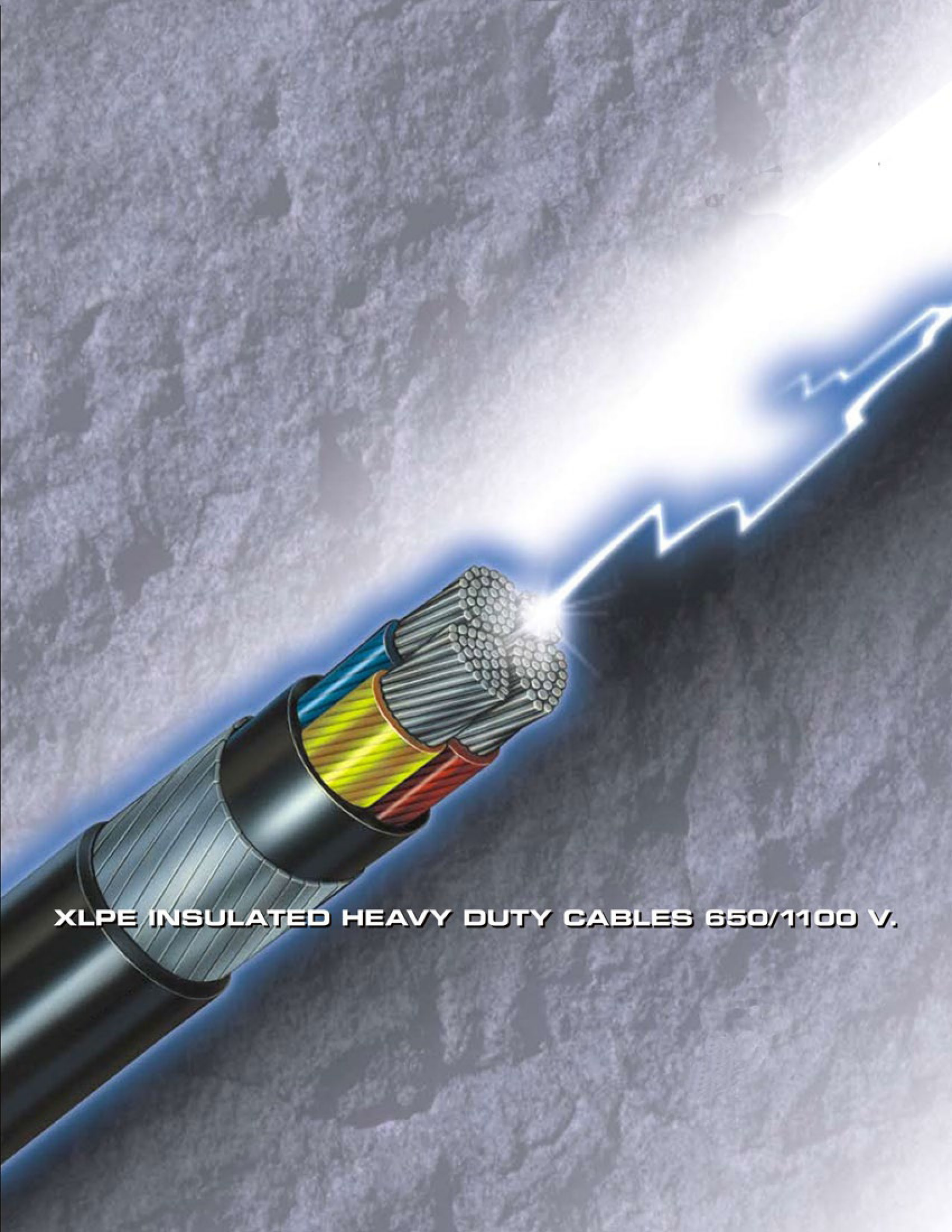
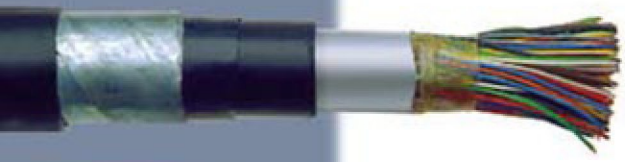
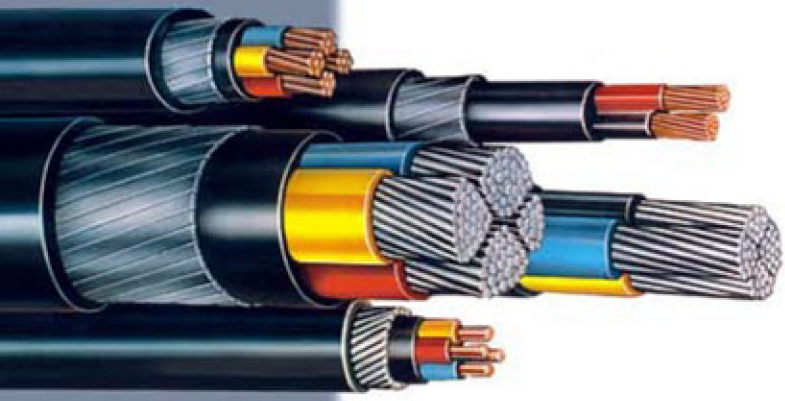
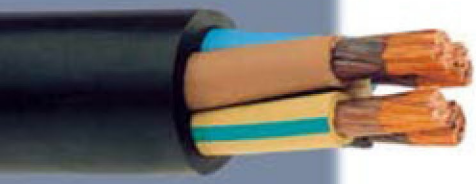


