



XLPE INSULATED HEAVY DUTY CABLES 650/1100 VOLTS



IS:7035 Part-II





Introduction

How does your house breathe? How do commercial establishment respire? Today, right from homes to institutions, factories to offices, malls to showrooms, spaces breath through wires and cables. Yes! Wires and cables lend life to spaces!

We manufacture pvc insulated sheathed & unsheathed wire & cable for working voltage upto & included 1100 volts.

In the field of manufacturing of wires & cables. We have acquired reasonable understanding of market requirement & are hence in a position to offer product that satisfies the demand of different clients.

We are an ISO certified company which ensures that there is no compromise on quality quotient while manufacturing wire & cable that match with the defined quality standards.

We have launched this very lifeline under the brand of **STANLEY**.

We join this journey to lend life to spaces, exploiting technology the innovative way to facilitate safe environments everywhere and contribute to a better life. Quality is the cornerstone of the entire manufacturing process of our range of wires and cables. We leave no room for grievances.

LT-XLPE Cables Application

'STANLEY' LT-XLPE Cables

'STANLEY' LT-XLPE Cables are manufactured as per IS:7098 / Part-I to be suitable for conductor temperature of 90°C and short circuit capacity 250°C. 'STANLEY' LT-XLPE Cables have excellent Mechanical, Electrical and Thermal Properties surpassing those of conventional polymeric dielectrics. The superior properties of XLPE have led to lower insulation thickness, high current carrying capacity, reduced weight and dimension. 'STANLEY' LT-XLPE Cable is the economic solution for low tension power distribution with high efficiency and total reliability.

Because of the excellent mechanical and electrical properties 'STANLEY' LT-XLPE CABLES can be used extensively in Power Stations, Industrial Units, Projects and Power Transmission and Distributions. They are ideally suited for Steel, Chemical, Fertilizers & Process Industry where cables are exposed to chemical corrosion or in heavy industries, where severe load fluctuations occur and for systems with frequent over voltages. 'STANLEY' LT-XLPE CABLES can also be used at higher ambient temperature on account of their higher operating temperature. Their excellent installation properties permit the cable to be used even under most difficult cable routing conditions and also in cramped conditions. Single core cable due to their excellent installation properties are used in Power Station, Sub-Station and Industrial Plants.



PRODUCT RANGE

CABLE TYPE	CONDUCTOR	GRADE	MFG.RANGE SPECIFICATION	RELEVANT
Power Cables	Aluminium & Copper Conductor	1.1 KV	Score upto 1000mm Sq and Multicore upto 630 mm sq	IS:7098/ Part-1/1988
Control Cables	Copper Conductor	1.1 KV	Upto 61 Crore	IS:7098/ Part-1/1988



PRODUCT RANGE

LT-XLPE Cables

Main Feature

- LT-XLPE Cables have longer life as compared to conventional PVC Cables.
- LT-XLPE Cables have a higher conductor temperature rating i.e. 90°C.
- LT-XLPE Cables have a higher emergency overload capacity 130°C.
- Max. temperature limit under short circuit conditions for LT-XLPE Cables is 250°C. Hence XLPE-Cables have higher short circuit rating.
- Insulation resistance of LT-XLPE Cable is excellent & superior to Identical PVC Cables.
- LT-XLPE Cables have high corrosion resistance in polluted atmosphere.
- LT-XLPE Cables have better properties of resistance to chemical and corrosive gases.
- LT-XLPE Cables have low installation cost because of light weight, dimensions and are far more flexible.
- LT-XLPE Cables have better properties to withstand vibrations, hot impacts.
- Jointing of LT-XLPE Cables is easier and quicker.

PRODUCT CODE

As per IS:7098-Part:1 / 1988

CONSTITUENT	CODE
Alumininum Conductor	A
XLPE Insulation	2X
Round Steel Wire	W
Flat Steel Strip Armour	F
Double Round Steel Wire Armour	WW
Double Flat Steel Strip Armour	FF
Non Magnetic (Al) Round Wire Armour	Wa
Non Magentic (Al) strip Armour	Fa
PVC Outer Sheath	Y

CONSTRUCTION

Conductor

Conductors are made from electrolytic grade aluminium / copper conforming to IS:8130/2013, and are Compact circular or Compact Sector shaped, Solid/Stranded circular.

