemical substances are stored and handled must be limited and controlled.

Every chemical substance container must be adequately and clearly labelled to identify its contents, to indicate precautionary requirements for the substance, and to indicate the date of expiry (if applicable). Pipes used to transfer / convey / distribute chemical substances must be clearly identified (e.g. colour coding). Directional flow must be indicated where practical.

Before any item, equipment or empty container containing a chemical residue is disposed of as general waste, it must be properly decontaminated (where applicable). Before being disposed of, empty chemical containers must also be rendered unusable for carrying water (by puncturing, cutting or crushing them).

Hazardous chemical substance waste (i.e. redundant / expired hazardous chemical substances, containers containing residues, contaminated items / materials, etc.) must be disposed of in accordance with the applicable legislation.

Maintenance, inspection and testing schedules and procedures must be in place for critical equipment associated with hazardous chemical substances.

A system must be in place to ensure that the risks are assessed before any changes are made to equipment and / or processes for the transportation, storage, handling, use or disposal of a hazardous chemical substance.

A programme must be in place to continually investigate possibilities / opportunities for replacing hazardous substances with safer alternatives.

## 16.44 Radiation

The risks associated with ionising (from naturally occurring radioactive minerals (NORM), radon, and man-made sources), ultra violet (UV) and electromagnetic field (EMF) radiation exposure must be assessed by a competent person.

There must be an inventory of all radiation sources that have the potential to cause adverse health effects. For each radiation source, the type of radiation (e.g. radioisotope, radon, x-ray, EMF, laser, etc.), the strength of the radiation, and the location must be recorded.

Where risk assessment indicates the need, a documented radiation management programme must be developed such that:

- All types of radiation sources are adequately characterised and described;
- Exposures are eliminated or reduced to as low as reasonably practicable (ALARP);
- A clearly defined chain of responsibility (with duties) is provided; and
- Education is provided for employees regarding radiation safety, including the radiation management programme elements.

The ionising radiation management programme must meet all applicable regulatory requirements, and as a minimum must include the following elements (as applicable):

- Surveyed radiation areas and quantification of exposure sources / levels;
- Exposure and medical monitoring programmes based on established investigation levels;
- Transport of radioactive materials in compliance with international radiation transport regulations, when no local regulations are in place;
- Waste monitoring and disposal programmes;
- Feedstock and equipment checks for naturally-occurring ionising radiation;
- Clearance and control procedures for all contaminated materials and equipment leaving or arriving at site (including scrap);
- Leak (wipe) tests on sealed radioactive containment equipment;
- Lock-out procedures for vessels and equipment containing radioactive sources and radon decay product measurement prior to entry;
- Emergency procedures;
- Environmental impact risk assessment (air, water, waste, foods, etc.);
- Product / waste life cycle control; and
- Dose assessment for employees and critical exposure groups, according to documented methods and by a competent person.

Areas with ionising radiation with annual doses greater than 5 milli Sieverts (mSv) must be designated as restricted access or controlled areas. These areas must be identified and mapped, signposted or otherwise clearly communicated to employees working in the area.

Each person whose potential exposure exceeds 5 mSv per annum or who is a designated radiation worker must undergo periodic personal radiation monitoring and medical surveillance designed to show continued fitness for radiation work.



All sources of ionising radiation must be managed in use and when they are either disposed of or securely stored in accordance with local regulations. Each operation where individual worker's exposures could exceed 5 mSv per annum must have a trained radiation protection adviser or ready access to a trained protection consultant.

There must be documented procedures for the inspection, assessment and maintenance of the controls, and emergency procedures to deal with incidents involving ionising radiation sources (including fire and explosions). All controls must be reassessed annually to ensure their continued effectiveness and that operating practices are in accordance with written procedures.

### **16.45 Thermal Stress**

Hot areas or activities where employees have experienced or could experience excessive fatigue, muscle cramp, dehydration, dizziness and other symptoms of heat stress must be identified and described.

Where a risk of thermal stress is determined, a competent person must conduct monitoring surveys on site, in consultation with workers.

For defined extreme thermal conditions and job activities, medical examinations must include information about the operator's physiological and biomedical aspects, and an assessment of fitness for the working conditions.

Cold areas or activities where employees have experienced or could experience pain or loss of feeling in extremities, frostbite, severe shivering, excessive fatigue and other symptoms of cold stress must be identified and described.

Workplace thermal stress levels (temperature, air movement, humidity, etc.), activities (work level, etc.) and conditions (clothing, health, etc.) that have the potential to exacerbate thermal stress effects must be adequately characterised and described. Workplace exposure assessment must be repeated according to regulatory requirements or whenever there is a change in production, work organisation, process or equipment which may impact thermal stress levels.

Detailed heat stress assessment of identified tasks or jobs must be tiered to:

- Commence with the use of a simple heat stress index as a screening tool; then, if necessary;
- Use rational heat stress indices in an iterative manner to determine the 'best' control methods for alleviating potential heat stress; and
- Undertake physiological monitoring when exposure times are calculated to be less than 30 minutes, or where high level PPE that limits heat loss must be worn.

Detailed cold stress assessment of identified tasks or jobs must be conducted according to current appropriate guidelines that incorporate a cold stress index, to determine the 'best' control methods for alleviating potential cold stress.

When a risk of thermal stress is identified, the following exposure controls must be implemented:

- An acclimatisation period for new workers and those returning from extended leave or sickness;
- Training in the recognition of signs and symptoms of heat or cold stress, emergency procedures and preventative measures;

- Protective observation (buddy system or supervision); and
- A requirement for self-paced working.

The following exposure controls must be considered by a competent person:

- Work / rest regimes and job rotation based on measurements conducted;
- Suitable rest areas with a provision of cool drinking water and cool conditions for high temperatures, or provision of warm drinks and warm conditions for cold temperatures;
- Selection of appropriate clothing or other PPE for extreme temperature conditions;
- The use of engineering controls; and
- Undertake hot / cold tasks during a cooler / warmer time of the day.

Where thermal stress is assessed to be a risk, the operation must develop a suitable emergency response plan.

#### **16.46 Fitness for Work**

The contractor must develop and implement a programme to manage employee fitness for work. All employees working on site for whom the contractor is responsible (i.e. direct employees of the contractor as well as the employees of any appointed sub-contractors) must be subject to this programme.

All safety critical jobs (i.e. roles where fatigue or other causes of reduced fitness for work could lead to serious injury, illness or death to employees, significant equipment / plant damage, or significant environmental impact) must be identified and the risks associated with reduced fitness for work in these roles must be assessed.

A programme to manage these risks must be implemented, and it must include:

- Mechanisms for managing fatigue, stress and lack of fitness;
- An alcohol and other (including prescription, pharmaceutical or illicit) drugs policy that includes testing;
- An Employee Assistance Programme providing confidential access to resources and counsellors; and
- Training and awareness programmes.

Each employee has an obligation to present health and safety fit for work at the start of the day / shift, and to remain fit for work throughout the work period. Reporting for work under the influence of alcohol or any other intoxicating substance will not be tolerated. Any transgression concerning the alcohol and other drugs policy applicable to the project may result in the offending employee's access to the project premises being temporarily or permanently withdrawn.

Alcohol and drug testing on the project premises will be carried out randomly (as employees report for duty and during the course of the day / shift), following significant incidents (all persons involved), and whenever there is reasonable suspicion. Alcohol and drug testing may also be carried out as part of a Pre-Employment Medical Examination.

Sleep deprivation during shift work or from excessive working hours is a known cause of fatigue. Fatigued employees are at increased risk of accidents. Shift system design must consider:

- The effect on worker fatigue;
- The effects of activities carried out during scheduled and overtime hours;
- The impact on sleep cycles of activities such as commuting to and from site; and



- The monitoring and control of working hours.

The contractor is responsible for the administration of the working hours of his employees as well as the employees of any appointed sub-contractors. The maximum working hours per day and the minimum rest times between shifts must be specified in the contractor's Health and Safety Management Plan and must comply with all applicable legislation.

All employees engaged in safety critical jobs must undergo fitness assessments (medical examinations) which must be carried out prior to the commencement of employment on the project, prior to a change in role, periodically based on an employee's individual risk profile, and on termination of employment on the project:

- Pre-Employment Medical Examination – to assess the physical suitability of the person for the role and environment in which he will work (carried out prior to the commencement of employment on the project and prior to induction);
- Periodic (Surveillance) Medical Examination – to assess the ongoing physical condition of an employee to determine if his role is impacting on his health and whether the employee's fitness level is still adequate for the role he holds (these medical examinations are "risk driven" – the specific protocol followed and the frequency of the examinations will depend on the applicable legal requirements and the employee's individual risk profile as determined by his personal fitness, the nature of his role / duties, and the environment in which he works / occupational health hazards to which he is exposed). The periodic medical assessment programme must include:
  - ♦ The identification of modifiable risk factors that may impact fitness for work;
  - ♦ Education and support to maintain health or address identified risk factors; and
  - ♦ Education and support to help employees regain their fitness for work.
- Role Change Medical Examination – to assess an employee's physical suitability for a different role and work environment (carried out prior to a change in role / duties);
- Exit (Post-Employment) Medical Examination – to determine the total physical impact of the work the employee performed (carried out on termination of employment on the project if the employee worked on the project site for more than six months).

**Note:** The results of an Exit Medical Examination from previous employment will not be accepted as a Pre-Employment Medical Examination.

**Note:** The medical examinations described above may only be carried out by an occupational medical practitioner (i.e. a medical doctor who holds a qualification in occupational medicine).

A detailed job (role) description and an exposure profile (noise, dust, heat, fumes, vapours, etc.) must be provided for each employee or group of employees. The medical examinations that an employee undergoes must be based on (i.e. the employee's fitness must be assessed against) the information contained in these documents as well as the baseline risk assessment for the work. This information must be made available to the occupational medical practitioner performing the medical examination.

For each role, the medical criteria for fitness must be documented and these must be based on an evaluation of the physical and medical requirements for the role.

Depending on the circumstances, certain vaccinations may need to be provided to employees.

The medical examinations carried out for all drivers and operators must include testing / assessment for medical conditions that could affect the safe operation of vehicles or equipment.

Specific testing / questioning must be carried out to determine if an individual:

- Suffers from epilepsy or any other medical condition deemed to be a risk by the occupational medical practitioner;
- Makes use of chronic medication that could affect performance;
- Is colour-blind; or
- Has poor day or night vision.

The medical examinations carried out for employees that are required to work at height must include testing / questioning to determine if an individual suffers from epilepsy, hypertension (high blood pressure) or any other medical condition deemed to be a risk (with regard to working at height) by the occupational medical practitioner.

Electricians must be tested for colour-blindness.

With regard to the placement of new employees:

- Prospective employees must be referred to a suitable occupational medical practitioner (doctor) for a "Pre-Employment Medical Examination";
- If an individual is found to be medically "unfit for placement", the doctor will indicate which work activities cannot be performed by the person;
- The individual may still be employed on the project if his medical restrictions can be accommodated and provided that no legislation is transgressed.

A process must be established to manage medical restrictions that may be placed on an employee. For every employee with a medical restriction, regular follow up visits with the occupational medical practitioner must be arranged to ensure that each case is proactively managed.

An employee in a safety critical job must report (to his supervisor) any condition that might impair his ability to safely perform the duties associated with his role. A mechanism must be in place for such reports to be referred to an occupational medical practitioner to determine if the employee is fit to continue with his work.

Proof of all medical examinations (i.e. certificates of fitness signed by an occupational medical practitioner) must be kept on site and these records must be readily available for inspection by the nominated project management representative.

An employee's certificates of fitness must be included in his Personal Profile (dossier). If an Employee Personal Profile (dossier) hasn't already been compiled for a particular employee, then this must be done without delay following the employee's Pre-Employment Medical Examination.

No employee in a safety critical role may commence work on site without proof that he has undergone a Pre-Employment Medical Examination.

Occupational medical examinations and data interpretation may only be carried out by medical practitioners that are appropriately qualified and certified to do so.

Occupational medical data contained in reports to management must be grouped and summarised to ensure that the confidentiality rights of each individual employee are maintained.

All occupational medical data and records must be retained for at least 40 years.

#### **16.47 Legionnaires Disease**

All equipment with the potential for generating Legionella (such as cooling towers and associated equipment, air-handling systems, hot water services and showers) must be identified and the risks of contamination and aerosol generation assessed.

Where there is an assessed risk that Legionella could grow in the system and cause harm, a programme must be in place such that:

- All such equipment is identified on a register. The register must contain details of the regular maintenance, cleaning and checking programmes;
- Control measures are in place to minimise aerosol emissions;
- There must be a documented water treatment programme, including procedures for inspection, assessment and maintenance of the controls; and
- New or retrofitted equipment is designed and constructed to minimise the risk of Legionella growth.

Where available, the Legionella plate count test should be used if more effective methods are not available.

Good maintenance procedures must be followed to minimise the risk of significant contamination of equipment with other bacteria and microbial organisms.

Adequate procedures must be available for disinfecting systems if significant concentrations of Legionella bacteria are present. Once disinfected, systems must be retested to confirm effectiveness of treatment.

#### **16.48 HIV / AIDS**

The contractor must assess the risks posed by HIV. Appropriate mitigation strategies must be implemented as required.

Discrimination towards employees on the basis of actual or perceived HIV status is forbidden.

All information on the HIV status and condition of employees and community members, including that relating to counselling, care and treatment and receipt of benefits, must be maintained in medical confidence.

HIV / AIDS screening may not be a requirement for recruitment or a condition of employment.

### **17. Occupational Hygiene**

These services are to be provided by TCP):

- Chemical agents =Gases, vapours, solids, fibres, liquids, dusts, mists, fumes, etc.
- Physical agents =Noise, Vibration, Heat, Cold, Electromagnetic fields, lighting etc.
- Biological agents =Bacteria, fungi, etc.
- Ergonomic factors =Lifting, stretching, and repetitive motion.
- Psychosocial factors =Stress, workload and work organisation

TCP Occupational health must provide the contractor with the health risk assessment in respect of existing Occupational Health Risk on Sites

Additionally an Occupational Health Program for monitoring the existing Occupational health Risk will be given to the Contractor

The contractor must conduct an Occupational Health Risk Assessment in respect of their trade.

The contractor must appoint an Approved Inspection Authority (AIA) for Occupational Hygiene to conduct the identified Occupational hygiene Surveys.

### **17.1 Lighting**

- Should be measured once-off within 6 months of new installations prior to work commencing for the first time in any area
- The installations should be placed on a maintenance/ repair/ replacement schedule by management. Proof of this should be available
- Lighting and ventilation shall comply with the National Building Regulations (SANS 10400-O: Lighting and Ventilation) before occupancy is established
- Measurements do not need to be conducted by an Approved Inspection Authority for Occupational Hygiene

### **17.2 Particulate and Gas/ Vapour Exposures (page 127)**

The concentration of an HCS in the air is, or maybe, such that the exposure of employees working in that workplace exceeds the recommended limit without the wearing of respiratory protective equipment, is zoned as a respirator zone

### **17.3 Thermal Stress**

Hot areas or activities where employees have experienced or could experience excessive fatigue, muscle cramp, dehydration, dizziness and other symptoms of heat stress must be identified and described.

Where a risk of thermal stress is determined, a competent person must conduct monitoring surveys on site, in consultation with workers.

For defined extreme thermal conditions and job activities, medical examinations must include information about the operator's physiological and biomedical aspects, and an assessment of fitness for the working conditions.

Cold areas or activities where employees have experienced or could experience pain or loss of feeling in extremities, frostbite, severe shivering, excessive fatigue and other symptoms of cold stress must be identified and described.

Workplace thermal stress levels (temperature, air movement, humidity, etc.), activities (work level, etc.) and conditions (clothing, health, etc.) that have the potential to exacerbate thermal stress effects must be adequately characterised and described. Workplace exposure assessment must be repeated according to regulatory requirements or whenever there is a change in production, work organisation, process or equipment which may impact thermal stress levels.

Detailed heat stress assessment of identified tasks or jobs must be tiered to:

- Commence with the use of a simple heat stress index as a screening tool; then, if necessary;
- Use rational heat stress indices in an iterative manner to determine the 'best' control methods for alleviating potential heat stress; and
- Undertake physiological monitoring when exposure times are calculated to be less than 30 minutes, or where high level PPE that limits heat loss must be worn.

Detailed cold stress assessment of identified tasks or jobs must be conducted according to current appropriate guidelines that incorporate a cold stress index, to determine the 'best' control methods for alleviating potential cold stress.

When a risk of thermal stress is identified, the following exposure controls must be implemented:

- An acclimatisation period for new workers and those returning from extended leave or sickness;
- Training in the recognition of signs and symptoms of heat or cold stress, emergency procedures and preventative measures;
- Protective observation (buddy system or supervision); and
- A requirement for self-paced working.

The following exposure controls must be considered by a competent person:

- Work / rest regimes and job rotation based on measurements conducted;
- Suitable rest areas with a provision of cool drinking water and cool conditions for high temperatures, or provision of warm drinks and warm conditions for cold temperatures;
- Selection of appropriate clothing or other PPE for extreme temperature conditions;
- The use of engineering controls; and
- Undertake hot / cold tasks during a cooler / warmer time of the day.

Where thermal stress is assessed to be a risk, the operation must develop a suitable emergency response plan.

#### **17.4 Measuring and Monitoring**

The workplace exposure (or potential exposure) of persons to occupational health stressors must be measured and monitored to determine the effectiveness of control measures as well as compliance with legal and other requirements, particularly Occupational Exposure Limits.

All such measuring and monitoring must be carried out by an Approved Inspection Authority (i.e. a specialist service provider that is appropriately registered with a governing authority).

A plan for measuring and monitoring occupational exposure must be developed and it must include:

- Detail of what must be measured and monitored, based on a risk assessment and / or identified legal or other requirements;
- The frequency of measurement and monitoring;
- A description of the necessary equipment;
- Data quality requirements and controls (including details on the sample size for statistical validation and any rejection criteria);
- The sampling and analysis method(s) including any laboratory certification requirements; and
- The competency requirements for persons carrying out workplace monitoring.

Each instrument and item of equipment used for occupational exposure measurement and / or monitoring must be:

- Properly maintained to ensure compliance with legislative requirements;
- Controlled and safeguarded from unintentional adjustments;
- Suitably stored and protected from damage; and
- Calibrated or verified against a traceable standard at specific intervals (calibration records must be retained).

Each analytical laboratory service that is used must have implemented a credible quality assurance or quality control programme.

All monitoring results obtained must be analysed on a regular basis to:

- Identify trends and potential exceedances of legal or other requirements (such as Occupational Exposure Limits);
- Identify inconsistent or unusual results;
- Evaluate the effectiveness of existing control measures;
- Measure performance against stated objectives; and Identify continual improvement opportunities.

Each exceedance of a specified requirement or limit must be recorded, investigated and reported. Appropriate corrective actions must be identified and implemented.

## **18. Temporary works**

A contractor must appoint a temporary works designer in writing to design, inspect and approve the erected temporary works on site before use.

A contractor must ensure that all temporary works operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose.

A contractor must ensure that all temporary works structures are adequately erected, supported, braced; and

A contractor must ensure that, all temporary works structures are adequately erected, supported, braced and maintained by a competent person so that they are capable of supporting all anticipated vertical and lateral loads that may be applied to them, and that no loads are imposed onto the structure that the structure is not designed to withstand;

All temporary works structures are done with close reference to the structural design drawings, and where any uncertainty exists the structural designer should be consulted; detailed activity specific drawings pertaining to the design of temporary works structures are kept on the site and are available on request to an inspector, other contractors, the client, the client's agent or any employee;

All persons required to erect, move or dismantle temporary works structures are provided with adequate training and instruction to perform those operations safely; all equipment used in temporary works structure are carefully examined and checked for suitability by a competent person, before being used;

All temporary works structures are inspected by a competent person  
all temporary works structures are inspected by a competent person immediately before, during and after the placement of concrete, after inclement weather or any other imposed load and at least on a daily basis until the temporary works structure has been removed and the results have been recorded in a register and made available on site;



No person may cast concrete, until authorization in writing has been given by the competent person; if, after erection, any temporary works structure is found to be damaged or weakened to such a degree that its integrity is affected, it is safely removed or reinforced immediately;

- adequate precautionary measures are taken in order to—
- secure any deck panels against displacement; and
- prevent any person from slipping on temporary works due to the application of release agents;
- as far as is reasonably practicable, the health of any person is not affected through the use of solvents or oils or any other similar substances;
- upon casting concrete, the temporary works structure is left in place until the concrete has acquired sufficient strength to safely support its own weight and any imposed load, and is not removed until authorization in writing has been given by the competent person contemplated in paragraph (a);
- The foundation conditions are suitable to withstand the loads caused by the temporary works structure and any imposed load in accordance with the temporary works design.
- provision is made for safe access by means of secured ladders or staircases for
- a temporary works drawing or any other relevant document includes construction sequences and methods statements;
- the temporary works designer has been issued with the latest revision of any relevant structural design drawing;
- a temporary works design and drawing is used only for its intended purpose and for a specific portion of a construction site; and
- The temporary works drawings are approved by the temporary works designer before the erection of any temporary works.

No contractor may use a temporary works design and drawing for any work other than its intended purpose.

## 19. Structure

A contractor must ensure that,

all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work;

No structure or part of a structure is loaded in a manner which would render it unsafe; and

all drawings pertaining to the design of the relevant structure are kept on site and are available on request to an inspector, other contractors, the client and the client's agent or employee.

An owner of a structure must ensure that;

Inspections of that structure are carried out periodically by competent persons in order to render the structure safe for continued use;

That the inspections contemplated in paragraph (a) are carried out at least once every six months for the first two years and thereafter yearly;

The structure is maintained in such a manner that it remains safe for continued use;

The records of inspections and maintenance are kept and made available on request to an inspector.

## 20. Emergency Preparedness and Response

The contractor must develop, implement, test and maintain an Emergency Response Plan (incorporating emergency evacuation procedures) that focuses specifically on the contractor's team and work activities. The plan must be risk-based and must detail the procedures that must be followed when responding to all potential emergency scenarios such as a medical emergency (including first aid response), a fire, an explosion, a hazardous substance spill, flooding, rescue from height, rescue from a confined space, etc.

The contractor's Emergency Response Plan must be aligned with the Emergency Response Plan developed for the project.

Potential off-site emergency scenarios must be included (e.g. emergency scenarios related to the transport of personnel, the transport of hazardous materials, and personnel performing work in remote locations).

Consideration must be given to neighbours, and to the availability and capability of local emergency services. Details of any arrangements with external emergency response service providers must be included.

The Emergency Response Plan must satisfy and comply with all applicable legal requirements.

The plan must be adequately resourced to ensure effective implementation. These resources must include appropriate personnel, external emergency response service providers, emergency response equipment, and warning devices. All equipment and warning devices must be identified, maintained and tested to ensure availability at all times.

Accountability for the Emergency Response Plan must be clearly defined. An Emergency Response Team (ERT) responsible for the implementation, management and execution of the Emergency Response Plan must be established. The roles and responsibilities of each team member must be clearly defined in the plan. Each team member must receive appropriate training to ensure that each role is performed competently.

The process for managing incident communication, notification, and reporting must be incorporated into the Emergency Response Plan. The responsible person(s) must be clearly identified, and the protocols for communicating with internal and external stakeholders must be defined.

Emergency evacuation procedures must be developed and included in the Emergency Response Plan.

A copy of the plan must be provided to the nominated project management representative for approval prior to site establishment.

The Emergency Response Plan must be formally reviewed (and amended if necessary) on at least an annual basis, and following any emergency situation, to ensure that it remains appropriate and effective.

At each project work site:

- A suitable evacuation alarm (siren) must be provided. If work is to be carried out in proximity to an existing operational plant, the alarm provided by the contractor must be distinctly different (in terms of the sound that it generates) to any alarm installed in the operational plant. All persons working in an area where an evacuation alarm is sounded must respond to it immediately.
- Suitable fire-fighting equipment must be provided and maintained, and personnel must be trained in fire-fighting procedures and the use of fire-fighting equipment.