XLPE INSULATED HEAVY DUTY CABLES 650/1100 V.

PRODUCT RANGE

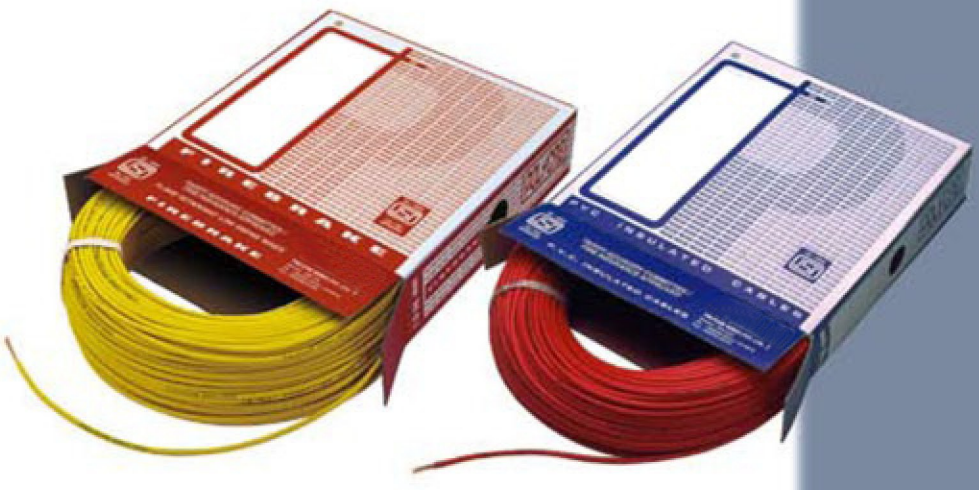






- L.T. PVC & XLPE POWER CABLES WITH COPPER / ALUMINIUM CONDUCTOR (650 / 1100 V. UPTO 4 CORE X 630 Sq. mm., 1 CORE X 1000 Sq. mm.)
- L.T. PVC & XLPE CONTROL CABLES (650 / 1100 V. UPTO 61 CORE X 1.5 & 2.5 Sq. mm.)
- H.T. XLPE CABLES UPTO 19/33 KV.
- INSTRUMENTATION CABLES SCREENED / UNSCREENED TYPE IN PVC / LDPE
- THERMO-COUPLE COMPENSATING & EXTENSION CABLES
- FRLS / FR / HR / HFFR / HOFR / RUBBER / LDPE –POWER, CONTROL & INSTRUMENTATION CABLES
- FLEXIBLES & HOUSEWIRES (SINGLE & MULTICORE)
- RAILWAY SIGNALLING CABLES
- FIRE SURVIVAL, ZERO HALOGEN CABLES
- TELEPHONE CABLES – DRY & JELLY FILLED
- AUTOMOBILE CABLES & HARNESSES
- MINING / WELDING – RUBBER CABLES
- EPR / SILICONE / HIGH TEMP. CABLES
- SUBMERSIBLE CABLES / WINDING WIRES
- STRUCTURED CABLES / CO-AXIEL CABLES
- AERIAL BUNCHED CABLES
- LAN CAT-5/5E CABLES
- OPTICAL FIBRE CABLES*

(*Under Development)



650/1100 VOLTS XLPE CABLES

INTRODUCTION

XLPE CABLES

The XLPE insulated heavy duty cables were introduced worldwide in mid sixties. These cables have overcome the limitations of PVC Insulated Cables, such as thermal degradation, poor moisture resistant and thermoplastic in nature.

The advantages of XLPE Insulated cables in comparision to those of PVC insulated cables are as under :-

(A) TECHNICAL ADVANTAGES :

- Higher current rating, higher short Circuit Rating. Approx. 1.2 times that of PVC.
- Thermosetting in nature.
- Higher insulation resistance – 1000 times more than PVC cables.
- Better Resistance to surge currents.
- Low Dielectric Losses.
- Better resistance to chemicals and corrosion.
- Longer service life.
- Comparatively higher cable operating temperature 90°C and short circuit temperature 250°C.