Insulation

STANLEY XLPE cables use specially made from high grade cross-linked polyethylene for insulation by extrusion process.

Core Identification

The cores are identified by different colours:

Single core	Red, Yellow and Blue or natural
Two core	Red and Black
Three core	Red, Yellow and Blue
Four core	Red, Yellow and Blue and Black
Three and half core	Red, Yellow, Blue and reduced neutral core in Black
Five core	Red, Yellow, Blue, Black and Grey
Six core and above	Six core and above Two adjacent cores (counting and direction core) in each layer Blue and Yellow. Remaining cores Grey Core numbering and different colours are also for control cables.

Laying Up

In multicore cables, cores are laid-up as per the above colour scheme, interstices are filled whenever necessary to make the laid-up cores circular.

Inner Sheath

Laid-up cores are bedded over with thermoplastic material for protection against mechanical and electrical damage.

Armouring

Armouring is provided over the inner sheath to guard against mechanical damage. Armouring is generally of galvanised steel wires or strips [in single core cables used in AC system armouring is by non-magnetic hard drawn aluminium wires / strips]. Round steel wires are used where the diameter over the inner sheath does not exceed 13 mm, flat steel strip' armour is used above 13 mm dia. Round wire of different sizes can be provided against specific request.

Outer Sheath

Specially formulated heat resistant black PVC compound conforming to the requirement to type ST2 of IS:5831-1984, extruded to form the outer sheath. STANLEY XLPE also offers a specially formulated Flame Retardant Low Smoke compound (FRLS) for outer sheath used in fire hazardous environment.

Operating Characteristic

A. Max. Conductor Temperature for continuous operation	:	90°C
B. Ambient Air Temperature	:	40°C
C. Standard Ground Temperature	:	30°C
D. Thermal Resistivity of Soil	:	1.5 km/W
E. Thermal Resistivity	:	350°C cm/Watt
F. Depth of Laying (for Cables laid direct in ground)	:	750 mm
G. Minimum Bending Radius (for Multi Core Cables)	:	12D (D-Dia of Cable)
H. Max. Conductor temperature during short circuit	:	250°C
I. Maximum Ambient, Air temperature	:	85°C

