Eskom	Standard	Transmission

Title: **TECHNICAL EVALUATION STANDARD FOR LINE INSULATORS**

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Content

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1. Introduction

The document is aimed at setting the standard technical evaluation criteria to be used when evaluating the tender submissions for glass cap and pin, composite longrod, composite post and porcelain insulators for Eskom. This document contains both the evaluation criteria used for desktop evaluation and factory evaluation and was compiled in accordance with [1].

2. Supporting clauses

2.1 Scope

This document covers the technical evaluation process and criteria for glass cap and pin and composite long rod insulators for systems with nominal voltages up to 765kV, and for porcelain and composite line post insulators for systems up to 400kV within Eskom Holdings SOC (Ltd).

2.1.1 Purpose

The document addresses the standard documented technical evaluation criteria to be used when evaluating tender submission for glass cap and pin and composite long rod insulators for systems with nominal voltages up to 765kV, and for porcelain and composite line post insulators for systems up to 400kV, in line with the Eskom Holdings SOC (Ltd) requirement.

2.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Divisions.

2.2 Normative/informative references

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] 32-1034 – Eskom procurement and supply chain management

[2] 240-77125772 Specification for Polymeric Longrod Insulators for AC Transmission Voltages of 220kV and above.

[3] 240-77125760 Glass Cap and Pin Insulators for ESKOM Transmission HVAC.

[4] ISO 9001 Quality Management Systems.

[5] 240-75883384- Specification for stay insulators porcelain or equivalent used for medium and low voltage overhead lines

[6] 240-75883166 Standard for Guy Strain Insulators for Overhead Distribution Systems

[7] 240-75883174- Specification for outdoor post and long rod insulator for new and refurbished power lines up to 33kV

[8] 240-75883896- Outdoor post and long rod insulators for new and refurbished power lines for 66kV and 132kV

[9] 240–75883900 - Outdoor low voltage insulators for new and refurbished power lines up to 1000 volts

[10] 240-75883140 - Specification for spindles and spindles with collar for distribution lines

[11] 240-75883164 - Hump back split pins for new and refurbished power lines up to 132kV.

[12] 240-131060721 - Standard for Line Post Insulators for 220kV and Above

[13] SANS 17025 - General requirements for the competence of testing and calibration laboratories

2.2.2 Informative

[14] 32-9 Definition of Eskom documents.

[15] 32-644 Eskom documentation management standard.

[16] 474-65 Operating Manual of the Steering Committee of Technologies (SCOT).

[17] QM 58 Supplier contract quality requirements specification.

2.3 Definitions

2.3.1 General

Definition	Description
Eskom Assessment Representative (s)	The person(s) appointed by Eskom to perform evaluation of tender/enquiry submission(s) in line with Eskom requirements.
Sliding Scale Points System	Refers to allocating maximum points to the tenderers whose value in question is higher according to the most superior performance amongst others and proportionally deducting points from those tenderers who are lower than that reference value.

2.3.2 Disclosure classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 Abbreviations

Abbreviation	Description
CAP	Committee for Accepted Products
DX	Distribution
GA	General Arrangement
GM	General Manager
HV	High Voltage
LAP	List of Accepted Products
n/a	Not Applicable
OEM	Original Equipment Manufacturer
OU	Operating Unit
PDE	Power Delivery Engineering
QC	Quality Control
TX	Transmission

2.5 Roles and responsibilities

The Line Insulation Care Group must ensure that this document is updated, renewed and current at all times.

2.6 Process for monitoring

Not applicable.

2.7 Related/supporting documents

Not Applicable

3. Technical tender evaluation procedure

The technical evaluation procedure is specific to each item type. The evaluation method has two main parts: desktop and factory evaluations. For items not previously evaluated, both parts may apply at Eskom's discretion. All items that have passed technical evaluation in the immediate previous enquiry or are currently being supplied shall not be technically evaluated again. Tender returnable must include a declaration by the prospective bidder confirming that their item has not been modified since their last bid, where applicable.

3.1 Desktop Evaluation

This evaluation exercise is performed by the Eskom evaluating representatives. This part of the evaluation starts when submissions are opened for the first time. It begins at evaluation of the mandatory criteria (Level 1), then proceeds to the scoring – Level 2, and refers to relevant Annex A Table for each item required.

The relevant test certificates together with the complete test reports shall be in English and shall be supplied to the purchaser in hardcopy and electronic format. The relevant product specific technical schedules shall be completed in full for each item and no spaces shall be left blank.

The Eskom assessment representatives will go through the details of the returnable submissions that are required and will ensure that all Level 1 qualification criteria are met. Submissions that obtain a "No" for any of the mandatory criteria (Level 1) will be disqualified.

