

 Eskom	Standard	Technology
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CRITERIA FOR MV/LV CABLE
WORK**

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1. Introduction

The technical evaluation of contractors is typically done by the Standards Implementation (SI) department within each Operating Unit (OU). The problem however is that the SI departments in the various OUs each use their own criteria when doing these evaluations, which led to contractors not being accepted as approved in certain OUs, when not evaluated in another OU. The need therefore arose to standardise on the criteria used to evaluate contractors throughout all the SI departments.

2. Supporting Clauses

2.1 Scope

This document sets out the standardised criteria to be used when evaluating MV/LV Cable system work.

2.1.1 Purpose

The purpose of this document is to ensure that all technical evaluators use the same method when evaluating contractors for the construction of MV and LV Cable system networks.

2.1.2 Applicability

This document shall apply to Standards Implementation departments across all Operating Units within Eskom Holdings Limited when performing Technical Evaluations for MV and LV Cable contractors. These contractors can either be used to perform cable work on a Minor contract or a Reticulation contract.

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] ISO 9001 Quality Management Systems.

2.2.2 Informative

None

2.3 Definitions

2.3.1 General

Definition	Description
LV Cable Work	Cable trenching, backfilling and compaction, laying of LV Cables, LV terminating and jointing, installation of ground mounted LV kiosks and metering kiosks.
Minor	Project costs below R 1 m. This will include labour and material costs.
MV Cable Work	Cable trenching, laying of MV cables, Backfilling and compaction, installation of miniature substations and ring Main Units.

2.3.2 Disclosure classification

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

2.4 Abbreviations

Abbreviation	Description
CIDB	Construction Industry Development Board
DBOUS	Design Base and Operating Unit Support
DOL	Department of Labour
OU	Operating Unit
PDE	Power Delivery Engineering
SAQA	South African Qualifications Authority
SCOT	Steering Committee of Technology
SI	Standards Implementation

2.5 Roles and responsibilities

The SI Managers in the various Operating Units shall ensure that this technical evaluation document is implemented. The process will be initiated by Commercial when required. It is commercial's responsibility to ensure that this document is made available to the tenderers. The tenderer shall ensure that they comply with these criteria.

2.6 Process for monitoring

The document shall be reviewed as and when required to be in line with the best technological practices and Government's procurement policies.

2.7 Related/supporting documents

Not applicable.

3. Technical Evaluation criteria for contractors constructing MV and or LV cable networks

The evaluation criteria described in the following sections should be used to evaluate any service provider that wishes to provide the service for: construction, refurbishment, dismantling, joining and termination of MV and or LV cable networks. The technical evaluation process will consist of two stages i.e. 1: document review stage and 2: verification stage. If the tenderer have passed all requirements specified in this document, then at contract award stage evidence will have to be submitted for PDE Scot Website access, MV/LV OU specific authorizations, calibration certificates for tools and instruments, proof of registration as Electrical Contractor (DOL).

3.1 Document Review Requirements

During the Document review stage, the tenderer will be required to submit supporting documents illustrating competence to perform the required scope of work. The requirements are grouped into 5 categories i.e. general requirements, training requirements, tools & equipment, vehicles as well as related experience.

3.1.1 General requirements

The general requirements to be met by tender submissions are specified in Table 1 and Table 2 below. Certified copies of the required documentation should be included in the submission. Point allocations and the minimum threshold are specified in the table.

Table 1: General Requirements for LV cable networks

General Requirements				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	Department Of Labour Registration for your Company as an Electrical Contractor (ECB).	1		Valid Department of Labour ECB Registration Certificate for your Company = 1 point.
2	Eskom Distribution Technology (PDE) website access.	1		Valid letter from Eskom confirming access to Website. Proof of Fee payment =1.
3	Do you have contracted skills available to perform jointing and termination of LV cables?	1		Submit proof of subcontracting agreement or proof of approved jointer.
4	Do you have contracted skills available to perform directional moulding?	1		Submit proof of subcontracting agreement
5	Did you submit a signed declaration letter to confirm that all information submitted for this tender is accurate and just?	1		1 Point to be awarded for a declaration signed by company owner.
	Minimum score	4		To meet the minimum requirements for this sections, a tender submission have to obtain the minimum score of 4 points.