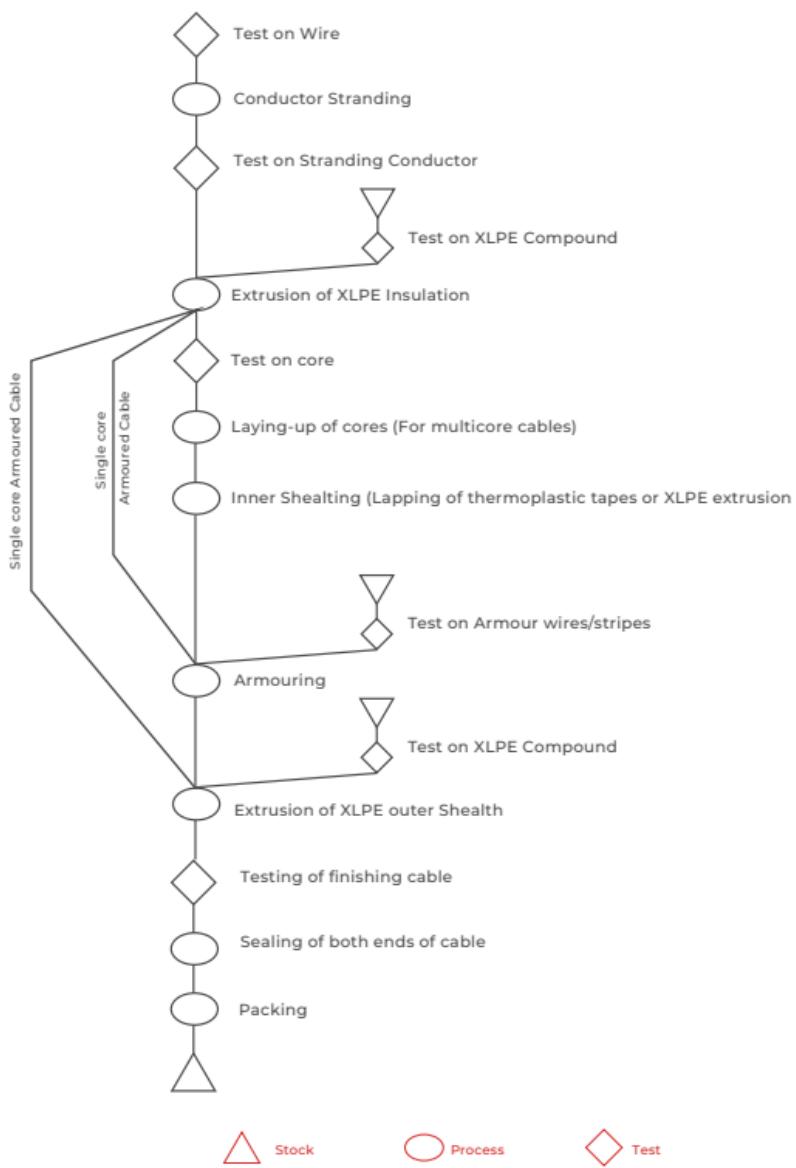
J. Type of Installation

- | | | | |
|-----|--------------------|---|-------------------------|
| I. | 3 Core Cable | - | Installed Independently |
| | | - | Three cables in Trefoil |
| ii. | Single Core Cables | - | Touching each other |



FLOW CHART

Flow Chart for Manufacturing process & quality control checks for XLPE Cables conforming to IS: 7098 (Part-1) 1988



DIMENSIONS & WEIGHTS

SINGLE CORE ALU CABLES

1.1 kV Single core XLPE insulated unarmoured and armoured cable with aluminium conductor conforming to IS:7098 (Part 1) / 1988



Unarmoured Cables					Armoured Cables									
					Single layer round wire armoured					Single layer flat strip armoured				
Nominal Area of Conductor [mm²]	Nominal thickness of XLPE insulation [mm]	Nominal thickness of PVC Outer Sheath [mm]	Approx. Overall diameter of cables [mm]	Approx. weight of cables [kg/km]	Nominal thickness of XLPE insulation [mm]	Nominal diameter of round wire [mm]	Min. thickness of PVC outer sheath [mm]	Approx. overall diameter of cable [mm]	Approx. weight of cable [kg/km]	Nominal thickness of flat strip [mm]	Min. thickness of PVC outer sheath [mm]	Approx. Overall diameter of cables [mm]	Approx. weight of cables [kg/km]	
10	0.7	1.80	9.5	90	1.0	1.40	1.24	11.5	180	-	-	-	-	
16	0.7	1.80	10.5	110	1.0	1.40	1.24	13.0	210	-	-	-	-	
25	0.9	1.80	12.0	150	1.2	1.40	1.24	14.0	260	-	-	-	-	
35	0.9	1.80	13.0	180	1.2	1.40	1.24	15.0	310	-	-	-	-	
50	1.0	1.80	14.5	230	1.3	1.40	1.24	17.0	360	-	-	-	-	
70	1.1	1.80	16.0	300	1.4	1.40	1.24	19.0	450	-	-	-	-	
95	1.1	1.80	18.0	380	1.4	1.60	1.40	22.0	590	0.8	1.40	21.0	520	
120	1.2	1.80	19.5	460	1.5	1.60	1.40	24.0	680	0.8	1.40	22.5	610	
150	1.4	2.00	22.0	580	1.7	1.60	1.40	25.0	810	0.8	1.40	24.0	730	
185	1.6	2.00	24.0	700	1.9	1.60	1.40	28.0	940	0.8	1.40	26.0	850	
240	1.7	2.00	26.5	880	2.0	1.60	1.40	30.0	1150	0.8	1.40	30.0	1050	
300	1.8	2.00	29.5	1070	2.1	1.60	1.56	33.0	1400	0.8	1.56	32.0	1290	
400	2.0	2.20	33.0	1270	2.4	2.00	1.56	38.0	1800	0.8	1.56	35.5	1600	
500	2.2	2.20	36.0	1660	2.6	2.00	1.56	41.0	2130	0.8	1.56	38.5	1910	
630	2.4	2.20	40.0	2100	2.8	2.00	1.72	45.5	2670	0.8	1.72	43.0	2420	
800	2.6	2.40	46.0	2670	3.1	2.00	1.88	51.0	3670	0.8	1.88	48.0	3320	
1000	2.8	2.60	50.5	3310	3.3	2.50	2.04	56.0	4170	0.8	1.88	53.0	4030	