(B) COMMERCIAL ADVANTAGES :

- Lower laying cost because of comparatively smaller diameter of cable and lighter weight.*
- Requiring less size of cable trays / supports.
- One size lower cables can be used as compared to PVC insulated cable. **

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* *Density of XLPE is lower than PVC*

** *For longer cable length voltage drop shall be considered.*

SELECTION OF POWER CABLES

Power cables are generally selected considering the application. However following factors are important for selection of suitable cable construction required to transport electrical energy from one end to the other.

- Maximum operating voltage.
- Insulation level.
- Frequency.
- Load to be carried.
- Possible overloading duration & magnitude.
- Route length and voltage drop.
- Mode of insulation considering installation environment such as ambient & ground temperature chemical & physical properties of soil.
- Flame retardant properties.
- Plant safety requirements.

All sizes of various XLPE cables are designed to standard operating conditions in India and abroad The standards adopted are considering the geographic / climatic conditions and general applications of power for utilities, distribution and general purposes.

The cables are manufactured conforming to Indian & International specification for XLPE Insulated cables. Customer specific requirements can also be met.

PARAMETERS REQUIRED ARE AS UNDER

- Voltage Grade – 1100 Volts.
- Relevant Indian Standard – IS - 7098 (Part-1) – 1988 or
  International standard – IEC - 60502 & BS - 5467, DIN.
- Number of cores – Single, Two, Three, Three & Half or Four Cores.
- Conductor – Size, wherever applicable size of reduced neutral conductor.
- Conductor Material – Copper/Aluminium.
- Type of Insulation – XLPE.
- Type of Inner Sheathing – PVC Wrapped/PVC Extruded.
- Type of Armour – Unarmoured/Strip Armoured/Wire Armoured/ Tape Armoured.
- Type of Outer Sheath – PVC/Flame Retardant/Flame Retardant Low Smoke/Zero Halogen (LSOH).
- Length of cable required and drum lengths.

TABLE – 1

** Conductor Technical Information for Single Core and Multicore cables conforming to IS-8130/'1984 (Stranded – Class-2) Copper & Aluminium Conductors.

Nominal Size of Conductor	Minimum no. of wires				Max. D.C. Resistance at 20°C		A.C. Resistance at 90°C	
	Non Compacted		Compacted Round /Shaped		Plain Copper	Aluminium	Plain Copper	Aluminium
Sq.mm	CU.	ALU.	CU.	ALU.	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km
1.5 *	3	3	-	-	12.1	18.10	15.5	23.17
2.5 *	3	3	-	-	7.41	12.10	9.48	15.50
4 *	7	3	-	-	4.61	7.41	5.90	9.48
6 *	7	3	-	-	3.08	4.61	3.94	5.90
10 *	7	7	6	-	1.83	3.08	2.34	3.94
16	7	7	6	6	1.15	1.91	1.47	2.44
25	7	7	6	6	0.727	1.20	0.930	1.54
35	7	7	6	6	0.524	0.868	0.671	1.11
50	19	19	6	6	0.387	0.641	0.495	0.82
70	19	19	12	12	0.268	0.443	0.343	0.567
95	19	19	15	15	0.193	0.320	0.247	0.410
120	37	37	18	15	0.153	0.253	0.196	0.324
150	37	37	18	15	0.124	0.206	0.159	0.264
185	37	37	30	30	0.0991	0.164	0.127	0.210
240	61	37	34	30	0.0754	0.125	0.0965	0.160
300	61	61	34	30	0.0601	0.100	0.0769	0.128
400	61	61	53	53	0.0470	0.0778	0.0602	0.100
500	61	61	53	53	0.0366	0.0605	0.0468	0.0774
630	91	91	53	53	0.0283	0.0469	0.0362	0.0600
800	91	91	53	53	0.0221	0.0367	0.0283	0.0470
1000	91	91	53	53	0.0176	0.0291	0.0225	0.0372

* *These sizes can be manufactured with solid conductor having single strand.*

** *Conductor meeting requirements of IEC-228 and BS 6360 can also be manufactured.*

TABLE – 2

Comparative Current Ratings of 650/1100 Volts Multicore heavy duty PVC Insulated Cables & XLPE Insulated Cables. (3, 3.5 & 4 Core Unarmoured / Armoured PVC Sheathed Cables with Aluminium Conductor.