- Suitable first aid equipment and supplies must be provided and maintained, and an adequate number of appropriately trained First Aiders must be in place (refer to Section 14.2).
- Emergency assembly points positioned in safe locations away from buildings, plant and equipment must be designated (and conspicuously signposted). In the event of an evacuation, all persons (i.e. personnel and visitors) must assemble and be accounted for at these emergency assembly points.
- All personnel must receive awareness training on the applicable emergency response procedures, and all visitors entering the site must be properly instructed in these procedures.
- The emergency response procedures must be displayed on each notice board.
- A diagram (site plan) indicating evacuation routes, emergency assembly point locations, and the positioning of emergency equipment (fire extinguishers, first aid boxes, etc.) must be prominently displayed in all buildings and plants, in all offices, on all notice boards, and in other locations on the site as may be required.
- An up-to-date list of emergency telephone numbers must be compiled and maintained. A copy of this list must be posted at each site entrance, in each office, near each telephone, and on every notice board.
- Emergency response drills must be conducted to test the effectiveness of the emergency procedures and equipment, as well as the knowledge and proficiency of the response personnel. Where appropriate, drills must include liaison with and the involvement of external emergency response service providers. A variety of emergency scenarios must be tested including, but not limited to, medical emergencies, fires, rescues, and hazardous substance spills. A drill must be carried out one month after site establishment and six-monthly thereafter.

Each drill must be monitored and the outcomes (highlights and shortcomings) must be documented. Corrective actions must be identified and implemented to address the shortcomings, and the Emergency Response Plan and associated procedures must be amended as required.

## **20.1 Fire Fighting**

The contractor must ensure that Fire Fighting requirements are met

## **20.2 First Aid**

The contractor must ensure that First Aiders are trained and appointed as described in (Section 9.5)

### **20.2.1 First Aid Kits**

A suitable first aid kit (i.e. appropriate to the level of training) must be readily available to each First Aider. All kits must be provided and maintained by the contractor.

Taking into account the type of injuries that are likely to occur in the workplace, each first aid kit must contain suitable equipment and supplies. First aid equipment and supplies required by applicable legislation must be provided as a minimum.

The contents of each first aid kit must be kept clean and dry. Each kit must be contained in either a portable weatherproof case / bag or a steel box mounted to a fixed structure. Access to first aid equipment / supplies must be limited to train First Aiders only. Access to portable kit bags must be controlled and steel first aid boxes mounted in the workplace must be kept locked.

Approved signage must be in place to indicate the locations of the first aid boxes / bags.

A record of each treatment administered must be kept in a suitable register.

The first aid kits must, as a minimum, contain the following equipment and supplies:

**Table 20.2.1-1 Minimum Requirements to be included when equipping first aid boxes**

Item 1:	Wound cleaner/ antiseptic – 100ml;
Item 2:	Swabs for cleaning wounds;
Item 3:	Cotton wool for padding – 100g;
Item 4:	Sterile gauze – minimum quantity 10;
Item 5:	1 x Pair of forceps – for splinters;
Item 6:	1 x Pair of scissors – minimum size 100mm
Item 7:	1 x Set of safety pins;
Item 8:	4 x Triangular bandages;
Item 9:	4 x Roller bandages – 75mm x 5m;
Item 10:	4 x Roller bandages – 100mm x 5m;
Item 11:	1 x Roll of elastic adhesive – 25mm x 3m;
Item 12:	1 x Non-allergenic adhesive strip – 25mm x 3m;
Item 13:	1 x Packet of adhesive dressing strips – minimum quantity 10 assorted sizes;
Item 14:	4 x First aid dressings – 75mm x 100mm;
Item 15:	4 x First aid dressings – 150mm x 200mm;
Item 16:	2 x Straight splints;
Item 17:	2 x Pairs large and 2 x pairs medium disposable latex gloves;
Item 18:	2 x CPR mouth pieces or similar devices.

Additional items / supplies may need to be provided depending on the nature of the workplace (specific hazards) and the level of training of the first aider in position of the kit.

## 21. Management Review

A review of the contractor's Health and Safety Management System must be completed annually to ensure that the system continues to be effective in managing health and safety performance and meeting project requirements.

The review must evaluate if there is any need for change and must identify actions to improve the system.

The review must be led by senior management and the following must be considered:

- The suitability of the policy adopted for the project;
- The impact of changing legislation;
- The management of risk;
- Health and safety objectives and performance indicators;
- Changing expectations and requirements of relevant stakeholders;
- Changes to the contractor's scope, schedule, designs, etc.;

- Changes to the contractor's organisational structure;
- Communication and feedback (particularly from employees, Project representatives, and client representatives);
- The effectiveness of the management of change process;
- Workplace exposure monitoring and medical surveillance;
- The status of corrective actions;
- Performance statistics, including an annual summary of safety statistics, and occupational hygiene monitoring and medical surveillance results;
- Non-conformances (findings) from completed audits;
- Follow up on actions from previous management reviews; and
- Recommendations and opportunities for improving the effectiveness of the management system.

A record of each completed management review must be retained and it must include all decisions and identified actions concerning alterations, modifications or improvements to the management system that demonstrate a commitment to continual improvement.

For occupational hygiene: **Approved Inspection Authority (AIA) for Occupational Hygiene**

## 22. Management of Change

To ensure that proposed changes do not give rise to unacceptable health or safety risk, the contractor must develop and implement a process for identifying and managing change in the workplace (e.g. changes to scope, schedule, procedures, work methods, site conditions, designs, plans, plant and equipment, materials, processes, etc.) that may impact on health or safety performance.

The management of change process must take into consideration that changes may be planned or unplanned, sudden or gradual, temporary or permanent.

The process must aim to ensure that:

- Changes are identified and assessed before they are implemented;
- Careful consideration is given to managing the risks associated with any change;
- Due diligence can be shown to have taken place;
- The number of unsatisfactory or unnecessary changes is minimised;
- The right people are involved in the change process; and
- All statutory requirements are met.

All risks associated with a proposed change must be evaluated and ranked. The risks that are ranked as moderate or higher must be managed to prevent serious injury or illness.

It must not simply be assumed that a change will not result in significant risks. All proposed changes must be formally evaluated. The evaluation or review must include:

- An appropriate level of technical expertise;
- The involvement of the workforce potentially affected by the proposed change; and
- Approval of the change by a person with at least the same level of authority as those who control the existing process or item being changed.

## 23. Sub-contractor Alignment / Stakeholder management

Processes must be in place to ensure that the health and safety risks associated with the procurement of materials, equipment, services and labour are identified, evaluated and effectively managed.

A process for evaluating a sub-contractor's (or supplier's) ability to provide materials, equipment, services and labour that meet defined specifications must be in place. A prospective sub-contractor's health and safety management expertise, experience and capability (including previous health and safety performance) must be formally assessed prior to any contract or purchase order being awarded.

Each appointed sub-contractor must develop and implement a detailed Health and Safety Management Plan based on the requirements of the contractor's Health and Safety Management Plan and the Health and Safety Specification for the project. This plan must be reviewed and approved by the contractor prior to the commencement of any work.

The properties of all materials provided to the project must be adequately understood, documented and integrated into operating procedures where exposure to these materials presents a significant health or safety risk.

Procedures, commensurate with the evaluated risk, must be in place for the receiving, storing, dispatching and transporting of all equipment and materials.

Before work commences on any contract, all sub-contractor personnel must receive comprehensive orientation and induction training (refer to Section 11).

All work carried out by a sub-contractor must be managed (activity supervised) throughout the contract period and performance must be reviewed (audited) on a regular basis (refer to Section 21).

## **24. Measuring and Monitoring**

The workplace exposure (or potential exposure) of persons to hazardous substances or agents must be measured and monitored to determine the effectiveness of control measures as well as compliance with legal and other requirements, particularly Occupational Exposure Limits.

All such measuring and monitoring must be carried out by an Approved Inspection Authority (i.e. a specialist service provider that is appropriately registered with a governing authority).

A plan for measuring and monitoring occupational exposure must be developed and it must include:

- Detail of what must be measured and monitored, based on a risk assessment and / or identified legal or other requirements;
- The frequency of measurement and monitoring;
- A description of the necessary equipment;
- Data quality requirements and controls (including details on the sample size for statistical validation and any rejection criteria);
- The sampling and analysis method(s) including any laboratory certification requirements; and
- The competency requirements for persons carrying out workplace monitoring.

Each instrument and item of equipment used for occupational exposure measurement and / or monitoring must be:

- Properly maintained to ensure compliance with legislative requirements;
- Controlled and safeguarded from unintentional adjustments;
- Suitably stored and protected from damage; and
- Calibrated or verified against a traceable standard at specific intervals (calibration records must be retained).

Each analytical laboratory service that is used must have implemented a credible quality assurance or quality control programme.

All monitoring results obtained must be analysed on a regular basis to:

- Identify trends and potential exceedances of legal or other requirements (such as Occupational Exposure Limits);
- Identify inconsistent or unusual results;
- Evaluate the effectiveness of existing control measures;
- Measure performance against stated objectives; and
- Identify continual improvement opportunities.

Each exceedance of a specified requirement or limit must be recorded, investigated and reported. Appropriate corrective actions must be identified and implemented.

## **25. Incident Reporting and Investigation**

The contractor must establish a procedure for the management of all health and safety incidents. This procedure must define the responsibilities, methodologies and processes that must be followed for:

- Reporting an incident;
- Investigating an incident;
- Analysing an incident to determine the root cause;
- Identifying and implementing corrective actions to prevent a recurrence; and
- Communicating information concerning an incident to relevant persons and / or groups.

**Please Note:** Arrangements must be in place to ensure that proper medical care is provided to any contractor (or sub-contractor) employee that suffers an occupational injury or illness (refer to Section 15). These arrangements must be described in the contractor's Health and Safety Management Plan.

An incident may have multiple impacts. For each impact, the Actual Consequence and the Maximum Reasonable Outcome must be evaluated. Each impact must be evaluated independently, with the most significant classification forming the primary rating of the incident.

A Near Hit is an incident. All Near Hits must be reported.

The Maximum Reasonable Outcome (MRO) is based on a risk evaluation of the maximum reasonable consequence of an impact and the likelihood of the event occurring again given a reasonable failure of existing controls. Using the matrix referred to above, each impact must be evaluated and classified as:

- Low;
- Moderate;
- High; or
- Extreme.

An incident must be reported on the same work day or shift on which it occurs and preliminary details must be recorded

Depending on the Actual Consequence and Maximum Reasonable Potential Outcome of the impact(s), the relevant internal and external parties must be notified in accordance with specified protocols and timeframes, and legislative requirements.

In the event of a significant incident (i.e. an incident with an Actual Consequence of Moderate, Major or Catastrophic, or a Maximum Reasonable Potential Outcome of High or Extreme, work must cease and must only resume once the necessary actions (including the re-evaluation of any relevant risk assessments) have been taken to eliminate or reduce the risk of recurrence. Work must only be permitted to recommence once formal authorisation has been granted by the Project Construction Manager. In the case of incidents with an Actual Consequence of Major or Catastrophic, work must not be permitted to recommence until authorisation has been granted by the relevant government authorities (i.e. the South African Police, the Department of Labour or the Department of Mineral Resources).

The Contract Manager must ensure that an investigation is completed for each incident that occurs, and that appropriately senior personnel participate in, and authorise the outcomes of, each investigation. Incident investigations must be facilitated by competent and experienced persons who have been trained in the appropriate methodology.

All significant incidents (i.e. incidents with an Actual Consequence of Moderate, Major or Catastrophic, or a Maximum Reasonable Outcome of High or Extreme must be investigated using the approved Transnet investigation methodology. Such an investigation must be facilitated by a trained project representative within 7 calendar days.

For all other incidents (i.e. incidents with an Actual Consequence of Insignificant or Minor, or a Maximum Reasonable Outcome of Low or Moderate other methodologies approved by the Project Health and Safety Manager must be used.

Each incident (including Near Hits) must be investigated to a level of detail that is appropriate for the Maximum Reasonable Potential Outcome of the incident.

Each incident must be analysed to determine the root cause, and corrective actions must be identified and prioritised for implementation to eliminate or reduce the risk(s) in order to prevent recurrence of the incident.

For each corrective action, a responsible person must be designated and an appropriate timeframe (target date) for completion of the corrective action must be specified. Progress on implementing corrective actions (i.e. closing incidents) must be monitored and reported on. The implementation of corrective actions must be verified during monthly audits by the Project Health and Safety Advisors but also no later than 30 calendar days after the conclusion of the incident investigation.

The contractor must document the results of each investigation and a report must be submitted to the nominated project management representative within five working days of the incident occurring.

As a minimum, each incident report must include:

- The date, time and location of the incident;
- A detailed description of the incident, including photographs;
- The names of any injured persons;
- Injury details (if applicable);
- A summary of the first aid and / or medical treatment provided (if applicable);

- The current status of any injured persons;
- The root causes of the incident; and
- Detailed corrective actions, including responsible persons and target dates for implementation.

Each significant incident must be summarised for its lessons learnt following the investigation. This information must be reviewed by the contractor's Project Manager to assure completeness, accuracy and relevance before it is shared with (communicated to) all project personnel.

## **26. Non-conformance and Action Management**

The contractor must establish a process for identifying and recording corrective actions arising from:

- Incident investigations;
- Hazard identification and risk assessment;
- Measurement and monitoring;
- Improvement plans and suggestions;
- Managing change;
- Audits and inspections; and
- Safety observations and coaching (safety interactions).

The contractor must establish a procedure for managing actions that addresses:

- Identification, categorisation and prioritisation of actions;
- Formal evaluation and approval of actions (management of change process);
- Assignment of responsibilities, resources and schedules for implementation;
- Implementation of actions;
- Tracking and reporting on implementation status; and
- Monitoring and verifying the effectiveness of the actions.

## **27. Performance Assessment and Auditing**

The contractor must establish and maintain programmes for measuring and monitoring HEALTH AND SAFETY performance on a regular basis. Metrics must include leading and lagging indicators, and be based on qualitative and quantitative data.

### **27.1 Reporting on Performance**

Reports summarising the contractor's health and safety performance on the project must be compiled on a weekly and a monthly basis.

The contractor must be prepared to discuss the content of these reports at scheduled health and safety meetings.

The reports must contain the following information:

- Number of contractor and sub-contractor employees on site;
- Total hours worked on site by contractor and sub-contractor employees (by company);
- Number of incidents by category (i.e. Near Hit, FAI, MTI and LTI);
- Lost Time Injury Frequency Rate (LTIFR) (project to date and 12-month rolling);
- Details of all new incidents for the reporting period and the corrective actions taken or to be taken;
- Feedback (progress updates) on all open incidents and outstanding corrective actions;
- Status and feedback on any employee that may have been injured and has not yet returned to work;



- Details of all health and safety training carried out during the reporting period;
- Number of SOC's (Safety Observations and Coaching) carried out during the reporting period;
- SOC trends identified and proposed action for the coming week or month to maintain positive trends and / or address negative trends;
- Details of all audits, inspections and site visits carried out during the reporting period, and the corrective actions taken (or to be taken) to address all non-conformances;
- Feedback (progress updates) on all open non-conformances and outstanding corrective actions;
- Number of Toolbox Talks conducted during the reporting period (monthly);
- Number of Planned Task Observations (PTO's) carried out during the reporting period (monthly);
- Details of all active risk assessments and Safe Work Procedures highlighting those that are due for review in the coming month (monthly);
- A look ahead (to the coming week, month or quarter) to ensure that appropriate health and safety planning and preparation is done for upcoming work;
- Challenges faced with regard to health and safety; and
- Any other health and safety related information specific to the project that may be required.

Leading indicators (e.g. audit findings, observations, etc.) must be analysed, and any negative trends identified with regard to unsafe behaviour or conditions must be appropriately addressed to prevent incidents.

Lagging indicators (e.g. injuries, illnesses, near hits, etc.) must be investigated in detail to determine the root causes. Corrective actions must be identified, implemented and integrated into Safe Work Procedures to prevent recurrences.

## 27.2 Audits and Inspections

On a monthly basis, the health and safety management system and workplace activities of the contractor will be audited by a Project Health and Safety Advisor to assess compliance with the project health and safety requirements. Any deviation from these requirements (i.e. non-conformance) that places the health or safety of any person in immediate danger will result in the specific activity being stopped until the non-conformance is corrected.

For each non-conformance determined during any audit, the contractor must identify and implement appropriate corrective actions.

For each corrective action, a responsible person must be designated and an appropriate timeframe (target date) for completion of the corrective action must be specified. Progress on implementing corrective actions (i.e. closing non-conformances) must be monitored and reported on. The implementation of corrective actions will be verified during the monthly audits.

Should it be determined that the contractor's level of compliance is unsatisfactory, all work being performed by the contractor on the project site may be stopped (at the contractor's expense) until an investigation into the reasons for the poor performance has been carried out, a corrective action plan has been developed, and corrective actions have been implemented.





In addition to the audit carried out by the Project Health and Safety Advisor, the contractor must carry out an internal audit on a monthly basis to assess compliance with the project health and safety requirements (including the requirements of this specification and the contractor's Health and Safety Management Plan). Furthermore, the contractor must ensure that each appointed sub-contractor is audited and measured to the same standard. Copies of these audit reports must be submitted to the Project Health and Safety Advisor on a monthly basis.

The contractor must carry out internal health and safety inspections as follows:

- General site health and safety inspections on a daily basis; and
- Inspections of plant, tools and equipment prior to establishment or use on site, and at least monthly thereafter.

All audits and inspections must be carried out by competent persons who have been appointed in writing.

A schedule of planned audits and inspections must be compiled and maintained ensuring that:

- All work areas and all activities are covered at regular intervals;
- All applicable legal requirements are complied with; and
- Areas or activities with significant associated hazards or risks receive greater attention.



# **TRANSNET**

## **GENERAL QUALITY REQUIREMENTS FOR CONTRACTORS AND SUPPLIERS**

### **QAL-STD-0001**

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## SUMMARY VERSION CONTROL

[illegible]

Note: Only the latest amendments and/or additions are reflected in italics in the body of the document.

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## 1. Purpose

This Specification outlines the minimum requirements to ensure that products and services supplied to TRANSNET are manufactured, provided, constructed or installed in accordance with all specified requirements as defined in the Contract, all associated specifications, drawings, codes and standards.

## 2. Definitions / Abbreviations

Term, Abbreviation	Meaning
<i>Contract:</i>	Formal document evidencing agreement between <i>Employer</i> and <i>Contractor</i> for supply of on site or off site services (generic term used for Purchase Orders, Contracts and Service Orders in this Standard).
<i>Contractor:</i>	The party to a <i>contract</i> that provides services to the <i>Employer</i> (generic term used for Vendors, Suppliers, Contractors, Consultants, etc.).
<i>Contractor</i> Documentation Schedule (CDS)	A schedule specifying the <i>Employer's</i> requirements for the document types to be submitted by the <i>Contractor</i> at various stages of the <i>Contract</i> and the timing of the submissions.
Data:	All drawings/documents/data/information/DPs and IOMs required to be supplied under the <i>Contract</i> .
Data Pack (DP):	A compilation of manufacturing data, certification, inspection and testing records prepared by the <i>Contractor</i> to verify compliance with the Contractual requirements.
<i>Employer:</i>	The party to a <i>Contract</i> or Purchase Order to whom the goods are supplied or for whom the work or services are performed. In the context of this document, Transnet Capital Projects is the <i>Employer</i> .

<b>Term, Abbreviation</b>	<b>Meaning</b>
Field Inspection Checklist (FIC):	A document that details the checks, requirements and test parameters for each type of equipment to permit field installation and pre-commissioning of the equipment
Inspection Release Report (IRR):	A document issued to the <i>Contractor</i> by TRANSNET advising release of materials for shipment. This does not relieve the <i>Contractor</i> of its obligations in accordance with the Terms and Conditions of the <i>Contract</i> .
Inspection Waiver Report (IWR):	A document issued to the <i>Contractor</i> by TRANSNET advising that TRANSNET has waived final inspection for the materials listed in this document. The issue of this report does not preclude further inspections by TRANSNET. It is issued without prejudice and does not relieve the <i>Contractor</i> from the guarantees and obligations included in the <i>Contract</i> .
Installation and Operating Manual (IOM):	A document prepared by the <i>Contractor</i> providing relevant information applicable to the installation and maintenance of the specific equipment, including data relating to consumables (eg. Oils, etc.)
Non Conformance (NC)	Material, product or workmanship which is not in accordance with the requirements of the <i>Contract</i> .
Non-Conformance Report (NCR):	A document initiated by either TRANSNET or the <i>Contractor</i> advising that certain materials/products/workmanship provided by the <i>Contractor</i> do not conform to the required standards and specifications.
Project Quality Plan (PQP):	A document that outlines the <i>Contractor's</i> strategy, methodology, resources allocation, Quality Assurance and Quality Control coordination activities to ensure that Goods and Services supplied meet or exceed the

Term, Abbreviation	Meaning
	requirements defined in the <i>Contract</i> drawings, codes and standards.
Quality Assurance (QA):	A formal methodology designed to assess the quality of products or services provided.
Quality Control (QC):	A set of activities intended to ensure that quality requirements are actually being met.
Quality Control Plan (QCP):	A document outlining specific manufacturing/construction inspection and testing requirements, including responsibilities, test acceptance criteria, nomination of witness and hold points.
Technical Query Note (TQN):	A document used by the <i>Contractor</i> to formally clarify a Technical Query related to the scope of supply. This should not be used where a Non-Conformance Report has already been initiated.
TRANSNET:	Transnet SOE Limited
<i>Works Information:</i>	Refers to the <i>Works Information</i> as defined in the <i>Contract</i>

### 3. **Applicable Documents**

#### 3.1 **General**

All work performed shall comply with the requirements of this Specification, the documentation referenced in the *Contract* and the latest revision/edition of the relevant Codes and Standards referenced herein.

#### 3.2 **Statutory Regulations**

Occupational Health & Safety Act, Act No 85, of 1993 and Regulations as amended.

#### 3.3 **Codes and Standards**

Document No.	Title
ISO 9001:2008/2015	International Standard Series Quality Systems



## 4. Quality System

### 4.1 General

The Contractor is responsible for all quality activities necessary to ensure the Work meets the requirements specified in the Contract, and shall manage and coordinate all Quality aspects of the Work in accordance with the requirements of this Specification, together with the Contractor's PQP and QCPs once reviewed and accepted by TRANSNET.

### 4.2 **Contractor Quality System Requirements**

The *Contractor* shall have and maintain a documented Quality Management System. The *Contractor* may be required to demonstrate its use to TRANSNET. The *Contractor's* Quality Management System should be in accordance with the requirements of International Standard ISO 9001.

The *Contractor* submits the following Quality System documentation to TRANSNET at the time of tender:

- Project Quality Plan
- Quality Policy
- Index of Procedures to be used
- Programme of internal and external audits

### 4.3 **Contractor / Supplier Documentation Submittal Requirements**

The *Contractor* will make formal submission of this Quality Documentation on award of the *Contract* and at the times defined in the *Contractor's* Documentation Schedule, included in the *Works Information* for the *Contract*.

The Contractor's responsibilities are defined in terms of *DOC-STD-0001* which outlines the standard requirements for preparation, submission, receipt, review, and collection of Technical and (or) Deliverable Documentation, as detailed in the Contractor Documentation Schedule (CDS).

TRANSNET uses the *Contractor's* Documentation Schedule (CDS), included in the *Works Information* for the *Contract*, to indicate those documents required to be submitted for information/review and/or acceptance.

The *Contractor* develops and maintains a comprehensive register of documents (*Contractor's* Documentation Register – CDR) that will be generated throughout the project.

The CDR includes all quality related documents. The CDR is a 'live' document and Is submitted to TRANSNET for review following each revision by the *Contractor*. The CDR indicates the dates of issue of the documents taking into account sufficient time to allow for the TRANSNET review/acceptance cycle prior to the document being required for use.

TRANSNET includes a standard template for the CDR (DOC-FAT-0002) in the Starter Pack issued to the *Contractor* at the start of every *contract*.

