

## LT XLPE CABLE

OVERALL DIAMETER AND CURRENT RATINGS (IN GROUND) OF 1.1 KV, 3 ½ CORE, XLPE / PVC SHEATHED (ARMOURED AND UNARMOURED) CABLES

Nominal Area of Conductor	Approximate Overall Diameter (mm)				Current Rating	
	Unarmoured		Armoured		Multi core	
mm <sup>2</sup>	PVC	XLPE	PVC	XLPE	PVC	XLPE
25	23.9	22.5	25.8	24.4	76	90
35	26.2	24.9	28.1	27.0	92	108
50	29.5	27.4	31.4	29.1	100	126
70	33.5	31.8	35.2	33.5	135	158
95	37.2	34.9	38.9	36.7	165	187
120	41.2	38.7	42.7	40.6	185	215
150	43.8	41.6	46.1	43.9	210	240
185	47.7	43.8	49.6	47.1	235	273
240	56.6	53.2	58.3	55.2	275	316
300	62.5	59.2	64.2	61.0	305	355
400	69.8	66.8	71.6	68.3	335	420
500	77.2	73.4	79.4	74.8	350	505

RATING FACTOR FOR VARIATION IN GROUND TEMPERATURE				
GROUND TEMPERATURE ( ° C )	30	35	40	45
RATING FACTOR (XLPE)	1.00	0.94	0.91	0.87
RATING FACTOR (PVC)	1.00	0.94	0.87	0.79

### XLPE Vs PVC – COMPARATIVE PROPERTIES SUMMARY

	PROPERTIES	XLPE	PVC
1.	Chemical structure	Thermal, pure hydrocarbon, Non-Polar C-C or Si-O Bonds	Thermoplastic, Polar Rotosenated, C-Ci Bond
2.	Polymer structure	Partial Crystalline	Amorphous
3.	Temperature rating Degree ° C		
	a) Operating	90	70
	b) Emergency overload	130	90
	c) Short circuit	250	135
4.	Cable installation job	Easy due to less wt, less Diam, and less bending radius	
5.	Current carrying capacity	30% higher than PVC	
6.	Tensile strength (N/mm <sup>2</sup> )	>15	>13
7.	Elongation (%)	550	240
8.	Ageing resistance at 100 Deg ° C	Excellent	Moderate
	120 Deg ° C	Good	Poor
	150 Deg ° C	Moderate	Very poor
9.	Dielectric strength (KV/mm)	550	350
10.	Volume resistance (Ohm. Cm)	1017	1014
11.	Thermal resistivity (Deg ° C /cm/watt)	350	730
12.	Dielectric constant at 20 Deg ° C	2.3	7.4
13.	Power factor at 20 Deg ° C x 10 <sup>3</sup>	0.4	80
14.	Low temperature brittleness Deg ° C	-90	-15
15.	Deformation resistance at 150 Deg ° C	Good	Poor
16.	Fungus resistance	Good	Poor
17.	Moisture penetration resistance	Excellent	Good
18.	Oil resistance	Excellent	Fair
19.	Solvent resistance	Excellent	Poor
20.	Acid resistance	Excellent	Fair
21.	Alkali resistance	Excellent	Good
22.	Health	Neutral	carcinogenic