

**المواصفات الفنية الخاصة بالمناقصة العامة**

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**الإدارة العامة للمشتريات والمخازن**

**إدارة المشتريات - قسم العقود والمناقصات**

# REPUBLIC OF YEMEN

*Ministry of Telecommunication & Information Technology*

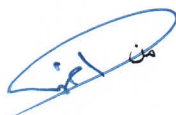
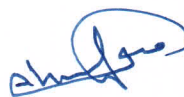


*Public Telecommunication Corporation*

Technical Specifications for

(JUMPER WIRE )

with Schedule of Quantities

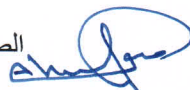
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## 1.General

This specification details construction electrical and mechanical requirements testing and packing of 1pair twisted together for jumper wire to be installed between NE( test terminal block )and MDF (protector terminal block) primary and secondary terminals in the outside plant cabinet .

## 2.Associated Documents .

2.1.where international standards are not available standards in accordance with ASTM (American society for testing and materials) and BS (British Standards)Have been specified .The latest Issue shall apply and deemed to be Integral parts of this specification.

2.2. The following standers are referred to in this specification:

ASTM B	Conductor Quality Tinned Copper Wire.
ASTM	Insulation Quality of PVC Compound.
MAT- 062	Packing and marking.

## 3.operating Environment.

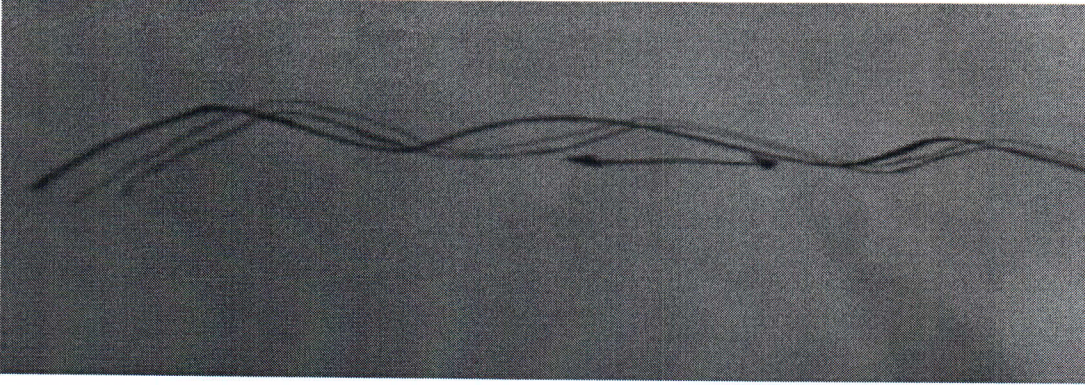
3.1.The jumper wire shall be without detriment the physical and electricalcharacteristics detailed in this specification over a working temperature range of-20Cto+80C.

3.2.The jumper wire shall not be suffer deterioration from humidity of corrosive elements in the atmosphere.

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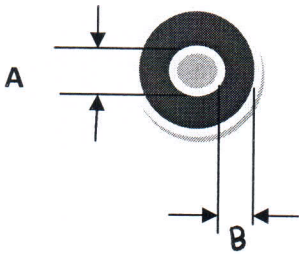

## 4-Construction.

4.1. The two insulated wires shall be twisted together with a uniform lay( lay length max.50mm)



4.2. The insulation shall be fit closely the conductor and be firm.

4.3 The conductor diameter and thickness described as shown in figure and table below.



A	CONDUCTOR DIAMETER	0.5mm
B	MIN. INSULATION THICKNESS	0.28mm

4.4. The insulation shall be colored in accordance with IEC198-2 as shown in table

Conductor A	Conductor B
White	Red

4.5 Each conductor shall be consist of Tinned Annealed Copper Wire.

4.6 Each conductor shall meet the requirements of ASTM have conductivity of atleast 96%.The diameter of the conductor shall be 0.5mm.

4.7. The insulation shall be excellent properties polyvinylchloride(PVC).

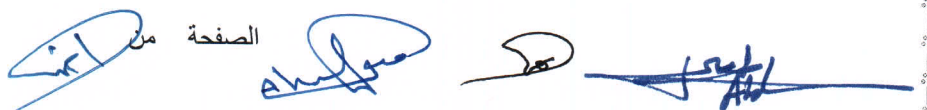
4.8. The average radial thickness at any section shall not be less than 95% of the thickness and the minimum spot thickness shall not be less than 85% of the thickness.