Table 2: General Requirements for MV Cable networks

General Requirements				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	Department Of Labour Registration for your Company as an Electrical Contractor (ECB).	1		Valid Department of Labour ECB Registration Certificate for your Company = 1 point.
2	Eskom Distribution Technology (PDE) website access.	1		Valid letter from Eskom confirming access to Website. Proof of Fee payment =1.
3	Do you have contracted skills available to perform jointing and termination of MV cables?	1		Submit proof of subcontracting agreement or proof of approved jointer.
4	Do you have contracted skills available to perform directional moulding?	1		Submit proof of subcontracting agreement
5	Did you submit a signed declaration letter to confirm that all information submitted for this tender is accurate and just?	1		1 Point to be awarded for a declaration signed by company owner.
	Minimum score	4		To meet the minimum requirements for this sections, a tender submission have to obtain the minimum score of 4 points.

3.1.2 Training requirements

All Training requirements with point allocations and minimum score required are specified in Table 3 and Table 4 below. Certified copies of training certificates from accredited training providers must be included in the tender submission.

Table 3: Training requirements for LV Cable networks

Training requirements				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	LV cable network construction module ELW12	3 (10 max)		One point will be awarded for each valid training certificate for ELW12.
2	ORLVS Course Certificate	1(4max)		Valid ORLVS Certificate (At least one set of valid certificates per team) – Applicable for working on LV networks.
3	Crane Operator	1(4max)		Valid crane operator Certificate. (At least one certificate per vehicle mounted crane).
4	Construction regulations training	1(4max)		1 point shall be awarded for each Course certificate submitted as proof.
	Minimum score	5		To meet the minimum requirements for this sections, a tender submission have to obtain the minimum score of 5 points.

Table 4: Training requirements for MV Cable networks

Training requirements				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	LV cable network construction module ELW12	3(10max)		One point will be awarded for each valid training certificate for ELW12.
2	ORHVS HVO 03a, 3b and 3c OR HVO 04 Course Certificate	1(4max)		Valid ORHVS (HV03a,b and c or HV04) Certificate (At least one set of valid certificates per team) – Applicable for working on MV networks.
3	Crane Operator	1(4max)		Valid crane operator Certificate. (At least one certificate per vehicle mounted crane).
4	Construction regulations training	1(4max)		1 point shall be awarded for each Course certificate submitted as proof.
	Minimum score	6		To meet the minimum requirements for this sections, a tender submission have to obtain the minimum score of 5 points.

3.1.3 Tool and equipment requirements

Tools and equipment is essential for execution of work. Tools and equipment can either be hired or owned, but this should be indicated in Table 5 below. The required tools and equipment, scoring system and minimum scoring required are specified in this table.