Scoring in Level 2 consists of discretionary criteria and will be assessed out of 100 points. A Level 2 score of ≥90% will qualify for the factory assessment phase.

3.2 Factory assessment

This document details the procedure to be followed when conducting a factory assessment for insulators.

Technical evaluation criteria shall not necessarily involve factory evaluation. This shall be undertaken, where necessary, upon placement of the first order or post contract award.

Factory evaluation may be performed on the basis of assessing the supplier's capability to enter into a contract with Eskom with respect to a specific product or service.

The report produced and any actions that are listed or recommended as a result of this assessment, is by no means a confirmation or guarantee that any contract will be entered into by Eskom and the supplier or that post contract performance has been achieved.

Any actions undertaken by the supplier as a consequence of this report is for the suppliers' account. Any liability for the said actions undertaken by the supplier is not transferrable to Eskom in any way.

The assessment team has no authority or responsibility in the decision taken by Eskom with respect to contracting for a product or service.

Any statements, intentions and/or actions expressed by the assessment team during the assessment and post the assessment has no effect and does not constitute any liability to Eskom with regards to contract placement or post contract performance guarantees.

For any outstanding technical information requested by Eskom but not provided by the factory evaluation stage, the onus is on the supplier to produce such information at an agreed date depending on the nature of the requested information. Failure to do so may disqualify the affected product from being supplied to Eskom.

3.2.1 Scope

Eskom may do factory assessments to assess the ability and readiness of the supplier for supplying/manufacturing insulators for Eskom should the need arise. Additionally, if needed, items evaluated in the desktop evaluation may be assessed further at the factory together with any technical information that may have been omitted during the initial evaluation or requested on the part of the evaluating team.

Eskom assessment representative(s) will arrange a physical and/or virtual factory inspection for a supplier that has qualified for factory evaluation.

At the factory evaluation, the Eskom assessment representative(s) will conduct the assessment through the use of checklists as per Annex B. The checklists are used to verify capability of the factory to supply the required product and compliance to the equipment specification and tender submission documents. At the end of this exercise, the Eskom assessment representative(s) will list all the deviations on the evaluation document as applicable. The representative will conduct formal discussions of the deviations in line with Eskom's requirements. Herein, the Tenderer and/or their OEM shall indicate whether they agree or disagree to meet Eskom requirements upon contract award.

3.2.2 Purpose

Assessments are performed as part of the standard practice within Eskom to determine whether a supplier has the capability and capacity to manufacture the required product, from a business, technical and quality perspective. The assessment also confirms the supplier's compliance to the equipment specification and tender submission requirements. This document is intended to formalise the factory assessment procedure followed for the different equipment types being sought.

3.2.3 Changing of manufacturing facility or process after evaluation

If a supplier has passed the desktop criteria, and Eskom has evaluated and approved the manufacturing facility or process which the supplier has agreed to supply Eskom from, the supplier is not allowed to supply Eskom from any other facility/process without prior notification and approval. If, for whatever reason, the supplier wishes to supply Eskom with insulators from any facility other than the approved facility/process, additional design and type testing may be required and factory evaluation of the new facility may need to be conducted as and when required by Eskom.

3.2.4 Confidentiality

All information reviewed, observed, recorded during and reported as a result of this assessment will be treated as, and remains highly confidential. The procurement team and the supplier team will be the only parties included in the distribution list.

3.2.5 Assessment Methodology

The assessment will follow a documented supplier capability and capacity assessment criteria as shown in Annexure B. These criteria are intended to assess the technical capabilities of the supplier and the product offered for tender to ensure it meets the tender requirements. During the assessment the following areas are evaluated in detail:

- Work Systems
- Operation – Manufacturing methods
- Technical Infrastructure
- Design Practices and Application
- Testing Facility and Practices
- Research and Development capabilities

The factory will be scored according to the criteria outlined in the Table 1 below.

Table 1: Factory evaluation thresholds

<80%	Total non-compliance to the agreed requirements
80%≤Score<90%	Major deviation to the agreed requirements
90%≤Score<100%	Minor deviation to the agreed requirements
100%	No deviation to the agreed requirements / fully compliant

All deviations and non-compliance to agreed requirements will need to be rectified for the factory to be approved by ESKOM.

