

NOTE: 1. DRAWING APPROVAL SUBJECT TO VALID TYPE TEST
8437866/2024/EEMRT/1051, TO BE CHECKED DURING ACCEPTANCE TESTS
 2. FOR EPC CONTRACTS ONLY

Drawing approval subject to valid vendor registration

TCL CABLES PVT LTD
 Guaranteed Technical Particulars

Customer : Transmission corporation of Andhra Pradesh Limited (APTransco)			
PROJECTNAME:-		AS APPLICABLE	
PO :-			
Contractor: AS APPLICABLE			
TITLE: Power Cable			
SR. NO.	PARTICULARS	Unit	3.5 C X 120 Confirmation/Commitement by the Supplier/Bidder
1	Name of Manufacturer.		TCL CABLES PVT LTD
2	Applicable Standard.		IS : 1554 (PART-1) 1988
3	Voltage Grade.	Volts	1100
4	Permission variation in a) Voltage	%	±10
	b) Frequency	%	±5
	c) Combined	%	±10
5	Wheather Suitable for Earthed or Uearthed System		Both
6	SIZE	SQ.MM	3.5 C X 120
7	Type.		AYFY
8	Conductor :		
a.	Material		H2 GRADE ALUMINIUM AS PER IS 8130 : 2013 CLASS 2
b.	Nominal Size (Phase / Neutral)	SQ.MM	120 / 70
c.	Number of wires in each conductor (Phase/Neutral)	Nos.	19 / 19
d.	Diameter of Each Wire (Phase/Neutral)BEFORE STRANDING	mm	2.84 / 2.18
e.	Shape of conductor		STRANDED SECTOR SHAPE
f.	Direction of lay of Conductor		RIGHT HAND LAY
g.	DC Resistance at 20°C (MAX.) PHASE/NEUTRAL	Ohms/Km	0.253 / 0.443
h.	AC Resistance at 70°C (MAX.) PHASE/NEUTRAL	Ohms/Km	0.304 / 0.531
9	Insulation		
a.	Material.		EXTRUDED PVC TYPE A
b.	IS Reference		IS :1554 (PART-1) 1988
c.	Nominal Thickness. (Phase / Neutral)	mm	1.60 / 1.40
d.	Cores identification		RED , YELLOW , BLUE & BLACK
f.	Cores identification		Confirming to : IS 1554
g.	MINIMUM FICTITIOUS DIAMETER UNDER INNER SHEATH	mm	35.7
10	Inner Sheath		
a.	Material.		EXTRUDED PVC TYPE ST-1
b.	IS Reference		IS : 5831 - 1984
c.	Minimum Thickness	mm	0.50
d.	MINIMUM FICTITIOUS DIAMETER OVER INNER SHEATH	mm	36.7
e.	Colour of inner sheath		Black
11	Armouring		
a.	Material & Type		GALVANIZED STEEL STRIP
b.	Extruded OR Wrapped		Wrapped
c.	IS Reference		IS: 3975/1999
d.	Nominal Diameter	mm	4 X 0.80
e.	MINIMUM FICTITIOUS DIAMETER OVER ARMoured	mm	38.3
f.	Direction of lay of armour		LEFT HAND LAY
g.	Min . Coverage of armour		upto 90 %
h.	DC Resistance of armour (Max) 20* C	ohm/km	2.20



Chief Engineer/Projects
APTRANSCO/VS/Vijayawada.

12	Outer Sheath		
a.	Material.		EXTRUDED PVC
b.	Type.		ST-1
c.	IS Reference		IS : 5831 - 1984
d.	Minimum Thickness	mm	1.72
e.	Colour		BLACK
f.	MINIMUM FICTITIOUS DIAMETER OVER OUTHER SHEATH	mm	41.7
13	FRLS PROPERTIES		
a.	Oxygen Index (Minimum)	%	-
b.	Temperature index (Minimum)	Deg C	
c.	Smoke Density (Maximum)	%	
d.	Acid Gas Generation (HCL%)Maximum	%	
e.	Flamibility Test a.Unefected Portion (min.)	mm	
	b. Flame Duration (Max.)	sec.	
14	Insulation Test		
	a) Minimum volume resistivity at (ohm-cm)		
	(i) 27 deg. C.		1×10^{13}
	(ii) 70 deg. C.		1×10^{10}
b.	Cable - Drum		Shall confirm to IS 10418 only
c.	Recommended min. Bending radius of cable	mm	12 X OVERALL DIA OF A CABLE
d.	Recommended Max. Safe pulling force		
i)	When Cable Pulled by pulling eye	N	12900
e.	Packing Material		NON RETURNABLE WOODEN DRUM
f.	Embossing on Cable		PROVIDE AS PER IS-1554 (PART-1)1988, Name of Customer,Year of manufacturing, APTRANSCO
g.	Cable should be ISI Marked		Yes , All cable furnish with ISI - Marked only
h.	Sequential marking of length (Printing)		PROVIDE EVERY METER
i	End cap		Provided both end of cable
15	(i) Minimum tensile - strength of insulation	N/mm ²	12.5(min)as per IS 5831:1984
	(ii) Minimum elongation at break	%	150(min)as per IS 5831:1984
16	(i) Minimum tensile - strength of sheath	N/mm ²	12.5(min)as per IS 5831:1984
	(ii) Minimum elongation at break	%	150(min)as per IS 5831:1984
17	(i) Minimum tensile - strength of armour	Mpa	300-500 as per IS 3975:1999
	(ii) Minimum elongation at break	%	10(min) as per IS 3975:1999
18	PVC Cable		
a)	High voltage test		3KV(rms) for 5mint as per IS 1554(part-1):1988
c)	Short circuit current rating for armour		KA/\sqrt{t} (K- 0.05 Factor in Amp) (where A = Area of Armour in mm ² & t = time in seconds)
19	a)Current carrying capacity in air and corresponding assumptions/conditions of installation		As per IS: 1255
20	ELECTRICAL CHARACTERISTICS		
a.	laying up of cable is accordance with		Confirming to : IS 1255
b.	Short Circuit Rating for 1 Sec. Duration	KA	9.10
c.	Conductor Temperature allowed for Continuous Operation condition (Max.)	°C	70
d.	Conductor Temperature allowed for the short circuit condition (Max.)	°C	160
21	GENERAL		
a.	Standard drum length	Mts	500/1000 (±5 %) OR ACTUAL
b.	Cable - Drum		Shall confirm to IS 10418 only
c.	Recommended min. Bending radius of cable	mm	12 X OVERALL DIA OF A CABLE
d.	Recommended Max. Safe pulling force		
i)	When Cable Pulled by pulling eye	N	12900
e.	Packing Material		NON RETURNABLE WOODEN DRUM
f.	Embossing on Cable		PROVIDE AS PER IS-1554 (PART-1)1988, Name of Customer,Year of manufacturing,APTRANSCO
g.	Cable should be ISI Marked		Yes , All cable furnish with ISI - Marked only
h.	Sequential marking of length (Printing)		PROVIDE EVERY METER
i	End cap		Provided both end of cable