TWIN CORE ALU CABLES

1.1 kV Twin core XLPE insulated unarmoured and armoured cable with aluminium conductor conforming to IS:7098 (Part 1) / 1988

Unarmoured Cables					Armoured Cables									
					Single layer round wire armoured					Single layer flat strip armoured				
Nominal Area of Conductor (mm²)	Nominal thickness of XLPE insulation (mm)	Nominal thickness of PVC Outer Sheath (mm)	Approx. Overall diameter of cables (mm)	Approx. weight of cables (kg/km)	Nominal thickness of XLPE insulation (mm)	Nominal diameter of round wire (mm)	Min. thickness of PVC outer sheath (mm)	Approx. overall diameter of cable (mm)	Approx. weight of cable (kg/km)	Nominal thickness of flat strip (mm)	Min. thickness of PVC outer sheath (mm)	Approx. Overall diameter of cables (mm)	Approx. weight of cables (kg/km)	
10	0.7	0.3	1.80	16.5	270	1.40	1.24	18.0	610	-	-	-	-	-
16	0.7	0.3	1.80	17.0	290	1.40	1.40	18.5	720	-	-	-	-	-
25	0.9	0.3	2.00	19.0	340	1.60	1.40	21.0	740	0.8	1.40	20.0	600	
35	0.9	0.3	2.00	20.0	410	1.60	1.40	23.0	900	0.8	1.40	21.0	700	
50	1.0	0.3	2.00	22.0	510	1.60	1.40	25.0	1060	0.8	1.56	23.0	840	
70	1.1	0.3	2.00	25.0	670	1.60	1.56	28.0	1320	0.8	1.56	26.0	1040	
95	1.1	0.4	2.20	28.0	860	2.00	1.56	31.0	1760	0.8	1.56	29.0	1280	
120	1.2	0.4	2.20	31.0	1050	2.00	1.56	34.0	2040	0.8	1.56	31.0	1520	
150	1.4	0.4	2.20	33.0	1260	2.00	1.72	37.0	2360	0.8	1.72	34.0	1800	
185	1.6	0.5	2.40	37.0	1700	2.00	1.88	40.0	2920	0.8	1.72	37.0	2280	
240	1.7	0.5	2.60	41.0	2120	2.50	2.04	45.0	3830	0.8	1.88	42.0	2760	
300	1.8	0.6	2.80	44.0	2560	2.50	2.20	49.0	4450	0.8	2.04	45.0	3280	
400	2.0	0.6	3.00	48.0	3160	2.50	2.36	52.0	5270	0.8	2.36	50.0	4010	
500	2.2	0.7	3.40	54.0	3920	3.15	2.68	60.0	6910	0.8	2.52	55.0	4820	
630	2.4	0.7	3.60	62.0	4910	3.15	2.84	66.0	8230	0.8	2.68	63.0	5920	

THREE CORE AW CABLES

1.1 kV Three core XLPE insulated unarmoured and armoured cable with aluminium conductor conforming to IS:7098 (Part 1) 1988