4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Gavin Strelec	Chief Engineer – Research, Testing and Development
Nishal Mahatho	Senior Consultant – Research, Testing and Development
Fernando Witbooi	Chief Technologist – Transmission, HV Plant Engineering
Kevin Kleinhans	Chief Engineer – Transmission, HV Plant Engineering
Jason Blaauw	Senior Engineer – Distribution, Standards Implementation
Sanjay Narain	Chief Engineer – Transmission, Line Engineering Services
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5. Revisions

Date	Rev	Compiler	Remarks
Sep 2023	5	K Ramharak	Alignment to Memo for “Simplified Technical Evaluation Process of Equipment Commodity Suppliers” issued 19/03/2023 by Tx Management concerning: • Previously accepted products • Factory evaluations not being mandatory
Nov 2022	4	K Ramharak	Normative reference 6 added for guy strain insulators for Overhead Distribution Systems Section 3.1 and 3.2 revised All tables in Annex A and B revised: • Table A.4 added to Annex A • Mandatory technical requirements compliance in Annex A changed from points allocation to a Yes/No option and weightings removed. • Transmission and Distribution insulator requirements and Tables updated.

Date	Rev	Compiler	Remarks
Aug 2018	3	K Ramharak	New standard for transmission line post insulators required Table A1 weights and score adjusted Evidence of corona gradient at both live & dead ends ≤ 0.42kV/mm moved from Level 1 to Level 2 requirement Transmission Post insulator spec to be added in the references and relevant Annex Table Minor formatting changes Design and Type Test Reports Verification at factory assessment stage
April 2016	2	S Zikhali	Including 1000hr or 5000hr Test as a mandatory requirement. Changed the evaluation criteria to 100point and that can be attained from the 80 points Level1 and 20 points Level 2
Oct 2014	1	R Nel	New document required for latest specification

6. Development team

The following people were involved in the development of this document:

- K. Ramharak
- S. Narain
- R. Khan
- J. Blaauw
- G. Strelec

7. Acknowledgements

The Line Insulation Care Group members are acknowledged for their input in reviewing this document.

Annex A – Insulator(s) technical evaluation criteria for initial evaluation

Table A.1: Composite Insulator(s) (220kV and above) technical evaluation criteria for desktop exercise

Specification Referred to	[2] 240-77125772 Specification for Polymeric Longrod Insulators for AC Transmission Voltages of 220kV and above.
Voltage Class Referred to	All items

1. Level-1 Basic Compliance: Tender Deliverables and Mandatory Technical Requirements

Activity	Clause in [2]	Compliance	Qualification Criteria
1.1.1 Is the completed Technical Schedule correctly submitted?	Annex A Schedule A	Yes/No	Mandatory requirement
1.1.2 Is the test report matrix completed, relevant and submitted?	Annex A Schedule B i.e. for each specific item	Yes/No	Mandatory requirement
1.1.3 Proof submitted that all required Design and Type testing has been performed at an accredited test facility [13] OR 1.1.4 At the factory and witnessed by an accredited body and supporting information supplied	Annex A Schedule B i.e. for each specific item	Yes/No	Mandatory requirement
1.1.5 Product meets ESKOM requirements as stipulated in Technical Schedule. No deviations found or deviations identified during detailed evaluation are considered minor i.e. negligible impact on technical and economic performance for the full product life-cycle and/or considered correctable before contract award	Annex A Schedule C i.e. for each specific item	Yes/No	Mandatory requirement

Note:
List of deviations and missing information to be made by evaluator for all sections evaluated.

2. **Level 2 – Scoring/Rating on discretionary items (only submission that passes Level 1)**

Activity	Clause in [2]	Weight	Score
2.1.1 Proof of 10 years manufacturing experience (at relevant voltages or one class lower)	Sect. 9 (v)	10	10 if > 10 years 5 if > 5 years 2 if < 5 years
2.1.2 Transport, Handling, Storage and Installation Guidelines	Sect. 9 (vi)	10	0 – No information 5 – Partial Information 10 – Complete Information

Activity	Clause in [2]	Weight	Score
2.1.3 Ability to provide samples letter	Sect. 9 (viii)	5	0 – No information 5 – Acceptable Information
2.1.4 Detailed Drawings provided	Sect. 3.4.2	25	0 – No drawing 10 – Partial itemised drawing 25 – Complete itemised drawing
2.1.5 Production capacity letter	Sect. 9 (x)	5	0 – No information 5 – Acceptable Information
2.1.6 Allowance for manufacturing, inspections and witnessing of tests letter	Sect. 9 (xi)	5	0 – No information 5 – Acceptable Information
2.1.7 Confirmation that offered product complies fully with IEC 61109 and IEC 62217 requirements, especially Table 1 of IEC 61109.	Sect. 5.1	20	0 – No information 10 – Partial information 20 - Acceptable Information
2.1.8 Sample of QITP for the routine testing	Sect. 3.4.3	5	0 – No information 5 – Acceptable Information
2.1.9 Delivery schedules adherence letter	Sect. 9 (vii)	5	0 – No information 5 – Acceptable Information
2.1.10 Evidence of corona gradient at both live & dead ends ≤ 0.42kV/mm	Annex A, Schedule B Item (7)	10	0 – No information 5 – Partial information 10 – Acceptable Information

