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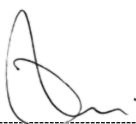
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## **1. Introduction**

This document covers the technical evaluation criteria for single mode and multimode Patch Panels (19") and single mode and multimode Patch Boxes.

## **2. Supporting clauses**

### **2.1 Scope**

The document contains the technical evaluation criteria to be used for evaluating the tender submissions for the single mode and multimode Patch Panels (19") and Patch Boxes.

#### **2.1.1 Purpose**

The criteria consist of the mandatory technical requirements, functional evaluation criteria and sample assessments for the enquiry are stated.

#### **2.1.2 Applicability**

This document shall apply throughout Eskom Transmission.

## **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] 240-70733995 Optical Distribution Frame/Patch Panel/Patch Box Specification
- [3] 240-53458797 Fibre-Optic Design & Installations – Substations
- [4] 0.54/09000: Fibre Patch Panel Drawing
- [5] 0.54/09002: Fibre Patch Box Drawing

### **2.2.2 Informative**

None

## **2.3 Definitions**

### **2.3.1 General**

<b>Definition</b>	<b>Description</b>
<b>Submission</b>	The tender in accordance with the requirements of the enquiry
<b>Technical evaluator</b>	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**

<b>Abbreviation</b>	<b>Description</b>
<b>ODF</b>	Optical Device Framework

## **2.5 Roles and responsibilities**

It is the responsibility of Transmission Commercial to implement this document.

## **2.6 Process for monitoring**

Document will be monitored by the Technical Evaluation Team.

## **2.7 Related/supporting documents**

Not applicable.

## **3. Technical Evaluation Procedure**

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

This report and any actions that are listed or recommended as a result of the assessments are by no means a confirmation or guarantee that any contract will be entered into by Eskom.

Any actions undertaken by the tenderer as a consequence of this report is for the tenderer's account. Any liability for the said actions undertaken by the tenderer 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 after the assessment should not be interpreted as the awarding of a contract and does not constitute any liability to Eskom with regards to contract placement or post-contract performance guarantees.

The evaluation method has four main parts: Mandatory criteria evaluation, Desktop evaluation, Sample evaluation and Final scores and Ranking. Each evaluation has to be passed before continuing on to the next.

The tender is for both single mode and multimode Patch Panels (19") and Patch Boxes which is specified in the Eskom document 240-70733995. Note that all the item Types A, B, C and D shall be locally manufactured.

### 3.1 Mandatory Criteria

**Table 1: Mandatory Criteria**

Item	Criteria	Comply
1	Submission of fully complete Technical Schedules A/B for Type A Single mode Patch Panel (19") provided in English which is listed in Annex A in this document.	
2	Submission of fully complete Technical Schedules A/B for Type B Multimode Patch Panel (19") provided in English which is listed Annex B in this document.	
3	Submission of fully complete Technical Schedules A/B for Type C Single mode Patch Box provided in English which is listed Annex C in this document.	
4	Submission of fully complete Technical Schedules A/B for Type D Multimode Patch Box provided in English which is listed in Annex D in this document.	
	<b>Threshold</b>	<b>Compliance to the above</b>

Submissions that pass the Mandatory criteria will proceed to the Desktop Evaluation. The tenderer is required to provide submissions for all the patch panels and patch boxes listed in Table 1, that is Type A, Type B, Type C and Type D, to proceed to the Desktop Evaluation.

The submissions for each of the Single mode and Multimode Patch Panels (19") and Patch Boxes together with the sample evaluation shall be scored within the framework of the Eskom scoring mechanism (Table 2).

**Table 2: Scoring of items in Technical Schedules A&B**

Criteria	Score
Fully compliant <ul style="list-style-type: none"> <li>Meets technical requirement(s) AND</li> <li>No unforeseen technical risk(s) AND</li> <li>Supporting information submitted and referenced.</li> </ul>	5
Partially compliant (minor deviation) <ul style="list-style-type: none"> <li>Meets technical requirement(s) with</li> <li>✓ Acceptable technical risk(s) AND/OR</li> <li>✓ Acceptable condition</li> <li>✓ Partial supporting information submitted.</li> </ul>	3
Non-compliant (major deviation) <ul style="list-style-type: none"> <li>Does not meet technical requirements AND/OR</li> <li>Unacceptable technical risk(s)</li> </ul>	0

### 3.2 Desktop evaluation

Items on the Technical Schedules A/B that are non-compliant or have no information will score zero points. Fully compliant items will score a 5, partially compliant items will score a point of 3 and non-compliant items will score a 0 as per Table 2. The weights for each individual item being scored is stated in the Technical Schedule A/B supplied in Annex A, B, C and D in this document. Critical items are assigned a higher weight. The score for each item will be multiplied by its weight to obtain the total score per item.