#### 4.4 **Project Quality Plan**

Where specified, the *Contractor* submits a PQP to TRANSNET within the period stated in the CDS and in any event not later than 28 days after the *Contract* start date. The PQP details how the *Contractor's* Quality System will be applied to the Scope of Work specified in the *Contract*, and shall address the following:

- Satisfying the technical and quality requirements of the *Contractor's* Scope of Work, and relevant elements of the applicable ISO 9001 standard
- Include all quality activities relevant to the Scope of Work, identifying all procedures, reviews, audits, controls and records used to control and verify compliance with the specified Contractual requirements.
- Include a listing of all special processes (e.g. welding and non-destructive testing, cube testing etc.) envisaged for use, including confirmation of personnel certification as required.
- Include all proposed method statements (for site based work activities).
- Include a description of the Contractor's project organisation, with key positions and responsibilities identified and individuals named. The organisation structure shall also indicate the resources committed to the management and coordination of QA / QC activities.
- Include a listing of all Quality Control Plans (QCPs), and associated Field Inspection Checklists (FICs), as applicable.
- Identify in the PQP any Sub-Contractor/Sub-Supplier work. Sub-Contractor/Sub-Supplier plans are approved by the Contractor, and a copy forwarded to TRANSNET for information.
- Include the proposed Authorised Inspection Authority (where applicable - for pressurised equipment and systems).
- Include a schedule of proposed quality records.

The PQP shall be controlled and re-submitted for approval when required to incorporate any change necessary during the *Contract* duration to ensure that the document is maintained as an effective control, change management and records. The change management will be done to an agreed policy or procedure.

Note: Where the *Contractor* is required to provide a PQP, no work shall commence until the PQP is accepted by TRANSNET.

## 4.5 Procedures

The *Contractor's* PQP and procedures shall address the system elements and activities appropriate to the Scope of Work, in compliance with the specified Quality Standard.

Where specified, the *Contractor* submits copies of Quality Procedures for review. In addition, the *Contractor* ensures that copies of all Procedures relevant to the Scope of Work are available for reference by TRANSNET at each work location.

These will include, as applicable, the following:

### 4.5.1 Document Control

The *Contractor's* PQP shall provide a description of how documents provided by TRANSNET to the *Contractor* are to be managed. The description shall address as a minimum:

- Management tools and databases
- Receipt, registration and maintenance
- Internal and external distribution to *Employer*, third parties and Sub-Contractors
- Management of Codes, Standards and Specifications
- Internal review and approval routines and authorities
- How it is ensured that the correct revisions of documents are available at the point of use including retention periods for all documentation

### 4.5.2 Design Control

Where the *Contractor* is responsible for any aspect of design related to the Scope of Work, the Quality Plan shall describe the *Contractor's* methods and procedures for the control of these design activities.

#### 4.5.3 **Procurement**

Where the *Contractor* is responsible for any aspect of procurement related to the Scope of Work, the Quality Plan shall describe the *Contractor's* methods and procedures for the control of these activities.

#### 4.6 **Contractor Audits**

The *Contractor* shall:

- Carry out audits in accordance with its Quality System at its own and Sub-Contractor's facilities to ensure project quality requirements are being achieved.
- Include a QA Audit Schedule in the *Contractor* PQP submitted to TRANSNET prior to commencement of the Scope of Work. The Audit Schedule shall include all audits to be implemented by the *Contractor* and Sub-Contractor during the execution of the *Contract*.
- Where stipulated in the *Contract*, perform an audit within three months after the *Contract* start date and thereafter at a minimum frequency of three months. Audit reports are submitted to TRANSNET at the completion of each Audit. Where unsatisfactory performance is evident, TRANSNET will direct the *Contractor* to perform additional audits.

#### 4.7 **Transnet Audit**

TRANSNET reserves the right to perform quality audits or participate as an observer in *Contractor* audits to verify compliance with the Contractual requirements. The *Contractor* shall within a time frame as agreed upon, correct any adverse audit finding advised by TRANSNET.

### 5. **Inspection and Testing**

#### 5.1 **General**

TRANSNET may, at its discretion, perform surveillance inspection at the *Contractor's* premises, the premises of any Sub-Contractor or at the location of the Scope of Work.

Dependent on the nature of the Scope of Work and the frequency of inspections, TRANSNET may elect to have inspection personnel resident at the place of manufacture, fabrication, or assembly.

The *Contractor* ensures free entry and access is given to TRANSNET, certifying authorities and statutory authorities to inspect the Scope of Work and review procedures and quality

records at all parts of the *Contractor's* and Sub-Contractor's premises, or at the location of the Scope of Work while any work or test is in progress.

The *Contractor* provides TRANSNET with all necessary tools, calibrated measuring equipment, safety equipment and workspace to verify or witness tests in progress.

While TRANSNET is at the *Contractor's* premises, the *Contractor* provides, free of charge, reasonable facilities including office facilities and reasonable access to a telephone, facsimile machine and computer connection point.

The *Contractor* provides written notice within a time frame as agreed upon, to allow the attendance of TRANSNET and other representatives at nominated witness and hold points.

## 5.2 Quality Control Plans

The *Contractor* prepares and submits QCPs to TRANSNET for review in accordance with the requirements of the *Contract* and PQP.

QCPs must clearly identify all inspection, test and verification requirements to meet the Contractual obligations, specifications, drawings and related details including destructive and non-destructive testing, witness and hold points.

The *Contractor* shall not commence fabrication or manufacture prior to review and approval of the applicable QCP by TRANSNET.

QCPs shall include reference to all tests specified in the *Works Information*.

A typical format for a QCP is shown in Appendix 1. The *Contractor* may use its own format providing all information shown in the sample in Appendix 1 is included.

## 5.3 Inspection Points

The QCP identifies points in the fabrication, manufacturing and/or installation process that are selected for inspection. These points are denoted by the following inspection codes:

- Hold Point (H)                      Inspection points in the manufacturing cycle, beyond which work shall not proceed without the specified activity, work or function being witnessed. Hold points require written notification to TRANSNET.
- Witness Point (W)                      An inspection point in the manufacturing cycle that will be witnessed or verified. If TRANSNET confirms it is unable to attend after being provided with the written

notification then manufacture may proceed. Witness points require written notification to TRANSNET.

- **Review Point (R)** A point at which products and quality records are verified and endorsed. Review points are not points that require notification to TRANSNET.
- **Surveillance (S)** An inspection point in the manufacturing cycle during which any activity, work or function is observed. No formal notification is required.

The *Contractor* maintains the status of testing and inspection by progressively having the QCPs signed off.

#### 5.4 **Revision to Quality Control Plans**

Revision of the QCP is subject to the same submission, review and acceptance routines as described for the original QCP issue.

#### 5.5 **Kick Off Meeting**

After the *Contract* start date, and prior to manufacture, TRANSNET will require a Kick-Off Meeting with the *Contractor* to discuss fully the implications of meeting TRANSNET's quality requirements. This meeting may be held as part of the *Contract* kick-off meeting for each package or may be a separate meeting, subject to the critical or complex nature of the work. This requirement for a pre-inspection meeting may be repeated when Sub-Contractors of key equipment are engaged.

#### 5.6 **Schedule of Inspection**

The *Contractor* shall submit a Schedule showing the proposed dates for inspections and tests nominated in the QCP where witness and hold points are required. The Schedule shall be regularly updated with progress and issued to TRANSNET to show the current inspection and test status.

#### 5.7 **Field Inspection Checklists**

For site installation and construction activities, the *Contractor* prepares Field Inspection Checklists (FICs) to permit inspection and testing of installed equipment and constructed facilities in accordance with the respective QCPs.

FICs are submitted to TRANSNET for initial review. FICs are used to record the results of inspection and testing (where applicable). On completion, FICs are submitted to TRANSNET

to confirm satisfactory completion of the tests and inspections at nominated QCP witness and hold points.

## 5.8 **Inspection Notification**

The *Contractor* notifies TRANSNET in writing at least two calendar weeks prior to the advent of inspections or tests that require witnessing.

For inspections or tests within the country, arrangements are confirmed at least two working days before the event. For inspection and tests outside of the country, arrangements are confirmed at least seven working days before the event.

Inspection notifications include the following essential information:

- Contract Number
- Location of Inspection or Test
- Nature of Inspection or Test
- Date and Time of Inspection or Test
- Name and telephone number of the *Contractor's* Representative.

## 5.9 **Inspection and Testing**

The *Contractor* is responsible for the conduct of all *Contractor* inspections and tests. This responsibility includes:

- Documenting inspection and test results in the QCPs and relevant FICs.
- Progressively inspecting the quality of the Scope of Work performed, including that of all Sub-Contractors.
- Inspecting to meet all Contractual requirements, in number, type and form
- Inspecting day to day activities, material receipts, issue of material for installation, in-process inspections, and final inspections.

Completed original QCPs and FICs are included in the DP that the *Contractor* submits to TRANSNET.

## 5.10 **Inspection Release**

At completion of the Scope of Work, either in total or in phases, TRANSNET may issue an Inspection Release Report (IRR) or an Inspection Waiver Report (IWR).

The issue of either an inspection release or waiver of inspection does not relieve the *Contractor* of its obligations under the *Contract*. The *Contractor* ensures that a copy of the release note and final expediting release note for transport, where appropriate, is attached

to the delivery docket and accompanies the Work to the designated destination indicated in the *Contract*. Items delivered to TRANSNET without a copy of these documents may not be accepted.

A copy of the inspection release or waiver of inspection is included in the DP.

### 5.11 **Special Processes**

It is the *Contractor's* responsibility to ensure that all processes which require prequalified procedures and/or work methods are tested and qualified before work begins. This typically covers such activities as welding, non-destructive testing, special fabrication techniques and painting. Unless specified such procedures are the *Contractor's* responsibility and do not require submission to TRANSNET before work begins. When such procedures are requested, no work shall commence until procedures are approved by TRANSNET.

It is the *Contractor's* responsibility to ensure all operators are qualified for the processes in accordance with the procedure and/or applicable standards. Records of qualification of operators shall be maintained by the *Contractor* and made available to TRANSNET when requested.

Records of qualification of procedures and processes shall be maintained by the *Contractor* in accordance with the applicable procedure or code.

### 5.12 **Welding Procedures**

Where the *Contractor's* Scope of Work includes fabricated weldments, Welding Procedure Specifications (WPS) defining the method, preparation and sequences to be adopted to achieve a satisfactory welded joint shall be provided for all weld types required in the execution of the *Contractor's* Scope of Work. The procedure shall only be submitted to TRANSNET when requested in the *Contract*.

WPS include all welding essential and non-essential variables for each process used, including appropriate test results. WPS comply fully with the standard or code pertaining to welding required in the execution of the *Contractor's* Scope of Work.

When requested in the *Contract*, a suitably marked "weld map" is completed by the *Contractor* for all items to be fabricated. A summary of WPS is prepared and, when used, is identified on the weld map.

Where TRANSNET approval is required, fabrication is not to commence until written approval of WPS and Welding Procedure Qualification Records (WPQR) is received by the



*Contractor*. No welding fabrication will be accepted that is not covered by a TRANSNET approved WPS/WPQR.

Welding Procedure Qualification (WPQ) tests may be witnessed by TRANSNET and/or an independent inspection authority. Testing of the specimens prepared during the WPQ Tests is carried out by an approved testing laboratory, independent of both TRANSNET and the *Contractor*. In certain instances, a certificate to EN 10204 3.1 B may be required which will be clarified at Tender review and clarification stage.

Where actual weld deposit analysis and weld metal physical properties are required for procedure qualification, the information is taken from the procedure qualification tests. Data listed in the catalogues of the manufacturer of welding consumables is not acceptable.

Welders/welding operators are qualified in accordance with the relevant welding code prior to commencing production fabrication. Specific Welder Qualification (WQ) records will be reviewed by TRANSNET in the *Contractor's* works and should NOT be submitted for review.

A register of welders qualified to work shall be maintained by the *Contractor*.

### 5.13 **Material Traceability**

Where, and to the extent that material traceability is required, the *Contractor* shall provide its procedures for the maintenance of material identification throughout all phases of manufacture. Methods of identification, routines for re-stamping or stencilling as appropriate shall be defined and agreed with the *Employer*.

Adequate records shall be maintained throughout construction enabling traceability of key materials from final product back to original material certificates. The material traceability records shall form part of the DP

The *Contractor* shall prepare a schedule of materials and equipment that are subject to traceability requirements.

### 5.14 **Material Certification**

Where specified in the Contract the following certificates shall be provided to TRANSNET and included in the DP.

Type A: A *Contractor's* certificate of compliance with the *Contract*. This certifies that the goods or services are supplied in compliance with the *Contract* without mention of any test results (EN10204 certificate 2.1).

- Type B: A certificate issued by a laboratory or test facility independent of the *Contractor's* works. It shall quote test results carried out on the product supplied and state whether compliance with the relevant technical standard, code, etc., has been complied with. (EN10204 certificate 3.1B).
- Type C: The same as Type B, the tests are to be witnessed by a third party (EN10204 certificate 3.1C).

## 6. Non-Conforming Products

### 6.1 General

The *Contractor* shall establish and maintain procedures to control material or products that do not meet the specified requirements.

All *Contractor* product and/or materials identified as not conforming to requirements shall be dealt with promptly as follows:

- If the *Contractor* discovers material or product which is not in accordance with the requirements of the *Contract*, i.e. a non-conformance, the *Contractor* shall immediately initiate the non-conformance procedure in terms of the *Contractor's* Quality Management System, advise TRANSNET promptly, and provide a copy of the non-conformance report (NCR) to TRANSNET
- If TRANSNET or its agent identifies a non-conformance, a TRANSNET NCR may be raised.

Originals of all closed out NCRs shall be included in the DP.

### 6.2 Corrective and Preventative Action

If the *Contractor* proposes a disposition of any non-conforming materials or product which varies from the requirements of the Specification or *Contract*, such a proposal shall be submitted in writing to TRANSNET whose decision on the proposal shall be obtained in writing before the non-conforming material or product is covered up or incorporated into the Works, or is the subject of any other disposition.

The disposition of non-conformances which do not vary the requirements of the *Contract*, specification or drawings may be approved by the *Contractor* following discussion and agreement with TRANSNET.

## 7. **Concession Requests and Technical Queries**

### 7.1 **Concession Requests**

Where a *Contractor* requests a Concession to deviate from the requirements of the *Contract* or specified requirements, the *Contractor* raises the request with TRANSNET using the format as shown in Appendix 2.

The Concession Requests shall clearly identify all elements of the proposed deviation together with any resulting technical, commercial and/or schedule impacts.

Completed original Concession Requests shall be included in the DP.

### 7.2 **Technical Queries**

For clarification of technical issues (only), the *Contractor* may submit a Field Engineering Query (FEQ) to TRANSNET in accordance with the *Contract*.

The FEQ shall clearly identify all elements of the query, and all supporting documentation and/or drawings shall be attached where appropriate.

Completed original FEQ's shall be included in the DP.

## 8. **Inspection, Measuring and Test Equipment**

### 8.1 **Calibration**

The *Contractor*, including its Sub-Contractors/Sub-Suppliers, shall ensure the calibration of test and measuring equipment is performed and maintained in accordance with the relevant *Contractor* procedures and/or the equipment manufacturer's specifications.

Where calibration is required by an external laboratory, the *Contractor* shall ensure that the facility selected for calibration possesses current certification. Calibration certificates shall contain a statement that the test equipment is accurate to within specified tolerances.

The *Contractor* should establish the frequency of calibration for each item of equipment (including jigs, fixtures or templates) and record the details in a 'Measuring and Test Equipment Register' (or similar).

### 8.2 **Use of Inspection, Measuring and Test Equipment**

The *Contractor* shall ensure that authorised equipment users:

- Use the equipment in accordance with manufacturer's instructions, and accepted industry practices
- Ensure the equipment is covered by a current calibration certificate

- Conduct the measurements or tests in accordance with the equipment manufacturer's specifications or other relevant specification
- Prior to commencement of each inspection or test activities:
  - Identify the measurements to be made
  - Determine the accuracy required
  - Select the appropriate inspection, measuring or test equipment for the scope of work.

### 8.3 **Verification of Previous Test Results**

Where the calibration status of the equipment is unknown, expired or has doubtful accuracy, the equipment shall immediately be quarantined, and tagged according to *Contractor's* Quality System procedures. The *Contractor* shall then arrange for either in-house or external calibration, and:

- review all previous test results associated with the suspect equipment;
- identify the inspections, measurements or tests required to re-validate the results;
- ensure that suitable re-testing is performed with calibrated equipment;
- record the results of the re-testing on the respective inspection and test documentation.

## 9. **Quality Personnel Qualifications**

It is preferable that *Contractor's* personnel engaged in Quality Assurance and Quality Control are members of one or more of the following organisations:

South African Quality Institute

Southern African Society for Quality

It is mandatory that personnel undertaking testing of rail-associated infrastructure are qualified as follows:

## 10. **Quality Records**

*Contractors* shall maintain Quality Records necessary to provide objective evidence that demonstrates and verifies achievement of the QA / QC requirements associated with the Scope of Work. All Quality Records, including original source material test certificates and

non-destructive test reports, shall be retained by the *Contractor* during the project, and be provided to TRANSNET at the times, and in the quantities specified in the *Contract*.

The *Contractor* shall collate all quality records in the DP and submit the DP to TRANSNET in accordance with the *Contract* and all referenced standards and specifications. This DP shall be compiled progressively, and shall be available for review at all phases of manufacture or construction activities.

The Scope of Work shall not be complete until the *Contractor's* DP, including the quality records from Sub-Contractors/Sub-Suppliers, has been reviewed and accepted by TRANSNET.

The *Contractor* compiles the DP progressively during the execution of the Scope of Work and makes the DP available for review by TRANSNET as required.

The *Contractor* shall retain a copy of all Quality documentation generated during the *contract*, including a copy of the complete DP, for his own records for a minimum period of five years after the completion of the work.

## Annexure 1 – Sample Quality Control Plan

Quality Control Plan No. _____					Revision: _____					Date Issued: _____				
Contract No. _____					Description: _____					Item No. _____				
Contractor _____					Location: _____									

Activity No.	Activity Description	Procedure Reference / Code Specification	Specification Acceptance Criteria	Verifying Document / Report / Certificate	Verification/Witness						
					Contractor		AIA		TRANSNET		
					Action	Sign	Action	Sign	Action	Sign	

Rev	Date	Reason for Revision	Drawn	Checked

**ACTION**

H – Hold. Mandatory Hold Point                      R – Review (Verify) only

W - Witness    S - Surveillance

NOTE: H & W points require formal notification to TRANSNET

## Annexure 2 – Concession Request (QAL-FAT-0003)

<b>Request for Concession No:</b>															
Project Name:						Project Number:									
<b>A. SUPPLIER/CONTRACTOR SUPPLIED INFORMATION</b>															
SUPPLIER/CONTRACTOR NAME:						P/O /CONTRACT NO.:									
SUPPLIER/CONTRACTOR CONCESSION NO:						DATE:									
<b>Required concession applicable to:</b> (Item/Material/Equipment/Area)															
<b>Quantity Affected:</b>															
<b>Original Requirements:</b>															
<b>Description of Concession – Revised Requirements:</b>															
<b>Justification:</b>															
<b>Cause :</b>															
<b>Consequence :</b>															
<b>References:</b>															
Original Requirements reference:															
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Drawing No.:				Rev.:				Specification No.:				Rev.:			
Attached applicable documentation:															

♦ A. SUPPLIER/CONTRACTOR SUPPLIED INFORMATION continued						
(NOTE: This concession will be rejected if the following information is not provided):						
(i) VALUE OF BENEFIT TO CLIENT  \$/R.....	(ii) AGREE TO AN EXTENSION OF THE WARRANTY	YES <input type="checkbox"/>	NO <input type="checkbox"/>	(iii) ANY IMPACT ON SCHEDULE?	NO <input type="checkbox"/>	YES <input type="checkbox"/>
	IF "YES" WHAT PERIOD?			IF "YES" WHAT PERIOD?		

<b>Requested by:</b> (Supplier/Contractor)							
Name:		Title:		Signature:		Date:	
<b>B. SITE ADMINISTERED CONTRACT?</b>			<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Possible QC implications:							
<b>Recommended</b>	<input type="checkbox"/>	<b>Rejected</b>	<input type="checkbox"/>				
♦ Recommendations with the following Conditions:							
Area Manager:			Signature:		Date:		
Site Engineer:			Signature:		Date:		
<b>C. RECOMMENDATION BY CONTRACT ADMINISTRATOR:</b>							
Name:		Signature:		Date:			
<b>D. RECOMMENDATION BY ENGINEERING:</b>							
<b>Recommended</b>	<input type="checkbox"/>	<b>Rejected</b>	<input type="checkbox"/>	<b>Conditional</b>	<input type="checkbox"/>		
Recommendations:							
PR Engineer:			Signature		Date		
Lead Discipline Engineer:			Signature		Date		
Engineering Manager:			Signature		Date		
Comments:							
<b>E. AREA MANAGER:</b>			<b>Accepted</b>	<input type="checkbox"/>	<b>Rejected</b>	<input type="checkbox"/>	
Name:		Signature		Date			
<b>F. Transnet Capital Projects :</b>			<b>Accepted</b>	<input type="checkbox"/>	<b>Rejected</b>	<input type="checkbox"/>	
Name:		Signature		Date			





TRANSNET GROUP CAPITAL  
ENVIRONMENT & SUSTAINABILITY

**CONSTRUCTION ENVIRONMENTAL  
MANAGEMENT PLAN (CEMP)**

**ENV-STD-001 Rev04**

## Document Control

This document will be managed and controlled in terms of the Transnet Document, Data and Records Management Procedure.

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Reviewer	Date reviewed
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### Document Approvals List

This document has been approved by

Name	Designation	Signature	Date approved
Khathutshelo Tshipala	Executive Manager: Environment and Sustainability		30 November 2017

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## 1 Purpose

This document describes the main environmental management requirements that the Contractor must comply with during the construction phase to ensure that the environment is considered, negative impacts avoided or minimised, and positive impacts enhanced. This document is critical to the principal Contractor and the Contractor's Environmental Officer (EO) as well as any sub-contractors performing work on the principal Contractor's behalf.

The purpose of this Document is to:

- Describe how project environmental risks will be identified and managed during the construction phase;
- Detail the roles and responsibilities of all parties with respect to environmental management during construction;
- Outline the organisational structure for effective implementation of the CEMP;
- Assist the Contractor in understanding the requirements of complying with the CEMP and any relevant specifications; and
- Provide a set of standards for environmental management during the construction phase.

## 2 Scope

This standard applies to Contractors that work on site under the control of Transnet Group Capital (TGC).

## 3 Abbreviations and Definitions

### 3.1 Abbreviations

Abbreviation	Meaning
CEMP	Construction Environmental Management Plan
CV	Curriculum Vitae
DEA	Department of Environmental Affairs
EA	Environmental Authorisation
ECO	Environmental Control Officer
EO	Environmental Officer

Abbreviation	Meaning
EGF	Environmental Governance Framework
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
NEMA	National Environmental Management Act 107 of 1998 (as amended)
NCR	Non-conformance Report
PES	Project Environmental Specification
SES	Standard Environmental Specification
SHEQ	Safety, Health, Environment and Quality
TGC	Transnet Group Capital
CM	Construction Manager
PEM	Project Environmental Manager
PM	Project Manager

### 3.2 Definitions

<b>Compliance</b>	The action or fact of complying with legislation or regulations.
<b>Conformance</b>	The action or fact of conforming to this standard and other internal policies, procedures, guidelines and best practice.
<b>Construction Manager</b>	Works together with the Project Manager and the TGC EO to ensure that construction proceeds in accordance with the relevant specifications and agreed schedule.
<b>Contractor</b>	The Principal Contractor as engaged by Transnet Group Capital for infrastructure construction operations, including all sub-contractors appointed by the main contractor of his own volition for the execution of parts of the construction operations; and any other contractor from time to time engaged by Transnet Group Capital directly in connection with any part of the construction operations which is not a nominated sub-contractor to the Principal Contractor.