Table A.2: Glass Insulator(s) technical evaluation criteria for desktop exercise

Specification Referred to	[3] 240-77125760 Glass Cap and Pin Insulators for ESKOM Transmission HVAC.		
Voltage Class Referred to	All items		
1. Level-1 Basic Compliance: Tender Deliverables and Mandatory Technical Requirements			
Activity	**Clause in [3]**	**Compliance**	**Qualification Criteria**
1.1.1 Proof of 10 years manufacturing experience	Sect. 9 (d)	Yes/No	Mandatory requirement
1.1.2 Is completed Technical Schedule submitted?	Annex A i.e. for each specific items	Yes/No	Mandatory requirement
1.1.3 Is the test report summary sheet completed and submitted together with all the required test reports and other requested information?	Annex A Schedule B i.e. for each specific items	Yes/No	Mandatory requirement
1.1.4 Proof of Failure rate Failure rate of <1 per 10000 pieces from ≥3 referees	Sect. 8 (f)	Yes/No	Mandatory requirement
1.1.5 Proof submitted that all required Design and Type testing has been performed at an accredited test facility [13] OR 1.1.6 At the factory and witnessed by an accredited body and supporting information supplied	Sect. 8 (l)	Yes/No	Mandatory requirement

Activity	Clause in [3]	Compliance	Qualification Criteria
1.1.7 Product meets ESKOM requirements as stipulated in Technical Schedule. No deviations found or deviations identified during detailed evaluation are considered minor i.e. negligible impact on technical and economic performance for the full product life-cycle and/or considered correctable before contract award?	Annex A Schedule C i.e. for each specific items	Yes/No	Mandatory requirement
Note: List of deviations and missing information to be made by evaluator for all sections evaluated.			

2. **Level 2 – Scoring/Rating on discretionary items (only submission that pass Level 1)**

Activity	Clause in [3]	Weight	Score
2.1.1 Certificates of origin of raw materials	Sect. 8 (h)	20	20 – full range of raw material covered 10 – partial coverage 0 – no information
2.1.2 Transport, Handling, Storage and Installation Guidelines	Sect. 8 (i)	10	0 – No information 5 – Acceptable Information 10 – Detailed Information
2.1.3 Ability to provide samples letter	Sect. 8 (m)	5	0 – No information 5 – Acceptable Information
2.1.4 Detailed Drawings provided	Sect. 5	25	0 – No drawing 10 – Partial itemised drawing 25 – Complete itemised drawing
2.1.5 Production capacity letter	Sect. 8 (x)	5	0 – No information 5 – Acceptable Information
2.1.6 Allowance for manufacturing, inspections and witnessing of tests letter	Sect. 8 (xi)	5	0 – No information 5 – Acceptable Information
2.1.7 Supplied Type tests certificates	Sect. 4.1	10	10 if tests < 5 years 5 if tests ≥ 5 years 0 if tests ≥ 10 years

Table A.3: Composite Line Post Insulator(s) technical evaluation criteria for desktop exercise

Specification Referred to	[12] 240-131060721 - Standard for Line Post Insulators for 220kV and Above [2] 240-77125772 Specification for Polymeric Longrod Insulators for AC Transmission Voltages of 220kV and above.
Voltage Class Referred to	220kV and above

1. Level-1 Basic Compliance: Tender Deliverables and Mandatory Technical Requirements

Activity	Clause in [12]	Compliance	Qualification Criteria
1.1.1 Is the completed Technical Schedule correctly submitted?	Annex A Schedule C	Yes/No	Mandatory requirement
1.1.2 Is the test report matrix completed, relevant and submitted?	Annex A Schedule B i.e. for each specific items	Yes/No	Mandatory requirement
1.1.3 Proof submitted that all required Design and Type testing has been performed at an accredited test facility [13] OR 1.1.4 At the factory and witnessed by an accredited body and supporting information supplied	Sect. 4.1.3	Yes/No	Mandatory requirement
1.1.5 Product meets ESKOM requirements as stipulated in Technical Schedule. No deviations found or deviations identified during detailed evaluation are considered minor i.e. negligible impact on technical and economic performance for the full product life-cycle and/or considered correctable before contract award?	Annex A Schedule A i.e. for each specific items	Yes/No	Mandatory requirement

Note:
List of deviations and missing information to be made by evaluator for all sections evaluated.