The Technical Schedules A/B and Additional Information table to be scored is attached in this document for convenience and also indicates how each type is weighted for the desktop evaluation.

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**Table 3: Patch Panel (19") and Patch Box Desktop evaluation**

Item	Criteria	Weighting
1	Compliance with <u>Type A Single mode 19"</u> Patch Panel Technical Schedules A/B from the Technical specification 240-70733995.	40%
2	Compliance with <u>Type B Multimode 19"</u> Patch Panel Technical Schedules A/B from the Technical specification 240-70733995.	40%
3	Compliance with <u>Type C Single Mode Patch Box</u> Technical Schedules A/B from the Technical specification 240-70733995.	10%
4	Compliance with <u>Type D Multimode Patch Box</u> Technical Schedules A/B from the Technical specification 240-70733995.	10%
	<b>Total</b>	<b>100%</b>
	<b>Threshold</b>	<b>80%</b>

The threshold of 80% is required for the tenderer to pass the Desktop evaluation and to proceed to the sample evaluation (section 3.3).

### 3.3 Sample evaluation

This part of the evaluation is performed on the basis of assessing the capability of the tenderer on supplying the 19" Patch Panel (Type A & B) and the Patch Box (Type C & D) as detailed in the standard 240-70733995, at an Eskom premises. The submission needs to comply with the drawings provided by Eskom for the Type B patch panel and Type D patch box as detailed in Table 4.

The tenderer will be given 4 weeks of notice after the desktop evaluation to provide the samples for evaluation.

The tenderer will need to provide the following samples per type that are being tendered for:

- a) Type A Single mode 19" 48 core 19" Patch Panel with Brush Panel
- b) Type B Multimode 19" 24 core 19" Patch Panel
- c) Type C Single Mode 6 core Patch Box
- d) Type D Multimode 12 core Patch Box

The patch panel (19") and the patch box shall be installed within an Eskom 19" cabinet for the practical evaluation.

The score for each item will be multiplied by its weight to obtain the total score per item.

An installation guide is also to be provided with each product. The installation guide should give all the required criteria including drawings/pictures to instruct an installer to correctly implement the patch panel.

All manufacturer's specifications of the mid-couplers, pigtails and splice organisers shall be provided at the practical visit at Eskom's premises.

Fully compliant items will score a 5, partially compliant items will score a point of 3 and non-compliant items will score a 0 as per Table 2.

Table 4: Patch Panel (19") and Patch Box Sample evaluation

Item	Criteria	Weighting
1	Compliance with Additional requirements of Technical Schedules A/B from the Technical specification 240-70733995. Single mode 48 core Patch Panel 19" Type A. See Annex E in this document	40%
2	Compliance with Additional requirements of Technical Schedules A/B from the Technical specification 240-70733995. Note: Multimode 24 core Patch Panel 19" Type B. <b>Note: 0.54/09000: Fibre Patch Panel Drawing.</b> See Annex F in this document.	40%
3	Compliance with Additional Requirements Technical Schedules A/B from the Technical specification 240-70733995. Single mode 6 core Patch Box Type C. See Annex E in this document.	10%
4	Compliance with Additional Requirements Technical Schedules A/B from the Technical specification 240-70733995. Multimode 12 core Patch Box Type D. <b>Note: 0.54/09002: Fibre Patch Box Drawing.</b> See Annex F in this document.	10%
	<b>Total</b>	<b>100%</b>
	<b>Threshold</b>	<b>80%</b>

The threshold of 80% is required for the tenderer to pass the Sample evaluation and to proceed to the final scoring and ranking evaluation (section 3.4).

### 3.4 Final Scores and Ranking

The weight split for desktop evaluation and sample evaluation is as per the table below in order to rank the tenderers:

Table 5: Desktop and Sample evaluation Split

Final Combined Evaluation	Weighting
Desktop Evaluation	50%
Sample Evaluation	50%
<b>Total</b>	<b>100%</b>
<b>Threshold</b>	<b>80%</b>

The tenderer has to pass the Desktop and Sample evaluations for all the patch panels and patch boxes listed in Table 1, that is Type A, Type B, Type C and Type D, in order to be considered technically compliant with a combined minimum threshold of 80%.