Table 5: Tool and equipment requirements

Tools & equipment:				
No.	Description of Item	Cable Work		Source of Evidence
		Minimum	Actual	Equipment can either be owned or hired
1	Barricading	1 (4max)		Round bar beam, fencing or orange netting with steel or wooden pole struts for trenches. The applicable score (1) will be awarded for each set of barricading equipment that can cover 300m of trenching.
2	Shoring equipment	1 (4max)		Timber, steel supports, struts as per construction regulations. The applicable score (1) will be awarded for each set of shoring equipment that can cover 300m of trenching.
3	Road crossing steel plates (with hoisting equipment) – Heavy vehicular traffic.	1 (4max)		One point will be awarded for each set of plates that can cover a road of 8m.
4	Trench crossing walkways for pedestrians / light vehicular traffic (driveways etc.)	1(4max)		One point will be awarded for each set of plates that can cover a driveway of 4m.
5	Road traffic signage	2 x Each to obtain full points(2)		<ul style="list-style-type: none"> Road works/construction ahead lane closed/road narrowing, detour, no through road, road closed, chevrons, stops signs, flag men, Stop/go. Note: 2 of each signs are required.
6	Hand excavation tools.	2 x picks 2x Spades to obtain full point (2)		Confirmation of availability 2 x picks and 2 x beaded spades.
7	Mechanical excavator (machine)	1 (2max)		Confirmation of availability.
8	Jackhammers	1 (2max)		Confirmation of availability.
9	Tar (asphalt) / concrete road surface cutter (angle grinder).	1 (2max)		Confirmation of availability.
10	Hand compacting tools (stampers)	2 (4max)		Confirmation of availability.
11	Mechanical compacting machinery ('rammer'/'wacker'/'Roller').	1 (2max)		Confirmation of availability.
12	Soil compaction testing equipment (DCPs)	1 (2max)		Confirmation of availability of Dynamic Cone penetrometer.
13	A.C. (230V) generators (for lighting, bentonite mixing equipment, portable test equipment, etc.).	1 (2max)		Confirmation of availability.
14	Submersible water pump	1 (2max)		Confirmation of availability.
15	Equipment for punching labels onto Al/Cu plates. Stencils.	1 (2max)		Confirmation of availability.
16	Cast in situ concrete formwork.	1 (2max)		Confirmation of availability.

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Tools & equipment:

No.	Description of Item	Cable Work		Source of Evidence
		Minimum	Actual	Equipment can either be owned or hired
17	Cable trailers (with hydraulic jacks etc.)	1 (2max)		Confirmation of availability.
18	Cable winch, dynamometer (pulling strain), jack stands and steel rope.	1(2max)		Confirmation of availability.
19	Cable bond pulling and nose pulling (pulling eye / pulling socks) equipment.	2(4max)		Confirmation of availability.
20	Cable rollers and skids (sufficient for every 2m of cable installed). What is the length of cable that can be pulled at one time?	3(5max)		The applicable score (1) will be awarded for every 100 meters cover i.e. 50 rollers.
21	Cable corner/guide rollers (sufficient for at least 5 corners).	5(2max)		1 point will be awarded per corner roller.
22	Equipment for cutting cables.	1(2max)		Confirmation of availability.
23	Gas flame/torch equipment (e.g. for heat shrink application).	1(4max)		Confirmation of availability.
24	Cylindrical brushes / close fitting mandrels (110mm and 160mm) to clean pipes before pulling cable	1(2max)		Confirmation of availability.
Minimum score		30		To meet the minimum requirements for this sections, a tender submission have to obtain the full score of 30 points.

3.2 Vehicle requirements

The requirements related to vehicles are specified in Table 6 below. Vehicles can either be owned or it may be hired from a Bona Fide Vehicle Hire Company.

Table 6: Vehicle requirements

Vehicles :				
No.	Item Description	Cable works		Source of Evidence
		Score	Actual	
1	Bakkies (LDV/Double Cab).	1		Registration Certificate in the company name or name of company owner(s); one vehicle per team
2	Truck with crane, footplate and crew cab.	1		Registration Certificate in the company name, or in the name of the company owner(s) or Proof that this can be hired from Bona Fide Vehicle Hire Companies.
3	Other vehicle for transporting staff.	1		Registration Certificate in the company name or in the name of the company owner(s) or Proof that this can be hired from Bona Fide Vehicle Hire Companies.
Minimum score		3		To meet the minimum requirements for this sections, a tender submission have to obtain the full score of 3 points.

3.2.1 Requirements related to experience

Due to the risk involved in the construction of cable networks, it is important for tenderers to be able to demonstrate experience in work required. This experience can either be from individuals in the company or previous products that the company completed. The specific experience required, points allocation and minimum score required are specified in Table 7 and Table 8 below.

