

General Technical Particulars of 11kV Class HT UG Cable

Sl. No.	Particulars	unit	HT UG Cable	Reference
1	Cables			
	a) Name of manufacturer			
	b) Place of manufacture			
2	Cable Type		A2XWY	IS 7098-II/2011 clause 21.3
3	Applicable specificaton & standards voltage Grade		IS: 7098 (Part-2) / 11kV	
4	Suitable for effective Earth/Unearth system			
5	Conductor screen, Insulation and insulation screen is manufactured by Tripple extrusion techniq only			
6	Permissible voltage & frequency variation for satisfactory operation			
7	Continuous current for standard conditon as per IS:			
	a) In air (45° C)	Amps		Table 10 of IS 3961 (P7)/2017
	b) In Ground (30° C)	Amps		
8	c) In Duct	Amps		
	Conductor			
	a) Material		Aluminium (H2/H4 Grade)	BESCOM TS Clause 8.1 & 10.0 & Clause 4 of IS: 8310:2013
	b) Purity & Resistivity of Conductor@20°C			
	c) Shape of conductor		Strandard compacted circular	BESCOM TS Clause 8.1 & Clause 4 of IS 8130/2013
	d) Geometrical cross sectional area	mm ²		
	e) Number of wire: (min)	No		BESCOM TS Clause 8.1/ Table 2 of IS 8130/2013
	f) Diameter of Wire : mm before compacting & strand Diameter	mm		However, the effective cross section should be as specified as specified at Sl. 8d
	f) Maximum DC resistance of the conductor at 20° C	Ω/KM	.....(CR value only for reference)	Table 2 of IS 8130:2013
9	g) Sampling batch for test		IS 7098-II/2011 Annex D	Annex D of IS 7098-II/2011
	Conductor Screening			

	a) Material		Pressure Extruded Semiconducting compound	
	b) Process		Triple Extrusion	
	c) Thickness (Min)	mm	0.4mm	BESCOM requirement as per clause No.10.02 of BESCOM TS & Clause: 11.1 of IS-7098 Part-2: 2011
	d) Continuous working temp	deg.C	90	
	e) Max allowable temp at termination of short circuit	deg.C	250	PART 3 of IS 13573/
10	Insulation:			
	a) Material		XLPE	BESCOM requirement, As per clause No.10.03 & Table 1, Annexure TS-2 of BESCOM TS and clause 5 of IS 7098-II /2011
	b) Thickness of Insulation (Nom)	mm		Table 4 of IS 7098-II /2011
	i) Between Cores	mm		
	ii) Between Cores & Inner Sheath			
	c) Minimum thickness of insulation at any one point	(mm)		
	d) Extrusion Type		Tripple Pressure Extruded	
	e) Specific insulation resistance at 90° C	Ohm-cm		Table 1 of IS 7098-II /2011
	f) Hot Set test:			
	a) Elongation under load (Max)	%	90% Max	BESCOM requirement TS Schedule-II Annexure TS-2
	b) Maximum Permanent elongation after cooling (Max)	%	10% Max	
	c) Tensile Strength at break (Min)	N/mm ²	..... Min	Table-1 of IS 7098-II /2011
	d) Elongation at break (Min)	%	..... Min	
	e) Shrinkage (Max)	%	..... Max	
11	Insulation Screening:			
	a) Material		Extruded Cross linked semi conducting compond	As per Bescom Clause 10.4 of BESCOM TS & clause 13 of IS 7098 P-II /2011
	b) Min. Thickness of extruded semi conducting layer	mm	0.3mm (Min)	BESCOM requirement and Clause 10.4.1 of TS
	c) Metallic Part: (Material)		Plain copper tape	BESCOM requirement and clause 10.4.2 of TS
	d) Size of copper Tape (Minimum)	mm	0.045	BESCOM requirement and clause 10.4.2 of TS

	e) Whether over lapping provided		Min 5% of Overlapping	BESCOM requirement and Clause 10.4.2 of TS
	f) Short Circuit rating in 1 sec.	KA		Calcualtion sheet shall be enclosed
12	Inner Sheath			
	a) Material		PVC copound Type -ST2	Clause 10.6.1 of Bescom TS. & IS 5831-1984
	b) Extrusion Type		Pressure Extruded	
	c) Thickness (Min)	mm		Table 5 of IS 7098-II /2011
	d) Nominal Dia over Inner Sheath	mm		10462(P-1)/1983 Fictitious calculation
13	Armouring			
	a) Material		Galvanised Steel	Clause 10.7.2 of Bescom TS.
	b) Type of armouring		Round wire	
	c) Nominal Dimensionof Armour wire	mm	..... Dimension and % of Tolerance	IS 3975/ 1999 (RA 2004) & Tolerance shall be ± 5 %. As per Clause 10.7.2 of TS
	d) Minimum Number of Armour wire		..... Numbers (Minimum)	IS-7098-II/2011 & 10462(P2)/1983
	e) Whether Galvanised			
	f) Mass of Zinc coating	gm/M ²		Table 2 of IS-4826/1979 & IS 3975 /1999
	g) Nominal Dia over Armouring	mm		IS-10462(P-1)/1983
	h) Short Circuit rating in 1 sec	KA		By Formula
	i) Resistivity of the Aroured wire	ohm -cm (max)		Clause No. 10.7.2 of BESCOM T.S. & IS 3975/ 1999 (RA 2004) Clause 8.4.1
14	Outer Sheath			
	a) Material			Extruded PVC Compound Type ST-2 as per IS 5831-1984
	b) Extrution type			Extruded
	c) Min. thickness of sheath	mm		Table 7 of IS 7098-II/2011
	d) Nominal Overall diameter of cable	mm		IS-10462/1983 Fictitious dia
	e) Tensile Strength at break	N/mm ²		
	f) Elongation at break	%		

	g) Shrinkage	%		
	h) Thermal stability test for sheath	Minutes	100 minutes (Min)	BESCOM Requirement 100 Minutes (Min) as per Clause No. 10.8.1 of BESCOM T.S.
15	Short circuit withstand capacity			
	a) Short Circuit withstand capacity	KA		
	b) Duration of short circuit	sec	one	
16	AC resistance per core at operating temperature	ohm/km		Calculation sheet shall be enclosed
17	Reactance Ohm/Km	ohm/km		
18	Capitance per core	μF/Km		
19	Allowable maximum conductor temperature when carrying current			
20	Insulation resistance at 27° C	ohm-cm		Table 1 of IS 7098-II/2011
21	Loss tangent at Ambient Temperature at U _o			Clause 20.4.2 of IS 7098-II/2011
22	Maximum cable charging current at normal operating volt	A/km		Calculation sheet shall be enclosed
	Additional data			
23	Core identification		Application of coloured stripes Red, Yellow & Blue	IS-10418/1982
24	Standard Packing Length and Tolerance	Mtrs	250/500 Mtrs	Clause No. 13.2.4 of BESCOM T.S.
25	Scheme of identification of the cable		Manufacturer's name or trade mark, voltage grade, year of manufacture and the letters "BESCOM". The identification shall repeat every 300/350 mm along with length of the cable.	Clause 21.1 of IS 7098-II/2011