2. **Level 2 – Scoring/Rating on discretionary items (only submission that pass Level 1)**

Activity	Clause in [12], [2]	Weight	Score
2.1.1 Proof of 10 years manufacturing experience (at relevant voltages or one class lower)	Sect. 4.1.5	10	10 if > 10 years 5 if > 5 years 2 if < 5 years
2.1.2 Transport, Handling, Storage and Installation Guidelines	Sect. 7	10	0 – No information 5 – Partial Information 10 – Complete Information
2.1.3 Ability to provide samples letter	Sect. 9 (viii) in [2]	5	0 – No information 5 – Acceptable Information
2.1.4 Detailed Drawings provided	Sect. 4.1.2	25	0 – No drawing 10 – Partial itemised drawing 25 – Complete itemised drawing

Activity	Clause in [12], [2]	Weight	Score
2.1.5 Production capacity letter	Sect. 3.2	5	0 – No information 5 – Acceptable Information
2.1.6 Allowance for manufacturing, inspections and witnessing of tests letter	Sect. 9 (xi) in [2]	5	0 – No information 5 – Acceptable Information
2.1.7 Confirmation that offered product complies fully with IEC 61952 and IEC 62217 requirements, especially Table 1 of IEC 61952.	Sect. 4.1.3	20	0 – No information 10 – Partial information 20 - Acceptable Information
2.1.8 Sample of QITP for the routine testing	Sect. 3.4.3 in [2]	5	0 – No information 5 – Acceptable Information
2.1.9 Delivery schedules adherence letter	Sect. 9 (vii) in [2]	5	0 – No information 5 – Acceptable Information
2.1.10 Evidence of corona gradient at both live & dead ends ≤ 0.42kV/mm	Annex A, Schedule A Item (3.23)	10	0 – No information 5 – Partial information 10 – Acceptable Information

Table A.4: Stay Insulator(s) technical evaluation criteria for desktop exercise

Specification Referred to	[5] 240-75883384- Specification for stay insulators porcelain or equivalent used for medium and low voltage overhead lines [6] 240-75883166 Standard for Guy Strain Insulators for Overhead Distribution Systems
Voltage Class Referred to	Up to and including 33kV

1. Level-1 Basic Compliance: Tender Deliverables and Mandatory Technical Requirements

Activity	Clause in [5],[6]	Compliance	Qualification Criteria
1.1.1 Is completed Technical Schedule submitted?	3.1 of this standard	Yes/No	Mandatory requirement
1.1.2 Is the Design and type tests submitted?	Annex B	Yes/No	Mandatory requirement
1.1.3 Has the drawing for item submitted?	3.1.4 / 3.7	Yes/No	Mandatory requirement
1.1.4 Is all required information (test certificates) submitted in English?	3.1 of this standard	Yes/No	Mandatory requirement

2. Level 2 – Scoring/Rating on discretionary items (only submission that pass Level 1)

Activity	Clause in [5],[6]	Weight	Score
2.1.1 Acceptable design and Type tests certificates and Characteristic curves	3.2 / 3.9	90	0 – Not Acceptable 90 – Acceptable
2.1.2 Packaging, Transport and Storage information	3.3 / 3.10	10	0 – No information 10 – Detailed Information

Table A.5: Porcelain LV Insulator(s) technical evaluation criteria for desktop exercise

Specification Referred to	[9] 240–75883900 - Outdoor low voltage insulators for new and refurbished power lines up to 1000 volts
Voltage Class Referred to	Up to and including 1kV

1. Level-1 Basic Compliance: Tender Deliverables and Mandatory Technical Requirements			
Activity	**Clause in [9]**	**Compliance**	**Qualification Criteria**
1.1.1 Is completed Technical Schedule submitted?	Annex B	Yes/No	Mandatory requirement
1.1.2 Is the Design and type tests submitted?	4	Yes/No	Mandatory requirement
1.1.3 Has the drawing for item submitted?	3.6	Yes/No	Mandatory requirement
1.1.4 Is all required information (test certificates) submitted in English?	4.2	Yes/No	Mandatory requirement

2. Level 2 – Scoring/Rating on discretionary items (only submission that passes Level 1)			
Activity	**Clause in [9]**	**Weight**	**Score**
2.1.1 Acceptable design and Type tests certificates and Characteristic curves	4	90	0 – Not Acceptable 90 – Acceptable
2.1.2 Packaging, Transport and Storage information	3.9 and 3.10	10	0 – No information 10 – Detailed Information