<b>Contractor's Environmental Officer</b>	Contractor's Environmental Officer responsible for ensuring compliance with the CEMP.
<b>Corrective Action</b>	It is generally a reactive process used to address problems after they have occurred. Corrective action may be triggered by a variety of events, e.g. Non-conformance to documented procedures and work instructions, non-conformances raised through internal audits, unacceptable monitoring and measurement results, internal & external SHEQ complaints, etc.
<b>Emergency</b>	Sudden unforeseen event needing immediate or prompt action.
<b>Environment</b>	Surroundings in which the Contractor operates, including air, water, land, natural resources, flora, fauna, humans and their interrelations.
<b>Environmental Aspect</b>	Element of a Contractor's activities, products or services that can interact with the environment and cause an environmental impact (e.g. dust, noise etc.).
<b>Environmental Authorisation</b>	Environmental Authorisation is the authorisation granted by a competent authority of a listed activity or specified activity in terms of National Environmental Management Act 107 of 1998 (as amended).
<b>Environmental Impact</b>	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from a Contractor's activities, products or services.
<b>Environmental Management Plan</b>	A plan generated by the Contractor describing the relevant roles and responsibilities and how potential environmental risks will be assessed and managed including the monitoring and recording thereof.

<b>Environmental Management Programme</b>	A programme that has been approved by the Competent Authority in terms of NEMA, 107 of 1998 stipulating information on any proposed management, mitigation, protection or remedial measures that will be undertaken to address the environmental impacts that have been identified
<b>Environmental Risk</b>	The product of the likelihood and severity of an unforeseen occurrence/incident/aspect and the impact it would have, if realised, on the environment
<b>Incident/Occurrence</b>	An undesired event occurring at work that results in physical harm to a person or death, or damage to the environment, plant and/or equipment, and/or loss of production.
<b>Method Statement</b>	A document that describes how the Contractor will implement environmental management measures associated with a particular environmental aspect during construction.
<b>Non-conformance</b>	An action or situation that does not conform to Transnet/TGC's SHEQ standards, procedures or legislative requirement(s) and that can be, or lead to, an unacceptable SHEQ incident.
<b>Non-compliance</b>	Contravention to environmental legislative requirements.
<b>Project Environmental Manager</b>	Works together with the Project Manager and Construction Manager to ensure that the requirements of the CEMP/SES and applicable PES are met.
<b>Project Manager</b>	A person/s, as appointed by Transnet, responsible for the overall management and implementation of a project.



## 4 Overview of the CEMP

It is the stated goal of TGC to implement sustainable environmental management practices within the organisation. This will apply to the planning, design, construction, operation, restoration, reuse and decommissioning activities related to all infrastructure development, upgrade and maintenance. The CEMP is the tool used to ensure this goal is achieved during the construction and commissioning phases. Some decommissioning may occur during site clearing in brownfield sites and this CEMP will also apply to those activities.

The CEMP has been developed in line with the requirements of all relevant South African Environmental Legislation and Standards of Best Practice.

The CEMP and associated documents or specifications as well as the EA will be included in the Tender Documents issued to the prospective Contractors. The Contractors will incorporate all requirements set out in the specifications in their submissions to TGC.

There are two types of environmental specifications:

- **Standard Environmental Specification (SES)** describes the minimum standards for environmental management for a range of environmental aspects associated with all construction projects with which the Contractor must comply.
- **Project Environmental Specification (PES)** describes standards specific to a particular project. Variations and additions to the SES are set out in this PES. These would include the EA issued to the project or elements generally drawn from the EA or permits for that project or from specific requirements set by TGC Clients. The PES may also require a more stringent standard to that described in the SES if required by the EA or a particular industry code to which Transnet subscribes including any environmental constraints at a construction site. The PES need not be a separate document; however it can be in a format of an appendix/addendum making reference to environmental authorisation(s), permit(s) or licence(s) applicable to the project. In cases where the project does not trigger any of the NEMA listed activities or any permit(s)/licence(s), the PES may be compiled to prescribe additional environmental management measures over and above the measures stipulated on the SES.

The specifications are configured as performance specifications to ensure that TGC and any entities that enter into formal agreements with TGC achieve the required level of environmental performance.

**NOTE:** No advice, approval of method statements or any other form of communication from TGC will be construed as an acceptance by TGC of any obligation that indemnifies the Contractor from achieving any required level of performance. Further, there is no acceptance of liability by TGC which may result from the Contractor failing to comply with the specifications, i.e. the Contractor remains responsible for achieving the required performance levels.

## 5 Implementation of the CEMP

### 5.1 Roles and Responsibilities

#### *5.1.1 TGC Project Environmental Manager (PEM)*

The TGC PEM will be responsible for ensuring that the CEMP and associated specifications or requirements are complied with during construction. The TGC PEM will report functionally to the TGC Senior Manager: Environment and Sustainability, and relevant Project Manager.

Specific tasks during the construction stage will include:

- Liaison with the relevant authorities;
- Preparation of the PES;
- Tender evaluation, development of environmental criteria and adjudication thereof;
- Review all reports from the Environmental Officer/Specialist, including sign off on Method Statements and Monthly Audit reports;
- Conduct any environmental incident enquiries;
- Identify, with support from the TGC Construction Manager; the need for corrective or remedial measures with regard to proposed works;
- Ensure induction material includes project appropriate environmental issues;
- Approve training programmes and other awareness initiatives;
- Coordinate or facilitate internal environmental audits;
- Sign-off on audit reports prepared by ECOs; and
- Prepare environmental monitoring protocols (if monitoring to be done by Environmental Officer and not by an outside consultant).

The TGC PEM may delegate part or all of these responsibilities to the TGC Environmental Officer, based on the merits of the particular project at hand.

### ***5.1.2 TGC Construction Manager***

The TGC Construction Manager has overall responsibility for environmental management on site which includes the implementation of the CEMP, SES and PES and reports to the Project Manager. The TGC Construction Manager is supported by the TGC Environmental Officer/Specialist.

The specific environmental tasks for TGC the Construction Manager during the construction phase will include:

- Reviewing the monthly reports compiled by the TGC Environmental Officer/Specialist;
- Communicating directly with the Contractors on environmental issues observed on site; and
- Issuing non-conformance notifications to Contractors in consultation with the TGC Environmental Officer/Specialist

### ***5.1.3 TGC Environmental Officer***

The TGC Environmental Officer reports functionally to the TGC Construction Manager and TGC PEM and is responsible for conducting the tasks required to ensure that the CEMP, SES and PES are implemented on the construction site.

The TGC Environmental Officer will conduct the following tasks:

- Ensure that environmental issues receive adequate attention in the site induction training;
- Prepare Risk Reports;
- Prepare and conduct environmental awareness training, as and when required (e.g. posters, tool box talks, signage);
- Generate an inspection checklist prior to the project commencement for sign off by the TGC PEM;
- Review and approve site layout plan;
- Conduct monthly observation & inspection of all work places based on the approved inspection checklist;
- Monitor the Contractor's compliance with the CEMP, SES and PES;

- Develop an Audit Finding and Close out Register that documents all audit findings, close out actions and the time frame allowed for in order to close the finding/s;
- Ensure that all environmental monitoring programmes (sampling, measuring, recording etc. when specified) are carried out according to protocols and schedules;
- Measurement of completed work (e.g. areas top soiled, re-vegetated, stabilised etc.);
- Attendance at scheduled SHE meetings, as and when required, and project coordination meetings;
- Ensure that site documentation (permits, EA, EMPr, CEMP, method statements, audit reports, waste disposal slips etc.) related to environmental management is maintained on the relevant Document Control System;
- Inspect and report on environmental incidents and check corrective action;
- Keep a photographic record of all environmental incidents;
- Completion of Flash Reports for all Level 1 and 2 environmental incidents;
- Implementation of environmental-related actions arising from the minutes of scheduled meetings;
- Management of complaints register;
- Review and Sign off Method Statements prepared by Contractor's EO, as delegated by the TGC PEM;
- Audit conformance to Environmental Method Statements;
- Collate information received, including monitoring results into a monthly report that is supported with photographic records to the TGC Construction Manager showing progress against targets; and
- Report environmental performance of the project on a monthly basis through relevant governance channels.

The key deliverables will include the compilation of:

- Project Start Up Checklist
- Monthly Inspection Checklist
- Monthly Environmental Audit Report
- Monitoring Results, where required
- Flash reports
- Incident investigation Reports
- Environmental Incident Register
- Environmental Non-Conformance Register & Reports
- Complaints Register

- Method Statements Register
- Site Close Out Inspection
- Site Close-Out Reports

#### ***5.1.4 Environmental Control Officer***

The Environmental Control Officer (ECO) is an independent person legally appointed to monitor compliance of construction related activities with the conditions of the Environmental Authorisation. The ECO fulfils an autonomous role and submits audit reports to the Competent Authority at intervals specified in the EA.

The ECO will conduct the following tasks:

- Monitor compliance to the conditions of the EA, EMPr and can include permits and licenses applicable to a project;
- Attend project meetings as and when required;
- Conduct audits at a frequency stipulated on the EA/EMPr; and
- Compile audit reports and submits them to relevant authorities.

#### ***5.1.5 Contractor's Environmental Officer***

The Contractor will appoint an Environmental Officer before commencement of any work on site whose role is to ensure implementation of the requirements of the CEMP, SES and PES where applicable. The Contractor will submit the name and CV of the Environmental Officer as well as an Environmental Management Plan detailing roles and responsibilities with their tender submission. The Environmental Officer should have relevant environmental qualifications and experience required for the project. The level of qualifications and experience will depend on the complexity of the project and the sensitivity of the site. This will be for TGC's approval and no work can commence on site if this has not been done.

The Contractor's Environmental Plan will include, but not be limited to:

- Contractor's Environmental Organogram;
- A description of environmental management responsibilities of the Contractor's Project Manager, Contractor's Site Manager and the Contractor's Environmental Officer;
- A signed and dated organisational Environmental Policy;
- Environmental Method Statements; and

- Project-specific Environmental Management Plan;

The Contractor's Environmental Officer will liaise with the TGC Environmental Officer on site. It will be the responsibility of the Contractor's Environmental Officer to ensure that all work is conducted according to the approved Environmental Method Statements and that the roles and responsibilities as set out in this document are fulfilled. The Contractor Environmental Officer's tasks will include:

- Daily and weekly inspections of the work area(s) as per schedule or authorised through written instruction by TGC PEM or Environmental Officer. The Contractor is referred to Section 7 for an example of the items that will need to be inspected and which items will be audited by the TGC Environmental Officer;
- Prepare project-specific activity/aspect based Environmental Method Statements;
- Identify local, provincial and national environmental legislation that applies to the Contractor's activities;
- Ensure conformance/compliance to the CEMP, SES, PES, licenses and permits and approved Environmental Method Statements;
- Conduct ongoing Environmental Awareness Training of the Contractor's site personnel;
- Reporting, investigating and recording of any environmental incidents caused by the Contractor or due to the Contractor's activities, including their sub-contractors;
- Close out of environmental incidents;
- Attendance at all SHE meetings and induction programmes, and toolbox talks where required
- Monitor Waste Management;
- Monitor Water and Energy use;
- Ensure that environmental signage and barriers are correctly placed;
- Taking required corrective action within specified time frame and close out of non-conformances;
- Maintain site documentation related to environmental management (permits, CEMP, method statements, EA, reports, audits, monitoring results, receipts for waste removal etc.). Documentation to be maintained on the relevant site Document Control System;
- The compilation of the Project Environmental Management File
- Hazardous Substances Register; and
- Ensure the environmental file content is scanned monthly or in intervals agreed to by the TGC EO, as per the TGC index and submitted to the TGC document control monthly.

The Contractor's Environmental Officer will be expected to submit daily/weekly checklists as agreed by the TGC Environmental Officer to the TGC Environmental Officer.

When the Contractor's Environmental Officer is replaced after the person has been approved by TGC, the Contractor will submit a CV of a replacement Environmental Officer who has at least the same level of qualification and experience of the previous approved person for approval by the TGC Environmental Officer and TGC Construction Manager. No work can proceed until the replacement Environmental Officer has been approved.

#### ***5.1.6 The Contractor***

The Contractor shall comply with the requirements of the CEMP and abide by the TGC Project Manager's and TGC Environmental Officer/Specialist's instructions regarding the implementation of the CEMP.

The Declaration of Understanding, as detailed in **Section 6**, must be signed during tender stage, and a signed copy must be submitted to the TGC Environmental Officer prior to the start of construction.

**Section 6** details some of the main actions required from the Contractor at various stages during the contract. The TGC Environmental Officer will monitor that all of these actions are undertaken in accordance with the CEMP.

It must be noted, however, that **Section 6** does not list all the requirements of the CEMP, but rather serves as a guide as to where definite actions are required before certain activities can commence. It should be read in conjunction with the SES, and the PES.

**Section 7** contains aspects that will be subject to regular inspections and audits by the various parties.

5.2 Organisational structure

The organisational structure identifies and defines the responsibilities and authority of the various entities involved in the project. All instructions and official communications regarding environmental matters will follow the organisational structure shown in **Figure 1**.

All instructions that relate to the CEMP will be given to the Contractor via the TGC Project Manager. In an emergency situation, however, the TGC Environmental Officer may give an instruction directly to the Contractor. Environmental Management of the site will be an item on the agenda of the monthly site meetings, and the TGC Environmental Officer will attend these meetings on request by the Contractor. If at any time the TGC Project Manager is uncertain in any way with respect to an environmentally related issue or specification in the CEMP, he will consult with the TGC PEM.

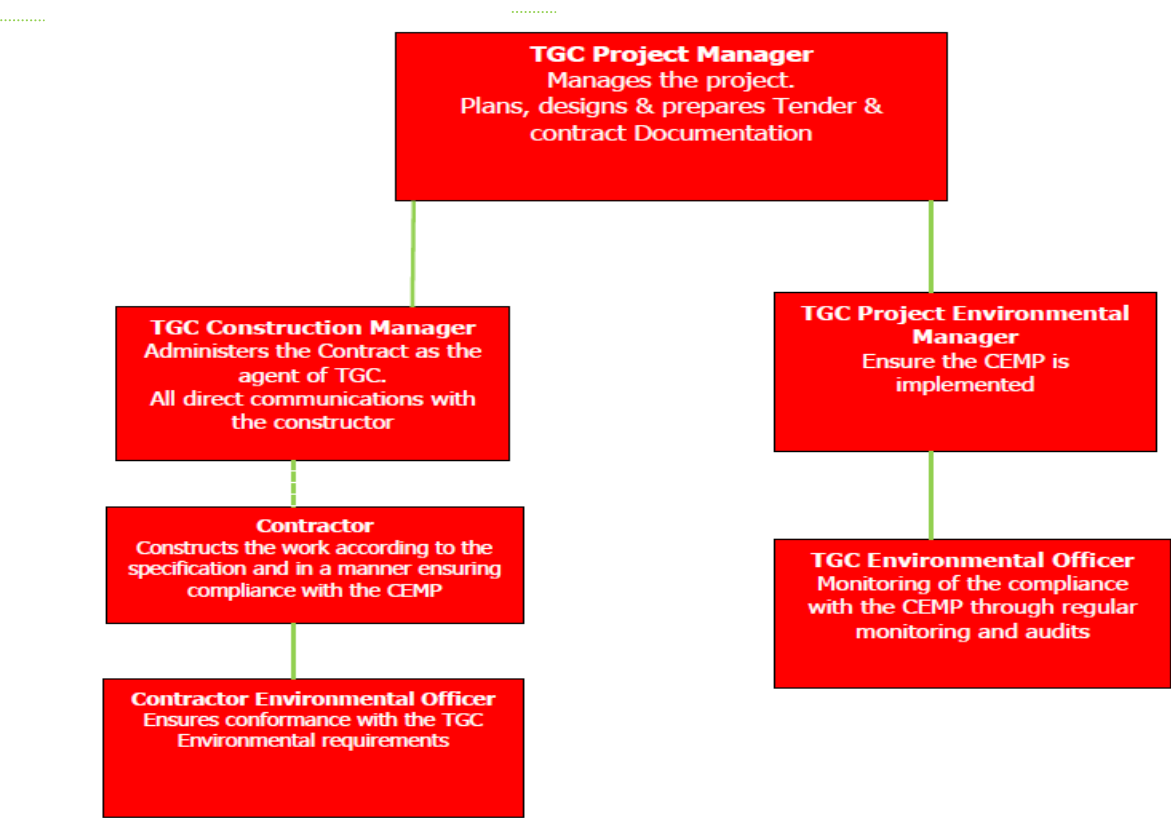


Figure 1: Typical TGC Organogram for Construction



### **5.3 Availability of the CEMP**

Copies of the relevant CEMP documentation (SES, & PES, and any Contractor's Guideline Documents) must be available at the site offices of the Contractor and/or on site.

### **5.4 Project Environmental Management Plan**

The Contractor is required to submit an Environmental Management Plan (EMP) with his Tender Documents. The EMP should describe the relevant roles and responsibilities and how potential environmental risks will be assessed and managed including the monitoring and recording thereof. These will be used to establish a Contractor's competency and experience of preventing and managing potential environmental impacts.

### **5.5 Environmental Method Statements**

Environmental Method Statements are written submissions by the Contractor to the TGC Construction Manager and Environmental Officer describing:

- The proposed activity, setting out the plant, equipment, materials, labour and method the Contractor proposes using to carry out an activity;
- The environmental management of site conditions – waste management, housekeeping, site establishment;
- Transportation of the equipment to and from site;
- How the equipment/ material will be moved while on site;
- How and where material will be stored;
- The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- Timing and location of activities;
- Description of potential positive and negative environmental impacts and how they will be managed;
- Conformance/ non-conformance with the Standard Environmental Specification and any other statutory and best practice standards;
- Monitoring and reporting requirements;
- Records Management; and
- Any other information deemed necessary by the TGC Construction Manager and TGC EO as well as ECO where applicable.

The Contractor will compile Activity/Aspect-based Environmental Method Statements for all activities proposed. The Environmental Method Statements will enable the potential positive and negative environmental impacts associated with the proposed construction activity to be identified and mitigation measures put in place. All method statements must be signed by both the Contractor and TGC CM and EO, with the addition of the ECO on authorised projects, thereby indicating that the works will be carried out according to the methodology described therein.

Activities may only commence once the Environmental Method Statements have been approved by the TGC PEM, Construction Manager and/or ECO. In some instances local authorities may also need to approve the method statements. This will be highlighted in the Project Environmental Specification, when applicable.

All changes to the original Method Statements must be approved by the TGC PEM/EO and/or TGC Construction Manager prior to implementation. The Contractor, TGC CM, EO and/or ECO will also be required to re-sign the amended Environmental Method Statement.

To enable timely approvals, the environmental method statements will be submitted to the TGC Construction Manager and TGC Environmental Officer for review **two (2) weeks** prior to the intended date of commencement of the activity, or as directed by the TGC Project Manager/Construction Manager.

Where changes to the work methodology are proposed, Environmental Method Statements must be amended accordingly and signed off by all relevant parties as indicated above. These Environmental Method Statements MUST contain sufficient information and detail to enable the TGC Construction Manager and/or Environmental Officer to apply their minds to the potential impacts of the works on the environment. The Contractor will also need to thoroughly understand what is required of him/her in order to undertake the works.

The initial Environmental Method Statements required for submission and approval are listed in the environmental specifications. Others may be requested by the TGC Construction Manager and/or TGC Environmental Officer/ECO during the Contract.

An explanatory example of an environmental method statement on the pro forma method statement sheet to be completed has been included as **Annexure B**.

## 5.6 Environmental Incidents

Environmental incidents are classified under four levels: 1, 2, 3 and 4. For the purpose of this document; they are defined as follows:

### ***5.6.1 Level 1 Environmental Incident***

An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in:

- A significant impact on the physical or biological environment (air, ground, water and habitat) with extensive or long term impairment of ecosystem function or surface and ground water resources.
- An inconvenience/ disturbance/disruption/annoyance (including odour, dust, noise, traffic problem, loss of water supply) of a long duration or with a long term impact on interested and affected parties. A release of material (gas, liquid, solid) or energy that will cause chronic illness, permanent lost time injury, fatality or extensive property damage experienced by interested and affected parties.
- Irreparable damage to highly valued structures and sacred locations.
- Public or national / international media outcry.
- Instances where inspections undertaken by or for the regulator to check legal compliance, were found to be outside the permitted limits and have resulted in prosecution.

Where the environmental impact of a Level 2 environmental incident is still present 120 days after occurrence, the incident will be reclassified as a Level 1 incident.

**NOTE:** A Level 1 environmental incident usually should be reported to the authorities, the incident usually results in significant pollution and may entail risk of public danger. Level 1 environmental incidents usually cause an irreversible impact even with the involvement of long-term external intervention i.e. expertise, best available technology, remedial actions, excessive financial cost etc.

### ***5.6.2 Level 2 Environmental Incident***

An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in:

- A moderate impact on the physical or biological environment (air, ground, water or habitat) with limited impairment of ecosystem function and/or surface and ground water resources.
- An inconvenience disturbance/ disruption/annoyance (including odour, dust, noise, traffic problems, loss of water supply) of moderate or with medium effect on interested and affected parties.
- A release of material (gas, liquid, solid) or energy that causes severe but reversible illness, non-lost time injury or moderate property damage experienced by interested and affected parties.
- Damage to rare structures of cultural significance or significant infringement of cultural values / sacred locations.
- Attention from local media or widespread complaints.
- Instances where inspections undertaken by or for the regulator to check legal compliance have been outside the permitted limits and an official pre-directive or directive was issued.
- Inability of Contractors to close out corrective actions in an NCR without proper reason.

**NOTE:** A Level 2 environmental incident may be reported to the authorities, can result in significant pollution or may entail risk of public danger. The impact of Level 2 environmental incidents should be reversible within a short to medium term with or without intervention.

### ***5.6.3 Level 3 Environmental Incident***

An incident or sequel of incidents, whether immediate or delayed, that results or has the potential to result in:

- A minor impact on the physical or biological environment (air, ground, water or habitat), with no significant or long-term impairment to the ecosystem function or surface/ground water resources.
- An inconvenience / disturbance / disruption / annoyance (including odour, dust, noise, traffic problems, loss of water supply) of short duration and with no long-term effect on the employees and the community.
- A release of material (gas, liquid, solid) or energy that has the potential to cause illness, or that causes short term discomfort or reversible health effect to interested and affected parties.
- Isolated complaints by interested and affected parties.

- Instances where inspections undertaken taken by or for the regulator to check for legal compliance, have been outside the permitted limits and a non-compliance notice was issued.

**NOTE:** A Level 3 environmental incident is not reportable to authorities, should not result in pollution and may not have a risk of public danger. The impact of Level 3 environmental incidents should be insignificant immediately after occurrence and/or once-off intervention on the day of occurrence.

#### ***5.6.4 Level 4 Environmental Incident***

A minor incident with lesser significance that did not necessarily result in damage or injury but that had the potential to cause damage to the environment, including:

- Could result in service disruption with a lesser significance;
- Did not necessarily result in damage; and/or
- Had the potential, under different circumstances, to cause major damage to the environment

In the event of an environmental incident, the Contractor will follow the following procedure:

- |         |  |
|---------|--|
| Step 1: | Immediately take all reasonable measures to contain and minimise the effects of the incident, including its effects on the environment and any risks posed by the incident to the health, safety and property of persons;  |
| Step 2: | Telephonically notify the TGC Environmental Officer and follow up in writing within <b><i>one(1) working day</i></b> including the following information: the nature of the incident and initial classification; substances involved with quantities; initial measures taken to minimise impacts; causes of the incident; measures taken and proposed to avoid the reoccurrence of the incident; |
| Step 3: | Step 3: Report the incident on all relevant documents and systems - TGC Environmental Incident Register; TGC Environmental Incident Report and TGC Incident Flash Report;  |
| Step 4: | Undertake clean-up procedures;   |
| Step 5: | Remedy the effects of the incident; and  |

Step 6: Assess the immediate and long-term effects of the incident on the environment and on public health;

In the event of any Level 1 or 2 environmental incidents, the Contractor's Environmental Officer must complete a TGC Incident Flash Report (FAC-FAT-0005); TGC Environmental Incident Report and document the incident on the TGC Environmental Incident Register.

