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**POWERTEL COMMUNICATIONS TENDER CLARIFICATIONS:**

**TENDER: ICT/PWT/07/2024: SUPPLY AND DELIVERY OF AERIAL FIBRE OPTIC CABLES WITH FITTINGS AND ACCESSORIES**

Please find below response to a Tender-Query raised by a prospective bidder.

**Bidders must take note that this document becomes part of the Tender documents and will be circulated through our website to all the bidders who are participating in the tender process**

**1.3 TECHNICAL SPECIFICATIONS FOR SINGLE MODE ADSS LONG SPAN CABLE G655**

This table should be completed and submitted together with the proposal, failure to which will lead to disqualification.

Category	Description	Specifications	Compliant Yes/No
	The general Specifications under Technical Requirements section	As stated in this document	
Sheath	Ripcord	Required	
	Material	HDPE	
	Color	Black	

**1.2 GENERAL SPECIFICATIONS**

The cables design shall consist of loose tubes (containing optical fibers with a gel filling compound) and fillers (super-absorbent yarn) stranded around a fiber re-enforced plastic (FRP) central strength member. The loose tube shall serve as a protection mechanism for the fibers. The tubes shall be filled with some gel to block water ingress and to provide stress release. The filling material shall be neutral in color and shall not inhibit the handling or identification of the optical fibers. The tubes and fiber strands of the cable shall be color coded for easy of identification. The following color-coding scheme shall be used for the fiber strands and tubes:

The cables must be compatible with installations on voltage lines infrastructure of up to 330KV

**Question1 : The required voltage is 330KV, should the sheath be changed to AT material which is resistant to electric traces?**

*No. Kindly note the material should remain HDPE as specified.*

**Question 2**

**NO. 1.3 TECHNICAL SPECIFICATIONS FOR SINGLE MODE ADSS LONG SPAN CABLE G655**

	Span Length	→ 88kV—150m ±20m → 132kV—350m ±20m → 330kV—500m ±20m
	External-Coating stripping force	1.5N <F< 5 N
	Cable diameter	8mm <d< 15mm
	Tensile strength	≥ 10 kN
	Crush resistance	≥ 3000 N/100 mm

**Q1: There are various ways of describing span and voltage, which one should I quote according to? Is it sufficient to quote only according to the following requirements for tension?**

*The span lengths are for tension purposes only. Bidders should quote fibre cables that support the above span lengths*

**Q2: Tensile force is required to be ≥10KN, is there any mistake in the description, the range of ≥10KN is large, should it be ≤10KN?**

**The tensile force should be greater than or equal to 10KN as stated**

**Q3: The requirement of flattening is ≥3000 N/100 mm, is it wrong to describe that ≥3000 N/100 mm has a wide range, should it be ≤3000 N/100 mm?**

*The flattening resistance should be greater than or equal to 3000N/100mm as stated*

Question 3:

Fiber Type	G655
1310nm	≤0.35 dB/km
1550nm	≤0.25 dB/km
1625nm	≤0.25 dB/km

**May I ask: G655 optical fiber in accordance with the national standard GB/T9771.5 requirements attenuation general test 1550nm and 1625nm, the value is generally the following chart, whether it can be implemented in accordance with the national standard?**

*Kindly quote the attenuation figures as per the technical specifications document guided by the ITU-T g655 standard.*

**Question 4:**

	Fiber Type	G657A1	
		1310nm	$\leq 0.35$ dB/km
		1550nm	$\leq 0.25$ dB/km
		1625nm	$\leq 0.25$ dB/km
	Attenuation Uniformity @ 1550±20nm		$\leq 0.05$ dB/km
	Point Discontinuity → @ 1550±20nm		$\leq 0.05$ dB
	Cable Cutoff Wavelength ( $\lambda_{cc}$ )		$< 1480$ nm

**May I ask: G657A1 optical fiber in accordance with the national standard GB/T9771.7 requires the cut-off wavelength is generally the following figure, whether it can be implemented in accordance with the national standard?**