Table 7: Related experience required for LV Cable networks

Related experience				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	Number of years of experience of individual members in constructing LV underground networks.	3		1 Point will be awarded for every 3 years of collective experience on LV cable network projects per team member.
2	List of previous projects involving trenching for LV cables (Team).	3		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 point will be allocated per project.
3	List of previous projects involving laying of LV cables (Team).	3		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 point will be allocated per project
4	List of previous projects involving installation of LV service distribution kiosk, LV jointing and terminations(Team) (Team)	3		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 point will be allocated per project
Minimum score		12		To meet the minimum requirements for this sections, a tender submission have to obtain the minimum score of 12 points.

Table 8: Related experience required for LV Cable networks

Related experience				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	Number of years of experience of individual members in constructing MV underground networks.	3		1 Point will be awarded for every 5 years of collective experience on MV cable network projects per team member.
2	List of previous projects involving trenching for MV cables (Team).	3		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 point will be allocated per project.
3	List of previous projects involving laying of MV cables (Team).	3		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 point will be allocated per project
4	List of previous projects involving installation of Minisubs and RMUs.	3		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 point will be allocated per project
Minimum score		12		To meet the minimum requirements for this sections, a tender submission have to obtain the minimum score of 12 points.

3.3 Site verification stage

Only tenderers that have met the minimum criteria specified in the document review stage shall be subjected to an on-site verification. The site verification exercise shall be performed at contract award stage. During the site verification, all tools and equipment, inspection and calibration records shall be inspected as specified in 13TB032 – “Standard tool requirement for MV cable system construction.” Work shall only be issued to those contractors that have successfully completed the site verification stage.

4. Technical evaluation criteria for joining and termination of MV cables

The evaluation criteria described in the following sections should be used to evaluate any service provider that wishes to perform jointing and termination of MV cables. The technical evaluation process will consist of two stages i.e. Document review stage and Verification stage. If the tenderer have passed all requirements specified in Document review stage, then at contract award stage evidence will be required for PDE Scot Website access, MV/LV OU Specific Authorizations, Calibration certificates for tools and instruments, Letter of Registration as Electrical Contractor (DOL) during the Verification stage.

4.1 Document review requirements (Jointer)

During the Document review stage, the tenderer will be required to submit supporting documents illustrating competence to perform the required scope of work. The requirements are grouped into four categories i.e. general requirements, training requirements, tools & equipment, as well as related experience.

4.1.1 General requirements (Jointer)

The general requirements to be met by tender submissions are specified in Table 6 below. Certified copies of the required documentation should be included in the submission. Point allocations and the minimum threshold are specified in the table.

Table 9: General Requirements (Jointer)

General Requirements				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	Department Of Labour Registration for your Company as an Electrical Contractor (ECB)	1		Valid Department of Labour ECB Registration Certificate for your Company = 1 point
2	Eskom Distribution Technology website access	1		Valid letter from Eskom confirming access to Website. Proof of Fee payment =1
3	Did you submit a signed declaration letter to confirm that all information submitted for this tender is accurate and just?	1		The applicable score (1) to be awarded for a declaration signed by company owner.
4	Does the company have a copy of SANS 10198 Part 10&11 and SANS 10142 part 2 available	1		The applicable score (1) will be awarded for proof submitted that these documents are readily available i.e. company has access to these documents.
5	Bakkies (LDV/Double Cab)	1		Registration Certificate in the company name or name of company owner(s); one vehicle per team.
Minimum score		5		To meet the minimum requirements for this sections, a tender submission have to obtain a full score of 5 points.

4.1.2 Training requirements (Jointer)

All Training requirements with point allocations and minimum score required are specified in Table 7 below. Certified copies of training certificates from accredited training providers must be included in the tender submission.

Table 10: Training requirements (Jointer)

Training requirements				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	The Jointing & Termination of Medium Voltage Cables to the requirements of SANS 10198 (part 10 & 11) as per SAQA US ID 259187	1		The applicable score (1) will be awarded for each valid training certificate obtained from an EWSETA accredited training provider.
2	ORHVS HVO 03a OR HVO 04 Course Certificate	1		Valid ORHVS (HV03a, or HV04) Certificate (At least one valid certificate per team) – Applicable for jointers to perform work under a permit.
Minimum score		2		To meet the minimum requirements for this sections, a tender submission have to obtain the score of 2 points.