In the event of any Level 1 or 2 environmental incidents, the TGC Environmental Officer will:

- Ensure that an Incident Flash Report (FAC-FAT-0005) has been compiled and that it contains the necessary information; and
- Ensure that Contractor has complied with relevant Transnet protocols on Occurrence Management.

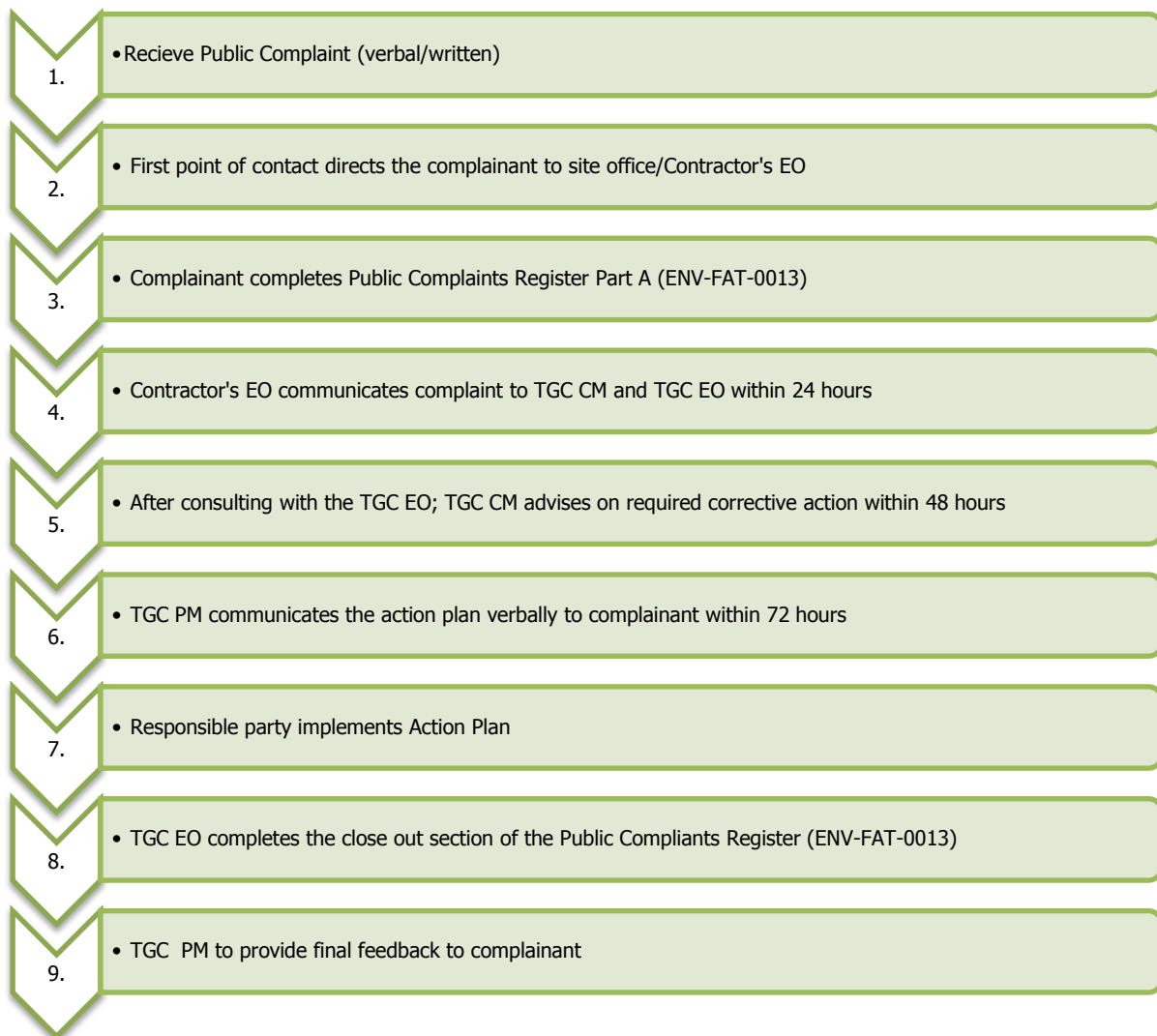
In the event of any Level 3 environmental incident, the Contractor's Environmental Officer must complete a TGC Environmental Incident Report and document the incident on the TGC Environmental Incident Register.

In the event of any Level 4 environmental incidents, the Contractor's Environmental Officer must document the incident on the TGC Environmental Incident Register and/or the Contractor's Incident Register.

In the event of an incident (regardless of level) occurring, the TGC EO shall ensure that the problem statement on the report is clear, the actual or potential consequences are noted, and priority mitigation actions and responsibility for actions are indicated where necessary.

## 5.7 Public Complaints

Any public complaint received shall be dealt with as depicted in Figure 2.



**Figure 2: Public Complaints Procedure**

## 5.8 Environmental Non-Conformances

A non-conformance may be issued to the Contractor by the TGC Project Manager/Construction Manager/Environmental Officer where:

- The incident response procedure described in section 5.6 above (including administrative requirements) was not successfully implemented; or
- There are repeated incidents due to inadequate environmental practices on site;
- Documentation required to comply with the CEMP is not prepared or maintained adequately on site; or

- Any non-compliance/non-conformance with the requirements of the Environmental Authorisations, the CEMP, permit(s), licence(s) and Environmental Specifications are identified.

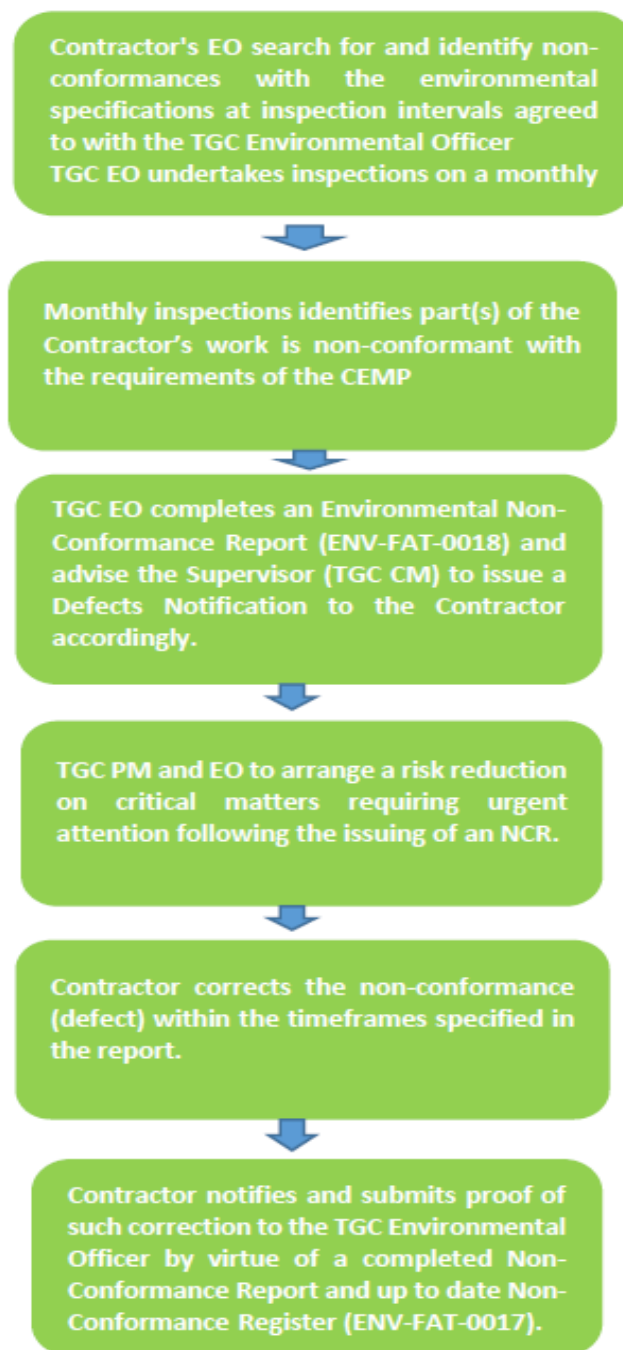
Any environmental non-conformance will be dealt with similarly to a *Defect* as defined in the Contract. A defect is due to non-compliance with the *Works Information* and it is the responsibility of the Contractor to correct the defect in order to ensure that the work takes place in accordance with the *Works Information*. Similarly, non-conformance with the CEMP and SES or with any other permit or licence will be regarded as a non-conformance with the *Works Information*. The Contractor is responsible to rectify any *defect* (non-conformance) as defined above promptly.

The Contractor's EO shall be responsible to search for and identify non-conformances with the environmental specifications at inspection intervals agreed to with the TGC Environmental Officer. The TGC Environmental Officer shall also undertake such inspections on a monthly basis. If such monthly inspections indicate that any part of the Contractor's work is non-conformant with the requirements of the CEMP, permit(s), licence(s), the TGC Environmental Officer shall complete an Environmental Non-Conformance Report and advise the TGC PM to issue a Defects Notification to the Contractor accordingly. The Contractor shall correct the non-conformance (defect) within the timeframes specified in the report and notification and submit proof of such correction to the TGC Environmental Officer by virtue of a completed Non-Conformance Report and up to date Non-Conformance Register.

The Contractor shall be responsible to rectify all environmental non-conformances at the time depicted as per Non-conformances that have not been rectified by the defects in the Contract date, the TGC Environmental Officer shall not issue the Contractor with a Site Closure Certificate. In such an event, the Supervisor may also make use of any reasonable contractual means to rectify the non-conformance(s) as allowed by the Contract (retention moneys etc.).

If the defect (non-conformance) is not corrected within the Defect Correction Period, the TGC Construction Manager can assess the cost of correction by others, and this amount needs to be paid by the Contractor.





**Figure 3: Non-Conformance procedure**

**NOTE:** Each Non-conformance should be listed and numbered separately.

## 5.9 Documentation and Records

The TGC Document Control will ensure that the Contractor is supplied with all required/applicable documents listed in the TGC Contents for the Contractors Environmental Management File. This Document has been included as **Annexure A**.

The Contractor's Environmental Officer will complete and maintain copies of all documents and records listed in Annexure A and ensure that these documents and records are kept up to date.

The Contractor's Environmental Officer will submit these documents to the TGC Environmental Officer on a frequency as agreed to, except where documents have remained unchanged in which case written notification to this effect must be provided to the TGC Environmental Officer. The Contractor's EO must ensure that electronic copies of these documents are saved on the system.

Once the construction activities have been completed and the TGC Environmental Officer has conducted a site closure inspection and notified the Contractor that site closure will be granted, all documents described above must be handed over to the TGC Environmental Officer after which a Site Closure Certificate will be issued.

**NOTE:** All documents/records are to be retained, within the TGC Document Control System, for a period of 10 years. In the event of environmental documentation/record being lost before receiving a Site Closure Certificate, the Contractor will be penalised according to the specifications laid down in the relevant project-specific contract.

### **5.10 Application for Exemption**

It is intended that the CEMP and SES be applicable to projects or activities of any size or complexity. For projects with minimal environmental impacts, or where the scope of work is limited; the Contractor may request, in writing to the TGC Project Manager, for exemption from parts of the CEMP. The TGC Project Manager will consult the TGC PEM/TGC Environmental Officer in reaching a decision on whether exemption from some of the CEMP provisions may be granted.

## **6 Main Actions required by the Contractor to comply**

### **6.1 Prior to Commencement**

The TGC Project Manager must ensure that the requirements below are requested of the Contractor in the Project Construction Contract Document, the Letter of Appointment and any other relevant correspondence with the Contractor prior to the start of works, as relevant.

### ***6.1.1 Declaration of Understanding (DoU)***

The Declaration of Understanding will be signed, by a person of authority, and provided by the Contractor as part of his Tender Document. The signed DoU is a written confirmation by the Contractor that the requirements of the CEMP, PES, EA, EMPr and other licenses/permits are understood and will be complied with for the duration of their works on site. Post-contract award, a DoU must be signed by the Contractor's EO to confirm that the requirements of the CEMP, SES, PES and other applicable permits and licences will be complied with. A signed DoU must be kept in the green file at all times.

The pro forma DoU to be signed by the Contractor has been included as **Annexure C**.

### ***6.1.2 Appointment of Contractor's Environmental Officer***

The Contractor will appoint an Environmental Officer or depending on the environmental impact of the project, assign a competent person, roles and responsibilities for environmental management during construction. The qualifications and experience of this person shall be stipulated at tender stage taking due regard to the complexity of the project and the sensitivity of the environment. The Contractor will forward details of the appointment to the TGC Construction Manager and TGC PEM for their review and approval. Should the Contractor's Environmental Officer or the person originally assigned with responsibilities for environmental management change from that person identified during either the tender stage, or the construction period, the Contractor will submit the details of such appointment or assignment for the TGC Project Manager's approval. No work will proceed until the new Environmental Officer is assigned or appointed. The Contractor's EO must be employed for the duration of the contract and be 100% allocated to project. Sharing of an EO resource between projects is not allowed unless if it's agreed upon with TGC Environment and Sustainability Department.

The pro forma appointment letter for the Environmental Officer to be appointed by the Contractor has been included as **Annexure D**.

### ***6.1.3 Environmental Management Plans and Method Statements***

Where relevant, an Environmental Management Plan and Environmental Method Statements, to meet the requirements of the CEMP, SES and relevant EA, permits/licences (activity based environmental method statements), will be provided by the Contractor as part of their Tender.

Required method statements will be specified in the Quality Criteria of the tender. These include, but are not limited to, the following where applicable:

- Establishment of construction lay down area
- Hazardous and non-hazardous waste management
- Storm water management
- Handling, Storage and Management of Hazardous Substances
- Contaminated water management
- Prevention of marine pollution
- Hydrocarbon spills
- Diesel tanks and refuelling procedures
- Dust control
- Spoil dumping
- Sourcing, excavating, transporting and dumping of fill material
- Noise and vibration control
- Removal of rare, endemic or endangered species
- Removal and stockpiling of topsoil
- Rodent and pest control
- Environmental awareness training
- Site establishment and demarcation
- Emergency procedures for environmental incidents
- Closure of construction laydown area
- Rehabilitation

Emergency construction activity Environmental Method Statements may also be required. The activities requiring Environmental Method Statements cannot commence if they have not been approved by the Construction Manager and PEM, ECO or Environmental Officer.

#### ***6.1.4 Environmental Induction***

The Contractor will ensure that all management, foremen and the general workforce, as well as all sub-contractors, suppliers and visitors to site have attended the TGC Environmental Induction Programme prior to commencing any work on site. Where new personnel commence work on site during the construction period, the Contractor will ensure that these personnel also undergo the TGC Environmental Induction Programme and are made aware of the environmental specifications on site. The Contractor must ensure that all of their personnel understand the

requirements of the EA, EMPr, CEMP, SES, relevant permits and licences and PES as relevant to their scope of work.

## **6.2 During Construction**

### ***6.2.1 Copy of the CEMP and familiarisation thereof***

A copy of the CEMP, SES and where relevant, EA, licenses and permits will be available on site and the Contractor will ensure that all the personnel on Site (including sub-contractors and their staff) as well as suppliers, are familiar with and understand the specifications contained in these documents.

### ***6.2.2 Compliance with the SES and PES and relevant permits and licences***

The Contractor will ensure that all sections of the SES and PES (where relevant), relevant EA, permits and licences are complied with during the construction period.

### ***6.2.3 Site clean-up for Closure***

Retention moneys will not be paid until a Site Closure Inspection (conducted by the TGC Environmental Officer) has taken place and site closure granted and signed off by the TGC Construction Manager and TGC PEM together with the Site Closure Certificate.

## **7 Environmental Inspections and Audits**

### **7.1 Environmental Inspections and Audits**

Environmental inspections and audits are conducted using five basic techniques:

- Interviews with Contractor's staff including Sub-contractors and suppliers
- Document review
- Observations
- Monitoring
- Measurement and verification

This document sets out the areas and aspects of the construction site that will be inspected or audited, the frequency of such audits, the auditor and auditee.

*It should be noted that these lists are not exhaustive and that each site will have specific issues that will need to be audited.*

For each construction project, the auditor and auditee are as follows:

**Table 1: Relationship between Auditor/Auditee**

<b>Place</b>	<b>Inspector/Auditor</b>	<b>Auditee</b>	<b>Inspection/audit frequency</b>
Work places	Contractor's Environmental Officer	Contractor's team	Daily/Weekly Inspection
Construction site (entire area)	TGC Environmental Officer	Contractor's Environmental Officer	Monthly Audit
Construction site (entire area)	Environmental Specialist: Assurance	TGC EO and PEM	As stipulated on the annual audit protocol
Construction site (entire area)	Environmental Control Officer	Construction team (TGC and Contractors)	As stipulated on the EA or TGC Contract

### ***7.1.1 Work Places Inspection***

The Contractor's Environmental Officer will be required to conduct daily/weekly inspections of all work places for which the Contractor is responsible, including but not limited to the following:

- Contractor's camp, recreational and canteen facilities
- Material lay down areas
- Liquid and solid waste storage facilities (general, hazardous, recycling and scrap)
- Workshops
- Oil traps
- Wash bays
- Construction work area
- Spray Booths
- Haul roads
- No-go areas
- Storm water drains

- Any other construction area for which the SHE Officer is responsible

At each of these sites, the Contractor's Environmental Officer will be required on a daily basis to check for the following, where relevant:

By observation:

- Litter
- Separation of solid waste as per system
- Hydrocarbon spills
- Effectiveness of dust control measures
- Illegal washing out of containers in drains
- Wash bay drainage systems are working
- Correct usage of drip trays
- Effectiveness of oil separators
- Water use and wastage
- Pollution of rivers and sea
- Provision and use of toilet facilities
- Any other illegal activities

By document check:

- Removal of oil for recycling as per schedule
- Removal of packaging as per agreements with suppliers
- Removal of hazardous waste by specialist Contractors as per schedule
- Correct placement of environmental signage and posters
- Document board listing emergency numbers, hazmat info sheets, etc.

The following records must also be kept up to date (information must include that of sub-contractors where relevant):

- Fuel consumption for entire contract period measured in litres (including plant, generators, other equipment, vehicles etc.)
- Electricity consumption for entire contract period measured in Watt hours
- Quantities of general waste submitted for recycling measured in kilograms
- Quantities of general waste disposed of to landfill measured in kilograms
- Quantities of hazardous waste submitted for recycling measured in kilograms
- Quantities of hazardous waste disposed of to landfill measured in kilograms

- Water consumption, including water used for construction and human consumption measured in litres

### ***7.1.2 Construction Site Audit***

The TGC Environmental Officer will be required to conduct monthly inspections of the entire construction site, which may involve more than one Contractor and may include, but not be limited to the following:

- Entire site
- Fencing
- Environmentally sensitive areas
- Contractor's camp, recreational and canteen facilities
- Material lay down areas
- Scrap yard
- Workshops
- Oil traps
- Wash bays
- Sewage plant
- Quarries and borrow pits used for fill and construction material
- Spoil dumping areas
- Solid waste disposal areas
- Liquid waste disposal areas
- Bioremediation site
- Area for the temporary storage of hazardous waste
- Fuel depot and hydrocarbon storage areas
- Construction work area
- Concrete batching plant
- Spray booths
- Haul roads
- No-go areas
- Storm water drains
- And any other construction areas not listed

At each of these sites, the TGC Environmental Officer will be required to check for the following, where relevant:



By observation:

- Litter
- Separation of solid waste as per system
- Hydrocarbon spills
- Use of bunding, hard standing and other protection measures
- Illegal dumping
- Effectiveness of dust control measures
- Illegal washing out of containers in drains
- Wash bay drainage systems are working
- Correct usage of drip trays
- Effectiveness of oil separators
- Illegal use of tracks and off-road driving in no-go areas
- Correct procedures are followed for topsoil removal and stockpiling
- Effectiveness of erosion protection measures
- Excess noise and vibration
- Water use and wastage
- Pollution of rivers and sea
- Provision and use of toilet facilities
- Topsoil removed and stockpiled
- Any other illegal activities

By document check:

- All receipts for the collection of old oil, general recycled waste and hazardous waste
- Correct placement of environmental signage, SHEQ policies and posters
- Document board listing emergency numbers, hazmat info sheets, etc.
- Complete and accurate record of Contractor's Environmental File

By measurement:

- Amount of water used by each Contractor (where practical and/or required by TGC EO)
- Amount of land stabilisation completed
- Area re-vegetated
- Amount of waste recycled, sent to scrap yard or disposed in dump
- Amount of material treated in the bioremediation site

By monitoring:

- Effectiveness of dust control systems
- Effectiveness of pollution control systems
- Effectiveness of rehabilitation and re-vegetation programmes
- Effectiveness of erosion control methods
- Effectiveness of noise control barriers

A site-specific inspection checklist will be provided to the TGC Environmental Officer, by the Contractor's EO, prior to site establishment.

## **7.2 Environmental Performance Criteria**

The Contractor will be required to achieve the minimum requirement for environmental audits. The standard/minimum requirement for all environmental audits, as per the TGC Environmental Governance Framework is 80%. Furthermore, the standard/minimum requirement for all audits conducted by ECO is 90%.

## **8 Associated Forms**

The list of applicable environmental forms and templates will be maintained by TGC's Document Management Department, and these are revised as and when required.

## **9 Records**

All environmental records/documents generated during the construction phase of the project will be managed in terms of the Transnet Document, Data and Records Management Procedure.