Table A.6: Porcelain MV Insulator(s) technical evaluation criteria for desktop exercise

Specification Referred to	[7] 240-75883174- Specification for outdoor post and long rod insulator for new and refurbished power lines up to 33kV
Voltage Class Referred to	Up to and including 33kV

1. Level-1 Basic Compliance: Tender Deliverables and Mandatory Technical Requirements			
Activity	**Clause in [7]**	**Compliance**	**Qualification Criteria**
1.1.1 Is completed Technical Schedule submitted?	3	Yes/No	Mandatory requirement
1.1.2 Is the Design and type test submitted?	4.2	Yes/No	Mandatory requirement
1.1.3 Has the drawing for item submitted?	3.6	Yes/No	Mandatory requirement
1.1.4 Is all required information (test certificates) submitted in English?	4.1.3	Yes/No	Mandatory requirement

2. Level 2 – Scoring/Rating on discretionary items (only submission that passes Level 1)			
Activity	**Clause in [7]**	**Weight**	**Score**
2.1.1 Acceptable design and Type tests certificates and Characteristic curves	4.2	90	0 – No information 90 – Detailed Information
2.1.2 Packaging, Transport and Storage information	3.14 and 3.15	10	0 – No information 10 – Detailed Information

Table A.7: Composite MV Insulator(s) technical evaluation criteria for desktop exercise

Specification Referred to	[7] 240-75883174- Specification for outdoor post and long rod insulator for new and refurbished power lines up to 33kV
Voltage Class Referred to	Up to and including 33kV

1. Level-1 Basic Compliance: Tender Deliverables and Mandatory Technical Requirements			
Activity	**Clause in [7]**	**Compliance**	**Qualification Criteria**
1.1.1 Is completed Technical Schedule submitted?	3	Yes/No	Mandatory requirement
1.1.2 Is the Design and type test submitted?	3	Yes/No	Mandatory requirement
1.1.3 Has the drawing for item submitted?	4.2	Yes/No	Mandatory requirement
1.1.4 Is all required information submitted in English?	4.1.3	Yes/No	Mandatory requirement
2. Level 2 – Scoring/Rating on discretionary items (only submission that passes Level 1)			
Activity	**Clause in [7]**	**Weight**	**Score**
2.1.1 Acceptable design and Type tests certificates and Characteristic curves	5.2	90	0 – No information 90 – Detailed Information
2.1.2 Packaging, Transport and Storage information	3.14 and 3.15	10	0 – No information 10 – Detailed Information

Table A.8: Composite HV Insulator(s) technical evaluation criteria for desktop exercise

Specification Referred to	[8] 240-75883896- Outdoor post and long rod insulators for new and refurbished power lines for 66kV and 132kV
Voltage Class Referred to	66kV up to and including 132kV

1. Level-1 Basic Compliance: Tender Deliverables and Mandatory Technical Requirements (Weight 80 points)			
Activity	**Clause in [8]**	**Compliance**	**Qualification Criteria**
1.1.1 Is completed Technical Schedule submitted?	3.1	Yes/No	Mandatory requirement
1.1.2 Is the Design and type test submitted?	4	Yes/No	Mandatory requirement
1.1.3 Has the drawing for item submitted?	3.1.6	Yes/No	Mandatory requirement
1.1.4 Is all required information submitted in English?	3.1	Yes/No	Mandatory requirement
2. Level 2 – Scoring/Rating on discretionary items (only submission that passes Level 1) **(Weight 20 points)**			
Activity	**Clause in [8]**	**Weight**	**Score**
2.1.1 Acceptable design and Type tests certificates and Characteristic curves	5.2	90	0 – No information 90 – Detailed Information
2.1.2 Packaging, Transport and Storage information	3.15 and 3.16	10	0 – No information 10 – Detailed Information

Annex B – Generic Factory evaluation criteria

No:	Technical Questions	Score	Criteria	Evidence and comments
1	**Work Systems**	**-30**		
1.1	Works procedures and instructions: a. What ISO standards are used b. Are the ISO accreditations up to date		If both in place and documents are traceable and up to date then = 0 If either 'a' or 'b' are omitted = -4 None = -6	
1.2	Continuous improvement and International compliance: Do they comply fully to the normative/governing IEC/SANS/IEEE standards and any additional requirements as stipulated in the applicable Eskom Specification for each equipment being assessed.		Full Compliance = 0 Minor deviation = -2 Major deviation/non-compliance = -4 Non-compliance to Eskom specs and governing standards = -6	
1.3	Quality control plans and systems (PQPs) (choose one of each)		QCP's and PQP's in place and traceable = 0 QCP's and PQP's in place = -2 Some QCP's and PQP's in place = -4 None in place = -6	
1.4	Inspections, audits and reviews (choose one of each)		All inspections, audits and reviews in place, up to date and traceable = 0 All inspections, audits and reviews in place = -2 Some inspections, audits and reviews in place = -4 None in place = -6	
1.5	Staff training and accreditation systems and controls What training do they offer their staff? Who are they accredited with? (choose minimum 2 random staff members)		Staff trained and accredited, and traceable = 0 Staff trained and traceable = -2 Staff trained = -4 Staff not trained = -6	

