Eskom	Report	Technology

Title: **TECHNICAL EVALUATION CRITERIA FOR MV AND LV CABLES**

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Compiled by	Functional Responsibility	Authorized by
Neville Booyens	**Jacques Paulse**	**Lerato Lekhema**
Chief Engineer: Dx Technology and Engineering	**Chairperson: MV & LV Cable Systems Care Group**	**Senior Manager: Dx Technology & Engineering**
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PCM Reference: **Support to Commercial**

SCOT Study Committee Number/Name: **Cable Systems and Metal Enclosed Switchgear**

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1. Introduction

This document has been developed to set the standard technical evaluation criteria to be used when evaluating the tender submissions. This covers the technical evaluation on XLPE medium voltage cables and low voltage cables for Eskom. It has clauses developed to address various aspects required to perform the technical evaluation. It has been developed based on the Eskom cable equipment specifications.

This document contains both the evaluation criteria used for the documentation evaluation and factory evaluation. In addition, it contains the questions which are required for technical evaluation purposes.

2. Supporting clauses

2.1 Scope

The document covers the criteria for the evaluation of XLPE medium voltage cables and low voltage cables within Eskom Holdings SOC (Ltd).

2.1.1 Purpose

The document addresses the standard documented technical evaluation criteria to be used when evaluating the tender submissions for the cables in line with the Eskom Holdings SOC (Ltd) requirements and it is applicable to all the technical evaluations for the related tender submissions.

2.1.2 Applicability

This document shall apply for Eskom Holdings Limited, Distribution, Transmission and Generation division wherein Eskom has a controlling interest.

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] SANS 1339: Cross-linked polyethylene (XLPE) – insulated cables for voltages from 3,8/6,6 kV to 19/33 kV;

[2] SANS 1507-3: Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1900/3300 V);

[3] 240-56063792: Specification for medium voltage impregnated paper and XLPE –insulated cables;

[4] 240-56063805: Specification for LV power and control cable with rated voltage 600/1000V;

[5] 240-56030635 General Information and Requirements for Medium-Voltage Cable Systems;

[6] 240-56030637 General Information and Requirements for Low-Voltage Cable Systems

[7] 240-48929482 - Tender Technical Evaluation Procedure;

[8] D-DT-3128: CABLE, 1 kV 1C, 2C, 3C, 4C, 7C, 12C, 19C, CU LV cables;

[9] D-DT-8001: Cable, 11 kV, 22 kV and 33kV XLPE-insulated;

[10] D-DT-2801: Cable, 11 kV, 22 kV and 33kV XLPE-insulated; and

[11] D-DT-2128: CABLE, 1 kV, Cu and Al LV cables.

2.2.2 Informative

[12] 32-9: Definition of Eskom documents.

[13] 32-644: Eskom documentation management standard.

[14] 474-65: Operating manual of the Steering Committee of Technologies (SCOT).

2.3 Definitions

2.3.1 General

Definition	Description
Eskom Evaluating Representative(s)	The person(s) appointed by Eskom to perform the evaluation of tender submission(s) in line with the Eskom requirements.

2.3.2 Disclosure classification

Confidential: the classification given to information that may be used by malicious/opposing/hostile elements to harm the objectives and functions of Eskom Holdings Limited.

2.4 Abbreviations

Abbreviation	Description
LV	Low Voltage
MV	Medium Voltage
TEAP	Technically evaluated and approved products
XLPE	Cross-Linked Polyethylene
TEC	Technical evaluation criteria

2.5 Roles and responsibilities

All Eskom employees and/or appointed bodies involved in the procurement of MV and LV cables shall ensure that the project deliverable meet the requirements of these technical evaluation criteria. Any deviation from these requirements shall constitute non-conformance, unless it was in advance agreed to by a delegated Cable Systems Specialist and is based on sound engineering judgement.

All prospective tenderers of MV and LV cables to Eskom must be conversant with the requirements of this technical evaluation criteria and shall comply with the requirements. No deviations will be accepted, and prospective tenderers shall ensure that they obtain clarity where required and obtain all supporting information or documents necessary to comply with this document.