## **10 Annexures**

- Annexure A: Contents for Contractor's Environmental File**
- Annexure B: Environmental Method Statement Example**
- Annexure C: Declaration of Understanding**
- Annexure D: Appointment of Contractor's Environmental Officer**

## Annexure A: Contents for Contractor's Environmental File



### CONTENTS FOR CONTRACTOR'S ENVIRONMENTAL FILE

<b>PROJECT NAME:</b>		<b>DOCUMENT NO:</b>	
<b>PROJECT NO:</b>		<b>DATE:</b>	
<b>CONTRACTOR:</b>		<b>CONTRACT NO:</b>	

The following documents must be incorporated into the Contractors Environmental File

No	Item Description	Document No	Tick
1.1	Transnet Safety, Health, Environmental and Quality – Risk Management Policy Statement dated 10 June 2016.		
1.2	TGC Safety, Health, Environmental Management and Quality Policy dated 01 June 2016.		
1.3	Transnet Construction Environmental Management Plan (CEMP) as supplied to Contractor by Transnet Group Capital	ENV-STD-001 Rev03	
1.4	Transnet Standard Environmental Specification (SES) as supplied to Contractor by Transnet Group Capital	ENV-STD-002 Rev03	
2	Project Environmental Specification (PES) as supplied to Contractor by Transnet Group Capital	ENV-FAT-0001	
3	Declaration of Understanding (Signed)	ENV-FAT-0002	
4.1	Contractor's Information	ENV-FAT-0003	
4.2	Contractor's Environmental Policy		
4.3	Contractor's Organogram		
4.4	Contractor's Environmental Management Plan		
4.5	Appointment of Contractors EO and Declaration of Understanding (Including CV and Job Profile)	ENV-FAT-0004	
5	Schedule of Contractor's Construction Plant and Equipment	ENV-FAT-0005	
6	Hazardous Substances Register	ENV-FAT-0006	
7	Emergency Contacts Register	ENV-FAT-0007	
8	Energy Consumption Register	ENV-FAT-0032	


## CONTENTS FOR CONTRACTOR'S ENVIRONMENTAL FILE

9	Water Usage Register	ENV-FAT-0033	
10	List of Interested and Affected Parties	ENV-FAT-0008	
11	Induction Attendance Register	Rev 00-01	
12	Project Start-Up Checklist	ENV-FAT-0022	
13	Site Access Certificate	ENV-FAT-0010	
14	Method Statement Register	ENV-FAT-0011	
15	Method Statements	ENV-FAT-0026	
16	Waste Disposal Register	ENV-FAT-0012	
17	Daily Inspection Checklist	ENV-FAT-0023	
18	Weekly Inspection Checklist	ENV-FAT-0024	
19	Monthly Compliance Audits	ENV-FAT-0025	
20	Public Complaints Register	ENV-FAT-0013	
21	Record of Formal External Communications	ENV-FAT-0014	
22	Incident Register	ENV-FAT-0015	
23	Incident Reports	ENV-FAT-0016	
24	Non Conformance Register	ENV-FAT-0017	
25	Non Conformance Reports	ENV-FAT-0018	
26	Awareness/Toolbox Attendance Register (Including Awareness Material)	ENV-FAT-0019	
27	Minutes of Monthly SHE Meetings		
28.1	Environmental Site Rules for Visitors	ENV-GL-0002	
28.2	Environmental Site Rules for Contractors	ENV-GL-0003	
29	Basic Site Procedures	ENV-GL-0001	

## CONTENTS FOR CONTRACTOR'S ENVIRONMENTAL FILE

30	TGC Environmental Induction		
31	Contractor's Environmental Management File Handover	ENV-FAT-0020	
32	Site Closure Inspection Form	ENV-FAT-0021	
33	Site Closure Certificate	ENV-FAT-0021	
34	Application for Exemption	ENV-FAT-0034	

## Annexure B: Environmental Method Statement Example



**ENVIRONMENTAL METHOD STATEMENT**

**PROJECT NAME:**

**PROJECT NO:** **DOCUMENT NO:**

**CONTRACTOR:** **DATE:**

**PROPOSED ACTIVITY** (give title of method statement and reference number from the CEMP):

**WHAT WORK IS TO BE UNDERTAKEN** (give a brief description of the works):

**WHERE ARE THE WORKS TO BE UNDERTAKEN** (where possible, provide an annotated plan and a full description of the extent of the works):

**START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:**

Start Date:

End Date:

**DESCRIPTION OF HOW POTENTIAL ENVIRONMENTAL IMPACTS WILL BE PREVENTED OR MANAGED** (provide as much detail as possible, including annotated sketches and plans where possible):

**ENVIRONMENTAL STANDARDS** (list the applicable environmental standards to be met):

**MONITORING AND RECORD KEEPING** (Describe how the activity will be monitored to ensure that the environmental standards are met, as well as the records to be kept):

**DECLARATIONS**

**CONTRACTOR'S ENVIRONMENTAL OFFICER** (The work described in this Environmental Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm):

Print Name	Signature	Date
------------	-----------	------

**PERSON UNDERTAKING THE WORKS** I understand the contents of this Environmental Method Statement and the scope of the works required of me. I further understand that this Environmental Method Statement may be amended on application to other signatories and that Transnet Group Capital Environmental Manager and Construction Manager will audit my compliance with the contents of this Environmental Method Statement

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## ENVIRONMENTAL METHOD STATEMENT

Print Name	Signature	Date
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**TGC ENVIRONMENTAL OFFICER** The work described in this Environmental Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm:

Print Name	Signature	Date
------------	-----------	------

**APPROVING AUTHORITY (i.e. the Employer's Construction Manager)**

The works described in this Method Statement are approved.

Print Name	Signature	Date
------------	-----------	------

## Annexure C: Declaration of Understanding



### DECLARATION OF UNDERSTANDING

<b>PROJECT NAME:</b>		<b>DOCUMENT NO:</b>	
<b>PROJECT NO:</b>		<b>DATE:</b>	
<b>CONTRACTOR:</b>		<b>CONTRACT NO:</b>	

I,

\_\_\_\_\_

*(Name)*

\_\_\_\_\_

*(Designation)*

\_\_\_\_\_

*(Representing)*

Declare that I have read and understood the contents of the Construction Environmental Management Plan (ENV-STD-001) and associated documents for the above mentioned Project and Contract.

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed	Signature	Date
Place		
Witness 1:	Signature	Date
Witness 2:		



## Annexure D: Appointment of Contractor's Environmental Officer



### APPOINTMENT OF CONTRACTOR ENVIRONMENTAL OFFICER & DECLARATION OF UNDERSTANDING

APPOINTMENT OF CONTRACTOR ENVIRONMENTAL OFFICER AND DECLARATION OF UNDERSTANDING		REFERENCE	
<p>We, _____ (Contractor), hereby confirm that</p> <p>_____ has been appointed as Environmental Officer for the duration of Contract</p> <p>_____, the scope of which entails _____</p> <p>_____ (Description of scope of works)</p> <p>_____</p> <p>I, _____ (Appointed Environmental Officer) declare that I have read and understand the contents of:</p> <ul style="list-style-type: none"> <li>The Transnet Group Capital (TGC) Construction Environmental Management Plan (CEMP) and Standard Environmental Specification (SES), documentation issued for Contract _____</li> </ul> <p>I, (Appointed Environmental Officer) also declare that I understand my responsibilities in terms of enforcing and implementing the requirements of the Construction Environmental Management Plan, Standard Environmental Specification (SES) and any Project Environmental Specifications (PES) that may be relevant or required for this project.</p>			
<b>Environmental Officer CV attached</b>	<b>Y</b>	<b>N</b>	<b>Environmental Officer Job Description attached</b>
<b>Signed (Contractors Environmental Officer)</b>	Signature		<b>Date</b>
<b>Received By (TGC Environmental Officer)</b>	Signature		<b>Date</b>



TRANSNET GROUP CAPITAL  
ENVIRONMENT AND SUSTAINABILITY

**STANDARD ENVIRONMENTAL  
SPECIFICATION (SES)  
ENV-STD-002 Rev04**

## Document Control

This document will be managed and controlled in terms of the Transnet Document, Data and Records Management Procedure.

### Revision History


Author	Date	Description	Revision
Khathutshelo Tshipala	15 September 2011	Standard Environmental Specification (SES)	00
Khathutshelo Tshipala	6 June 2013	Standard Environmental Specification (SES)	01
Biance Schoeman	15 September 2015	Standard Environmental Specification (SES)	02
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Nonkululeko Hadebe	30 November 2017	Standard Environmental Specification (SES)	04

This document has been reviewed by:

Reviewer	Date reviewed
Stehan Bouwer	30 November 2017

### Document Approvals List

This document has been approved by

Name	SAP Component	Signature	Date approved
Khathutshelo Tshipala	Executive Manager: Environment and Sustainability		30 November 2017

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## 1 Purpose

This specification describes the minimum standards for environmental management to which Contractors and Sub-contractors on a construction site must comply. It is a generic standard for use across all construction works executed by Transnet Group Capital (TGC).

There may be project specific environmental standards in addition to the standards in this document that exceed the standards prescribed here. The project specific environmental standards will be described in the Project Environmental Specification (PES) that will be issued separately for each project (where relevant).

This document must be read in conjunction with the TGC Construction Environmental Management Plan (CEMP).

## 2 Scope

This standard applies to Contractors that work on site under the authority of TGC.

## 3 Abbreviations and Definitions

### 3.1 Abbreviations

Abbreviation	Meaning
<b>CEMP</b>	Construction Environmental Management Plan
<b>CM</b>	Construction Manager
<b>DEA</b>	Department of Environmental Affairs
<b>EA</b>	Environmental Authorisation
<b>EO</b>	Environmental Officer
<b>EGF</b>	Environmental Governance Framework
<b>NEMA</b>	National Environmental Management Act 107 of 1998 (as amended)
<b>NEM:BA</b>	National Environmental Management: Biodiversity Act 10 of 2004
<b>NWA</b>	National Water Act 36 of 1998
<b>PEM</b>	Project Environmental Manager

<b>PM</b>	Project Manager
<b>PES</b>	Project Environmental Specification
<b>SES</b>	Standard Environmental Specification
<b>SHEQ</b>	Safety, Health, Environment and Quality
<b>TGC</b>	Transnet Group Capital

## 3.2 Definitions

<b>Fauna</b>	A group of animals specific to a certain region or time period.
<b>Flora</b>	A group of plants specific to a certain region or time period.
<b>General waste</b>	<p>Waste that does not pose an immediate hazard or threat to health or to the environment; and includes:</p> <ul style="list-style-type: none"> <li>(a) domestic waste;</li> <li>(b) building and demolition waste;</li> <li>(c) business waste;</li> <li>(d) inert waste; or</li> <li>(e) any waste classified as non-hazardous waste in terms of NEMWA, 59 of 2008.</li> </ul>
<b>Hazardous waste</b>	Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment and includes hazardous substances, materials or objects within business waste, residue deposits and residue stockpiles.
<b>Indigenous vegetation</b>	Plants that naturally occur in an area.
<b>Liquid waste</b>	Waste that appear in liquid form such as used oil, grease and/or contaminated water or waste water.

<b>Method statement</b>	A document that describes how the Contractor will implement environmental management measures associated with a particular environmental aspect during construction. It is a written submission by the Contractor to the TGC Environmental Officer/Construction Manager in response to this Specification or a request by the Engineer, an ECO or Authorities setting out the equipment, plant, materials, labour and method the Contractor proposes to use to carry out an activity identified by this Specification or the TGC EO when requesting the Method Statement, in such detail that the TGC EO is able to assess whether the Contractor's proposal is in accordance with this Specification and/ or will produce results in accordance with this Specification.
<b>Natural Vegetation</b>	All existing species, indigenous or otherwise, of trees, shrubs, groundcover, grasses and all other plants found growing on the site.
<b>Rehabilitation</b>	Refers measures that must be put in place to restore the site to its pre-construction or enhanced state, subsequent to construction taking place.
<b>Responsible Authority</b>	A Responsible Authority, according to the National Water Act 36 of 1998, relates to specific power or authority in respect of water uses that is assigned by the Minister to a Catchment Management Agency or to a Regional Office.
<b>Sensitive area</b>	Any area that is denoted as sensitive by this Specification due to its particular attributes, which could include the presence of rare or endangered vegetation, the presence of heritage resources ( <i>e.g.</i> archaeological artefact or graves), the presence of a unique natural feature, the presence of a watercourse or water body, the presence of steep slopes.

<b>Solid waste</b>	All solid waste, including construction debris, chemical waste, excess cement/ concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).
<b>Spoil</b>	Excavated material which is unsuitable for re-use as material in the Works or any other use; or is material which is surplus to the requirements of the Works.
<b>Temporary Storage</b>	A once-off storage of waste for a period not exceeding 90 days.
<b>Topsoil</b>	Means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility appearance, structure, agricultural potential, fertility and composition of the soil.
<b>Waste</b>	Any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object can be re-used, recycled or recovered and includes all wastes. Waste or a portion of waste ceases to be a waste only once the waste is, or has been re-used, recycled or recovered.
<b>Watercourse</b>	Means: <ul style="list-style-type: none"> <li>a) a river or spring;</li> <li>b) a natural channel in which water flows regularly or intermittently;</li> <li>c) a wetland, lake or dam into which, or from which, water flows; and</li> <li>d) any collection of water gazetted by the National Water Act, 36 of 1998 as a watercourse and a reference to a watercourse includes, where relevant, its bed and banks</li> </ul>



**Wetland**

Land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

## **4 Minimum Standards for Environmental Management**

The Contractor shall identify the potential environmental aspects and impacts that may occur as a result of his/her activities and accordingly prepare separate Method Statements describing how each of these impacts will be prevented or managed so that the standards set out in this document are achieved. These method statements will be prepared in accordance with the requirements set out in the CEMP.

The Contractor will comply with the standards described below.

### **4.1 Site Planning and Establishment**

The Contractor shall establish his construction camps, offices, workshops, eating areas and any other facilities on the site in a manner that does not adversely affect the environment. These facilities must not be sited in close proximity to sensitive areas. Where required a buffer must be determined by the ecological requirements of the fauna/flora found on-site.

The Contractor shall ensure that a most recent Transnet SHEQ Policy is displayed on the notice-board at all times.

#### **4.1.1 Site plan**

Before the onset of construction, the Contractor shall submit to the TGC Construction Manager and TGC Environmental Officer for their approval, plans of the exact location, extent and construction details of the proposed facilities and the impact mitigation measures the Contractor proposes to put in place. Any changes to the location of the facilities and site activities as per the approved site layout plan shall be re-submitted for approval prior to implementation of changes.

The Site Plan must as a minimum include but not necessarily be limited to:

- Detailed layout of the construction works areas including access roads, site offices, material laydown areas, temporary stockpile areas and parking areas;
- Detailed locality and layout of all waste storage and handling facilities for litter, kitchen refuse and workshop-derived liquid waste;
- Proposed areas for the stockpiling of topsoil and excavated spoil material;
- Demarcation of the construction footprint including areas not to be disturbed by the development; and
- Location of sewage and sanitary facilities at the site offices and staff accommodation and at all localities on the site where there will be a concentration of labour. Sanitary arrangements should be to the satisfaction of the TGC Construction Manager and Environmental Officer.

The site offices should not be sited in close proximity to steep areas. It is recommended that the offices, and in particular the ablution facilities, aggregate stockpiles, spoil areas and hazardous material stockpiles be located as far away as possible from any watercourse. Should this not be possible, approval for the location of these facilities must be granted by the TGC Environmental Officer.

#### ***4.1.2 Identification and establishment of suitable access routes/roads***

Existing access routes to the construction/works areas must be used as far as possible. The building of access roads must be restricted to within the development footprint to prevent unnecessary disturbance of the surrounding environment. However, prior to making a decision about a new access road, the TGC Environmental Officer must assess the proposed access road against the prevailing environmental legislation to confirm/rule out possible EIA triggers. Access tracks must be maintained in a good condition at all times during construction to minimize erosion and dust generation.

#### ***4.1.3 Demarcation of site limits***

Prior to the commencement of construction, the actual site to be developed must be clearly demarcated through the most effective means. Vegetation within the demarcated zone may be

cleared only upon obtaining approval from the TGC Environmental Officer. Disturbance of vegetation outside of the demarcated development footprint is not permitted.

All plant, material and equipment required for construction must be located within the designated areas. Laydown areas must be clearly demarcated within the site limits. No activities are allowed outside of the demarcated development footprint.

#### **4.1.4     *Eating Areas***

The Contractor is responsible for providing adequate eating facilities within the works area to ensure that workers do not leave the site to eat during working hours. Refuse bags/bins must be provided at all established eating areas and when full it should be disposed as required by Section 4.3 below.

#### **4.1.5     *Liquid waste Management***

Liquid waste water from site shall be stored on-site in a properly designed and constructed system, situated so as not to adversely affect water courses (streams, rivers, pans, dams etc.). Only domestic type wastewater, i.e. toilet, shower, basin, kitchen water shall be allowed to enter the designated system.

### **4.2     *Sewage and Sanitation***

The Contractor is responsible for providing adequate sanitary facilities including toilets, toilet paper, wash basins etc. to all workers on site and for enforcing the proper use of these facilities. Safe and effective sewage treatment will require one of the following sewage handling methods: dry-composting toilets such as “enviro loos” or the use of chemical toilets which are supplied and maintained by a suitably qualified Sub-contractor. The type of sewage treatment will depend on the location of the site and the surrounding land uses, the duration of the contract and proximity (availability) of providers of chemical toilets.

Toilet facilities shall be serviced regularly and the waste material generated from these facilities shall be disposed of at a registered waste water treatment works/macerator and proof of servicing and disposal shall be made available in the Contractor EO’s File.

Toilets and latrines shall be easily accessible and shall be positioned within walking distance from wherever employees are employed on the works. Use of open areas (i.e. the veldt) shall not, under any circumstances, be allowed. For projects of high mobility a mobile toilet facility shall be made available by the Contractor.

Outside toilets shall be provided with locks and doors and shall be secured to prevent them from blowing over. Toilets must not be placed in areas susceptible to flooding or high winds. The Contractor shall arrange for regular emptying of toilets and shall be entirely responsible for enforcing their use and for maintaining such facilities in a clean, orderly and hygienic condition to the satisfaction of the TGC Construction Manager.

### 4.3 Waste Management

Waste is grouped into "general" or "hazardous", depending on its characteristics. The classification determines handling methods and the ultimate disposal of material.

General waste to be expected during construction includes the following:

- Trash (waste paper, plastics, cardboard, etc.) and food waste from offices, warehouses and construction personnel;
- Uncontaminated construction debris such as used wood and scrap metal; and
- Uncontaminated soil and non-hazardous rubble from excavation or demolition.

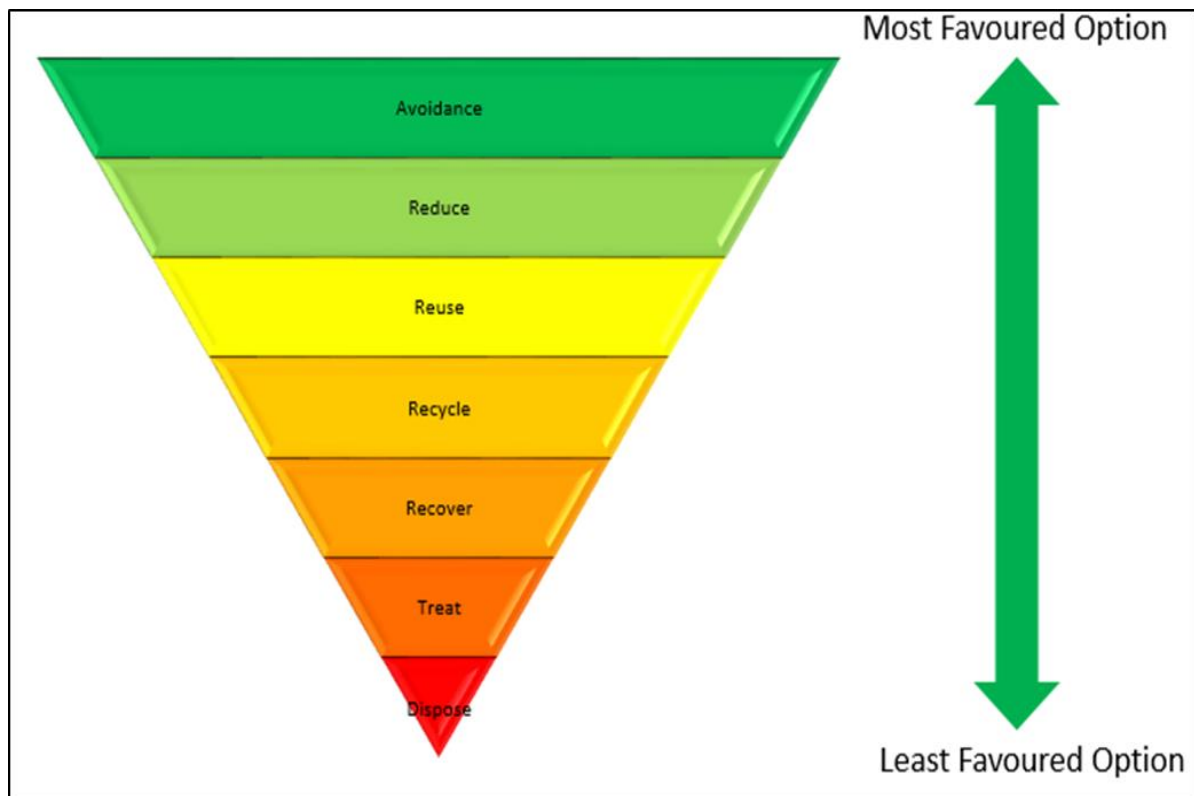
The Contractor shall classify all waste expected to be generated during the construction period. Examples of typical construction waste which could be expected on the site and how they should be classified are indicated in the following table:

**TABLE 1: EXAMPLE OF CONSTRUCTION WASTE CLASSIFICATION**

WASTE	CLASSIFICATION	
	HAZARDOUS	GENERAL
Aerosol containers	X	
Batteries, light bulbs, circuit boards, etc.	X	X
Clean soil		X
Construction debris contaminated by oil or organic compounds	X	

WASTE	CLASSIFICATION	
	HAZARDOUS	GENERAL
Domestic waste		X
Empty drums (depends on prior use)	X	X
Empty paint and coating containers		X
Explosive waste	X	
PCB waste	X	
Rubble (not contaminated by oil or organic compounds)		X
Waste Cable		X
Waste plastic		X
Waste paint and/or solvent	X	
Waste oil	X	
Waste concrete		X
Waste cement powder	X	
Waste empty cement bags (must be thoroughly decanted)		X
Waste containing fibrous asbestos	X	
Waste timber		X
Sewerage sludge	X	
Scrap metal		X
Chemically-derived sanitary waste	X	

A hierarchical control approach to waste management is encouraged. Waste should preferably be managed in the following order of preference:



**FIGURE 1: THE WASTE MANAGEMENT HIERARCHY**

(Transnet Environmental Risk Management Strategy and Framework, 2015:42)

<b>Avoidance/Prevention:</b>	using goods in a manner that minimises their waste components
<b>Reduction/Minimisation:</b>	reduction of the quantity and toxicity of waste generated during construction
<b>Re-use:</b>	removing an article from a waste stream for use in a similar or different purpose without changing its form or properties
<b>Recycling:</b>	separating articles from a waste stream and processing them as products or raw materials
<b>Recovery:</b>	reclaiming particular components or materials, or using the waste as a fuel
<b>Treatment:</b>	processing of waste by changing its form or properties in order to reduce toxicity and quantity
<b>Disposal:</b>	burial, deposit, discharge, abandoning or release of waste

The Contractor is responsible for the removal of all waste from site generated through the construction activities. The Contractor shall ensure that all waste is removed to appropriate licensed waste management facilities. (For the identification of an appropriate facility, the following source may be utilized: <http://sawic.environment.gov.za/>).

The Contractor's Environmental Officer will work in conjunction with the Contractor's Safety and Health personnel to create a Hazardous Materials Management Program. This program will establish the necessary protocol for proper handling and removal of hazardous materials on the site.

The Contractor shall manage **GENERAL WASTE** that is anticipated to be generated by operations as follows:

- Notify waste hauler when container is full so that it can be removed and replaced with an empty container/skip;
- No littering is allowed on site. In the event where staff mobility is high, refuse bags will be made available by the Contractor;
- Provide documented evidence of proper disposal of waste (Waste Disposal Certificate)

The Contractor shall recycle **GENERAL WASTE** (as far as practically possible) that is anticipated to be generated by its operations as follows:

- Obtain and label recycling containers for the following (whichever relevant) and locate them within temporary office building and trailers:
  - Office Waste;
  - Aluminium;
  - Steel;
  - Glass;
  - Ferrous Metals;
  - Non Ferrous Metals; and
  - Waste Timber
- Establish recycled material collection schedule
- Arrange for full bins to be hauled away

Spent batteries, circuit boards, and bulbs, while non-hazardous, require separate storage, special collection and handling.

No burning, burying or dumping of waste of any kind will be permitted.

The Contractor shall manage **HAZARDOUS WASTE** anticipated to be generated by his operations as follows:

- Obtain and provide an acceptable container with correct and visible classification label;
- Place hazardous waste material in allocated container;
- Inspect the container on a regular basis as prescribed by the Contractor's waste management plan;
- Track the accumulation time for the waste, haul the full container to the registered hazardous disposal site;
- Notify the waste hauler when container is full so that it can be removed and replaced with an empty container/skip; and
- Provide documented evidence of proper waste disposal of the waste (Waste Disposal Certificate).

The Contractor shall quantify all waste disposed of, whether general or hazardous (including waste disposed of by any sub-contractors) and keep record of these quantities on site.

#### **4.4 Workshops, equipment maintenance and storage**

All vehicles and equipment must be kept in good working order to maximise efficiency and minimise pollution. Maintenance, including washing and refueling of plant on site must be done at designated locations at workshop areas. These designated areas must be agreed with the TGC Construction Manager and TGC Environmental Officer. The Contractor must ensure that no contamination of soil or vegetation occurs around workshops and plant maintenance facilities. All machinery servicing areas must be bunded. Drip trays should be used to collect used oil, lubricants at all times. Drip trays must be provided for all stationary plant. Washing of equipment should be restricted to urgent maintenance requirements only. Adequate wastewater collection facilities must be provided and the wastewater should be disposed of at a registered hazardous waste disposal site.



