



Eskom

Report

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CRITERIA FOR OPTICAL
GROUND WIRE(OPGW) CABLES**

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1. Introduction

This document outlines the criteria to be followed in conducting both the technical desktop and factory evaluations on suppliers' submissions intending to supply Optical Ground Wire (OPGW) cables. The criteria for each cable type are tabulated in the appendices at the end of this document.

2. Supporting clauses

2.1 Scope

This document explains the technical evaluation criteria associated with OPGW fibre optic cables as described by the relevant Eskom standards.

2.1.1 Purpose

The purpose of this document is to describe the criteria which will be used to evaluate tender submissions from suppliers intending to supply of OPGW cables.

2.1.2 Applicability

This document shall apply throughout Eskom Distribution Division.

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] 32-1034 - Eskom Procurement and Supply Management Procedure.
- [3] NRS 061-1: Overhead Ground-Wire with Optical Fibre Part 1: Product Specification.

2.2.2 Informative

- [4] NRS 061-2: Overhead Ground-wire with Optical Fibre Part 2: Installation Guidelines
- [5] 240-48929482 Tender Engineering Evaluation Procedure

2.3 Definitions

2.3.1 General

Definition	Description
Criteria	Process by which the inquiry will be evaluated and scored
Inquiry	A competitive or non-competitive request for information, interest, quotations, or proposals made to a supplier, a group of suppliers or the market at large.
Submission	The tender in accordance with the requirements of the enquiry
Technical Evaluator	End-users, technical experts nominated by the end-user and Divisional technical functionaries with the necessary technical expertise.

2.3.2 Disclosure classification

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

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2.4 Abbreviations

Abbreviation	Description
CV	Curriculum Vitae
NRS	National Rationalised Specifications
OEM	Original Equipment Manufacturer
OPGW	Optical Ground Wire
PLS-CADD	Power Lines Systems – Computer Aided Design & Drafting
TET	Technical Evaluation Team

2.5 Roles and responsibilities

- **Procurement:** Inquiry Process Owner
- **Subject Matter Expert:** Lead Technical Evaluator.
- **Technical Evaluation Team member:** The delegated Engineer / Technical specialist who are responsible to review and evaluate technical aspects of the tender documents as per predefined evaluation criteria

2.6 Process for monitoring

Monitored by Technical Evaluation Team using tender processes.

2.7 Related/supporting documents

Not applicable.

3. OPGW Cables Technical Evaluation Criteria

Optical Ground Wire (OPGW) cables technical evaluation criteria is a process by which an inquiry is evaluated and scored to assess supplier's capability to enter a supply contract with Eskom. A complete evaluation of a potential supplier would involve a desktop evaluation and factory evaluation. The factory evaluation is necessary to verify if the supplier possesses the capabilities which they have documented in their tender submissions.

Any tenderers who have been assessed by Eskom within the past 36 months for the supply of OPGW **may be** exempted from the technical factory evaluation. These tenderers are still required to submit all technical documents listed in Table 2.

The assessment team has no authority or responsibility in the decision taken by Eskom with respect to contracting for a product or service. During the evaluation, the assessment team will undertake the following steps:

Table 1: Evaluation Steps for Eskom Technical Assessment Team

Steps #	Activities for Eskom Technical Assessment Team
1	Find Tables A3.1, A3.2, A3.3, A3.4
2	Complete Table 3 Mandatory Criteria
3	Proceed to evaluate Tenderer that meets Table 3 Mandatory Criteria
4	Evaluate Technical File of the Tenderer
5	Review submission for Table A3.1 and score Table A3.2 for each submitted OPGW - link with Type Test report submitted

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Steps #	Activities for Eskom Technical Assessment Team
6	Review Indexed Factory File submission and score Table 6
7	Review Data Sheets information submitted for each OPGW and score
8	Review PLSCADD information submitted for each OPGW and score
9	Consolidate Scores for Desktop evaluation from steps 6, 7 and 8 above
10	Compile first report to Commercial indicating which Tenderers have passed Desktop evaluation
11	Commercial to inform tenderer and indicate dates for Factory visits
12	Factory Visits by Cross-functional team
13	Final Report completed

