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Annexure-II

4. General Technical Requirements:

SL. NO.	TECHNICAL PARTICULARS	UNIT	REQUIREMENT			
Aluminium alloy Stranded conductor, (IS 398 Part 4, table 2)						
			Size of conductor		Area of Conductor	
3	Actual Sectional area of the conductor	mm ²	ZEBRA		465	
			Size of conductor	Area of Conductor	No. of Strands	Dia of strands
4	Stranding & wire dia. of the conductor	No/mm	ZEBRA	465	37	4
			Size of conductor	Area of Conductor	Overall Diameter	
5	Approx. overall dia. of the conductor	mm	ZEBRA	465	28	
			Size of conductor	Area of Conductor	Mass	
6	Approx. mass of the conductor	Kg/km	ZEBRA	465	1280.5	
			Size of conductor	Area of Conductor	Max Conductor resistance	
7	Calculated max resistance of 20 °C of the conductor	Ohm/km	ZEBRA	465	0.0734	
			Size of conductor	Area of Conductor	Breaking load	
8	Approx. calculated breaking load of the conductor	KN	ZEBRA	465	136.38	
Aluminium Alloy wire used in the construction of stranded Aluminium Alloy Conductors, (IS 398 Part 4, table 1)						
			Size of conductor	Nominal Dia.	Maximum	Minimum
9	Diameter	mm	ZEBRA	4	4.04	3.96
			Size of conductor	Nominal Dia.	Cross Sectional Area	
10	Cross Section Area of Nominal dia. Wire	mm ²	ZEBRA	4	12.57	
			Size of conductor	Nominal Dia.	Mass	
11	Mass of individual wire	Kg/km	ZEBRA	4	33.93	
			Size of conductor	Nominal Dia.	Breaking Load	

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12	Minimum Breaking Load of each strand after stranding	KN	ZEBRA	4	3.69	
			Size of conductor	Nominal Dia.	Max. Resistance	
13	Max Resistance at 20 °C	Ohm/km	ZEBRA	4	2.663	
		No. of wires in Conductor	Size of conductor	No of Strands	Min	Max
15	Lay ratio of conductor (Min. / Max.) Note – As per IS 398 part 4, table 3	Layer 1: 3/6 Wires Right Hand	ZEBRA	37	10	17
		Layer 2: 12 Wires Left Hand			10	16
		Layer 3: 18 Wires Right Hand			10	14
			Size of conductor		Length of the Cond	
17	Standard length of conductor (meter) Note – Tolerance on standard length of Conductor is ±5 %	Mtr	ZEBRA		2000	
			Size of conductor	No of Strands	Modulus of elasticity	
18	Modulus of Elasticity Note – As per IS 398 Part 4 ANNEX A	Kg/cm ²	ZEBRA	37	0.5814 X 10 ⁶	
			Size of conductor		Co-efficient of liner expansion per °C	
19	Co – efficient of liner expansion per °C Note – As per IS 398 Part 4 ANNEX A		ZEBRA		23 X 10 ⁻⁶	
			Size of conductor		Current Carrying Capacity Amp (min)	
22	Continuous max current carrying capacity in still air at 40°C ambient temperature (Max)	Amp	ZEBRA		906	Bidder to provide the supporting doc with calculation

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7. TESTS:

C. TYPE TESTS:

Sl. No.	Conductor Size (mm ²)	Remarks
1	34	Type test done on 232 mm ² AAA Conductor as per this Technical Specification will be also valid for 232 mm ² , 148 mm ² , 100 mm ² , 80 mm ² , 55 mm ² and 34 mm ² AAA Conductor.
2	55	
3	80	
4	100	
5	148	
6	232	If Bidder has submitted the conductor sizes mentioned other than 232 mm ² , type test reports will be considered for that conductor size & below sizes.
7	465	Type to be provided for 465 mm ² AAA Conductor.

8. TYPE TEST CERTIFICATES:

The bidder shall furnish the type test certificates of the cable for the tests as mentioned as above as per the corresponding standards. All the tests shall be conducted by CPRI / ERDA / Govt. Owned NABL Accredited Labs as per the relevant standards. Type test should have been conducted in certified Test Laboratories during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TPNODL / TPWODL / TPCODL/ TPSODL / TPDDL / TPADL /Tata power Mumbai.