Unarmoured Cables					Armoured Cables									
					Single layer round wire armoured					Single layer flat strip armoured				
Nominal Area of Conductor (mm²)	Nominal thickness of XLPE insulation (mm)	Nominal thickness of PVC Outer Sheath (mm)	Approx. Overall diameter of cables (mm)	Approx. weight of cables (kg/km)	Nominal thickness of XLPE insulation (mm)	Nominal diameter of round wire (mm)	Min. thickness of PVC outer sheath (mm)	Approx. overall diameter of cable (mm)	Approx. weight of cable (kg/km)	Nominal thickness of flat strip (mm)	Min. thickness of PVC outer sheath (mm)	Approx. Overall diameter of cables (mm)	Approx. weight of cables (kg/km)	
10	0.7	0.3	1.80	18.0	250	1.40	1.24	20.0	630	-	-	-	-	-
16	0.7	0.3	1.80	18.0	310	1.60	1.40	20.5	810	-	1.24	19.0	590	
25	0.9	0.3	2.00	21.0	440	1.60	1.40	23.0	940	0.8	1.40	21.0	730	
35	0.9	0.3	2.00	22.0	540	1.60	1.40	25.0	1090	0.8	1.40	23.0	870	
50	1.0	0.3	2.00	26.0	680	1.60	1.56	28.0	1320	0.8	1.40	26.0	1050	
70	1.1	0.4	2.20	29.0	920	2.00	1.56	32.0	1840	0.8	1.56	29.0	1360	
95	1.1	0.4	2.20	33.0	1170	2.00	1.56	35.0	2180	0.8	1.56	33.0	1660	
120	1.2	0.4	2.20	35.0	1430	2.00	1.72	39.0	2580	0.8	1.56	36.0	1970	
150	1.4	0.5	2.40	39.0	1760	2.00	1.88	43.0	3030	0.8	1.72	40.0	2360	
185	1.6	0.5	2.60	43.0	2180	2.50	2.04	48.0	3960	0.8	1.88	44.0	2850	
240	1.7	0.5	2.80	49.0	2790	2.50	2.20	53.0	4790	0.8	2.04	50.0	3350	
300	1.8	0.6	3.00	53.0	3420	2.50	2.36	57.0	5630	0.8	2.20	53.0	4250	
400	2.0	0.7	3.30	59.0	4310	3.15	2.68	65.0	7510	0.8	2.52	60.0	5300	
500	2.2	0.7	3.60	66.0	5370	3.15	2.84	72.0	8860	0.8	2.68	66.0	6410	
630	2.4	0.7	3.80	73.0	6810	4.00	3.00	81.0	11760	0.8	2.84	74.0	7980	

THREE & HALF CORE ALU CABLES

1.1 kV Three & Half core XLPE insulated unarmoured and armoured cable with aluminium conductor conforming to IS:7098 (Part 1) 1988



THREE & HALF CORE ALU CABLES

1.1 kV Three & Half core XLPE insulated unarmoured and armoured cable with aluminium conductor conforming to IS:7098 (Part 1) 1988



Unarmoured Cables							Armoured Cables							
							Single layer round wire armoured				Single layer flat strip armoured			
Nominal Area of Conductor (mm²)	Nominal area of reduced neutral conductor (mm²)	Nominal thickness of XLPE insulation Main/ Neutral (mm)	Min. thickness of PVC inner sheath (mm)	Nominal thickness of PVC outer sheath (mm)	Approx overall diameter of cable (mm)	Approx weight of cable (kg/km)	Nominal diameter of Round Wire (mm)	Min. thickness of PVC outer sheath (mm)	Approx overall diameter of cable (mm)	Approx weight of cable (kg/km)	Nominal thickness of flat strip (mm)	Min. thickness of PVC outer sheath (mm)	Approx. Overall diameter of cables (mm)	Approx. weight of cables (kg/km)
25	16	0.9/0.7	0.3	2.00	22.0	510	1.60	1.40	25.0	1060	0.8	1.40	23.0	830
35	16	0.9/0.7	0.3	2.00	23.0	610	1.60	1.40	26.0	1210	0.8	1.40	24.0	970
50	25	1.0/0.9	0.3	2.00	27.0	790	1.60	1.56	30.0	1490	0.8	1.40	28.0	1200
70	35	1.1/0.9	0.4	2.20	31.0	1060	2.00	1.56	35.0	2070	0.8	1.56	32.0	1540
95	50	1.1/1.0	0.4	2.20	34.0	1360	2.00	1.56	38.0	2470	0.8	1.56	35.0	1900
120	70	1.2/1.1	0.4	2.20	37.0	1680	2.00	1.72	41.0	2960	0.8	1.72	38.0	2310
150	70	1.4/1.1	0.5	2.40	42.0	2020	2.00	1.88	45.0	3420	0.8	1.72	42.0	2680
185	95	1.6/1.1	0.5	2.60	46.0	2510	2.50	2.04	50.0	4470	0.8	1.88	47.0	3260
240	120	1.7/1.2	0.6	2.80	51.0	3210	2.50	2.20	55.0	5420	0.8	2.04	52.0	4060
300	150	1.8/1.4	0.6	3.00	56.0	3940	2.50	2.36	59.0	6390	0.8	2.20	56.0	4860
400	185	2.0/1.6	0.7	3.40	65.0	5010	3.15	2.68	70.0	8500	0.8	2.52	65.0	6060
500	240	2.2/1.7	0.7	3.60	73.0	6210	3.15	2.84	79.0	10030	0.8	2.68	74.0	7370
630	300	2.4/1.8	0.7	4.00	82.0	7900	4.00	3.00	88.0	13330	0.8	3.00	82.0	9210