Nominal Size of of cable	3, 3.5 & 4 Core PVC Insulated & Sheathed Cables as per IS - 1554 (Part-1) 1988			3, 3.5 & 4 Core XLPE Insulated & Sheathed Cables as per IS - 7098 (Part-1) 1988		
	In Ground	In Air	Approx Voltage Drop	Inground	In Air	Approx Voltage Drop
Sq.mm	Amp	Amp	Mv / amp / mtr	Amp	Amp	Mv / amp / mtr
16	60	51	4.0	73	70	4.20
25	76	70	2.5	94	96	2.70
35	92	86	1.8	113	117	1.90
50	110	105	1.3	133	142	1.40
70	135	130	0.93	164	179	0.99
95	165	155	0.68	196	221	0.72
120	185	180	0.54	223	257	0.58
150	210	205	0.46	249	292	0.48
185	235	240	0.38	282	337	0.39
240	275	280	0.28	326	399	0.31
300	305	315	0.25	367	455	0.26
400	335	375	0.20	420	530	0.21

TABLE – 3

Comparison of Short Circuit Rating for 1 Second duration for * PVC & XLPE Insulated Cables ** with Copper and Aluminium Conductors. (Current in kAmps)

Nominal Size	PVC Insulated		XLPE Insulated	
Sq.mm	Copper	Aluminium	Copper	Aluminium
1.5	0.173	-	0.21	-
2.5	0.283	-	0.36	-
4	0.46	0.303	0.57	0.38
6	0.690	0.455	0.86	0.57
10	1.15	0.758	1.40	0.94
16	1.84	1.21	2.30	1.50
25	2.88	1.90	3.60	2.40
35	4.03	2.65	5.00	3.30
50	5.75	3.79	7.10	4.70
70	8.05	5.31	10.00	6.60
95	10.90	7.20	13.60	9.00
120	13.80	9.10	17.10	11.30
150	17.30	11.40	21.40	14.20
185	21.30	14.02	26.40	17.50
240	27.60	18.20	34.30	22.60
300	34.50	22.80	42.90	28.30
400	46.00	30.40	57.10	37.70
500	57.50	38.00	71.40	47.20
630	72.50	47.25	90.00	59.40
800	92.00	60.00	114.30	75.50
1000	115.00	75.00	142.90	94.30

* PVC Type 'A' Insulation as per IS-5831 '84.

** PVC Cables as per IS-1554 (Part-1)-1988.

** XLPE Cables as per IS-7098 (Part-1)-1988.

1) Max. Conductor Temperature during operation — PVC 70°C, XLPE 90°C

2) Max. Conductor Temperature During Short circuit. — 160°C, 250°C

Formula relating Short Circuit Rating with duration

$It = \frac{I sh}{\sqrt{t}}$ Where

It = Short Circuit Rating for t Seconds.

t = duration in seconds

Ish = Short Circuit rating for 1 second.

TABLE – 4

CAPACITANCE

APPROXIMATE CAPACITANCE (Microfarads/km) 1.1 KV XLPE CABLES.

Nominal Area of Conductor in sq. mm	Single Core		Two Core	Three, Three & Half and Four Core
	Unarmoured	Armoured		
1.5	0.19	-	0.051	0.15
2.5	0.24	-	0.058	0.18
4	0.29	-	0.065	0.22
6	0.34	-	0.071	0.25
10	0.43	0.32	0.081	0.31
16	0.51	0.38	0.088	0.36
25	0.49	0.38	0.089	0.41
35	0.57	0.44	0.096	0.47
50	0.58	0.46	0.098	0.50
70	0.63	0.51	0.10	0.53
95	0.73	0.59	0.11	0.61
120	0.74	0.61	0.11	0.63
150	0.73	0.61	0.11	0.64
185	0.69	0.59	0.11	0.65
240	0.74	0.64	0.11	0.66
300	0.80	0.69	0.12	0.67
400	0.83	0.70	0.12	0.67
500	0.83	0.71	0.12	0.69
630	0.87	0.75	0.11	0.73
800	0.92	0.78	-	-
1000	0.94	0.81	-	-

TABLE – 5

REACTANCE

APPROXIMATE REACTANCE AT 50 HZ (Ohm/km) 1.1 KV XLPE CABLES.

Nominal Area of Conductor in sq. mm	Single Core		Multi Core
	Unarmoured	Armoured	
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	0.134	0.0837
16	0.108	0.125	0.0808
25	0.103	0.120	0.0805
35	0.0986	0.114	0.0783
50	0.0937	0.108	0.0750
70	0.0900	0.102	0.0740
95	0.0865	0.100	0.0724
120	0.0841	0.0968	0.0712
150	0.0839	0.0941	0.0716
185	0.0836	0.0932	0.0718
240	0.0813	0.0900	0.0710
300	0.0795	0.0881	0.0705
400	0.0787	0.0873	0.0704
500	0.0779	0.0859	0.0702
630	0.0785	0.0843	0.0698
800	0.0755	0.0826	-
1000	0.0752	0.0825	-

CURRENT RATINGS

RECOMMENDATIONS FOR CURRENT RATINGS:

The current rating of power cable is defined by the maximum intensity of current (amperes) which can flow continuously through the cable, under permanent loading conditions, without any risk of damaging the cable or deterioration of its electrical properties.

