Eskom	Standard	Technology

Title: **TECHNICAL EVALUATION STANDARD FOR SUBSTATION STRANDED CONDUCTOR CLAMPS - EPC CONTRACTING**

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PCM Reference: **Substation Design**

SCOT Study Committee Number/Name: **Substation**

Content

1. Introduction

This document has been developed in accordance with Eskom Procurement and Supply Management Procedure 32-1034 and is used to define the standard technical evaluation criteria to be used when evaluating pre-qualification submissions.

The document defines various aspects required to perform the technical evaluation and contains the evaluation criteria used at paper evaluation and the associated sample evaluation.

2. Supporting clauses

2.1 Scope

The scope of this document is to provide the framework wherein the substation connectors or clamps for stranded conductors may be effectively evaluated against the applicable standard.

This document does not specify the requirements of each item as the specific requirements for the items are contained within the Technical Schedules that are attached to the respective Commercial Enquiries. This document covers only the evaluation strategy and criteria for substation stranded conductor clamps used in substations within Eskom Transmission.

2.1.1 Purpose

The purpose of this document is to standardise the technical strategy and evaluation criteria for application during formal Commercial Enquiry processes for Eskom Transmission substation stranded conductor clamps in alignment with Eskom Holdings SOC (Ltd) policies.

2.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Divisions. It is also applicable for all external parties constructing substation infrastructure projects that will be handed over operationally to Eskom.

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 Management Procedure

[2] 240-48929482, Tender Technical Evaluation Procedure

[3] 240-83534936, Tubular and Stranded Conductor Clamps Additional to the Existing Standards

[4] 240-53113927, Specification for Substation Clamps for Stranded Aluminium Conductors

[5] ISO 9001, Quality Management Systems.

2.2.2 Informative

None

2.3 Definitions

2.3.1 General

Definition	Description
Accredited testing laboratory/authority	A laboratory which is ISO/IEC 17025 accredited and/or that holds valid certification issued by ILAC (International Laboratory Accreditation Corporation) or one of its members.
Certified test report	A certificate of tests performed as specified within the standard and carried out by an accredited authority or by the manufacturer and witnessed by an accredited authority that has been accredited in accordance with ISO/IEC 17011.
Eskom assessment / evaluation representative(s)	The person(s) appointed by Eskom to perform evaluation of tender submission (s) in line with Eskom requirements.
Routine test	Tests done to verify the quality and uniformity of the workmanship and materials used in the manufacture of equipment.
Type test	Tests done on the completion of the development of a new design to establish representative performance data. They need to be repeated if the design is changed to modify its performance or there is a change in the manufacturing process.

2.3.2 Disclosure classification

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

2.4 Abbreviations

Abbreviation	Description
OEM	Original Equipment Manufacturer
SAP	Systems Application Processes
EPC	Engineer, procure & construct

2.5 Roles and responsibilities

Suppliers are responsible for manufacturing, testing and supplying products in accordance with document [3] and [4]. Personnel involved with the design, procurement and construction of Eskom substations shall ensure compliance to these requirements and that clamps for stranded conductors are evaluated in accordance with this document.

2.6 Process for monitoring

All clamps for stranded conductors to be supplied to Eskom shall be in accordance with [3] and [4], and shall be evaluated against the criteria as stipulated in this document. The Substations COE will ensure that it is updated should it be required with the support of the Substations Products Care Group.

2.7 Related/supporting documents

This document must be read in conjunction with [3] and [4].

3. Requirements

3.1 General

The technical evaluation for the substation stranded conductor clamps shall be composed of documentation evaluation. The criteria for the technical evaluation are based on the specified requirements in the Eskom Standard 240-53113927: Specification for Substation Clamps for Stranded Aluminium Conductors.

All documentation for this tender shall be in English.

For the supplier's submission to be compliant all tender technical returnables (3.2) must be submitted as required and score at least 70% in the qualitative evaluation.