2.6 Process for monitoring

The MV and LV cables acceptance shall be based on fully compliant submission of documents, the factory testing of the cables, and proving manufacturing capability and capacity during factory evaluations.

2.7 Related/supporting documents

Refer to clause/ section 2.2.

3. Requirements

This document contains the technical evaluation criteria for XLPE MV and LV cables. The three phases of the technical evaluation criteria are specific to each of the cable equipment types evaluated. The evaluation methodology will include three main stages, namely the documentation evaluation, factory evaluations and factory sample evaluations.

3.1 Documentation Evaluation

a) The documentation evaluation exercise is performed by the Eskom evaluating representatives. This initial part of the evaluation starts when submissions are opened and assessed for the first time. The submitted documents will be evaluated against the evaluation criteria as stated in clause 3.4 to clause 3.6;

b) The documentation evaluations are meant for establishing if all the key tender deliverables are met with regard to the cables offered. The documentation evaluation will be performed in two levels:

   1) The Mandatory Technical Evaluation requirements and deliverables (Level 1: Mandatory); and

   2) The Qualitative Technical Evaluation requirements or scoring phase (Level 2: Qualitative).

c) Any non-compliance or non-submission with the Mandatory evaluation requirements shall result in a disqualification of the tender submission;

d) Qualitative Technical Evaluation Criteria consist of a scoring system. Tenderers are required to score a minimum of 80% in this section to proceed to the Factory Evaluation and Factory Sample Evaluation stage. Any tenderer that does not achieve the minimum 80% threshold score required for the qualitative technical evaluation criteria shall be disqualified.

e) Only tenderers that have scored a minimum of 80% in the Qualitative Technical Evaluation Criteria will proceed to the next stage of the Factory Evaluation and Factory Sample Evaluation. During this stage the tenderers shall be required to provide clarifications to ensure full compliance with Eskom's technical criteria. Note: This will ensure that the product is fully compliant with the technical evaluation criteria and a score of 100% is achieved for the Qualitative Evaluation Criteria;

f) Such post tender clarifications as required shall not be used to render a non-responsive tender responsive or to change the outcome of scoring or ranking. Clarifications shall not trigger changes in the price, scope, lead times or risk position of Eskom or the tenderer. The objective is to provide assurance to Eskom that any remaining ambiguities arising during the qualitative technical evaluation stage are resolved prior to contract award recommendation. During this stage of clarification that will be administered through the relevant appointed Procurement Practitioner, documents that are required to resolve outstanding matters for full compliance in support of the technical requirements shall be submitted by the tenderer. This is required prior to contract award recommendation.

g) Eskom reserves the right to list technically compliant tenderers on Eskom's TEAP listing database for the items approved.

3.2 Factory Evaluation

The factory evaluations shall only be performed on the submissions that have met all the mandatory technical evaluation requirements in level 1: mandatory gate-keeper requirements as stated in this document. Eskom Commercial shall make the arrangements for factory visits and ensure the technical representatives are invited in time.

At the factory: the Eskom evaluating representative(s) conducts the evaluation through the use of checklists. The checklists are used to verify factory capability and manufacturing method compliance to the type tested cables offered.

The factory evaluation will consist of the cable manufacturing plant evaluation (i.e design capability, type tested compounds, extrusion lines, manufacturing plant, processes, sample and routine testing, etc).

The following areas shall be assessed during the manufacturing evaluation:

Table 1: Factory evaluation Check list

Item Nr	Item description	Clause	Weight	Score
1.	Design and software design capability.	240-56063805 Clause 3.2	10	
2.	Machinery capability.	240-56063805 Clause 3.2	20	
3.	Plant setup.		10	
4.	Material handling and storage.	240-56063805 Clause 3.10	10	
5	Production process and critical checkpoints.	240-56063805 Clause 3.9	10	
6	Testing facilities including certification and calibration of testing equipment.	240-56063805 Clause 3.8.4	10	
7	Sample and routine testing and procedures.	240-56063805 Clause 3.8.4	10	
8	Cable, conductor and cable outer sheath marking.	240-56063805 Clause 3.4 to 3.6	10	
9	Packaging of materials and cable drums.	240-56063805 Clause 3.7	10	
Tenderers will be required to score a minimum of 80/100 to proceed to the next phase of evaluation (SDL&I, Finance and Commercial).				/100

At the end of this exercise, the Eskom evaluating representative(s) lists all the deviations and identified risks if any. The representative conducts a formal discussion of the deviations and risks in line with Eskom's requirements.