Any statements, intentions, and/or actions expressed by the technical evaluation team member(s) during and after the assessment shall not be interpreted as the awarding of a contract and does not constitute any liability to Eskom Distribution regarding contract placement or post-contract performance guarantees

To ensure comprehensive technical evaluation, all tender submissions shall consist of but not limited to:

- a) Complete Table A3.1. This is in Annex A and an excel version with drop down boxes is submitted with the tender pack. This will give an indication of which OPGW cables are offered.
- b) Complete Table A3.2. This is in Annex B and an excel version with drop down boxes is submitted with the tender pack. This is required as to the status of the type tests for the OPGW cables offered.
- c) Complete Table A3.3. This is in Annex C and an excel version is submitted with the tender pack. A fully indexed and comprehensive file with relevant factory information is required.
- d) Complete Table A3.4. This is in Annex D and an excel version with various columns is submitted with the tender pack. The fully completed A/B Schedules are required for each OPGW cable offered.
- e) The Manufacturer's Data Sheets per OPGW cable tendered is required for desktop evaluation.
- f) The OPGW information for PLS-CADD with the co-efficient and sag and tension data shall be included for each OPGW tendered.
- g) It must be noted that before any OPGW fibre optic cable is used on Eskom's system, a mechanical compatibility test shall be done with the designated hardware. Agreement between prospective fibre optic cable supplier and prospective hardware supplier shall be concluded. Eskom's only responsibility with this aspect is to review the final test results and on occasion witness these tests.
- h) Tenderers shall ensure that they cater for the manufacture of special cables that may be requested during the contract lifetime.

Table 2 provides a summary of all the documents that are required from the Tenderers

Table 2: Requirements from Tenderers

Step #	Activities and Submission Summary for Tenderers
1	Submit a properly indexed Technical File
2	Submit completed Table A3.1 - OPGW cables offered
3	Submit completed Table A3.2 - TYPE TESTS status
4	Submit completed Table A3.3 - FACTORY FILE index completed
5	Submit completed Table A3.4 - A/B Schedules per OPGW offered

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Step #	Activities and Submission Summary for Tenderers
6	Submit most recent TESTS reports for every OPGW offered
7	Submit most recent DATA SHEETS for every OPGW offered
8	Submit most recent PLSCADD information for every OPGW offered
9	Submit indexed file with Factory Information correlating to Table A3.3

3.1 Mandatory Criteria for Evaluation

Mandatory for Evaluation requirements are assessed on a **Yes/ NO** basis to determine whether the requirements are met or not. A completed submission of Tables A3.1, A3.2, A3.3 and A3.4 is mandatory. A **“No”** or incomplete submission of any of requested item on Table A3.1 or A3.2 or A3.3 or A3.4 will disqualify the tenderer and will not proceed further to the Desktop evaluation.

Technical Evaluation Team will check all the submissions to ensure mandatory requirements are met as a start to the Desktop Evaluation

Table 3: Mandatory Criteria

OPGW Cable Mandatory Criteria	Comply (Yes/No)
Specify which cables can be manufactured and supplied (Complete Table A3.1)	
State which tests are submitted and which will be provided during Factory Evaluation. (Complete Table A3.2)	
File of information supplied for Factory Evaluation (Complete Table A3.3)	
A and B Schedules completed to Eskom requirements for the OPGW cables provided in English from the latest NRS 061-1 (Complete Table A3.4)	
Threshold	100% (All “Yes”)

All tables that are to be completed together with the submissions and are found in Annex A. The excel versions of these will be provided in the tender pack. Complete each excel table as requested.

3.2 Desktop Evaluation

Submissions that pass the Mandatory criteria will proceed to the Desktop Evaluation

3.2.1 Desktop OPGW Assessment

The desktop assessment will score the following items:

- OPGW test reports – only OPGW cables that were submitted as part of the tender shall be evaluated.
- Manufacturer’s Data Sheets per OPGW cable that was submitted for tender.
- The PLS-CADD information with the co-efficient and sag & tension data for each OPGW submitted for tender shall be included. The items will be scored as per the Table 4 below:

Table 4: Scoring of items in Desktop Evaluation

Criteria	Score
Fully compliant	3
Non-compliant (major deviation)	0

Each Tenderer will be scored per kA rated OPGW submitted as indicated in Table 5.