4.1.3 Tool and equipment requirements (Jointer)

Tools and equipment is essential for execution of work. Tools and equipment can either be hired or owned, but this should be indicated in Table 8 below. The required tools and equipment, scoring system and minimum scoring required are specified in this table.

Table 11: Tool and equipment requirements (Jointer)

Tools & equipment:				
No.	Description of Item	Cable Work		Source of Evidence
		Minimum	Actual	Equipment can either be owned or hired
1	Flash blankets for parallel power cables in joint bay	1		Flash blankets to cover joint bay of about 2m.
2	Equipment for punching labels onto Al/Cu plates. Stencils	1		Confirmation of availability.
3	Equipment for cutting cables	1		Confirmation of availability.
4	Measuring tape (Metric)	1		Confirmation of availability.
5	Hacksaw (Junior)	1		Confirmation of availability.
6	Torque shear holding tool	1		Confirmation of availability.
7	A.C. (230V) generators (for lighting, bentonite mixing equipment, portable test equipment, etc.)	1		Confirmation of availability.
8	Submersible water pump	1		Confirmation of availability.
9	Moisture test kit	1		Confirmation of availability.
10	Core Pushers	1		Confirmation of availability.
11	Semicon Stripper Knife	1		Confirmation of availability.
12	Twine Binder	1		Confirmation of availability.
13	Safety Barricade Net	1		Confirmation of availability.

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Tools & equipment:				
No.	Description of Item	Cable Work		Source of Evidence
		Minimum	Actual	Equipment can either be owned or hired
14	9KG Handi-gas Bottles	1		Confirmation of availability.
15	Handi-gas Burners	1		Confirmation of availability.
16	Handi-gas Torch	1		Confirmation of availability.
17	Toolbox	1		Confirmation of availability.
18	Head Lamp	1		Confirmation of availability.
19	Stanley Knife	1		Confirmation of availability.
20	3M x 3M Gazebo	1		Confirmation of availability.
Minimum score		14		To meet the minimum requirements for this sections, a tender submission have to obtain the minimum score of 14 points.

4.1.4 Requirements related to experience (Jointer)

Due to the risk involved in the construction of cable networks, it is important for tenderers to be able to demonstrate experience in work required. This experience can either be from individuals in the company or previous products that the company completed. The specific experience required, points allocation and minimum score required are specified in Table 9 below.

Table 12: Related experience required (Jointer)

Related experience				
No.	Item Description	Minimum	Actual	Scoring of Evidence submitted
1	Number of years of experience in MV XLPE jointing	2		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 Point will be awarded for every year of experience in MV XLPE jointing.
2	Number of years of experience in MV PILC jointing	1		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 Point will be awarded for every year of experience in MV PILC jointing.
3	Number of years of experience in MV Outdoor cable termination	2		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 Point will be allocated for every year of experience in MV Outdoor cable termination
4	Number of years of experience in MV Indoor cable termination	2		Give a list of projects including a description of the scope, Name and contact number for the Project manager. 1 point will be allocated for every year of experience in MV Indoor cable termination
Minimum score		6		To meet the minimum requirements for this sections, a tender submission have to obtain the minimum score of 6 points.

4.2 Site verification stage (Jointer)

Only tenderers that have met the minimum criteria specified in the Document review stage shall be subjected to an on-site verification. The site verification exercise shall be performed at contract award stage. During the site verification, all tools and equipment, inspection and calibration records shall be verified. Work shall only be issued to those contractors that have successfully completed the site verification stage.

5. Authorisation

This document has been seen and accepted by:

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6. Revisions

Date	Rev	Compiler	Remarks
Nov 2020	1	J. Paulse	First issue

7. Development team

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

- Taelo Phali
- Jacques Paulse
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8. Acknowledgements

- Thinus Du Plessis