One of the following conditions will have to be met for the factory evaluation i.e condition for factories to which Eskom has previously performed factory evaluations within the last seven years, or condition for factories to which Eskom has never performed factory evaluations or factory evaluations were performed more than seven years ago.

3.2.1 Condition where Eskom has previously performed factory evaluations within the last seven (7) years:

Factory evaluations will not be performed if an open tender evaluation was performed on the product or products offered within the last seven (7) years. If a published report was compiled and is available for the previously completed factory evaluations, then the information available from that report shall be used and there would be no need to re-evaluate the factory as per clause 3.2 of this document.

If however there has been changes either on the design, or manufacturing process or raw material (including change of the location of the manufacturing plant or change of main component suppliers from the previous evaluation) then it might be required to perform the factory evaluation depending on a decision made by the Eskom evaluation team. If the Eskom evaluation team deem it necessary to perform the factory evaluation, such will be communicated once the desktop evaluation is concluded. Any changes done on the previously evaluated submission (if applicable) must be clearly stated in the submission

3.2.2 Eskom has previously performed factory evaluations more than seven (7) years ago, or no factory evaluation has been previously performed

Full factory evaluation in accordance with clause 3.2 above shall be performed for these kinds of submissions.

3.3 Factory Sample Evaluation

The factory sample evaluations will be the evaluation of the exact replica product that is offered to Eskom during tender. A product sample will be required; whereby each tenderer is required to prepare only one exact replica sample per cable type offered for factory sample evaluations.

The factory sample evaluations shall only be performed on the submissions that have met all the documentation mandatory technical evaluation requirements in level 1 and were found compliant for the factory evaluations concluded, in accordance with this document.

It is required that the tenderer ensure that the required exact replica samples in accordance with the Eskom specifications and technical evaluation criteria are manufactured, tested and ready for evaluation within one month after Eskom notified the tenderer that Eskom will proceed with factory evaluations and factory sample evaluations. The Eskom notification will include a list of the product ranges that was successful to advance to the factory evaluations and factory sample evaluations stages.

Eskom Commercial shall make the necessary arrangements for the exact replica factory sample evaluations, by ensuring the companies are notified and the technical representatives are invited in time.

The factory sample evaluations shall be performed in accordance with SANS 1339 and or SANS 1507-3 at the cable manufacturing plant in South Africa.

One of the following conditions will have to be met for the factory sample evaluation i.e condition for factories to which Eskom has previously performed factory sample evaluations within the last seven years, or condition for factories to which Eskom has never performed factory sample evaluations or factory sample evaluations were performed more than seven years ago.

3.3.1 Condition where Eskom has previously performed factory sample evaluations within the last seven (7) years:

Factory sample evaluations will not be performed if an open tender evaluation was performed on the product or products offered within the last seven (7) years. If a published report was compiled and is available for the previously completed factory sample evaluations, then the information available from that report shall be used and there would be no need to re-evaluate the factory sample as per clause 3.3 of this document.

If however there has been changes either on the design, or manufacturing process or raw material (including change of the location of the manufacturing plant or change of main component suppliers from the previous evaluation) then it might be required to perform the factory sample evaluation depending on a decision done by the Eskom evaluation team. If the Eskom evaluation team deem it necessary to perform the factory sample evaluation, such will be communicated once the desktop evaluation is concluded. Any changes done on the previously evaluated submission (if applicable) must be clearly stated in the submission.

3.3.2 Eskom has previously performed factory sample evaluations more than seven (7) years ago, or no factory sample evaluation has been previously performed

Full factory sample evaluation in accordance with clause 3.3 above shall be performed for these kinds of submissions.