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Table 5: Desktop OPGW Evaluation

OPGW Cable Scoring Criteria	Maximum Score	Threshold
Each offered OPGW Cable Tests (10kA, 12kA, 16kA, 18kA, 18kA)	36	80% / 28.8
Data Sheets Submitted per cable Offering	3	100% / 3
PLSCADD (Co-efficient/ sag and tension data) information per Cable offering	3	100% / 3

OPGW cable score that passes ALL pre-set threshold in Table 5 shall be considered for the tender.

3.2.2 Desktop Factory File Assessment

The Factory Information File shall be scored as per Table 6. A score of 1 point is given for every item requested.

Table 6: Desktop Factory File Evaluation

OPGW Cable Scoring Criteria	Maximum Score	Threshold
Factory Information - File scored on answers to Table 7 on Factory information	42	80%/33.6

The Factory information file will also be scored during the Desktop evaluation and is required to pass the threshold score (33.6/80%).

3.3 Factory Assessment

These assessments are performed to assess the tenderer's capability to enter a contract with Eskom with respect to a specific product or service and meet Eskom's requirements.

Type of tests that were indicated "FAT" in Table A3.2 (for Desktop evaluation) shall be provided during the factory visit. Other outstanding tests to be provided at contract award.

3.3.1 Scope

Eskom will do factory assessments to assess the ability and readiness of the tenderer for supplying/manufacturing OPGW fibre optic cables. Eskom assessment representative(s) will arrange visits to the factories that have met Desktop evaluation threshold.

The Eskom assessment representative(s) will conduct the assessment using Table 7 provided below. The requirements in the Desktop evaluation will be verified. If a tenderer scores less than the threshold of 80%, they will be disqualified.

The OEM's local representative shall be available on site at the manufacturing premises during the virtual or during the factory assessment and will be required to present during the assessment.

Table 7: Scoring of items in Factory Evaluation

Factory Scoring Desktop & Factory Site			
Item #	Manufacturing Methods/Product Conformance	Max Score	Actual Score
1	Factory Information – <ul style="list-style-type: none"> • Manufacturing premises address, • Staff organogram, • Equipment, • Testing facilities and • Plant layout 	5	

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Factory Scoring Desktop & Factory Site			
Item #	Manufacturing Methods/Product Conformance	Max Score	Actual Score
2	Ability to provide verification of all material utilised in the production of OPGW cable <ul style="list-style-type: none"> • fibre cores, • aluminium/steel strands, • tube, • grease and • gel. 	5	
3	Ability to produce complete fibre product- OPGW <ul style="list-style-type: none"> • Manufacture of fibre tube • Drawing of fibre cores into tube • Addition of gel with fibre cores • Setting up of machine with steel/aluminium strands fibre tube • Stranding of complete product (or similar process) 	5	
4	Manufacturing to standards, licenses etc. IEC, Eskom spec etc. <ul style="list-style-type: none"> • Specs available on premises • Staff knowledge on specs • Implementation of specs 	3	
5	Design Capabilities of supplier- In house or external experts etc. <ul style="list-style-type: none"> • Personnel and • Software 	2	
6	Affiliations with any international organisation/ experts in the field.	1	
7	History and list of external customers that you have supplied similar products.	2	
8	Type of testing facilities. <ul style="list-style-type: none"> • Calibration of equipment (major equipment calibrated accordingly), • Test capabilities (able to perform in-house sample/production tests - Test report and generic testing forms to be submitted), • Competencies of Technicians (ability to perform in-house tests), • Quality of Test reports (all relevant testing information available on test report) 	4	
9	Confirmation of Type Testing Procedures (2pt) and Facilities (2pt) (confirm that supplier has ability to type test products in accordance to IEC 60794-1-2, IEC 61089 and IEC 61395)	4	
10	Can provide typical packaging details of items after manufacture. <ul style="list-style-type: none"> • Treatment of packaging (drums), • Drum design 	2	
11	Packaging of drums into containers for international suppliers <ul style="list-style-type: none"> • container size 	3	