*Kindly comply with the figures on the technical specifications document*

**Question 5:**

	Span Length	<ul style="list-style-type: none"> <li>→ LT Lines 88kV 50m ±20</li> <li>→ 11kV lines 100m ±20</li> <li>→ 33kV lines 150m ±20</li> <li>→ 88kV 150m ±20m</li> </ul>	
	External Coating stripping force	1.5N < F < 5 N	
Cable structure	Cable diameter	8mm < d < 15mm	
	Tensile strength	$\geq 5$ kN	
	Crush resistance	$\geq 3000$ N/100 mm	

**Q1: There are various ways of describing span and voltage, which one should I quote according to? Is it sufficient to quote only according to the following requirements for tension?**

*The span lengths are for tension purposes only. Bidders should quote fibre cables that support the above span lengths*

**Q2: Tensile force is required to be  $\geq 5$ KN, is there any mistake in the description, the range of  $\geq 5$ KN is large, should it be  $\leq 5$ KN?**

*The tensile force should be greater than or equal to 5KN as stated*

**Q3: The requirement of flattening is  $\geq 3000$  N/100 mm, is it wrong to describe  $\geq 3000$  N/100 mm, the range of  $\geq 3000$  N/100 mm is larger, should it be  $\leq 3000$  N/100 mm? The flattening resistance should be greater than or equal to 3000N/100mm as stated**

**Question 6**

**2.2 TECHNICAL SPECIFICATIONS FOR SINGLE MODE HIGH VOLTAGE WRAP FIBRE (G655) AND ACCESSORIES**

Category	Description	Specifications	Compliant Yes/No
	The general Specifications for Wrapped fibre	As stated in this document under Section 0	
	Voltage Lines	Should support installation on <u>88kV</u> , <u>132kV</u> , <u>330kV</u> lines	
Sheath	Ripcord	Required	
	Material	Polyethylene (PE)	
	Color	Black	
	Fiber Type	<u>G655</u>	
		<u>1310nm</u> $\leq 0.30$ dB/km	
		<u>1550nm</u> $\leq 0.25$ dB/km	

**May I ask 1: Required voltage:88,132,330KV, should the sheath be changed to AT material which is resistant to electric traces?**

*No. Kindly note the material should remain Polyethene as specified.*

**Question 7:**

**2.2 Technical Specifications for Single Mode High Voltage Wrap Fibre (G655) AND ACCESSORIES**

Specifications	Mode field / Clad Concentricity	<0.8 $\mu$ m	
	Cladding Non-Circularity	<2%	
	Coating-Cladding Concentricity	<12 $\mu$ m	
Mechanical Specifications	Span Length	<ul style="list-style-type: none"> <li>• 88kV – 150m <math>\pm</math>20m</li> <li>• 132kV – 350m <math>\pm</math>20m</li> <li>• 330kV – 500m <math>\pm</math>20m</li> </ul>	
		Macro Bending Loss	Macro-bending loss due to 100 turns should be $\leq$ 0.05dB

**Q1: There are various ways of describing span and voltage, which one should be quoted according to?**

*The span lengths are for tension purposes only. Bidders should quote fibre cables that support the above span lengths*

**Q2: Can I refer to the tension and flattening requirements in Q2 1.3 TECHNICAL SPECIFICATIONS FOR SINGLE MODE ADSS LONG SPAN CABLE G655?**

Yes

Question 8:

2.3 Technical Specifications for Single Mode Low Voltage Wrap Fibre (G657A1) AND ACCESSORIES

Mechanical Specifications	Span Length	<ul style="list-style-type: none"> <li>• LT Lines – 50m <math>\pm</math>20</li> <li>• 11kV lines – 100m <math>\pm</math>20</li> <li>• 33kV lines – 150m <math>\pm</math>20</li> </ul>	

**Q1: There are various ways of describing span and voltage, which one should be quoted according to?**

*The span lengths are for tension purposes only. Bidders should quote fibre cables that support the above span lengths*