All samples, activities and factories that are involved in the manufacture of the patch panels and patch boxes shall be evaluated by Eskom representatives. Once a contract is awarded, these samples, activities and factories cannot be changed without prior consultation and approval by Eskom and shall be subjected to quality checks after first production.

The sample evaluated shall be retained by Eskom and kept during contract period if the tenderer is successful.

#### **4. Authorization**

This document has been seen and accepted by:

<b>Name and surname</b>	<b>Designation</b>
Tejin Gosai	Chief Engineer – Telecommunications PTM&C

#### **5. Revisions**

<b>Date</b>	<b>Rev</b>	<b>Compiler</b>	<b>Remarks</b>
May 2023	3	V.Naidu	Changes made to align with strategy
April 2023	2	V. Naidu	Changes made to evaluation criteria and sample requirements.
July 2022	1	V. Naidu	New document required for Tender evaluation.

#### **6. Development team**

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

- Tejin Gosai

#### **7. Acknowledgements**

Not applicable.



**Annex A – Schedule A/B – Single Mode Patch Panel 19”**

The Technical Schedule below is based on the Eskom standard, 240-70733995.

Clause No	Description of Clause	Schedule A (Eskom's Requirement)	Weighting
<b>Patch Panel 19" Single Mode</b>		<b>Single Mode</b>	
Manufacturer Details - address/location		<i>comply</i>	2
Specification/Device name		<i>comply</i>	1
3.1 a)	Enclosed metal or mild steel case and hard plastic organiser	<i>comply</i>	3
3.1 a)	Mounted in a 19" cabinet	<i>comply</i>	3
3.1.b)	Depth <260mm	<i>comply</i>	3
3.1.c)	Adhere to 240-75655504 Eskom's Corrosion Protection Standard	<i>comply</i>	2
3.1 d)	1U high (for 12 - 48 fibre) including storage for patch leads.	<i>comply</i>	3
3.1 d)	1U brush tray shall be used for storage of the leads required.	<i>comply</i>	1
3.1 e)	Mounting of adjustable brackets at midway or ends of the ODF.	<i>comply</i>	3
3.1 e)	Adjustable brackets provided for a 21" cabinet.	<i>comply</i>	3
3.1 f)	Splice organization or a splice cassette of dimensions to accommodate fibre core splices of 12 to 48.	<i>comply</i>	3
3.1 g)	Swivel tray that can move out of the main bracket.	<i>comply</i>	3
3.1 h)	Two 1U ODFs should be able to be mounted one below the other with full access to the fibres with the swivel tray function	<i>comply</i>	2
3.1 i)	Built-in pigtail guides in the swivel portion of the case	<i>comply</i>	2
3.1 j)	A cable terminating clamp should be fixed to the rear of the non-movable portion of the ODF.	<i>comply</i>	2
3.1 k)	Firmly able to secure the duct fibre cable with varying diameter.	<i>comply</i>	2
3.1 l)	Transport tubes should be provided for protecting the fibre.	<i>comply</i>	2

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Clause No	Description of Clause	Schedule A (Eskom's Requirement)	Weighting
3.1 m)	Splice cassette shall be mounted with sufficient space.	<i>comply</i>	2
3.1 m)	Splice protectors that fit the splice cassette shall be provided with 2 spare splice protectors.	<i>comply</i>	2
3.1 n)	Spacing of the holes on the faceplate - enough space to connect or disconnect the pig-tails	<i>comply</i>	3
3.1 o)	Casing finish shall be smooth for adhesive labelling	<i>comply</i>	1
3.1 p)	Mid couplers shall be of high quality. Provide mid coupler specifications.	<i>provide specification</i>	2
3.1 q)	Full complement of SC-APC (12-48) D-hole mounting mid couplers	<i>Comply 6/12/24/48 simplex SC/APC single mode</i>	2
3.1 r)	Supplied with SC/APC single mode pigtails	<i>comply</i>	1
3.1 s)	Velcro Cable ties provided	<i>comply</i>	2

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**Annex B – Schedule A/B – Multimode Patch Panel 19”**

The Technical Schedule below is based on the Eskom standard, 240-70733995.