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Factory Scoring Desktop & Factory Site			
Item #	Manufacturing Methods/Product Conformance	Max Score	Actual Score
	<ul style="list-style-type: none"> layout of drums in container loading and off-loading requirements 		
12	Marking on drums as per Eskom requirements (NRS 061-1)	1	
13	Handling and storage requirements of product as per manufacturer.	2	
14	Verification of product length on drum	1	
15	Verification of drum gross and net weight.	2	
	Totals	42	

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4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
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5. Revisions

Date	Rev.	Compiler	Remarks
Aug 2025	2	Tshepiso Moloisane	Updated Scoring Tables
May 2025	1	Tshepiso Moloisane	Original Document

6. Development team

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

- Lesiba Buthane
- Tshepiso Moloisane

7. Acknowledgements

Not applicable.

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Annex A: Tenderer Submission Tables

Table A3.1: Mandatory Criteria OPGW List

	Table A3.1 Mandatory Criteria Please state which OPGWs you are tendering for				
	kA Rating				
	10kA	12kA	16kA	18kA	21kA
Greased 48 core					
Ungreased 48 core					

Please place an X for those cables tendered for above. This table can also be found in excel format in the tender pack.

Table A3.2: Mandatory Criteria Type of Tests

		Table A3.2 Mandatory Criteria OPGW Type Tests Required				
Type of Test (Yes/No/FAT) Indicate which Tests have been submitted and which will be available at FAT NOTE: 80% threshold for type tests for each cable must be submitted for Desktop Evaluation		Ungreased				
		48 Core				
		10kA	12kA	16kA	18kA	21kA
1	Crush Resistance Test (IEC 60794-1-2)					
2	Tensile Performance Test (IEC 61089)					
3	Cable deformation Test					
4	Stress-Strain Test (IEC 61089)					
5	Impact Test (IEC 60794-1-2)					
6	Sheave Test					
7	Aeolian Vibration Test					
8	Temperature Cycle					
9	Water Ingress Test (IEC 60794-1-2)					
10	Short Circuit Test (IEC 60794-1-2)					
11	Lightning Test (IEC 60794-1-2)					
12	Conductor Creep Test (IEC 61395)					

Please place a Yes/No/FAT to indicate which tests have been submitted and which will be available at the factory evaluation. This table can also be found in excel format in the tender pack.

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Table A3.3: Factory Scoring Desktop & Factory Site

Table A3.3 Mandatory Criteria Provide an Indexed File with answers to the following statements				
Item #	Manufacturing Methods/Product Conformance	State location/Index in File (eg. Tab 1, Tab 2, Tab A, Tab B)	Max Score	Actual Score
1	Factory Information – <ul style="list-style-type: none"> • Manufacturing premises address, • Staff organogram, • Equipment, • Testing facilities and Plant layout 		5	
2	Ability to provide verification of all material utilised in the production of OPGW cable <ul style="list-style-type: none"> • fibre cores, • aluminium/steel strands, • tube, • grease and gel. 		5	
3	Ability to produce complete fibre product- OPGW <ul style="list-style-type: none"> • Manufacture of fibre tube • Drawing of fibre cores into tube • Addition of gel with fibre cores • Setting up of machine with steel/aluminium strands fibre tube • Stranding of complete product (or similar process)		5	
4	Manufacturing to standards, licenses etc. IEC, Eskom spec etc. <ul style="list-style-type: none"> • Specs available on premises • Staff knowledge on specs Implementation of specs		3	
5	Design Capabilities of supplier- In house or external experts etc. <ul style="list-style-type: none"> • Personnel and Software 		2	
6	Affiliations with any international organisation/ experts in the field.		1	
7	History and list of external customers that you have supplied similar products.		2	
8	Type of testing facilities. <ul style="list-style-type: none"> • Calibration of equipment (major equipment calibrated accordingly), • Test capabilities (able to perform in-house sample/production tests - Test report and generic testing forms to be submitted), • Competencies of Technicians (ability to perform in-house tests), Quality of Test reports (all relevant testing information available on test report)		4	
9	Confirmation of Type Testing Procedures (2pt) and Facilities (2pt) (confirm that supplier has ability to type test products in accordance to IEC 60794-1-2, IEC 61089 and IEC 61395)		4	
10	Can provide typical packaging details of items after manufacture. <ul style="list-style-type: none"> • Treatment of packaging (drums), • Drum design 		2	