The value given in the tables are valid for one circuit in a three phase system under conditions specified. For grouping cables rating factors must be used.

The current carrying capacities mentioned in the technical data are intended as a guide, to assist operating engineers in selecting cables for safety and reliability.

Basic assumptions and conditions of installation :-

- Ambient Ground Temperature : 30° C.
- Ambient Air Temperature : 40° C.
- Depth of cable burial : 750 mm.
- Thermal resistivity of soil : 150° C. Cm/W
- Max. conductor Temperature for Continuous Operation : 90° C.
- Max. Conductor Temperature for Short Circuit : 250° C.

Single core cables are installed as indicated in the table. Spacing between cables in flat formation is as indicated.

For three and four core cables, it is usual to assume the same current carrying capacity for four cores cables as for three core cables. Our calculated values are based actually on three cores cables. These values are suitable with enough accuracy also for four core cables in most cases. Only for large four core cables in air the values may be found to be too conservative, due to the large cable surface and consequent high heat dissipation factor.

To obtain the maximum current carrying capacity of a cable operating at different conditions from the standard. Various rating factors are to be multiplied, as follows :-

$I_a = K \times I_s$ in amperes

Where ;

I_a : Current rating at actual operating conditions (amperes)

I_s : Current rating at standard operating conditions (amperes)

K : Rating factor as, applicable.

RATING FACTORS

1) FOR AIR AND GROUND TEMPERATURE.

A. Rating factors for variation in ambient air temperature						
Ambient Temp (°C)	25	30	35	40	45	50
Rating Factors	1.14	1.10	1.04	1.00	0.95	0.90
B. Rating factors for variation in ground temperature						
Ground Temp (°C)	15	20	25	30	35	40
Rating Factors	1.12	1.08	1.03	1.00	0.96	0.91

2) FOR DEPTH OF LAYING (CABLES LAID DIRECT IN THE GROUND).

Depth of laying	Size		
Cm	Upto 25 mm²	Above 25 mm² Upto 300 mm²	Above 300 mm²
75	1.0	1.00	1.00
90	0.99	0.98	0.97
105	0.98	0.97	0.96
120	0.97	0.96	0.95
150	0.96	0.94	0.92
180 or more	0.95	0.93	0.91

3) FOR VARIATION IN THERMAL RESISTIVITY OF SOIL (TWO AND THREE AND MULTICORE CABLES LAID DIRECT IN THE GROUND).

Nominal area of conductor mm²	Two cables touching for values of Thermal Resistivity of soil in °C cm / W					
	100	120	150	200	250	300
1.5	1.10	1.05	1.00	0.92	0.86	0.81
2.5	1.10	1.05	1.00	0.92	0.86	0.81
4	1.10	1.05	1.00	0.92	0.86	0.81
6	1.10	1.05	1.00	0.92	0.86	0.81
10	1.10	1.06	1.00	0.92	0.85	0.80
16	1.12	1.06	1.00	0.91	0.84	0.79
25	1.14	1.08	1.00	0.91	0.84	0.78
35	1.15	1.08	1.00	0.91	0.84	0.77
50	1.15	1.08	1.00	0.91	0.84	0.77
70	1.15	1.08	1.00	0.90	0.83	0.76
95	1.15	1.08	1.00	0.90	0.83	0.76
120	1.17	1.09	1.00	0.90	0.82	0.76
150	1.17	1.09	1.00	0.90	0.82	0.75
185	1.18	1.09	1.00	0.89	0.81	0.75
240	1.18	1.09	1.00	0.89	0.81	0.75
300	1.18	1.09	1.00	0.89	0.81	0.75
400	1.19	1.10	1.00	0.89	0.81	0.75

GROUP RATING FACTORS

FOR SINGLE CORE CABLES

A) Cables laid direct in the ground in horizontal formation.

No. of Trefoils in Group	Distance between Trefoils			
	Touching	15 cm	30 cm	45 cm
2	0.78	0.81	0.85	0.88
3	0.68	0.71	0.77	0.81
4	0.61	0.65	0.72	0.76
5	0.56	0.61	0.68	0.73

B) Cables laid in ducts in horizontal formation.

No. of Trefoils in Group	Distance between Trefoils		
	Touching	45 cm	60 cm
2	0.87	0.90	0.91
3	0.79	0.83	0.86
4	0.74	0.79	0.82
5	0.71	0.76	0.80

C) Cables laid on Racks / Trays in covered trench with having restricted air circulation, Trefoils are separated by two cable diameter horizontally and the trays are in tiers having 30 cm distance.