Clause No	Description of Clause	Schedule A (Eskom's Requirement)	Weighting
<b>Patch Panel 19' Multimode</b>			
	Manufacturer Details – address/location	<i>comply</i>	2
	Specification/Device name	<i>comply</i>	1
3.2 a)	Enclosed metal or mild steel case and hard plastic organiser	<i>comply</i>	3
3.2 a)	Mounted in a 19" cabinet	<i>comply</i>	3
3.2 b)	Adhere to 240-75655504 Eskom's Corrosion Protection Standard	<i>comply</i>	2
3.2 c)	The functional specifications shall adhere to Eskom document 0.54/09000: Fibre Patch Panel Drawing	<i>comply</i>	3
3.2 c)	1U high (for 12 - 24 fibre) including storage for patch leads.	<i>comply</i>	3
3.2 c)	1U brush tray shall be used for storage of the leads required.	<i>comply</i>	1
3.2 d)	Mounting on adjustable brackets, if necessary.	<i>comply</i>	1
3.2 e)	Splice organization or a splice cassette of dimensions to accommodate fibre core splices of 12 to 24. Provide drawing	<i>provide specification</i>	3
3.2 f)	Swivel tray that can move out of the main bracket.	<i>comply</i>	3
3.2 g)	Two 1U ODFs should be able to be mounted one below the other with full access to the fibres with the swivel tray function	<i>comply</i>	2
3.2 h)	Built-in pigtail guides in the swivel portion of the case	<i>comply</i>	2
3.2 i)	A cable terminating clamp should be fixed to the rear of the non-movable portion of the ODF.	<i>comply</i>	2
3.2 j)	Firmly able to secure the duct fibre cable with varying diameter.	<i>comply</i>	2
3.2 k)	Transport tubes should be provided for protecting the fibre.	<i>comply</i>	2
3.2 l)	Splice cassette shall be mounted with sufficient space.	<i>comply</i>	2
3.2 m)	Splice protectors that fit the splice cassette shall be provided with 2 spares.	<i>comply</i>	2

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Clause No	Description of Clause	Schedule A (Eskom's Requirement)	Weighting
3.2 n)	Spacing of the holes on the faceplate - enough space to connect or disconnect the pig-tails	<i>comply</i>	3
3.2 o)	Casing finish shall be smooth for adhesive labelling	<i>comply</i>	1
3.2 p)	Mid couplers shall be of high quality. Provide mid coupler specifications.	<i>provide specification</i>	2
3.2 q)	Full complement of 6 or 12 duplex LC mid couplers fully fitted	<i>Comply 6/12 duplex LC mid couplers</i>	2
3.2 r)	Supplied with 50/125µm multimode LC pigtails.	<i>comply</i>	2
3.2 s)	Supplied with M6x15 earthing stud	<i>comply</i>	2

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**Annex C – Schedule A/B – Patch Box Single Mode**

The Technical Schedule below is based on the Eskom standard, 240-70733995.

Clause No	Description of Clause	Schedule A (Eskom's Requirement)	Weighting
<b>Patch Box</b>		<b>Single mode</b>	
	Manufacturer Details – address/location	<i>comply</i>	2
	Specification/Device name	<i>comply</i>	1
3.3 a)	Patch box shall be a closed mild steel case with a slide out cover	<i>comply</i>	3
3.3 a)	Similar to specifications of the Eskom approved drawing 0.54/09002	<i>comply</i>	2
3.3 a)	Adhere to 240-75655504 Eskom's Corrosion Protection Standard.	<i>comply</i>	1
3.3 b)	Maximum size of 200 mm x 120mm x 45mm. Provide drawing.	<i>Provide outline sketch</i>	3
3.3 c)	Mounting on a wall or on the side panel of a cabinet with din rail facility.	<i>comply</i>	1
3.3 d)	Accessories for securing and organising the fibre and splice cassette	<i>comply</i>	2
3.3 e)	Splice cassette with an approximate size of 120mm x 100mm x 10mm	<i>comply</i>	1
3.3 f)	Supplied with 6 x SC/APC single mode pigtails	<i>6x SC/APC single mode pigtails</i>	3
3.3 g)	A mounting plate with 6 single SC/APC mid couplers. Tenderer to supply specifications.	<i>Single mode SC/APC mid couplers. Tenderer to supply specifications</i>	3
3.3 h)	Suitable gland to secure the unarmoured cable	<i>comply</i>	1
3.3 i)	Provide a strain relief clamp to secure the Glass Reinforced Plastic strength member	<i>comply</i>	1
3.3 j)	Casing finish shall be smooth for adhesive labelling	<i>comply</i>	1

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**Annex D – Schedule A/B – Patch Box Multimode**

The Technical Schedule below is based on the Eskom standard, 240-70733995.