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11	Packaging of drums into containers for international suppliers <ul style="list-style-type: none"> • container size • layout of drums in container • loading and off-loading requirements 		3	
12	Marking on drums as per Eskom requirements (NRS 061-1)		1	
13	Handling and storage requirements of product as per manufacturer.		2	
14	Verification of product length on drum		1	
15	Verification of drum gross and net weight.		2	

Please provide a file with all the relevant information as requested in the table above.

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Table A3.4: Mandatory Criteria A/B Schedules

Table A3.4 Mandatory Criteria Please Complete as per OPGW cable tendering					
Item	Clause	Description		Schedule A	Schedule B
B.1	4.1.4	Grease conductor in accordance with SANS 61089?	Yes/No	Greased & Ungreased required	xxxxxxxxxx
	4.1.5	Pollution level, if other than heavy		_____	xxxxxxxxxx
		Maximum temperature, if other than 50 °C	°C	_____	xxxxxxxxxx
		Minimum temperature, if other than –10 °C	°C	_____	xxxxxxxxxx
		Maximum wind speed, if other than 36 m/s	m/s	_____	xxxxxxxxxx
		Route altitude, if other than 2 000 m	m	_____	xxxxxxxxxx
	4.1.6	Name of manufacturer		xxxxxxxxxx	_____
		Place of manufacture		xxxxxxxxxx	_____
		Manufacturer's reference number		xxxxxxxxxx	_____
B.2	4.2.1.1	Type of fibre in accordance with NRS 081 (G.652D)	Yes/No	xxxxxxxxxx	_____
		If no, state fibre type		xxxxxxxxxx	_____
	4.2.2.1	OPGW 1 s current rating	kA	10, 12, 16, 18, 21	_____
	4.2.2.2	Stranding and wire diameter		xxxxxxxxxx	_____
B.3	4.3.1.1	Number of fibres		48 Core	xxxxxxxxxx
	4.3.2.1	Conductor material		xxxxxxxxxx	_____
		Nominal cross-section		xxxxxxxxxx	_____
		Actual cross-sectional area		xxxxxxxxxx	_____
		Maximum overall diameter		xxxxxxxxxx	_____
		Maximum mass per metre of cable-ungreased	kg/m	xxxxxxxxxx	_____
		Maximum mass per metre of cable-greased	kg/m	xxxxxxxxxx	_____
		Rated tensile strength (RTS)		xxxxxxxxxx	_____
		Initial modulus of elasticity		xxxxxxxxxx	_____

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		Final modulus of elasticity		xxxxxxxxxx	_____
		Maximum drum length		xxxxxxxxxx	_____
		Direction of lay of outer layer		xxxxxxxxxx	_____
		Diameter of all layer strands		xxxxxxxxxx	_____
		Short-circuit 1 s current rating		xxxxxxxxxx	_____
		Short-circuit 0.5 s current rating		xxxxxxxxxx	_____
		DC resistance at 20 °C/km	Ω	xxxxxxxxxx	_____
		Continuous current-carrying capability	A	xxxxxxxxxx	_____
	4.3.2.2	Complete details of cable construction, including measures to minimize hydrogen absorption and water ingress.		xxxxxxxxxx	_____
B.4	4.4.1	Is a sample required?	Yes/No	No-will request needed if	xxxxxxxxxx
	4.4.3	Length of sample, if not 1 m		_____	xxxxxxxxxx
B.5	5.1.3.2	Specify class of cable 0, 1, 2 or 3		3	xxxxxxxxxx
B.6	6.2.1	Maximum drum length of OPGW		Xxxxxxxxxxx	_____
		Mass of drum including max. length of OPGW cable		xxxxxxxxxx	_____
B.7	6.3	Is documentation required?	Yes/No	Yes	xxxxxxxxxx

Each OPGW cable offered requires a fully completed A/B schedule. This can be found in an excel version in the tender pack.

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