FOUR & CORE ALU CABLES

1.1 KV Four & core XLPE insulated unarmoured and armoured cable
with aluminium conductor conforming to IS:7098 (Part 1) 1988



Unarmoured Cables						Armoured Cables									
Nominal Area of Conductor (mm²)	Nominal thickness of XLPE insulation (mm)	Nominal thickness of PVC inner sheath (mm)	Nominal thickness of PVC Outer sheath (mm)	Approx. Overall diameter of cables (mm)	Approx. weight of cables (kg/km)	Single layer round wire armoured				Single layer flat strip armoured					
						Nominal diameter of round wire (mm)	Min. thickness of PVC outer sheath (mm)	Approx. overall diameter of cable (mm)	Approx. weight of cable (kg/km)	Nominal thickness of flat strip (mm)	Min. thickness of PVC outer sheath (mm)	Approx. Overall diameter of cables (mm)	Approx. weight of cables (kg/km)		
10	0.7	0.3	1.80	19.0	300	1.40	1.40	20.0	720	-	-	-	-		
16	0.7	0.3	1.80	20.0	370	1.60	1.40	22.5	850	-	1.40	20.0	670		
25	0.9	0.3	2.00	24.0	540	1.60	1.40	26.0	1110	0.8	1.40	24.0	880		
35	0.9	0.3	2.00	26.0	680	1.60	1.40	28.0	1310	0.8	1.40	27.0	1050		
50	1.0	0.3	2.00	29.0	860	1.60	1.56	32.0	1590	0.8	1.56	30.0	1320		
70	1.1	0.4	2.20	34.0	1170	2.00	1.56	37.0	2220	0.8	1.56	34.0	1670		
95	1.1	0.4	2.20	37.0	1500	2.00	1.72	40.0	2700	0.8	1.56	37.0	2070		
120	1.2	0.4	2.40	41.0	1870	2.00	1.88	44.0	3210	0.8	1.72	41.0	2330		
150	1.4	0.5	2.60	43.0	2300	2.50	2.04	47.0	4150	0.8	1.88	44.0	3000		
185	1.6	0.5	2.80	48.0	2840	2.50	2.20	52.0	4910	0.8	2.04	49.0	3620		
240	1.7	0.6	3.00	56.0	3650	2.50	2.36	60.0	5970	0.8	2.20	56.0	4530		
300	1.8	0.7	3.20	63.0	4490	3.15	2.52	68.0	7750	0.8	2.36	63.0	5470		
400	2.0	0.7	3.60	70.0	5690	3.15	2.84	76.0	9300	0.8	2.68	71.0	6780		
500	2.2	0.7	3.80	79.0	7020	4.00	3.00	86.0	12150	0.8	2.84	79.0	8230		
630	2.4	0.7	4.00	88.0	8910	4.00	3.00	94.0	14600	0.8	3.00	88.0	10280		