No. racks / trays in tiers	No. of Trefoils in Horizontal Formation		
	1	2	3
1	0.95	0.90	0.88
2	0.90	0.85	0.83
3	0.88	0.83	0.81
6	0.86	0.81	0.79

D) as above C. but cables lad in open air.

No. racks / trays in tiers	No. of Trefoils in Horizontal Formation		
	1	2	3
1	1	0.98	0.96
2	1	0.95	0.93
3	1	0.94	0.92
6	1	0.93	0.90

FOR MULTI CORE CABLES

A) Cables laid on cable trays exposed to air, the cables spaced by one cable diameter and trays are in tiers spaced by 30 cm. The clearanc between the wall and the cable is 25 mm.

No. of cables trays in tier	Distance between Trefoils				
	1	2	3	6	9
1	1	0.98	0.96	0.93	0.92
2	1	0.95	0.93	0.90	0.89
3	1	0.94	0.92	0.89	0.88
6	1	0.93	0.90	0.87	0.86

B) Cables laid inside concrete trench with removable covers on cable trays having restricted circulation. The cables spaced by one cable diameter and trays are in tiers spaced by 300 mm. The clearance of the cable from the wall is 25 mm.

No. of cables trays in tier	No. of cables				
	1	2	3	6	9
1	0.95	0.90	0.88	0.85	0.84
2	0.90	0.85	0.83	0.81	0.80
3	0.88	0.83	0.81	0.79	0.78
6	0.86	0.81	0.79	0.77	0.76

C) Cables laid on cable trays exposed to air, the cable touching and trays are in tiers spaced by 30 cm. The clearance between the wall and the cable is 25 mm.

No. of cables trays	No. of cables per tray				
	1	2	3	6	9
1	1	0.84	0.80	0.75	0.73
2	1	0.80	0.76	0.71	0.69
3	1	0.78	0.74	0.70	0.68
6	1	0.76	0.72	0.68	0.66

D) Cables laid direct in ground in horizontal formation.

No. of cables in Group	Distance of cables			
	Touching	15 cm	30 cm	45 cm
2	0.79	0.82	0.87	0.90
3	0.69	0.75	0.79	0.83
4	0.62	0.69	0.74	0.79
5	0.58	0.65	0.72	0.76
6	0.54	0.61	0.69	0.75

E) Cables laid in single way ducts / pipes in horizontal formation.

No. of cables in Group	Distance of cables			
	Touching	30 cm	45 cm	60 cm
2	0.88	0.90	0.92	0.94
3	0.82	0.84	0.87	0.89
4	0.77	0.80	0.84	0.87
5	0.74	0.78	0.82	0.85
6	0.71	0.76	0.81	0.84

SINGLE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

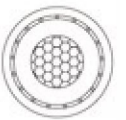

TABLE - WD 1 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular ○	Nominal Thickness of XLPE Insulation for U/A	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Nominal Thickness of XLPE insulation for Armoured Cable	Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
				Nominal Thickness of PVC Outer	Approx. Overall Diameter of Cable	Approx. Weight of Cable		Nominal Dimension of Aluminium Flat. Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of Aluminium Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground.	In Air	
Sq. mm.		mm	mm	mm	mm	Kg./Km	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
4	Solid	0.7	-NA-	1.8	7.5	60	–	–	–	–	–	–	–	–	–	36	31	1000
4	Stranded	0.7	-NA-	1.8	8.0	65	–	–	–	–	–	–	–	–	–	36	31	1000
6	Solid	0.7	-NA-	1.8	8.0	70	–	–	–	–	–	–	–	–	–	44	39	1000
6	Stranded	0.7	-NA-	1.8	8.5	75	–	–	–	–	–	–	–	–	–	44	39	1000
10	Solid	0.7	-NA-	1.8	9.0	80	1.0	–	–	-	–	–	–	–	–	59	53	1000
10	Stranded	0.7	-NA-	1.8	9.5	90	1.0	–	–	–	–	–	–	–	–	59	53	1000
16	Stranded	0.7	-NA-	1.8	10.0	115	1.0	–	–	–	–	1.4	1.24	13.0	220	76	73	1000
25	–do–	0.9	-NA-	1.8	12.0	155	1.2	–	–	–	–	1.4	1.24	14.0	260	96	98	1000
35	–do–	0.9	-NA-	1.8	13.0	180	1.2	–	–	–	–	1.4	1.24	15.0	310	114	121	1000
50	–do–	1.0	-NA-	1.8	14.0	240	1.3	–	–	–	–	1.4	1.24	17.0	380	135	150	1000
70	–do–	1.1	-NA-	1.8	16.0	310	1.4	–	–	–	–	1.4	1.24	19.0	480	166	187	1000
95	–do–	1.1	-NA-	1.8	17.5	385	1.4	4 x 0.80	1.40	21.0	560	1.6	1.40	22.0	640	198	230	1000
120	–do–	1.2	-NA-	1.8	19.0	470	1.5	4 x 0.80	1.40	22.0	660	1.6	1.40	23.5	745	225	268	1000
150	–do–	1.4	-NA-	2.0	21.5	600	1.7	4 x 0.80	1.40	23.0	750	1.6	1.40	24.5	850	253	309	1000
185	–do–	1.6	-NA-	2.0	23.5	710	1.9	4 x 0.80	1.40	25.0	900	1.6	1.40	26.5	1000	286	360	1000
240	–do–	1.7	-NA-	2.0	26.0	900	2.0	4 x 0.80	1.40	27.5	1100	1.6	1.40	29.0	1215	332	433	1000
300	–do–	1.8	-NA-	2.0	28.5	1075	2.1	4 x 0.80	1.56	30.0	1350	1.6	1.56	31.5	1475	376	501	1000
400	–do–	2.0	-NA-	2.2	33.0	1385	2.4	4 x 0.80	1.56	34.0	1725	2.0	1.56	36.5	1925	431	596	500
500	–do–	2.2	-NA-	2.2	36.0	1650	2.6	4 x 0.80	1.56	37.5	2090	2.0	1.56	39.5	2300	490	693	500
630	–do–	2.4	-NA-	2.2	40.0	2100	2.8	4 x 0.80	1.72	40.5	2525	2.0	1.72	43.0	2800	557	814	500
800	–do–	2.6	-NA-	2.4	46.0	2730	3.1	4 x 0.80	1.72	46.5	3150	2.0	1.88	49.5	3450	600	890	500
1000	–do–	2.8	-NA-	2.6	52.0	3350	3.3	4 x 0.80	1.88	54.0	3963	2.5	2.04	58.0	4475	650	1050	500