**May I ask : Is it possible to refer to the tension and flattening requirements mentioned in question 5?**

Yes

**Question 9: Lot 3 – 2 Core drop cable**

**3.3 TECHNICAL SPECIFICATIONS FOR SINGLE MODE DROP CABLE G657A1**

Category	Description	Specifications	Compliant Yes/No
	The general Specifications under Technical Requirements section	As stated in this document	
	Voltage Lines	Should support installation on LT lines and Buildings	
Sheath	Material	HDPE	
	Color	Black	
	Fiber Type	G657A1	
		1550nm	≤ 0.25 dB/km
		1310nm	≤ 0.30 dB/km
	Attenuation Uniformity @ 1550±20nm		≤0.05dB/km
	Point Discontinuity @ 1550±20nm		≤0.05dB
	Cable Cutoff Wavelength (λ <sub>cc</sub> )		<1480 nm
	Mode-Field Diameter @ 1550nm		(8~11) ±10%μm
		1530nm	≥0.1ps/(nm.km)
	1565nm	≤10ps/(nm.km)	
	PMD (Max Individual Value)		≤0.5ps/√km
	Cladding Diameter		125.0±1μm
	Mode field / Clad Concentricity		<0.8μm
	Cladding Non-Circularity		<2%
	Coating-Cladding Concentricity		<12μm

**Q1: 2 Core Drop Cable does not have a model number requirement, should it be a flat drop cable, it usually uses LSZH sheath, can the sheath material be changed to LSZH?**

*The model number has been provided as G657A1. The requirements was that it is marked "POWERTEL DROP WIRE FIBRE", month and year of manufacture, sequential meter markings, fiber count, and fiber standard. The markings on the outer jacket shall be printed in a distinguishable color.*

*Also kindly note the sheath should remain HDPE*

**Q2: There is no specific structure requirement for 2 Core Drop Cable, is it possible to specify the model or specific structure?**

*The model has been provided, it is G657A1.*

Q3: Is the G657A1 fiber index incorrectly described? Should it be the same as the G657A1 fiber index in 1.4 TECHNICAL SPECIFICATIONS FOR SINGLE MODE ADSS MEDIUM SPAN CABLE G657A1?

*G657A1 is the correct model.*

TECHNICAL SPECIFICATIONS FOR SINGLE MODE ADSS MEDIUM SPAN CABLE G657A1 (24F & 48F)

**Kindly confirm required Span length**

*The span lengths are for tension purposes only. Bidders should quote fibre cables that support the above span lengths*

**Kindly confirm Mechanical & environmental conditions for ADSS Cable**

*Kindly refer to the indicated ranges for tensile strength, crush resistance, and temperature. Please note that the temperature range specified pertains to Zimbabwe temperatures.*

Lot 2 - Wrapped Fibre Specifications

**There is no requirement in BOQ for wrapped cables, kindly confirm whether we need to quote for same as it is included in PDF file**

*Yes. Kindly quote for the quantities as in the PDF file.*

TECHNICAL SPECIFICATIONS FOR SINGLE MODE HIGH VOLTAGE WRAP FIBRE (G655) AND ACCESSORIES

**Kindly confirm required Span length**

*The span lengths are for tension purposes only. Bidders should quote fibre cables that support the above span lengths.*

**Kindly confirm Mechanical & environmental conditions for ADSS Cable**

*Kindly refer to the indicated ranges for tensile strength, crush resistance, and temperature. Please note that the temperature range specified pertains to Zimbabwe temperatures.*

TECHNICAL SPECIFICATIONS FOR SINGLE MODE LOW VOLTAGE WRAP FIBRE (G657A1) AND ACCESSORIES

**Kindly confirm Mechanical & environmental conditions for ADSS Cable**

*Kindly refer to the indicated ranges for tensile strength, crush resistance, and temperature. Please note that the temperature range specified pertains to Zimbabwe temperatures.*

Lot 3 - 2 Core drop cable

**There is no requirement in BOQ for Drop cables, kindly confirm whether we need to quote for same as it is included in PDF file**

*Yes. Kindly quote for the quantities as in the PDF*