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2.For EPC contractors only.

			<b>Customer : Transmission corporation of Andhra Pradesh Limited (APTransco)</b>						
			<b>PROJECTNAME:-</b>			<b>AS APPLICABLE</b>			
			<b>PO :-</b>						
			<b>Contractor: AS APPLICABLE</b>						
			<b>TITLE: Control Cable</b>				<b>2.5</b>		
	<b>PARTICULARS</b>		3 C X 2.5	5 C X 2.5	7 C X 2.5	10 C X 2.5	14 C X 2.5	19 C X 2.5	27 C X 2.5
<b>SR. NO.</b>	<b>Description</b>	<b>Unit</b>	<b>Confirmation/Commitement by the Supplier/Bidder</b>						
1	<b>Name of Manufacturer.</b>		CHANDRESH CABLES LTD(BRAND NAME-AVOCAB)						
2	<b>Applicable Standard.</b>		IS : 1554 (PART-1) 1988						
3	<b>Voltage Grade.</b>	Volts	1100						
4	<b>Permission variation in a)Voltage</b>	%	±10						
	<b>b)Frequency</b>	%	±5						
	<b>c) Combined</b>	%	±10						
5	<b>Wheather Suitable for Earthed or Uearthed System</b>		Both <span style="float: right;"><b>2.5</b></span>						
6	<b>SIZE</b>	SQ.MM	3 C X 2.5	5 C X 2.5	7 C X 2.5	10 C X 2.5	14 C X 2.5	19 C X 2.5	27 C X 2.5
7	<b>Type.</b>		YWY ( FRLS & C2 TYPE )			YFY ( FRLS & C2 TYPE )			
8	<b>Conductor :</b>								
a.	Material		EC GRADE ANNEALED PLAIN COPPER CLASS-2 AS PER IS 8130 : 2013						
b.	Nominal Size	SQ.MM	2.5						
c.	Number of wires in each conductor	Nos.	7						
d.	Diameter of Each Wire (Before Stranding) Minimum	mm	0.67						
e.	Direction of lay of Conductor		RIGHT HAND LAY						
e.	Shape of conductor		STRANDED CIRCULAR						
f.	DC Resistance at 20°C (MAX.)	Ohms/Km	7.41						
g.	AC Resistance at 90°C (MAX.)	Ohms/Km	9.48						
9	<b>Insulation</b>								
a.	Material.		EXTRUDED PVC TYPE A						
b.	IS Reference		IS : 1554 (PART-1) 1988						
c.	Nominal Thickness.	mm	0.90	0.9	0.9	0.9	0.9	0.9	0.9
d.	Cores identification		3 CORE> RED,YELLOW,BLUE,5 CORE> RED,YELLOW,BLUE,RED & GREY, ABOVE 5 CORE>ALL GREY WITH NUMBER PRINTING AS PER IS:1554(P-1)1988						
10	<b>Inner Sheath</b>								
a.	Material.		EXTRUDED PVC TYPE ST-1						
b.	IS Reference		IS : 5831 - 1984						
c.	Minimum Thickness	mm	0.30	0.3	0.3	0.3	0.3	0.3	0.3
d.	Mimimum Fictitious Diameter over Inner Sheath	mm	8.40	10.30	11.40	15.00	16.50	18.60	22.70

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<b>11</b>	<b>Armouring</b>								
a.	Material & Type		GALVANIZED STEEL ROUND WIRE						
b.	Extruded OR Wrapped		Wrapped						
c.	IS Reference		IS: 3975/1999						
d.	Nominal Diameter	mm	1.4 (± 0.04)			4 X 0.8 (± 10%)			
e.	Mimimum Fictitious Diameter over Armour	mm	11.20	13.10	14.20	16.60	18.10	20.20	24.30
f.	Direction of lay of armour		LEFT HAND LAY						
h.	DC Resistance of armour (Max)		As per IS:1554(P-1)1988 Table no-6						
<b>12</b>	<b>Outer Sheath</b>								
a.	Material.		EXTRUDED PVC						
b.	Type.		ST-2 WITH FRLS PROPERTIES						
c.	IS Reference		IS : 5831 - 1984						
d.	Minimum Thickness	mm	1.24	1.24	1.24	1.4	1.4	1.4	1.4
e.	Colour		BLACK						
f.	Mimimum Fictitious Diameter of Cable	mm	13.7	15.6	16.68	19.4	20.9	23	27.14
<b>13</b>	<b>FRLS PROPERTIES</b>								
a.	Oxygen Index Minimum	%	29						
b.	Temperature index Min	Deg C	250						
c.	Smoke Density Max	%	60						
d.	Acid Gas Generation (HCL%) Max	%	20						
e.	Flamibility Test a.Unefected Portion (min.)	mm	50						
	b. Flame Duration (Max.)	sec.	60						
<b>14</b>	<b>Insulation Test</b>								
	d) Minimum volume resistivity at (ohm-cm)								
	(i) 27 deg. C.		1 X 10 <sup>13</sup>						
	(ii) 70 deg. C.		1 X 10 <sup>10</sup>						
15	(i) Minimum tensile - strength of insulation	N/mm <sup>2</sup>	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 <sup>2</sup>	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						
<b>18</b>	<b>PVC Cable</b>								
	a) High voltage test		3KV(rms) for 5mint as per IS 1554(part-1):1988						
	b) Short circuit current rating for armour	KA	KA/vt (K- 0.05 Factor in Amp) (where A = Area of Armour in mm2& t = time in seconds)						
	a)Current carrying capacity in air and corresponding assumptions/conditions		As per IS : 1255						

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<b>20</b>	<b>ELECTRICAL CHARACTERISTICS</b>									
a.	laying up of cable is accordance with			Confirming to : IS 3961-2						
b.	Continuous Current Rating for Standard IS Condition when Laid.			As per IS 3961-2						
	i. In Ground.at 30°C	Amps								
	ii. In Air at 40°C	Amps								
	iii. In Air at 50°C	Amps								
c.	Short Circuit Rating for 1 Sec. Duration	KA		0.285						
d.	Conductor Temperature allowed for Continuous Operation condition (Max.)			70						
e.	Conductor Temperature allowed for the short circuit condition (Max.)	°C		160						
<b>21</b>	<b>GENERAL</b>									
a.	Standard drum length	Mts		500/1000 ( ±5 %)						
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		375	625	875	1250	1750	2375	3375
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, FRLS,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						
										

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**CHIEF ENGINEER/PROJECTS**  
**APTRANSCO/VISVIJAYAWADA**

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