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5% Length more than normal as per customer request.

SINGLE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

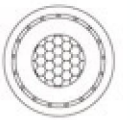

TABLE - WD 2 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular ○	Nominal Thickness of XLPE Insulation for U/A	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Nominal Thickness of XLPE insulation for Armoured Cable	Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable		Nominal Dimension of Aluminium Flat. Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of Aluminium Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.		mm	mm	mm	mm	Kg./Km	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
4	Solid	0.7	-NA-	1.8	7.5	91	–	–	–	–	–	–	–	–	–	47	42	1000
4	Stranded	0.7	-NA-	1.8	8.0	95	–	–	–	–	–	–	–	–	–	47	42	1000
6	Solid	0.7	-NA-	1.8	8.0	115	–	–	–	–	–	–	–	–	–	59	53	1000
6	Stranded	0.7	-NA-	1.8	8.5	125	–	–	–	–	–	–	–	–	–	59	53	1000
10	Stranded	0.7	-NA-	1.8	9.5	170	1.0	–	–	-	–	1.4	1.24	12.0	245	78	72	1000
16	Stranded	0.7	-NA-	1.8	10.0	220	1.0	–	–	–	–	1.4	1.24	13.0	315	102	98	1000
25	Stranded	0.9	-NA-	1.8	12.0	325	1.2	–	–	–	–	1.4	1.24	14.0	415	132	132	1000
35	Stranded	0.9	-NA-	1.8	13.0	420	1.2	–	–	–	–	1.4	1.24	16.0	525	156	156	1000
50	Stranded	1.0	-NA-	1.8	14.0	550	1.3	–	–	–	–	1.4	1.24	17.0	690	186	198	1000
70	Standed	1.1	-NA-	1.8	16.0	750	1.4	–	–	–	–	1.4	1.24	19.0	910	228	246	1000
95	Stranded	1.1	-NA-	1.8	17.5	1010	1.4	4 x 0.80	1.40	21.0	1150	1.6	1.40	22.0	1325	264	294	1000
120	Stranded	1.2	-NA-	1.8	19.0	1250	1.5	4 x 0.80	1.40	22.0	1400	1.6	1.40	23.5	1485	300	336	1000
150	Stranded	1.4	-NA-	2.0	21.5	1550	1.7	4 x 0.80	1.40	23.0	1680	1.6	1.40	24.5	1780	336	384	1000
185	Stranded	1.6	-NA-	2.0	23.5	1900	1.9	4 x 0.80	1.40	25.0	2040	1.6	1.40	26.5	2140	366	444	1000
240	Stranded	1.7	-NA-	2.0	26.0	2450	2.0	4 x 0.80	1.40	27.5	2580	1.6	1.40	29.0	2700	414	510	1000
300	Stranded	1.8	-NA-	2.0	28.5	3050	2.1	4 x 0.80	1.56	30.0	3200	1.6	1.56	31.5	3325	450	570	500
400	Stranded	2.0	-NA-	2.2	33.0	4035	2.4	4 x 0.80	1.56	34.0	4200	2.0	1.56	36.5	4400	480	660	500
500	Stranded	2.2	-NA-	2.2	36.0	5020	2.6	4 x 0.80	1.56	37.5	5180	2.0	1.56	39.5	5400	570	708	500
630	Stranded	2.4	-NA-	2.2	40.0	6250	2.8	4 x 0.80	1.72	40.5	6425	2.0	1.72	43.0	6700	564	825	500
800	Stranded	2.6	-NA-	2.4	46.0	7900	3.1	4 x 0.80	1.72	46.5	8100	2.0	1.88	49.5	8400	660	945	500
1000	Stranded	2.8	-NA-	2.6	52	9850	3.3	4 x 0.80	1.88	54.0	10150	2.5	2.04	58.0	10660	723	1063	500