2	**Operation – Manufacturing methods**	**-66**		
2.1	What base materials are used, and how is it checked?		All base material quality checked, handled, stored and catalogued correctly, and is traceable = 0 All base material quality checked, stored and catalogued correctly = -2 Some of the above checks not done = -4 No tracing of base material, or stored incorrectly = -6	
2.2	For components/materials manufactured in-house- How is quality controlled?		All manufactured materials- quality checked, handled, stored and catalogued correctly, and is traceable = 0 All manufactured materials, stored and catalogued correctly = -2 Some of the above checks not done = -4 No tracing of manufactured materials, or stored incorrectly = -6	
2.3	If corona rings are applicable, how is it checked? Are installation guides supplied for corona rings? Please include short circuit kA/s ratings.		All corona rings quality checked, handled, stored and catalogued correctly and includes kA/s rating, and is traceable = 0 If corona rings N/A = 0 Some of the above checks not done = -4 No tracing of corona rings, or stored incorrectly = -6	
2.4	Which metallic parts are used, and how is it checked?		All metallic parts quality checked, handled, stored and catalogued correctly, and is traceable = 0 All metallic parts quality checked, stored and catalogued correctly = -2 Some of the above checks not done = -4 No tracing of metallic parts, or stored incorrectly = -6	

2.5	What is the quality and availability of test reports?		Test certificate has all relevant data, easy to read and understand, signed off by authorised personnel and is traceable = 0 Test certificate has all relevant data, easy to read and understand, signed off by authorised personnel = -2 Test certificate has relevant data, not signed off by authorised personnel = -4 Test certificates do not display all relevant criteria = -6	
2.6	What is the supplier's estimate of current capacity limit of the insulator?		Can meet on time delivery for our unit = 0 Some potential delays for the production of our unit = -3 Major delays anticipated = -6	
2.7	Are there any bottlenecks in the manufacturing process? (e.g., test bay, moulding, baking, etc.)		Can meet on time delivery for our units = 0 Some potential delays for the production of our unit = -3 Major delays anticipated = -6	
2.8	Does the supplier intend to make use of a substitute factory if capacity increase is required? If so, has it been evaluated for this project?		Yes, fully accredited = 0 Yes, not accredited yet = -6	
2.9	How has the supplier expedited orders if required?		Adequate process to fast-track orders, and is traceable = 0 Adequate process to fast-track orders = -2 Process exists, but needs improvement = -4 No process = -6	
2.10	Plant Capacity: can the factory provide the commodity according to Eskom's specification		Aligns completely to Eskom specifications = 0 Partially aligns to Eskom specifications = -3 Doesn't align to Eskom specifications = -6	
2.11	What are factory failure rates for the last 5 years and how is daily limit managed if exceeded?		Less than 1%, and traceable = 0 Less than 1% = -2 Between 1-2% = -4 Greater than 2% = -6	

3	**Technical Infrastructure**	**-18**		
3.1	What manufacturing equipment/tools does the supplier have, who manufactures this equipment, what is the capacity of this equipment?		Equipment/tools bought from accredited and known manufacturers, and traceable = 0 Equipment/tools bought from accredited and known manufacturers but not traceable = -2 Some equipment/tools bought from accredited and known manufacturers = -4 Equipment/tools bought from unrecognised manufacturers = -6	
3.2	How are supervisors and workers trained on handling equipment?		Certificate or accreditation, and traceable = 0 Certificate or accreditation = -2 Some workers accredited, certified = -4 No certificate or accreditation = -6	
3.3	What is the maintenance operating model for the production line?		Complete maintenance records, and traceable = 0 Complete maintenance records = -2 Incomplete maintenance records, procedures = -4 Limited/no maintenance records = -6	
4	**Design Practices and Application**	**-72**		
4.1	Please describe your design criteria basis and guidelines – Electrical, Mechanical		Clear tools and software for designs = 0 Have tools (software) available, however no clear philosophy on how tools are employed = -2 Have tools only = -4 No philosophy = -6	