## **4.5 Vehicle and Equipment Refueling**

### **4.5.1 Stationary/Designated Refueling**

No vehicles or machines shall be serviced or refuelled on site except at designated and approved servicing or refuelling locations. No oil or lubricant changes shall be made except at designate locations, or in case of breakdown or emergency repair.

The Contractor shall store fuel and oil at a secure area, which shall be bunded to contain 110% of the total volume within the bund and designed with an impervious layer or liner or paved surface to prevent spillage from entering the ground.

The Contractor shall provide details of its proposed fuel storage and fuelling facility to the TGC Environmental Officer for approval. The design shall comply with the regulations of the National Water Act, (Act 36 of 1998), the Hazardous Substances Act, (Act 15 of 1973), the Environmental Conservation Act, (Act 73 of 1989), National Environmental Management Act, (Act 107 of 1998), and the Occupational Health and Safety Act, (Act 85 of 1993), mainly the Construction - and Hazardous Chemical Substances Regulations.

### **4.5.2 Mobile Refueling**

In certain circumstances, the refuelling of vehicles or equipment in a designated area is not a viable/practicable option and refuelling has to be done from a tank, truck, bowser or container moved around on site. In such circumstances, the Contractor may request approval from the TGC Construction Manager to conduct mobile refuelling subject to the following control measures:

- Secondary containment equipment shall be in place. This equipment shall be sized to contain the most likely volume of fuel that could be spilt during transfer.
  - Absorbent pads or drip trays are to be placed around the fuel inlet prior to dispensing.
  - Mobile refuelling units are to be operated by a designated competent person.
  - The transfer of fuel must be stopped prior to overflowing. Fuel tanks or refuelling equipment on vehicles may only be filled to 90% carrying capacity.
  - Mobile fuelling tanks must be stored in an area where they are not susceptible to collisions.
- The fuel storage area must be located away from drainage channels.

- Mobile refuelling operations shall not take place within 30 meters of any watercourses or 7.5 meter from other structures, property lines, public ways or combustible storage.
- All mobile refuelling tanks are to be properly labelled and fire extinguishers with valid service dates shall be located near the fuel storage areas. These extinguishers must be of a suitable type and size.

#### **4.6 Spill Response**

The Contractor shall have adequate spill response materials/equipment on site which must be aligned with the volumes of hazardous substances used on site and the risk of pollution to sensitive environmental attributes.

The Contractor shall provide details for approval by the TGC Construction Manager and TGC Environmental Officer of its spill response plan in the event of any spills of fuel, oils, solvents, paints or other hazardous materials. The plan will show measures to be taken in removing contaminated material from site and demonstrate complete removal of contamination.

The Contractor shall instruct construction personnel on the following spill prevention and containment responsibilities:

- Immediately repair all leaks of hydrocarbons or chemicals;
- Take all reasonable means to prevent spills or leaks;
- Do not allow sumps receiving oil or oily water to overflow;
- Prevent storm water runoff from contamination by leaking or spilled drums of oil or chemicals; and
- Do not discharge oil or contaminants into storm water or sewer systems.

If a spill occurs on land, the Contractor must:

- Immediately stop or reduce the spill
- Contain the spill
- Recover the spilled product
- Remediate the site
- Implement actions necessary to prevent the spill from contaminating groundwater or off-site surface water
- Dispose of contaminated material at a registered hazardous waste disposal site and provide proof thereof (SDCs)

Any spill to water has the potential to disperse quickly, therefore, the spill must be contained immediately using appropriate containment equipment.

If a spill to water occurs, the Contractor must:

- Take immediate action to stop or reduce the spill and contain it
- Notify the appropriate on-site authorities
- Implement actions necessary to prevent the spread of the contamination by deploying booms and/or absorbent material
- Recover the spilled product
- Dispose of spilled material at a registered hazardous waste disposal site and provide SDCs
- Water samples to be taken downstream from where the spill took place to trace the extent of pollution

#### **4.7 Spray Painting and Sandblasting**

Spray painting and sandblasting should be kept to a minimum. All painting should, as far as practicable, be done before equipment and material is brought on site. Touch-up painting is to be done by hand painting or by an approved procedure. A Method Statement shall be submitted to the TGC Environmental Officer for approval.

The relevant Contractor will inform his Environmental Officer of when and where spray painting or sandblasting is to be carried out prior to commencement of work. The Contractor's Environmental Officer will monitor these activities to ensure that adequate measures are taken to prevent contamination of the soil.

If the area is in confined or high (elevated) areas, a protection plan must be issued for approval by the TGC Environmental Officer.

#### **4.8 Dust Management**

Contractors are responsible for managing dust generated as a result of their activities. The use of water for dust management must be minimised as far as practically possible. Discretion must be applied on a site-by-site basis in terms of dust control. Dust control measures must be agreed upon by the TGC EO prior to commencement of the Works.

Below are some dust control measures which can be applied during construction:

- Operate vehicles within speed limits, where no speed limit has been specified, the limit shall be 20km/h;
- Minimise haulage distances where possible;
- Environmentally friendly soil stabilisers may be used as additional measures to control dust on gravel roads and construction areas;
- The introduction of hydro-seeding and mulch due to its ability to bind soil particles together and thus reduce fugitive dust on-site;
- Dust suppression measures will also apply to inactive construction areas. (An inactive construction site is one on which construction will not occur for a month or more);
- Minimise disturbance of natural vegetation during right-of-way construction (e.g. transmission lines and erection of fences) to reduce potential erosion, runoff, and airborne dust;
- Material in transit should be loaded and contained within the load bin of the vehicle in such a way as to prevent any spillage onto the roads and the creation of dust clouds. If necessary, the load bin of the vehicle shall be covered with a tarpaulin to prevent dust;
- Implement a system of reporting excessive dust conditions by construction personnel (as instructed through Environmental Awareness Training);
- In cases where water is to be used for dust control; it shall be ensured that only authorised sources are used; and
- Apply water to gravel roads with a spraying truck when required

#### **4.9 Storm water and Dewatering Management**

The Contractor shall be aware that, apart from runoff from overburden emplacements and stock piles, storm water can also be contaminated from batch plants, workshops, vehicle wash-down pads etc., and that contaminants during construction may include hydrocarbons from fuels and lubricants, sewerage from employee ablutions and excess fertiliser from rehabilitated areas, etc.

The Contractor shall take note that discharges to controlled waters such as the sea, rivers, groundwater or to sewerage systems are controlled under the South African Water Legislation. The following specific measures are required:

- Temporary drainage must be established on site during the construction period until permanent drainage is in place. Contractors are responsible for maintaining the temporary

drainage in their areas. Contractors must provide secondary drainage that prevents erosion, where necessary.

- Contractors must employ good housekeeping in their areas to prevent contamination of drainage water.
- The Contractor shall clear stagnant water at all times.
- The Contractor shall ensure that no contaminated surface water flows off-site as a result of Contractor operations. Where necessary, silt traps shall be constructed to ensure retention of silt on site and cut-off ditches shall be constructed to ensure no runoff from the site except at points where silt traps are provided. The Contractor shall be responsible for checking and maintaining all silt traps for the duration of the project.
- The removal from groundwater is defined as a water-use under the National Water Act 36 of 1998. Therefore, it must be ensured that the project has been authorised by the Responsible Authority to remove groundwater prior to dewatering taking place. If applicable, the Contractor shall be responsible for collection, management, and containment within the site boundaries of all dewatering from all general site preparation activities.
- No discharge/dewatering to off-site land or surface water bodies will be allowed
- On-site drainage shall be accomplished through gravity flow. The surface drainage system shall consist of mild overland slopes, ditches, and culverts. The graded areas adjacent to buildings shall be sloped away with a 5% slope. Other areas shall have a minimum slope of 0,2% or as otherwise indicated
- Ditches shall be designed to carry a 25-year storm event with velocities in accordance to minimise erosion. Erosion protection shall consist of suitable stabilising surfaces in all ditches.
- Culverts shall be designed to ensure passage of the 50-year storm peak runoff flow.

#### **4.10 Erosion Control**

All structural and non-structural (vegetative) erosion control measures will be designed, implemented, and properly maintained in accordance with best management practices which will include, but not limited to the following:

- Scheduling of activities to minimise the amount of disturbed area at any one time;
- Implementation of re-vegetation as early as feasible;
- Limiting construction traffic and/or avoidance thereof on access roads and areas to be graded to the extent feasible at drainage ditches;

- Compacting loose soil as soon as possible after excavation, grading, or filling;
- Using silt fences, geo-textiles, temporary rip-rap, soil stabilisation with gravel, diversionary berms or swales, small sedimentation basins, and gravelled roads to minimise transport of sediment;
- Implementing the erosion and sedimentation control plan and ensuring that construction personnel are familiar with and adhere to it;
- Managing runoff during construction; and
- The Contractor shall be responsible for checking and maintaining all erosion and sedimentation controls.

#### **4.11 Noise Management**

The Contractor must implement the following measures, as a minimum, to manage noise pollution resulting from his/her activities:

- Keep all equipment in good working order;
- Operate equipment within its specification and capacity and don't overload machines;
- Apply regular maintenance, particularly with regards to lubrication;
- Operate equipment with appropriate noise abatement accessories, such as sound hoods;
- Sensitive social receptors shall be notified of any excessive noise-generating activities that could affect them;
- Ensure that the potential noise source will conform to the South African Bureau of Standards recommended code of practice, *SANS 10103:2004* or the latest at the time, so that it will not produce excessive or undesirable noise when released;
- All the Contractor's equipment shall be fitted with effective exhaust silencers and shall comply with the South African Bureau of Standards recommended code of practice, *SANS 10103:2004* or the latest at the time, for construction plant noise generation
- All the Contractor's vehicles shall be fitted with effective exhaust silencers and shall comply with the Road Traffic Act, (Act 29 of 1989) when any such vehicle is operated on a public road
- If on-site noise control is not effective, protect the victims of noise by ensuring that all noise-related occupational health provisions are met. (Occupational Health and Safety Act, (Act 85 of 1993).

## **4.12 Protection of heritage resources**

### **4.12.1 *Archaeological Sites***

If an artefact on site is uncovered, work in the immediate vicinity shall be stopped immediately. The Contractor shall take reasonable precautions to prevent any person from removing or damaging any such article and shall immediately upon discovery thereof inform the TGC CM and TGC EO of such a discovery. The South African Heritage Resources Agency (SAHRA) or relevant Authority is to be contacted and will appoint an Archaeologist to investigate the find. Work may only resume once clearance is given in writing by the Archaeologist.

### **4.12.2 *Graves and middens***

If a grave or midden is uncovered on site, or discovered before the commencement of work, all work in the immediate vicinity of the graves/middens shall be stopped and the TGC Construction Manager and EO informed of the discovery. The South African Heritage Resources Agency (SAHRA) or relevant Authority should be contacted and in the case of graves, arrangements made for an undertaker to carry out exhumation and reburial. The undertaker will, together with the SAHRA, be responsible for attempts to contact family of the deceased and for the site where the exhumed remains can be re-interred.

## **4.13 Fire prevention**

Fires shall only be allowed in facilities or equipment specially constructed for this purpose.

A firebreak shall be cleared and maintained around the perimeter of the camp and office sites where and when necessary in accordance with relevant legislative requirements.

All conditions incorporated in the requirements of the Occupational Health and Safety Act shall be implemented.

#### **4.14 Water Protection and Management**

No water shall be abstracted from any water course (stream, river, or dam) without the expressed permission of the TGC Construction Manager and TGC Environmental Officer. Such permission shall only be granted once it can be shown that the water is safe for use, that there is sufficient water in the resource to meet the demand, and once permission has been obtained from the Department of Water and Sanitation in accordance with the requirements of the National Water Act (Act 36 of 1998).

Water for human consumption shall be available at the site offices and at other convenient locations on site. The generally acceptable standard is that a supply of drinking water shall be available within 200m of any point on the construction site.

Method Statement(s) must be prepared by the Contractor for the various water uses. The Contractor shall keep a record of the quantities of water used during construction (including use by sub-contractors), irrespective of the purpose of use.

#### **4.15 Protection of Fauna and the collection of firewood**

On no account shall any hunting or fishing activity of any kind be allowed. This includes the setting of traps, or the killing of any animal caught in construction works.

On no account shall any animal, reptile or bird of any sort be killed. This specifically includes snakes or other creatures considered potentially dangerous discovered on site. If such an animal is discovered on site an appropriately skilled person should be summoned to remove the creature from the site. Consideration should be given to selection and nomination of such a person prior to site establishment. If no-one is available, training should be provided to at least two site staff members.

The Contractor shall provide adequate facilities for all his staff so that they are not encouraged to supplement their comforts on site by accessing what can be taken from the natural surroundings. The Contractor shall ensure that energy sources are available at all times for construction and supervision personnel for heating and cooking purposes.



#### **4.16 Environmental Awareness Training**

An Environmental Awareness Program is considered a necessary part of the Construction Environmental Management Plan for the Project. Training of the appropriate construction personnel will help ensure that all environmental regulations and requirements are followed which must be defined in the relevant Method Statement to be prepared by the Contractor.

Objectives of environmental awareness training are:

- Environmental Management – protecting the environment from the effects of construction by making personnel aware of sensitive environmental resources.
- Regulatory compliance – complying with requirements contained in project – specific permit conditions, also complying with requirements in regional and local regulations.
- Problem recognition and communication – training personnel to recognise potential environmental problems, i.e. spills, and communicate the problem to the Contractor's EO for a solution.
- Liability control - non-compliance with regulatory requirements can lead to personal and corporate liability.

All individuals on the Project construction site will need to have a minimum awareness of environmental requirements and responsibilities. However, not all need to have the same degree of awareness. The required degree of knowledge is greatest for personnel in the Safety, Health, and Environmental Sections and the least for the manual personnel.

The Contractor shall present environmental awareness programmes on a weekly/bi-monthly basis (depending on project requirements) and keep record of all the environmental related training of the personnel.

#### **4.17 Handling and Batching of Concrete and Cement**

Concrete batching shall only be conducted in demarcated areas which have been approved by the TGC Construction Manager and TGC EO.

Such areas shall be fitted with a containment facility for the collection of cement-laden water. This facility shall be bunded and have an impermeable surface protection so as to prevent soil

and groundwater contamination. Drainage of the collection facility will be separated from any infrastructure that contains clean surface runoff.

The batching facility will not be placed in areas prone to floods or the generation of stagnant water. Access to the facility will be controlled so as to minimise potential environmental impacts. Hand mixing of cement and concrete shall be done on mortarboards and/or within the bunded area with impermeable surface or concrete slab. Bulk and bagged cement and concrete additives will be stored in an appropriate facility at least 10m away from any watercourses, gullies and drains.

Waste water collected in the containment facility shall be left to evaporate. The Contractor shall monitor water levels to prevent overflows from the facility. It is acknowledged that all waste water will evaporate; it must be ensured that the remaining water can be pumped into sealed drums for temporary storage and must be disposed of as liquid hazardous waste.

All concrete washing equipment, such as shovels, mixer drums, concrete chutes, etc. shall be done within the washout facility. Water used for washing shall be restricted as far as practically possible.

Ready-mix concrete trucks are not allowed to wash out anywhere other than in an area designated and approved by the TGC Construction Manager and EO for this purpose.

The Contractor shall periodically clean out hardened concrete from the wash-out facility or concrete mixer, which can either be reused or disposed of as per accepted waste management procedures.

Empty cement and bags, if temporarily stored on site, must be collected and stored in weatherproof containers. Used cement bags may not be used for any other purpose and must be disposed of on a regular basis in accordance with the Contractor's solid waste management system.

Sand and aggregates containing cement will be kept damp to prevent the generation of dust.

Concrete and cement or any solid waste materials containing concrete and cement will be disposed of at a relevant registered disposal facility and SDCs kept on the file. Where disposal

facilities for general waste are utilised, written consent from the relevant municipality must be obtained by the Contractor and proper records kept.

#### **4.18 Stockpiling, Soil Management and Protection of Flora**

The Contractor shall measure the extent of all areas cleared for construction purposes and keep this figure updated. Sensitive areas shall be cordoned off and avoided in this regard.

Stockpiling may only take place in designated areas indicated on the approved site layout plan. Any area to be used for stockpiling or material laydown shall be stripped of all topsoil.

Clearance of vegetation shall be restricted to that which is required to facilitate the execution of the works. Vegetation clearance shall occur in a planned manner, and cleared areas shall be stabilised as soon as possible when and where necessary. The detail of vegetation clearing shall be subject to the TGC Construction Manager's approval and shall occur in consultation with the TGC Environmental Officer.

Stockpiles must be positioned in areas sheltered from the wind and rain to prevent erosion and dispersion of loose materials. Stockpiled soil shall be protected by adequate erosion-control measures. Soil stockpiles shall be located away from drainage lines, watercourses and areas of temporary inundation. Stockpiles containing topsoil shall not exceed 2m in height unless otherwise permitted by Transnet.

Topsoil shall be stockpiled separately from other materials and prevented from movement. Excavated subsoil, where not contaminated, must be used for backfilling, if possible, and topsoil for landscaping and rehabilitation of disturbed areas. Where topsoil has become mixed with subsoil or is not up to the original standard, fertiliser or new topsoil shall be provided by the Contractor.

No vegetation located outside the construction site shall be destroyed or damaged. As far as is reasonably practicable, existing roads must be used for access to the site. Before site clearance takes place, vegetation surveys must be conducted and protected species identified.

No protected plant species shall be removed without written consent from the relevant authorities. The development of new embankments or fill areas must be undertaken in consultation with the TGC Environmental Officer.

No dumping of solid waste or refuse shall be allowed within or adjacent to areas of natural vegetation.

The Contractor shall identify and eradicate all declared alien and invasive plant species occurring on site.

#### **4.19 Traffic Management**

Vehicles usage is permitted **only** on access roads. Vehicles should only be parked within designated parking areas as demarcated on the site layout plan.

Turning of vehicles should only take place within a clearly demarcated "turn area" located within the approved construction footprint.

The Contractor must co-ordinate the loading and offloading of material during the construction phase so as to ensure that vehicular movement is in one direction only at any one time and that side-tracks are not created on the site.

#### **4.20 Transportation of Materials**

The Contractor is responsible for ensuring that all suppliers and delivery drivers are aware of procedures and restrictions (e.g. no-go areas) in terms of the CEMP and this Specification. Material must be appropriately secured to ensure safe passage between destinations during transportation. Loads must have appropriate cover, where ADTs are not utilised, to prevent spillage from the vehicles. The Contractor will be held responsible for any clean-up resulting from the failure to properly secure transported materials.

#### **4.21 Borrow Pits and Quarries**

The Contractor shall ensure that suppliers of rock and sand raw materials are in possession of the required permit/license and keep record of the quantity of material supplied.

The Contractor will not make direct use of any borrow pits and quarries unless the borrow pit has a valid permit, he has obtained written approval from the TGC Construction Manager and Method Statement has been submitted and approved. The Method Statement will provide the detailed description of the location of the borrow pits and/or quarries and the procedures that will be followed to adhere to any pertinent national or local legislation (e.g. mineral extraction, rehabilitation, safety and noise levels).

#### **4.22 Social and Labour Issues**

The criteria for and selection of labourers, sub-contractors and suppliers for the project shall demonstrate preference for the local community and shall be aligned with the criteria set by TGC in appointing the Contractor. The Contractor shall keep records of the identity of all staff.

Under no circumstances shall the Contractors engage in formal discussions with landowners without prior consent by the TGC Construction Manager.

No activity on private property shall be allowed without written consent by the relevant landowner and TGC Construction Manager/TGC Environmental Officer.

Any damage to private property caused by the Contractor during the construction period, shall be repaired to the satisfaction of the TGC CM and the TGC EO and the land-owner.

The Contractor shall keep record of any complaint raised during the construction period relating to the Contractor's activities.

No job-seekers shall be allowed on site and signs reflecting such shall be displayed on the notice boards.

All public complaints received shall be dealt with as per the CEMP.

#### **4.23 Energy Management**

The Contractor shall measure and keep updated records of the following:

- Electricity consumption (to be measured in Kilowatt Hours)
- Fuel consumption (to be measured in liters)

#### **4.24 Handling, Storage and Management of Hazardous Substances**

All hazardous materials/substances shall be stored in a secured, designated area that is fenced, bunded and has restricted entry.

All storage shall take place using suitable containers to the approval of the TGC Construction Manager and EO.

All hazardous liquids shall be located in a secure, demarcated area and an adequate bund wall (110% of the total volume stored) shall be provided. The floor and wall of the bund area shall be impervious to prevent infiltration of any spilled/leaked liquids into the soil.

No spillages or accumulated stormwater within this bunded area will be allowed to be flushed from the bund into the surrounding area. All fluids accumulated within the bunded area shall be removed and disposed of in accordance with Section 4.3 above.

Hazard signs indicating the nature and volume of the stored materials shall be displayed on the storage facility or containment structure.

Weighbills of hazardous substances shall be sourced from suppliers and kept on site for inspection by the TGC Environmental Officer.

The Contractor must provide a method statement detailing the hazardous substances that are to be used during construction, as well as the storage, handling and disposal procedures for each substance. Emergency procedures in the event of misuse or spillage that might negatively affect the environment must be specified.

Information on each hazardous substance will be available to all persons on site in the form of Material Safety Data Sheets (MSDS)/Safety Data Sheets (SDS). Training and education about

the proper use, handling, and disposal of the material will be provided to all workers handling the material.

The Contractor's Environmental Officer must be informed of all activities that involve the use of hazardous substances to facilitate prompt response in the event of a spill or release.

#### **4.25 Housekeeping**

The Contractor must ensure proper housekeeping of the site for the duration of the project. If practical the contractor shall amongst construction personnel, assign one to be responsible for good housekeeping

Materials shall be stored in a neat and tidy manner in designated areas as per the approved site layout plan.

#### **4.26 Rehabilitation**

Contractors shall rehabilitate the entire site upon completion of work. A rehabilitation plan will be submitted to the TGC Construction Manager and EO for approval at least six weeks before project completion. The following, but not limited are critical issues to be included in the rehabilitation plan:

- Details of soil preparation procedures including proposed fertilisers or other chemicals being considered for use;
- A list of the plant species that will be used in the rehabilitation process. Note that these should all be indigenous species, and preferably species that are endemic to the area. The assistance of an appropriately qualified Botanist/Horticulturist should be sought in developing this list;
- Procedures for watering the planted areas (frequency of watering, methodology proposed etc.);
- An indication of the monitoring procedures that will be put in place to ensure the successful establishment of the plants (duration and frequency of monitoring, proposed criteria for declaring rehabilitation as being successful); and
- Procedures for the prevention of the establishment and spread of alien invasive species.

## **5 Documentation**

Refer to the Construction Environmental Management Plan.

## **6 Records**

All documents generated in terms of this procedure will be classed as records and retained for the life of the project for handover by the contractor to TGC (electronic and hard copies).




# "HOW TO" GUIDE FOR BIDDERS

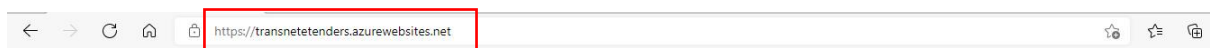
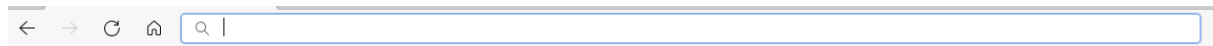
REGISTER ON ETENDER PORTAL

ACCESS TENDERS


**NB: Do not wait for the last minute to register or to bid for a tender. Ensure you complete your process at least 1 day (24hours) before the closing date**

Go to Google Chrome 

In the address bar type: <https://transnetetenders.azurewebsites.net>



https://transnetetender.b2clogin.com/transnetetender.onmicrosoft.com/b2c\_1\_signupsignin/oauth2/v2.0/authorize?client



### Sign in with your email address

Email Address

Password

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Sign in

Don't have an account? [Sign up now](#)

If not already registered, click on Sign up now.