## 5. Electrical Requirements at 20C.

5.1. The maximum conductor resistance shall be less than  $92\Omega/\text{km}$ .

5.2. The resistance unbalance between two conductors shall not exceed 2% .5.3. The insulation resistance shall not be less than  $10000\text{ M}\Omega/\text{km}$  under 500 volts DC for one minute.

5.4. Dielectric strength between two conductors is 1500 volts DC for 3 seconds .

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## **6. Mechanical Requirements.**

All tests shall be performed as specified in Specification MTA-061.

### **6.1. Conductor**

6.1.1. The tensile strength shall not be less than 200 N/mm<sup>2</sup> for 0.5 mm.

6.1.2. The elongation at break shall not be less than 15%.

### **6.2. Insulation.**

6.2.1. The maximum melt flow index shall be 0.5 g/10 minutes.

6.2.2. The tensile shall not be less than 12.5 N/mm<sup>2</sup> .

## **7.compliance.**

Tenderers shall be state their compliance with this specification. Any deviations suggested by a manufacturer , shall be fully documented and may be presented in the form of an alternative offer.

## **8.Supply experience**

The tender shall be submit document of supply experience.

## **9.samples.**

9.1The sample shall be corresponding to submitted offer with length not less 100m.

9.2. The sample shall be stamped by manufacture company.

## **10. Delivery lengths.**

The Jumper wire shall be delivered in coils of 500 meter length.

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[Handwritten signatures and stamps]

## **11. Inspection**

**11.1** Inspection shall be performed as described in MAT-061.

**11.2** The manufacture shall be keep suitable summary records for a period of not less than five years of all electrical and physical test data.

**11.3** The test results will be supplied along each consignment.

**11.4** PTC should have a right to depute a reprehensive to inspect at factory during the manufacture of the jumper wire on the cost of the tenderer.

**11.5** The approval to attend two PTC engineers to test the jumper wire during the manufacture on the cost of the tenderer.

## **12. Packing and Marking.**

**12.1** Packing and marking shall be performed according according to MAT-602.

Packing/Unpacking instructions may be supplied along with each consignment.

The packing material should not contain any sharp edges or nails which may damage the material.




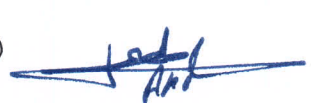
**12.2** The Jumper wires shall be supplied in spool lengths of 500 meters within a spool each wire shall be of one continuous length without any joint in-between.

**12.3** The tender shall be warrant that the materials supplied by him in accordance with the specification and are free from manufacturing and defects.

**12.4** Each spool shall be securely packed and wrapped with paper or plastic covering .

Each spool shall be have a label showing the order number manufacturer's name and length

**12.5.** The spools shall be packed and delivered in cartons of wooden or other materials suitable for long distance transportation.

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Tenderers should be give details of the construction of Jumper wire physical, electrical characteristics and mechanical characteristics in the relating to the concerned tender in the form given in the table below:-

characteristics	Tender Offer	NOTES
<b>1- CONSTRUCTION:-</b>		
1.1 Conductor material		
1.2 conductor diameter (mm)		
1.3 Insulation material		
1.4 Insulation thickness (mm)		
1.5 lay length (mm)		
1.6 color of conductor Insulation		
1.7 weight of tinned copper per Km of conductor		
1.8 standard length of roll(m)		
<b>2. ELECTRICAL CHARACTERISTICS AT 20°C</b>		
2.1 conductivity of conductor %		
2.2 Max conductor resistance $\Omega$ /Km		
2.3 Resistance unbalance /Km		
2.4 Insulation resistance at (500 VDC)		
2.5 Dielectric strength between conductors for 3 sec.		
<b>3. MECHANICAL CHARACTERISTICS</b>		
3.1 Tensile strength of conductor		
3.2 Elongation of conductor		
3.3 Tensile strength of insulation		
3.4 Elongation of insulation		
<b>4. SAMPLE</b>		
4.1 length of sample		

\*\*\* END OF SPECIFICATIONS\*\*\*



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