4.2	What is the design team's composition/structure, numbers, experience levels?		Engineer has >10 years' experience in design, CVs, certifications are current = 0 Engineer has 5-10 experience in design, CVs and/or certifications are not current = -3 No CVs, certifications = -6	
4.3	Please provide design process flowchart / systems for similar products		Up to date flowchart = 0 Flowchart not current = -3 No flowchart = -6	
4.4	How do you ensure internal design verification/ validation as part of your design process?		Authorised person checks and signs off design = 0 No checks, self-release = -6	
4.5	What is the process to deal with design change requests (concession), internal or external?		Formalised design review process that includes customer, internal personnel and design expert, plan and schedule = 0 No formalised design review process = -6	
4.6	Following final design approval, how is the final design linked to the manufacturing process?		Approved inspection and test plans include hold points to verify execution of design = 0 No monitoring system = -6	
4.7	Are the engineering tools used for the relevant designs calibrated and/or up to date?		Tools are certified and up to date, calibration, software updates – must be of the latest version, user accreditation must be current = 0 Some certifications of tools, software, user has accreditation but not of latest value = -3 No certified tools = -6	
4.8	How do you ensure continuous development of staff with respect to design systems and philosophy? (i.e., software and manually)		Training programme for all involved staff, individual development plans for staff, adequate and up to date learning = 0 Training programme exists process not adequate = -3 No continuous development = -6	

4.9	How does the system flag excursions outside internal design rules? E.g. non-standard design outside the internal design capability		Flags excursions, calibration is current = 0 Flags some but not all = -3 No excursions flagged, not calibrated properly = -6	
4.10	As design technology backup, who are your technology partners?		Aligned with accredited institutions = 0 Not aligned with accredited institutions = -3 None = -6	
4.11	How do you support/co-ordinate the use of academic/research institutions for technology support, if any?		Clear functional role and responsibilities, collaboration with universities (i.e., sponsorship of students) = 0 No = -6	
4.12	How do you support/co-ordinate external partners for component manufacturers, if any?		Clear functional role and responsibilities, collaboration with manufacturers = 0 No = -6	
5	**Testing Facility and Practices**	**-60**		
5.1	Please provide proof of calibration of all test equipment		Calibrated within date, done by accredited person, and traceable = 0 Calibrated within date, done by accredited person = -2 Not calibrated = -6	
5.2	Test capabilities		Fully capable of performing sample and routine tests, and is traceable = 0 Fully capable of performing sample and routine tests, and is not traceable = -2 Capable of performing routine tests only = -4 Cannot perform any tests = -6	
5.3	Electrical in-house testing (if applicable)		Within required standards, and traceable = 0 If N/A = 0 Within required standards but not traceable = -2 Not within required standards = -6	

5.4	Mechanical in-house testing		Within required standards and traceable = 0 Within required standards but not traceable = -2 Not within required standards = -6	
5.5	Dimensional verification checking		Within required standards, and traceable = 0 Within required standards but not traceable = -2 Not within required standards = -6	
5.6	Test object laboratory setup		Within required standards, and traceable (or N/A) = 0 Not within required standards = -6	
5.7	RIV tests (if applicable)		Within required standards, and traceable (or N/A) = 0 If N/A = 0 Not within required standards = -6	
5.8	Reports, timeousness, quality thereof		All test reports produced immediately, checked by accredited person, and is traceable = 0 All test reports produced immediately, not checked by accredited person and is traceable = -2 Test reports produced but not accredited nor traceable = -4 No test report available = -6	
5.9	Is the test bay area closed off?		Yes = 0 Partially closed off = -3 Not closed off = -6	moved from section 2
5.10	Clean conditions in workshop		Clean-room environment (dust-free, static-free) = 0 Workshop is clean overall = -2 Workshop is fairly clean = -4 Workshop not clean = -6	moved from section 2

6	**Research and Development capabilities**	**-24**		
6.1	Do you own your R&D? If not, who are R&D partners?		In-house R&D exists= 0 No in-house R&D = -6	
6.2	How is R&D triggered in your organisation?		Clear triggers for R&D – optimising for performance or cost, continuous improvement (e.g. new materials, component designs), and traceable = 0 Clear triggers for R&D – optimising for performance or cost, continuous improvement but not traceable = -2 R&D supported, but no clear mandate = -4 No support or mandate for R&D = -6	
6.3	What initiatives are you pursuing to introduce new technology		Pursuing newest technology actively = 0 No research into the new technology = -6	
6.4	Do you outsource your designs? How much of your designs are outsourced? What controls are in place		Do not outsource = 0 Outsource, accredited and validation should be current, controls should be in place = 0 Outsource but not accredited and validation, no clear controls = -6	