3.4 Technical Evaluation Gate Keepers for MV XLPE Cables

3.4.1 Technical Evaluation Criteria MV XLPE Cables: Mandatory Technical Evaluation Requirements

Table 2: MV XLPE Cable Mandatory Technical Evaluation Criteria

TASK / MEASURE		
Criteria	**Standard/Documentation Applicable**	**Acceptance: Yes/ No**
1) Is a covering letter listing all items tendered for with the OEM and product code indicated submitted?	Letter	
2) Is a completed Type Test schedule summary submitted in the provided excel format?	Test Schedules	
3) SABS Permit to Apply Certification Mark for SANS 1339 submitted?	Permit	
4) A signed manufacturer's declaration shall be submitted confirming that the raw materials, material grades, and quality standards used in the cables offered to Eskom are identical to those used in the fully assembled type-tested cable and, upon contract establishment with Eskom, shall remain unchanged for the duration of the contract.	Letter	
Any "NO" on the above scores the supplier will be disqualified. The Type testing should fully comply with the requirements of SANS 1339 in order to obtain YES under testing requirements.		

3.4.2 Technical Evaluation Criteria MV XLPE Cables – Level 2 Qualitative Evaluation (Scoring)

Table 3: Qualitative Evaluation Criteria for MV XLPE cables

Type Tests, Cable data, Routine Tests: Weight: 35			
Criteria	**Standard /Documentation Applicable**	**Weight**	**Score**
1. Are English copies of the required type tests reports as per the specification requirements submitted and are the type testing requirements met in accordance with Eskom requirements? Type tests for longitudinal water blocked cable to be included.	240-56063792	25	
2. Have all applicable type tests been performed by a testing laboratory accredited by an ILAC MRA signatory accreditation body?	240-56063792	1	
3. Generic routine test certificate & reports submitted?	240-56063792	1	
4. Factory routine tests failure rate (Number of cables tested and failed per annum/number of cables tested per annum). Figures must be auditable for the last 2 years.	Ratio	1	
5. Is the cable conductor marking method provided?	240-56063792	0.5	
6. Are cable rating data and calculations submitted for current rating and fault current ratings and	240-56030635	0.5	
7. Do the cable ratings meet Eskom requirements?	240-56030635	2	
8. Is the cable marking method provided?	240-56063792	1	
9. Is the marking of cable outer sheath provided?	240-56063792	3	

• For the routine test certificate or report supplier gets 100 % if all requirements are met as per SANS 1339 and loses 20% for each missing requirement. A factory routine test failure rate < 5% the supplier gets 100% and loses 100% for a factory failure rate > than 5%.	**Total**	**/35**

Technical Schedules Weight: 30

Criteria	Clause	Weight	Score
1) Are completed technical schedules B submitted in the provided excel format?	Technical schedules A & B	25	
2) Correctness of completion i.e. no "TBA, Comply, Noted, supplied later, noted, acceptable only when Eskom informs"	Technical schedules A & B	2.5	
3) No technical deviations on technical schedules.	Technical schedules A & B	2.5	
NB: The technical schedules B are provided on the Annexures of the MV cable specifications. • Negative marking is done and a penalty of 0.2 points is applicable for each incorrect completion deviation. • Negative marking is done and a penalty of 0.1 points is applicable for each deviation from meeting Eskom specification and deviations.	**Total**	**/30**	

Drawings Weight: 30

Criteria	Clause	Weight	Score
1. Are cable construction drawings submitted? 1.1 Does the drawing indicate longitudinal waterblocking. 1.2 Does the materials and construction of cable meet the Eskom requirements. Materials to be listed on the drawing. 1.3 All cable layers indicated on drawing? Complete labelling of all cable layers?		25	
2. Are cable dimensional data drawings submitted?		0.5	
3. Drawing number shown on drawing?		0.5	
4. Revision number shown on drawing?		0.5	
5. Detailed description provided in "Title"?		0.5	
6. Approval date shown on drawing?		0.5	
7. Completed legend?		0.5	
8. Marking of conductor drawing submitted?		0.5	
9. Marking of cable drawing submitted?		0.5	
10. Marking of outer sheath drawing submitted?		1	
Negative marking and supplier loses the applicable weighting per deviation.		**Total**	**/30**

Packaging Weight: 5

Criteria	Clause	Weight	Score
1. Are cable drums manufactured in accordance with Eskom specification?	240-56063792	3	
2. Is Marking of cable drum done in accordance with Eskom specification?	240-56063792	2	
3. Negative marking is applied, and supplier loses 0.1 point for each deviation from Eskom specification.		**Total**	**/5**