CONDUCTOR RESISTANCE

Nominal Area of Conductor (Sq. mm)	Aluminium		Plain Copper	
	Max. D.C. Resistance at 20°C Ohm / Km	Approx A.C. Resistance at operating Temp. 90°C Ohm / Km	Max. D.C. Resistance at 20°C Ohm / Km	Approx A.C. Resistance at operating Temp. 90°C Ohm / Km
1.5	-	-	12.1	15.5
2.5	-	-	7.41	9.50
4	7.41	9.50	4.61	5.91
6	4.61	5.91	3.08	3.95
10	3.08	3.95	1.83	2.35
16	1.91	2.45	1.15	1.47
25	1.20	1.539	0.727	0.932
35	0.868	1.113	0.524	0.671
50	0.641	0.822	0.387	0.496
70	0.443	0.568	0.268	0.343
95	0.320	0.410	0.193	0.247
120	0.253	0.325	0.153	0.196
150	0.206	0.265	0.124	0.159
185	0.164	0.212	0.0991	0.128
240	0.125	0.162	0.0754	0.0977
300	0.100	0.130	0.0601	0.0781
400	0.0778	0.102	0.0470	0.0616
500	0.0605	0.081	0.0366	0.0490
630	0.0469	0.064	0.0283	0.0386
800	0.0367	0.0526	0.0221	0.0317
1000	0.0291	0.0438	0.0176	0.0265

CURRENT RATING

Current Rating for 1.1 KV XLPE Insulated - Aluminium Conductor Cables - Armoured and Unarmoured

Nominal Area of Cross Section Sq. mm	Cables in ground						Cables in ground					
	Single Core Cables			Two Core cables	Three, Three and a half & Four cables	Single Core Cables			Two Core cables	Three, Three and a half & Four cables		
	Two Cables		Three Cables			Two Cables		Three Cables				
	AC	DC	AC	AC	AC	AC	DC	AC	AC	AC	AC	
	[Amps]	[Amps]	[Amps]	[Amps]	[Amps]	[Amps]	[Amps]	[Amps]	[Amps]	[Amps]	[Amps]	
10	69	69	59	71	57	60	60	53	67	53		
16	90	90	76	91	73	82	82	73	88	70		
25	116	116	97	120	97	108	108	99	117	95		
35	139	139	116	143	116	136	136	122	145	117		
50	166	162	139	167	134	163	163	149	176	140		
70	199	199	171	204	167	208	208	190	221	176		
95	241	241	204	245	199	258	258	235	271	221		
120	273	273	231	278	227	303	303	276	316	258		
150	305	305	259	315	255	348	348	321	362	294		
185	347	347	292	356	287	407	407	371	420	339		
240	407	407	342	407	333	488	488	447	497	402		
300	458	463	384	463	375	569	569	515	578	461		
400	518	528	440	528	426	669	678	606	678	542		
500	592	602	500	592	481	786	805	705	786	624		
630	666	694	565	676	537	922	958	823	913	723		
800	750	796	629	-	-	1067	1130	949	-	-		
1000	833	907	704	-	-	1220	1329	1076	-	-		

CURRENT RATING

Current Rating for 1.1 KV XLPE Insulated - Copper Conductor Cables - Armoured and Unarmoured

Nominal Area of Cross Section Sq. mm	Cables in ground						Cables in ground					
	Single Core Cables			Two Core cables	Three, Three and a half & Four cables	Single Core Cables			Two Core cables	Three, Three and a half & Four cables		
	Two Cables		Three Cables			Two Cables		Three Cables				
	AC	DC	AC	AC		AC	DC	AC	AC		AC	
	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	(Amps)	
1.5	31	31	27	33	25	25	25	22	29	22	22	
2.5	41	41	36	43	34	33	33	29	39	3	3	
4.0	54	54	46	56	44	44	44	40	51	40	40	
6.0	68	68	57	71	55	55	55	51	64	51	51	
10	89	89	76	92	73	80	80	71	88	70	70	
16	116	116	97	116	97	104	104	95	113	90	90	
25	148	148	125	152	125	139	139	126	153	122	122	
35	181	181	153	180	148	172	172	158	186	148	148	
50	213	213	181	218	175	213	213	194	226	181	181	
70	259	259	217	264	213	271	271	249	264	230	230	
95	310	310	264	314	254	335	335	307	348	284	284	
120	352	352	296	357	292	389	389	357	402	330	330	
150	393	397	333	403	325	447	452	411	461	375	375	
185	449	449	375	453	366	524	524	479	533	434	434	
240	518	527	434	518	421	632	632	569	633	515	515	
300	583	593	490	583	472	722	741	659	732	588	588	
400	657	685	556	658	528	850	877	769	841	677	677	
50	731	778	620	730	583	976	1031	877	967	767	767	
63	823	897	695	-	-	1130	1229	1013	-	-	-	
800	907	1027	758	-	-	1284	1464	1148	-	-	-	
1000	981	1176	834	-	-	1437	1709	1275	-	-	-	