Clause No	Description of Clause	Schedule A (Eskom's Requirement)	Weighting
<b>Patch Box Multimode</b>			
	Manufacturer Details – address/location	<i>comply</i>	2
	Specification/Device name	<i>comply</i>	1
3.4 a)	Patch box shall be a closed mild steel case with a slide out cover	<i>comply</i>	3
3.4 a)	Similar to specifications of the Eskom approved drawing 0.54/09002	<i>comply</i>	3
3.4 a)	Adhere to 240-75655504 Eskom's Corrosion Protection Standard.	<i>comply</i>	1
3.4 b)	Maximum size of 200 mm x 120mm x 45mm. Provide drawing.	<i>Provide outline sketch</i>	3
3.4 c)	Mounting on a wall or on the side panel of a cabinet with din rail facility.	<i>comply</i>	1
3.4 d)	Accessories for securing and organising the fibre and splice cassette	<i>comply</i>	2
3.4 e)	Splice cassette with an approximate size of 120mm x 100mm x 10mm	<i>comply</i>	1
3.4 f)	Supplied with 12 x 50/125µm multimode LC pigtails	<i>12x 50/125µm multimode LC pigtails</i>	3
3.4 g)	A mounting plate with 6 duplex LC mid couplers. Tenderer to supply specifications.	<i>Multimode LC duplex midcouplers required. Tenderer to supply specifications</i>	3
3.4 h)	Suitable gland to secure the unarmoured cable	<i>comply</i>	1
3.4 i)	Provide a strain relief clamp to secure the Glass Reinforced Plastic strength member	<i>comply</i>	1
3.4 j)	Casing finish shall be smooth for adhesive labelling	<i>comply</i>	1
3.4 k)	Supply M6x15 earthing stud	<i>comply</i>	1

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**Annex E – Schedule A/B – Single mode Additional Requirements**

The Technical Schedule below is based on the Eskom standard, 240-70733995.

For the Type A patch panel (single mode) and Type C patch box (single mode), the following table applies:

Clause No	Description of Clause	Schedule A (Eskom's Requirement)	Weighting	
			Patch Panel	Patch Box
Additional Requirements - for Sample Assessment				
3.5 a)	Provide a sample of the patch panel and box. Type A & C.			
Complies to Size; Mounting and Finishing		comply	3	3
Complies to Accessibility; Swivel Tray/Din Rail		comply	3	3
Complies to Pigtail Guide; Terminating Clamp; Transport Tube		comply	3	3
Documentation Required- for Sample Assessment				
3.6 a) 1)	All outline drawings for ODF/Patch panel & Patch box	provide details/drawings	3	3
3.6 a) 2)	Details of splice organisers	provide details/drawings	2	2
3.6 a) 3)	Installation instructions	provide installation document	4	2
3.6 a) 4)	All specifications of mid couplers	provide specifications	2	2

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**Annex F – Schedule A/B – Multimode Additional Requirements**

The Technical Schedule below is based on the Eskom standard, 240-70733995.

For the Type B patch panel (multimode) and Type D patch box (multimode), the following table applies:

Clause No	Description of Clause	Schedule A (Eskom's Requirement)	Weighting	
			Patch Panel	Patch Box
Additional Requirements - for Sample Assessment				
3.5 a)	Provide a sample of the patch panel and box Type B & D			
Complies to Size; Mounting and Finishing		comply	5	3
Complies to Accessibility; Swivel Tray/Din Rail		comply	5	3
Complies to Pigtail Guide; Terminating Clamp; Transport Tube		comply	3	3
Comply to the Eskom drawings submitted as explained in Table 4.		comply	5	5
Documentation Required- for Sample Assessment				
3.6 a) 1)	All outline drawings for ODF/Patch panel & Patch box	provide details/drawings	3	3
3.6 a) 2)	Details of splice organisers	provide details/drawings	2	2
3.6 a) 3)	Installation instructions	provide installation document	4	2
3.6 a) 4)	All specifications of mid couplers	provide specifications	3	2

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