3.5 Technical Evaluation Criteria for LV Cables

3.5.1 Technical Evaluation Criteria LV Power and Control Cables: Mandatory Technical Evaluation Requirements

Table 4: LV Power and Control Cable Mandatory technical evaluation criteria

TASK / MEASURE		
Criteria	**Standard/Documentation Applicable**	**Acceptance: Yes/ No**
1. Is a covering letter listing all items tendered for with the OEM and product code indicated submitted?	Letter	
2. Is the summary of Type Tests schedule submitted in the provided excel format?	Test Schedules	
3. SABS Permit to Apply Certification Mark for SANS 1507-3 submitted?	Permit	
4. A signed manufacturer's declaration shall be submitted confirming that the raw materials, material grades, and quality standards used in the cables offered to Eskom are identical to those used in the fully assembled type-tested cable and, upon contract establishment with Eskom, shall remain unchanged for the duration of the contract.	Letter	
Any "NO" on the above scores the supplier will be disqualified. The Type testing should fully comply with the requirements of SANS 1507-3		

3.5.2 Technical evaluation criteria LV Power and Control Cables – Level 2 Qualitative Evaluation(Scoring)

Table 5: Qualitative Evaluation Criteria for LV cables

LV Power and Control Cable technical evaluation for the documentation exercise			
Type Tests, Cable data, Routine Tests: Weight: 35			
Criteria	**Clause**	**Weight**	**Score**
1. Are English copies of the required type tests reports as per the specification requirements submitted and are the type testing requirements met in accordance with Eskom requirements?	240-56063805	25	
2. Have all applicable type tests been performed by a testing laboratory accredited by an ILAC MRA signatory accreditation body?	240-56063805	1	
3. Generic routine test certificate & reports submitted?	240-56063805	1	
4. Factory routine tests failure rate. (Number of cables tested and failed per annum/number of cables tested per annum). Figures must be auditable for the last 2 years. Suppliers with greater than 5% failure rates will be excluded.	Ratio	1	
5. Are cables rating data and calculations submitted for current rating and fault current ratings	240-56063805/ 240-56030637	0.5	
6. Do the cable ratings meet Eskom requirements?	240-56063805/ 240-56030637	2	
7. Does cable core colouring meet Eskom requirements?	240-56063805	1	
8. Is the cable conductor marking method provided?	240-56063805	0.5	
9. Is the cable marking method provided?	240-56063805	1	
10. Is the marking of cable outer sheath provided?	240-56063805	2	
• For the routine test certificate or report supplier gets 100 % if all requirements as per SANS included and loses 20% for each missing requirement. • A factory routine test failure rate < 0.05% the supplier gets 100% and loses 100% for a factory failure rate > than 0.05. • Is cable core colouring document submitted and meets Eskom requirements? If yes supplier gets 100 %, and if not 0%.		**Total**	**/35**

Technical schedules Weight: 30			
Criteria	**Clause**	**Weight**	**Score**
1. Are completed technical schedules B submitted in the provided excel format?	Technical Schedules A & B	25	
2. Correctness of completion i.e. no “TBA, comply, noted, supplied later, noted, acceptable only when Eskom informs”	Technical schedules A & B	2.5	
3. No technical deviations on technical schedules.	Technical schedules A & B	2.5	
NB: The technical schedules B are provided on the Annexures of the LV Power and Control Cable Specification. • Negative marking is done and a penalty of 0.2 points is applicable for each incorrect completion deviation. • Negative marking is done and a penalty of 0.1 points is applicable for each deviation from meeting Eskom specification and deviations.		**Total**	**/30**
Drawings Weight: 30			
Criteria	**Clause**	**Weight**	**Score**
1. Are cable construction drawings submitted? 1.1 Does the materials and construction of cable meet the Eskom requirements. Materials to be listed on the drawing. 1.2 All cable layers indicated on drawing? 1.3 Complete labelling of all cable layers?		25	
1. Drawing number shown on drawing?		0.5	
2. Revision number shown on drawing?		0.5	
3. Detailed description provided in “Title”?		0.5	
4. Approval date shown on drawing?		0.5	
5. Completed legend?		0.5	
6. Marking of conductor drawing submitted?		0.5	
7. Marking of cable drawing submitted?		0.5	
8. Marking of outer sheath drawing submitted?		0.5	
9. Are cable dimensional data drawings submitted?		1	
Negative marking and supplier loses the applicable weighting per deviation.		**Total**	**/30**
Packaging Weight: 5			
Criteria	**Clause**	**Weight**	**Score**
1. Are cable drums manufactured in accordance with Eskom specification?	240-56063805 Clause 3.7	3	
2. Is Marking of cable drum done in accordance with Eskom specification?	240-56063805 Clause 3.7	2	
Negative marking is applied, and supplier loses 10% for each deviation from Eskom specification.		**Total**	**/5**