Suppliers who are tendering but are not the OEM of the product must source the required technical returnable from the OEM where relevant. Missing information will not be requested after the Enquiry closing date.

If any part or sub-component of the production process is outsourced, the Supplier shall retain full and complete accountability for the (entire) product.

3.2 Desktop Evaluation

The desktop evaluation shall be conducted by the Eskom assessment representatives. This part of the evaluation will start when submissions are opened the first time. It begins with the confirmation that all tender technical returnables have been submitted. Tenderers are to submit all the required tender technical returnables and highlight any clarification prior to tender close.

During the qualitative assessment, the Eskom evaluating representatives will go through the qualifying submissions in detail and score each item evaluated. Refer to Annex A. The tender submission must score a minimum of 70% in the qualitative evaluation to be considered as technically qualified.

Local Suppliers Vexila (Pfisterer), McWade and Preformed Line Products South Africa (PLP) have been evaluated previously and deemed technically acceptable for application within Eskom Transmission. At tender stage commitment letters to procure from these suppliers will be deemed technically acceptable and need not be evaluated any further.

3.3 Technical returnables

The following documents shall be submitted when tendering:

a) A full list of clamps on offer and as requested in the tender

b) A set of dimensioned outline drawings including ratings

c) A completed technical schedule B as stipulated in Annex B of 240-53113927, Specification for Substation Clamps for Stranded Aluminium Conductors, [4] for each clamp type. The technical schedule B shall not be left blank. Where numerical values (for example, rated values and dimensions) or specific information is required, the actual value/information shall be stated. In such cases, use of words, such as "COMPLY", "TBA", is not acceptable.

d) Welding procedure

e) Proof of accreditation of welder

f) A list and copies of all type test certificates and reports specified in the specification

4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Rukesh Ramnarain	Chief Engineer Substation Engineering
Subhas Maharaj	Senior Manager Substation Engineering

5. Revisions

Date	Rev	Compiler	Remarks
Aug-23	1	Mark Peffer	First Issue

6. Development team

Not Applicable.

7. Acknowledgements

- Theunus Marais

Annex A – Desktop Documentation Evaluation: Qualitative Criteria

After confirming that all the tender technical returnables have been submitted and that critical requirements have been met, the submission will be assessed against the following criteria (shown below) with detail as stipulated in [3], 240-53113927 Specification for Substation Clamps for Stranded Aluminium Conductors and/ or [4], 240-83534936 Tubular and Stranded Conductor Clamps additional to the existing Standard.

Criteria	**Section**	**% weight**	**Weighted Score**
Clamp Range	A1	20	
Technical Schedules	A2	50	
Outline Drawings	A3	25	
Welding	A4	5	
Total		**100**	

For each evaluation criteria, the extent to which submissions comply with the requirements shall be scored based on the following, with a maximum score of 100.

5	100%	**COMPLIANT** Meet technical requirement(s) AND; No foreseen technical risk(s) in meeting technical requirements.
4	80%	**COMPLIANT WITH ASSOCIATED QUALIFICATIONS** Meet technical requirement(s) with; Acceptable technical risk(s) AND/OR; Acceptable exceptions AND/OR; Acceptable conditions.
2	40%	**NON-COMPLIANT** Does not meet technical requirement(s) AND/OR; Unacceptable technical risk(s) AND/OR; Unacceptable exceptions AND/OR; Unacceptable conditions.
0	0%	**TOTALLY DEFICIENT OR NON-RESPONSIVE**

Threshold: The score that each tenderer receives will provide a numeric basis for tender comparison. The minimum weighted average score required for a stranded conductor clamp to be considered must be 70% or above.