CAPACITANCE

Approximate Capacitance (Micro Farads / Km) 1.1 KV XLPE Insulate Cables

Nominal Area of cross Section	Single Core Cables		Twin And Multicore Cables
	Sq. mm	Unarmoured	Armoured
1.5	0.2	0.16	0.07
2.5	0.24	0.19	0.09
4	0.29	0.22	0.11
6	0.34	0.26	0.13
10	0.43	0.31	0.15
16	0.52	0.38	0.18
25	0.52	0.40	0.20
35	0.60	0.47	0.23
50	0.63	0.50	0.24
70	0.68	0.55	0.26
95	0.79	0.64	0.29
120	0.79	0.67	0.29
150	0.79	0.67	0.29
185	0.79	0.67	0.29
240	0.84	0.72	0.31
300	0.86	0.75	0.33
400	0.88	0.75	0.33
500	0.90	0.77	0.34
630	0.94	0.81	0.36
800	0.97	0.88	-
1000	1.01	0.88	-

REACTANCE

Approximate Reactance at 50Hz (Ohm / Km) 1.1 KV XLPE Insulate Cables

Nominal Area of cross Section	Single Core Cables		Twin And Multicore Cables
	Sq. mm	Unarmoured	
1.5	0.155	-	0.107
2.5	0.142	-	0.0985
4	0.132	-	0.0927
6	0.123	-	0.0884
10	0.114	-	0.0837
16	0.108	-	0.0808
25	0.102	0.116	0.080
35	0.097	0.110	0.080
50	0.092	0.103	0.078
70	0.088	0.099	0.077
95	0.085	0.097	0.074
120	0.082	0.093	0.072
150	0.082	0.091	0.072
185	0.082	0.090	0.072
240	0.079	0.086	0.072
300	0.078	0.085	0.071
400	0.077	0.085	0.070
500	0.076	0.083	0.070
630	0.075	0.082	0.0698
800	0.075	0.081	-
1000	0.068	0.081	-

SHORT CIRCUIT RATING

Short Circuit Rating for 1 Second duration of XLPE Cables (Kilo Amps.)

Nominal Area of cross Section sq. mm	With Aluminium Conductor		With Copper Conductor K Amp
	K Amp		
1.5	0.041		0.215
2.5	0.235		0.358
4	0.376		0.572
6	0.564		0.858
10	0.940		1.430
16	1.504		2.29
25	2.350		3.580
35	3.290		5.000
50	4.700		7.150
70	6.580		10.000
95	8.930		13.590
120	11.280		17.160
150	14.100		21.450
185	17.390		26.450
240	22.560		34.320
30	28.200		42.90
400	37.600		57.200
500	47.000		71.500
630	59.220		90.100
800	75.2		114.4
1000	94		143

- Max. Conductor temperature before short circuit: 90°C
- Max Conductor temperature during short circuit: 250°C
- Max. duration of short circuit - 1 second

Formula for calculating the short circuit rating for other duration

$$I_{sh} = \frac{KA}{\sqrt{T}}$$

Where I_{sh} = Short circuit current in KA
 K = Constant (0.094 for Aluminium & 0.143 for Copper)
 A = Area of cross section in sq.mm
 T = Duration of short circuit in second

Recommended minimum bending radius

- Single Core: 15 x D
 - Multicore : 12 x D
- Where D Diameter of cable in mm

Recommended safe pulling force when pulled with pulling eye:

- a) Aluminium conductor cable (Newton) - 30 x Total conductor area in sq.mm
- b) Copper conductor cable (Newton) - 50 x Total conductor area in sq.mm

Recommended safe pulling force with stockings:

- a) Unarmoured Cables 1.1 KV (Newton)- 5 x D²
 - b) Armoured Cables 1.1 KV (Newton) - 9 x D²
- Where D Diameter of cable in mm



Address Manufactured By:

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