3.6 Conclusion

This report is effective to specify the technical evaluation criteria for MV and LV cables to be used in Eskom. Prospective tenderers are to comply with the requirements of this TEC and the referenced standards.

4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Lerato Lekhema	Senior Manager: Dx Technology & Engineering
Jacques Paulse	Senior Engineer WCOU SI, Chairperson MV LV Underground Cable Systems CG

5. Revisions

Date	Rev	Compiler	Remarks
Sept 2026	6	N. Booyens	Format error of LV cable mandatory table corrected.
Aug 2026	5	N. Booyens	1. Removed scoring requirements for Mandatory Evaluation; 2. Modified the Qualitative Evaluation scoring from 20% to 100%; 3. Modified the MV and LV Mandatory and Qualitative Evaluation criteria to allow the full evaluation of evidence only once; 4. Added clarification notes on the document evaluation process to explain factory and factory sample evaluation clarifications; 5. Added the statement that items could be added to TEAP list; 6. Removed requirement for Type Tests older than 10 years; 7. Modified the Qualitative Evaluation criteria for a construction drawing to add the requirement of adding the cable longitudinal waterblocking requirement; 8. Added the requirement for MV and LV cable Mandatory Evaluation Criteria in terms of applicable of the SABS 1339 and 1507-3 mark. 9. Added to the Mandatory Evaluation Criteria for MV and LV cables : A signed manufacturer's declaration shall be submitted confirming that the raw materials, material grades, and quality standards used in the cables offered to Eskom are identical to those used in the fully assembled type-tested cable and, upon contract establishment with Eskom, shall remain unchanged for the duration of the contract. 10. Combined Mandatory requirement criteria :materials and construction of cable and Qualitative Drawing criteria for cable layers and labelling and combined into one Qualitative Criteria called: Are cable construction drawings submitted? 1.Does the drawing indicate longitudinal waterblocking.

			2.Does the materials and construction of cable meet the Eskom requirements. Materials to be listed on the drawing. 3. All cable layers indicated on drawing? 4.Complete labelling of all cable layers? 11. Duplicate LV drawing criteria for dimension on drawing removed 12.Removed the following from the Conclusion: The technical evaluation criteria for this project are specified in clause 3.1 to clause 3.6 of this document. 13. Updated the normative references with 240-56030635 General Information and Requirements for Medium-Voltage Cable Systems; 240-56030637 General Information and Requirements for Low-Voltage Cable Systems
April 2023	4	Q. Khumalo	Requirements for PILC cables have been removed. PILC will no-longer be included for National Contracts; will be procured by the OUs as and when required by the specific OU.
March 2022	3	Q. Khumalo	Option to waiver factory evaluation and factory sample evaluations if they have been performed within the past 7 years (clause 3.2 and 3.3). Factory evaluation check sheet added (1).
Sept 2017	2	Q. Khumalo	Revised to align with the latest revision of the cable standards (240-56063792 & 240-56063805). Included the buyer's guides for Aluminium cables. Added the requirements for factory sample evaluation.
Oct 2014	1	T. Du Plessis & Q. Khumalo	New document.

6. Development team

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

- Jacques Paulse — Senior Engineer WCOU SI, Chairperson MV LV Underground Cable Systems CG; and
- Neville Booyens — Chief Engineer, Dx Technology and Engineering

7. Acknowledgements

Not applicable.