A1	**CLAMPING RANGE**			
ITEM NO	**DESCRIPTION**	**UNIT**	**CRITERIA**	**SCORE**
A1.1	Does the supplier supply all the clamps required as per this tender?	% of required clamps listed	100%	5
			80%	4
			40%	2
			0%	0
Clamping Range (maximum points: 5)			Score	
CLAMPING RANGE (section weight: 20%)			Weighted Score = $(\mathbf{Score}) * \left(\frac{\mathbf{20}}{\mathbf{5}}\right)$	

A2	**TECHNICAL SCHEDULES**			
ITEM NO	**DESCRIPTION**	**UNIT**	**CRITERIA**	**SCORE**
A2.1 Compliance with Technical Requirements (15%)	Does the supplier comply with the technical requirements as stipulated in the Technical Schedules? (Excluding Type Tests)	% compliance	100%	5
			80%	4
			40%	2
			0%	0
	Technical Schedules (maximum points: 5)		Score 1	
	Technical Schedules (sub-section weight: 15%)		Weighted Score 1 = $(\textbf{Score 1}) * \left(\frac{\mathbf{15}}{\mathbf{5}}\right)$	
A2.2 Deviation schedule provided (5%)	Has a deviation schedule been completed and accepted for deviations from the standard?	% compliance	100%	5
			80%	4
			40%	2
			0%	0
	Deviation Schedule (maximum points: 5)		Score 2	
	Deviation Schedule (sub-section weight: 5%)		Weighted Score 2 = $(\textbf{Score 2}) * \left(\frac{\mathbf{5}}{\mathbf{5}}\right)$	
A2.3 Type Tests Submission (30%)	Have the type tests as specified in the standard been passed as required. Note: If the type test specified below is not applicable to the clamp, then the evaluator will award the points for that particular type test e.g. An electrical test for a support clamp.			
	Heat (Current)-Cycle test		Yes	5
			No	0
	Temperature Rise Test		Yes	5
			No	0
	Corona and RIV test		Yes	5
			No	0
	Short Circuit Withstand Test		Yes	5
			No	0
	Bolt-tightening torque test		Yes	5
			No	0
	Slip/Pull-out strength test		Yes	5
			No	0
	Cantilever strength of bus supports test		Yes	5
			No	0

	Type Tests **(maximum points: 35)**	Score 3	
	Type Tests (sub-section weight: 30%)	Weighted Score 3 = $(\textbf{Score 3}) * \left(\frac{\textbf{30}}{\textbf{35}}\right)$	
TECHNICAL SCHEDULES **(section weight: 50%)**		Weighted Score 1 + Weighted Score 2 + Weighted Score 3 =	

A3	**OUTLINE DRAWINGS**			
ITEM NO	**DESCRIPTION**	**UNIT**	**CRITERIA**	**SCORE**
A3.1	Clamp description	% drawings correct	100%	5
			80%	4
			40%	2
			0%	0
A3.2	Eskom code	% drawings correct	100%	5
			80%	4
			40%	2
			0%	0
A3.3	Drawing number	% drawings correct	100%	5
			80%	4
			40%	2
			0%	0
A3.4	Ratings	% drawings correct	100%	5
			80%	4
			40%	2
			0%	0
A3.5	Dimensions including weight (in kg)	% drawings correct	100%	5
			80%	4
			40%	2
			0%	0
Outline Drawings **(maximum points: 25)**			Score	
OUTLINE DRAWINGS **(section weight: 25%)**			Weighted Score = $(\textbf{Score}) * \left(\frac{\textbf{25}}{\textbf{25}}\right)$	

A4	**WELDING**			
ITEM NO	**DESCRIPTION**	**UNIT**	**CRITERIA**	**SCORE**
A4.1	Has the welding procedure been submitted		Yes	5
			No	0
A4.2	Has proof of accreditation of the OEM welder been submitted		Yes	5
			No	0
Welding (maximum points: 10)			Score	
Welding (section weight: 5%)			Weighted Score = $(\mathbf{Score}) * \left(\frac{\mathbf{5}}{\mathbf{10}}\right)$	