Ensure that the email you use to sign in is the same as the email that you received from the tender invite on the email, otherwise you will not see the tender

[← Cancel](#)



[Send verification code](#)

Country/Region



[Create](#)

Complete all fields, before selecting “Send verification code” and confirm that all information is correct.

**VERY IMPORTANT:** Each field needs to be completed and not to be left blank

If you do not have a central Supplier Database number, enter the same company registration number in that field.

Send verification code

After completing all fields, select "Send verification code". The code will be sent to your email.

< Cancel



Verification code has been sent to your inbox. Please copy it to the input box below.

abc@gmail.com

Verification Code

Copy the code as received on the email and paste it in the Verification code field  
Then click on Verify code

Verify code

Send new code

\*\*\*\*\*

Forgot your password?

Sign in

Don't have an account? [Sign up now](#)

Then click on Sign in

Once registered and signed in, the home screen will have “WELCOME (Registered user)”

**DO NOT use secondary email address, YOU THE SAME EMAIL ADDRESS WHICH YOU RECEIVE INVITES FOR BIDDING**



To view / search for tenders, click on ADVERTISED TENDERS

Tender Invitation For Tender Ref # TE/2022/04/0697/RFQ - Message (HTML)

File Message Help Tell me what you want to do

Delete Archive Reply Reply All Forward Share to Teams ATM signed To Manager Team Email Move Tags Editing Read Aloud Translate Zoom Send to OneNote Viva Insights

Tender Invitation For Tender Ref # TE/2022/04/0697/RFQ

SRV-TCC-Etender  
To noreply@transnet.net

This message was sent with Low importance.

Dear Suppliers,  
You have been invited to bid and respond to the following tender:

Name Of Tender : TE22-SRX-1FG-02068  
Description : STOP; TOP BUNK, OD 19.5 X HT 6.5 MM  
Tender Number : TE/2022/04/0697/RFQ

Access to this tender will be granted by using this email when you sign up/sign in. To access the tender information

Kind Regards,  
Transnet eTenders

When a bidder receives an email to quote, the bidder needs to register with the email address of the recipient that received the email. If already registered, sign in.

**NOTE: The details on this email is intended for guidance only and not to be used on the live system**

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**ADVERTISED TENDERS**

Open Tenders Other Tenders

Show  entries Search:

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TCC/2021/11/0031/RFQ	For the supply and installation of an air compressor	For the supply and installation of an air compressor for indoor shooting range that operates the laser system and supply air to air guns utilised during training and conduct maintenance on air supply system and hoses.		12/10/2021 12:00:00 PM	Closed	<a href="#">View Details</a>
TFR/2021/12/0014/RFQ	ELECTRICAL MATERIAL (CABLES)	SUPPLY AND DELIVERY OF ELECTRICAL MATERIAL (CABLES) FOR A ONCE OFF PERIOD		12/13/2021 4:00:00 PM	Closed	<a href="#">View Details</a>
TFR/2021/12/0017/RFQ	CRAC_JHB_36509.	FOR THE SUPPLY AND DELIVERY OF HIGH BACK CHAIRS FOR CTC OFFICES IN CENTRAL, EASTERN AND WESTERN REGIONS, FOR A ONCE OFF PERIOD.		12/14/2021 10:00:00 AM	Closed	<a href="#">View Details</a>
TFR/2021/12/0015/RFQ	CRAC-JHB-36313	FOR THE SUPPLY AND DELIVERY OF VARIOUS CLAMPS, TERMINAL LUGS, DROPPER CLIPS AND		1/13/2022 12:00:00	Closed	<a href="#">View Details</a>

When signed in, select "ADVERTISED TENDERS".

To manually search and change the view from Closed to Open, click twice on arrow next to "Tender Status". The arrow pointing down will change to blue and open tenders will be displayed.


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entries
Search:

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0450/RFQ	VALVE:L-1 LOAD DET,WAGONS AIRBRAKE	VALVE:L-1 LOAD DET,WAGONS AIRBRAKE-062101802 VALVE; TYPE: L-1 LOAD DETECTOR, MEDIA FOR WHICH DESIGNED: WAGONS AIRBRAKE, CONNECTION TYPE: FLANGE, SPECIAL FEATURES: BLUE, WITHOUT PIPE BRACKET; SIMILAR ITEM: 062004338		4/8/2022 10:00:00 AM	Open	<a href="#">View Details</a>
TE/2022/04/0494/RFQ	GEAR OIL	OIL, GEAR TYPE SYNTHETIC BRAND NAME MOBILGEAR SHC SERIES GRADE SCH 6800 VISCOSITY RATING 220 TO 320 FLASH POINT 234 DEG C COLOR ORANGE CONTAINER TYPE SACHET 250 G CONTAINER CAPACITY 14 KG FOR USE ON: 39-200 GM, 15E AND 19E LOCOMOTIVES		4/8/2022 10:00:00 AM	Open	<a href="#">View Details</a>
TE/2022/04/0495/RFQ	SUPPLY OF CORROSION (NALCOOL) - APPROVED	ITEM NUMBER - 077807563 INHIBITOR, CORROSION; TYPE: COOL-C18, COLOR: RED,		4/8/2022 10:00:00	Open	<a href="#">View Details</a>



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entries
Search: TE/2022/04/0697/RFQ

Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00 AM	Open	<a href="#">View Details</a>

To search for a specific tender, the tender number, tender name or description can be used for searching.

## ADVERTISED TENDERS

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entries
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Reference Number	Tender Name	Description	Briefing Session	Closing Date	Tender Status	
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00	Open	<a href="#">View Details</a>

When the tender has been identified, click on "View Details"

When the “View Details” has been selected, the following screen will be displayed where the attachments can be viewed or downloaded.

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## TENDER DETAILS

Tender Details

<b>Tender Reference Number</b>	TE/2022/04/0697/RFQ
<b>Name Of Tender</b>	TE22-SRX-1FG-02068
<b>Description</b>	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM
<b>Tender Type</b>	RFQ
<b>Contact Person</b>	Charl du Preez Transnet Engineering SLR
<b>Contact Person Email Address</b>	Charl.duPreez@transnet.net
<b>Date Published</b>	4/7/2022 3:51:47 PM
<b>Closing Date</b>	4/13/2022 10:00:00 AM
<b>Briefing Date And Time</b>	
<b>Briefing Details</b>	
<b>Location Of Service</b>	Coaches, Salt River

**Briefing Session**

**Closing Date**  
4/13/2022 10:00:00 AM

**Attachments**

- 2.14 Standard Terms and Conditions of Contract f
- 2.18 Supplier Integrity Pact\_April 2020\_v1.pdf
- 2.19 Non Disclosure Agreement\_April 2020\_v1.pdf
- 2.9 Request for Quotations TE22-SRX-1FG-02068,

**Log An Intent To Bid**

☐

If interested to bid, on the same page there's an option to select: **Log an Intent to Bid**. Once selected, an option will appear to “**Submit Intent**” or “**Cancel**”. Click on **Submit Intent**

Tender Details

<b>Tender Reference Number</b>	TE/2022/04/0697/RFQ
<b>Name Of Tender</b>	TE22-SRX-1FG-02068
<b>Description</b>	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM
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<b>Contact Person</b>	Charl du Preez Transnet Engineering SLR
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<b>Date Published</b>	4/7/2022 3:51:47 PM
<b>Closing Date</b>	4/13/2022 10:00:00 AM
<b>Briefing Date And Time</b>	
<b>Briefing Details</b>	
<b>Location Of Service</b>	Coaches, Salt River
<b>Name Of Institution</b>	TE
<b>Tender Category</b>	Goods
<b>Tender Status</b>	Open

**Briefing Session**

**Closing Date**  
4/13/2022 10:00:00 AM

**Attachments**

- 2.14 Standard Terms and Conditions of Contract f
- 2.18 Supplier Integrity Pact\_April 2020\_v1.pdf
- 2.19 Non Disclosure Agreement\_April 2020\_v1.pdf
- 2.9 Request for Quotations TE22-SRX-1FG-02068,

**Log An Intent To Bid**

☒

**Submit Intent** **Cancel**



**Tender Details**

**Tender Reference Number**

**Name Of Tender**

**Description**

**Tender Type** RFQ

**Contact Person** Charl du Preez Transnet Engineering SLR

**Contact Person Email Address** Charl.duPreez@transnet.net

**Date Published** 4/7/2022 3:51:47 PM

**Closing Date** 4/13/2022 10:00:00 AM

**Briefing Date And Time**

**Briefing Details**

**Location Of Service**

**Name Of Institution**

**Tender Category**

**Tender Status**

**Intent to Bid**

Your request to log an intent to bid has been successfully submitted.

Close

When the "Submit Intent" is selected, a message will appear to indicate that the request was successfully submitted. Click on close and wait for the next screen.

**Briefing Session**

**Closing Date** 4/13/2022 10:00:00 AM


**Attachments**

- 2.14 Standard Terms and Conditions of Contract for
- 2.18 Supplier Integrity Pact\_April 2020\_v1.pdf
- 2.19 Non Disclosure Agreement\_April 2020\_v1.pdf
- 2.9 Request for Quotations TE22-SRX-1FG-02068.pdf

**Log An Intent To Bid**

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ADVERTISED TENDERS
MY SUBMITTED INTENTS
MY BID DOCUMENT SUBMISSIONS
CONTACT
WELCOME TESTING 
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## MY SUBMISSION INTENTS

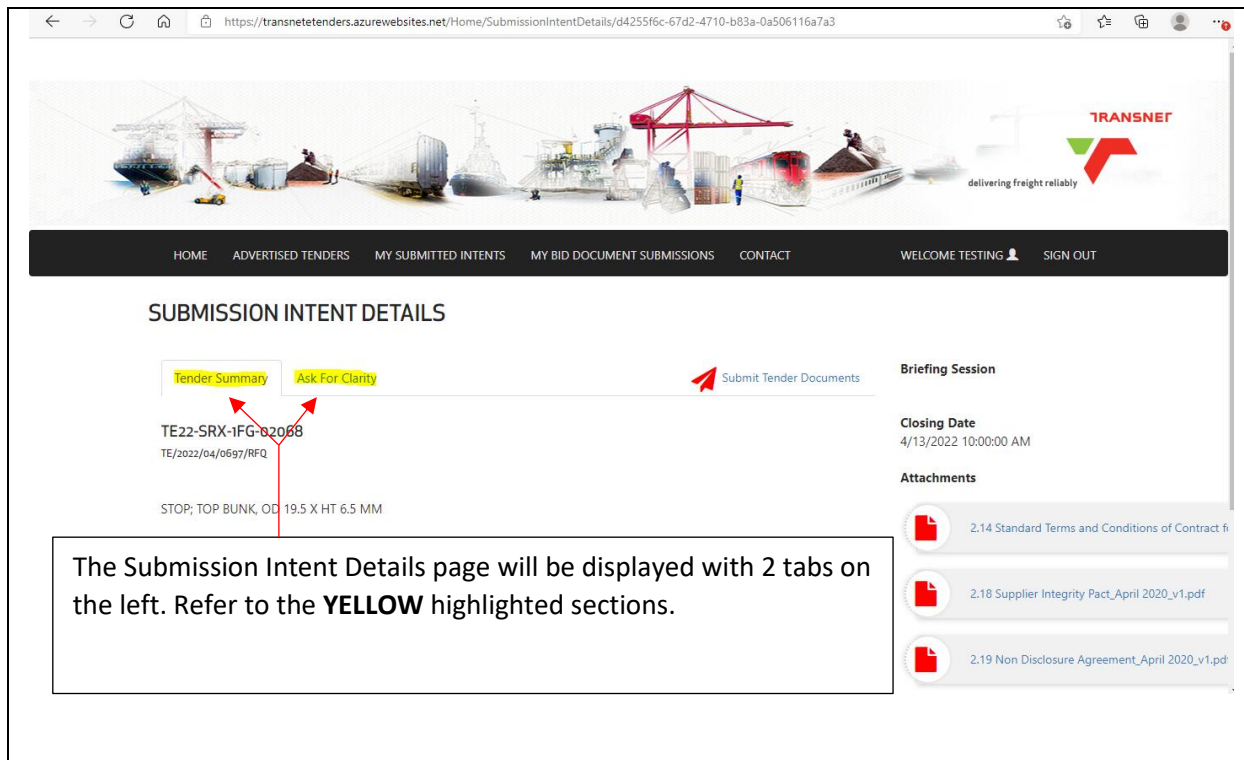
Show 10 entries

Tender Reference Number	Name	Description Of Tender	Briefing Session Date	Closing Date	View Details
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	STOP; TOP BUNK, OD 19.5 X HT 6.5 MM		4/13/2022 10:00:00 AM	<a href="#" style="background-color: red; color: white; padding: 2px 5px;">View Details</a>

Showing 1 to 1 of 1 entries

Previous 1 Next

The screen should be updated and load the "MY SUBMITTED INTENTS". To proceed to capturing your bid documents, click on "View Details"



https://transnettenders.azurewebsites.net/Home/SubmissionIntentDetails/d4255f6c-67d2-4710-b83a-0a506116a7a3

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

### SUBMISSION INTENT DETAILS

**Tender Summary** **Ask For Clarity** [Submit Tender Documents](#)

TE22-SRX-1FG-02068  
TE/2022/04/0697/RFQ

STOP, TOP BUNK, OD 19.5 X HT 6.5 MM

**Briefing Session**

**Closing Date**  
4/13/2022 10:00:00 AM

**Attachments**

- 2.14 Standard Terms and Conditions of Contract fi
- 2.18 Supplier Integrity Pact\_April 2020\_v1.pdf
- 2.19 Non Disclosure Agreement\_April 2020\_v1.pdf

The Submission Intent Details page will be displayed with 2 tabs on the left. Refer to the **YELLOW** highlighted sections.



https://transnettenders.azurewebsites.net/Home/SubmissionIntentDetails/d4255f6c-67d2-4710-b83a-0a506116a7a3

HOME ADVERTISED TENDERS MY SUBMITTED INTENTS MY BID DOCUMENT SUBMISSIONS CONTACT WELCOME TESTING SIGN OUT

### SUBMISSION INTENT DETAILS

**Tender Summary** **Ask For Clarity** [Submit Tender Documents](#)

Please email drawing

No Response From Transnet

**Submit queries below**

[Submit All Questions](#) [Cancel](#)

**Briefing Session**

**Closing Date**  
4/13/2022 10:00:00 AM

**Attachments**

- 2.14 Standard Terms and Conditions of Contract 1

By selecting the "Ask for Clarity", a bidder may request for further clarity with regards to drawings or specification. The clicking on the "Submit All Questions". The response from the Transnet representative will also be reflected on this page.



Submission Intent Details

Tender Summary Ask For Clarity **Submit Tender Documents**

TE22-SRX-1FG-02068  
TE/2022/04/0697/RFQ

STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

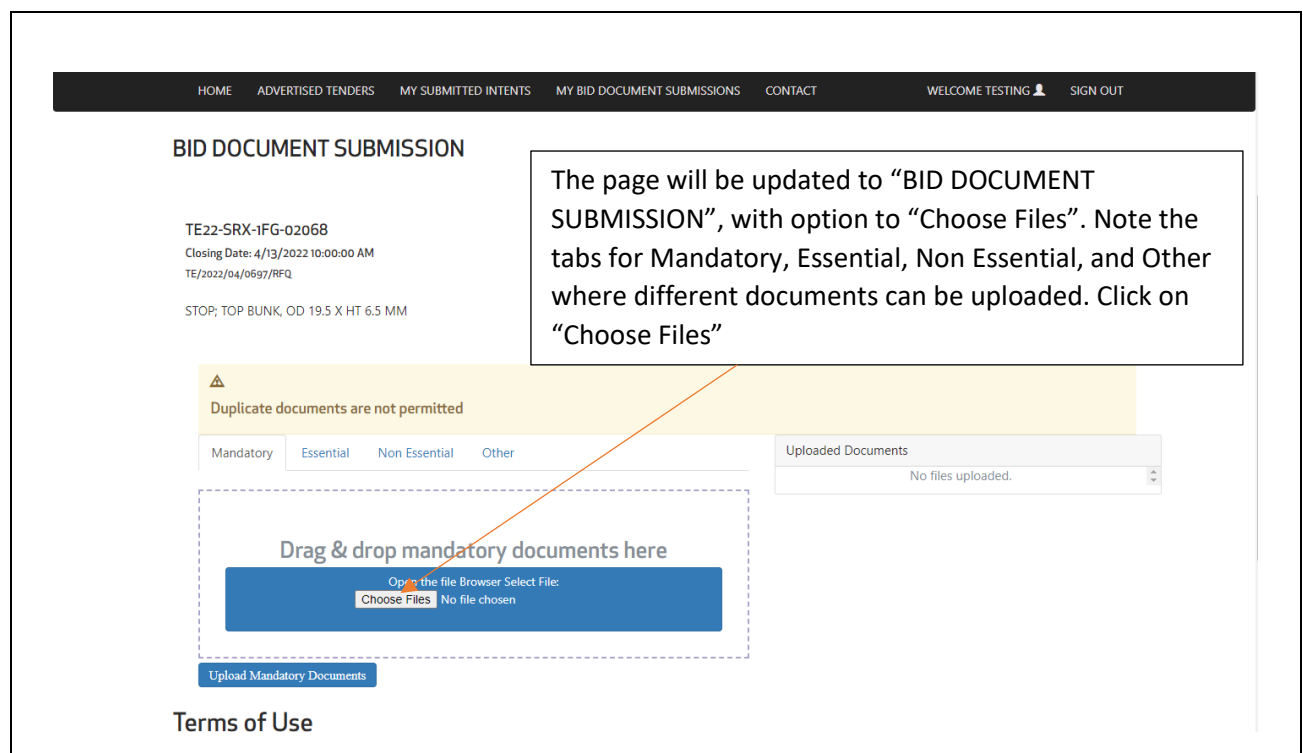
When the bidder has completed the returnable documents and scanned to their PC/Laptop, the next step would be to upload the documents. Click on “Submit Tender Documents”

Briefing Session

Closing Date  
4/13/2022 10:00:00 AM

Attachments

- 2.14 Standard Terms and Conditions of Contract f
- 2.18 Supplier Integrity Pact\_April 2020\_v1.pdf
- 2.19 Non Disclosure Agreement\_April 2020\_v1.pdf
- 2.9 Request for Quotations TE22-SRX-1FG-02068.



BID DOCUMENT SUBMISSION

TE22-SRX-1FG-02068  
Closing Date: 4/13/2022 10:00:00 AM  
TE/2022/04/0697/RFQ

STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

The page will be updated to “BID DOCUMENT SUBMISSION”, with option to “Choose Files”. Note the tabs for Mandatory, Essential, Non Essential, and Other where different documents can be uploaded. Click on “Choose Files”

Duplicate documents are not permitted

Mandatory Essential Non Essential Other

Uploaded Documents  
No files uploaded.

Drag & drop mandatory documents here

Open the file Browser Select File:  
Choose Files No file chosen

Upload Mandatory Documents

Terms of Use

A pop-up window will be displayed, where the bidder will need to select the returnable documents. Once the file is located, select the file and open.



**BID DOCUMENT SUBMISSION**

TE22-SRX-IFG-02068  
Closing Date: 4/13/2022 10:00:00 AM  
TE/2022/04/0697/RFQ  
STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

Duplicate documents are not permitted

Mandatory Essential Non Essential Other

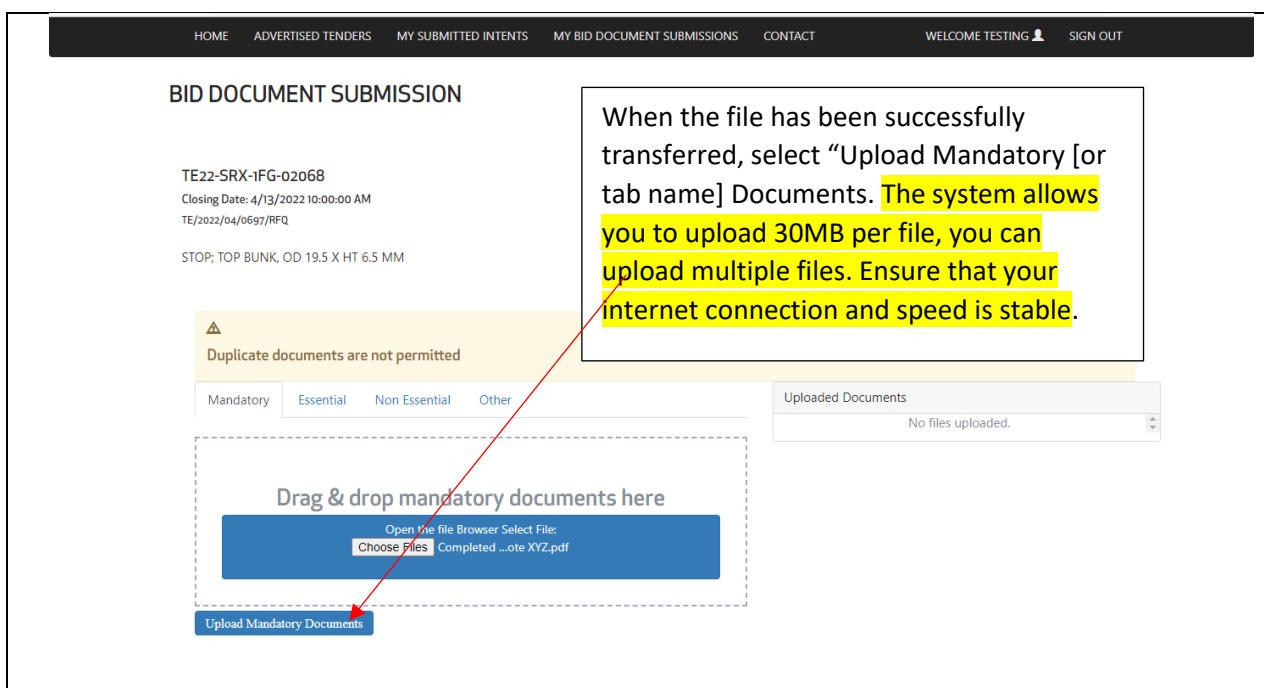
Drag & drop mandatory documents here

Open the file Browser Select File:  
Choose Files Completed ...ote XYZ.pdf

Upload Mandatory Documents

Uploaded Documents  
No files uploaded.

When the file has been successfully transferred, select "Upload Mandatory [or tab name] Documents. The system allows you to upload 30MB per file, you can upload multiple files. Ensure that your internet connection and speed is stable.



The "Uploaded Documents" section will be updated to confirm that the document was uploaded, then click on "Submit Bid"

TE/2022/04/0697/RFQ

STOP; TOP BUNK, OD 19.5 X HT 6.5 MM

⚠ Duplicate documents are not permitted

Mandatory Essential Non Essential Other

Drag & drop mandatory documents here

Open the file Browser Select File:  
Choose Files No file chosen

Upload Mandatory Documents

Uploaded Documents

Completed quote XYZ.pdf - Document Type: Mandatory Documents


Delete

Terms of Use

Information provided by the bidder through this portal constitute a binding bid submission/response and a commitment to deliver Transnet requirements. Kindly note that the system automatically ranks the outcome of the evaluation of price and BBBEE scoring based on the information provided. Pricing and BBBEE information provided is the responsibility of the bidder to ensure correctness and Transnet will only consider your latest submission made before the closing date.

← Back

→ Submit Bid



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### MY BID DOCUMENT SUBMISSIONS

Show 10 entries Search:

Tender Reference Number	Name	Date Submitted	Company Name	View Details
TE/2022/04/0697/RFQ	TE22-SRX-1FG-02068	4/8/2022 8:59:06 AM	Transnet Engineering	View Details

Showing 1 to 1 of 1 entries

Previous 1 Next

The screen will progress to "MY BID DOCUMENT SUBMISSION", where the "View Details" can be selected to confirm that all required information is submitted correctly.

# TRANSNET CAPITAL PROJECTS RICHARDS BAY