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5% Length more than normal as per customer request.

TWO CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 3 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular Shaped ○/⌓	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.	mm	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
4	Solid ○	0.7	0.3	1.8	12.5	140	-NA-	-NA-	-NA-	-NA-	1.40	1.24	14.5	400	40	34	1000
4	Stranded ○	0.7	0.3	1.8	13.0	150	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.5	430	40	34	1000
6	Solid ○	0.7	0.3	1.8	13.5	170	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.5	470	50	44	1000
6	Stranded ○	0.7	0.3	1.8	14.0	180	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.5	485	50	44	1000
10	Solid ○	0.7	0.3	1.8	15.0	205	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.0	545	69	59	1000
10	Stranded ○	0.7	0.3	1.8	16.0	225	-NA-	-NA-	-NA-	-NA-	1.40	1.24	18.0	565	69	59	1000
16	Stranded ⌓	0.7	0.3	1.8	14.0	225	-NA-	-NA-	-NA-	-NA-	1.40	1.40	17.0	570	88	74	1000
25	Stranded ⌓	0.9	0.3	2.0	17.0	330	4 x 0.8	1.40	18.5	600	1.60	1.40	20.0	790	112	98	1000
35	Stranded ⌓	0.9	0.3	2.0	19.0	410	-do-	1.40	20.0	690	1.60	1.40	22.0	910	138	124	1000
50	Stranded ⌓	1.0	0.3	2.0	21.0	510	-do-	1.40	22.5	820	1.60	1.40	24.0	1050	169	156	1000
70	Stranded ⌓	1.1	0.3	2.0	23.0	675	-do-	1.56	25.5	1050	1.60	1.56	27.0	1325	200	188	1000
95	Stranded ⌓	1.1	0.4	2.2	26.5	900	-do-	1.56	28.0	1300	2.00	1.56	30.5	1750	238	231	500
120	Stranded ⌓	1.2	0.4	2.2	28.5	1050	-do-	1.56	30.5	1500	2.00	1.56	33.0	2000	262	262	500
150	Stranded ⌓	1.4	0.4	2.2	32.0	1215	-do-	1.72	34.0	1750	2.00	1.72	36.0	2250	300	300	500
185	Stranded ⌓	1.6	0.5	2.4	35.5	1510	-do-	1.72	37.0	2200	2.00	1.88	40.0	2750	344	344	500
240	Stranded ⌓	1.7	0.5	2.6	39.5	1900	-do-	1.88	41.0	2600	2.50	2.04	45.0	3700	400	406	500
300	Stranded ⌓	1.8	0.6	2.8	43.5	2360	-do-	2.04	45.5	3200	2.50	2.20	49.0	4400	444	456	500
400	Stranded ⌓	2.0	0.6	3.0	49.0	3100	-do-	2.36	51.0	4000	2.50	2.36	54.4	5300	481	525	500
500	Stranded ⌓	2.2	0.7	3.4	55.5	4000	-do-	2.52	56.5	5000	3.15	2.68	61.5	7000	523	678	500
630	Stranded ⌓	2.4	0.7	3.6	61.5	5000	-do-	2.68	62.5	6050	3.15	2.84	67.5	8560	592	786	500

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

TWO CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 4 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular Shaped ○/⌓	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.	mm	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
4	Solid ○	0.7	0.3	1.8	12.5	165	-NA-	-NA-	-NA-	-NA-	1.4	1.24	14.5	480	51	44	1000
4	Stranded ○	0.7	0.3	1.8	13.0	175	-NA-	-NA-	-NA-	-NA-	1.4	1.24	15.5	525	51	44	1000
6	Solid ○	0.7	0.3	1.8	13.5	210	-NA-	-NA-	-NA-	-NA-	1.4	1.24	15.5	564	63	56	1000
6	Stranded ○	0.7	0.3	1.8	14.0	225	-NA-	-NA-	-NA-	-NA-	1.4	1.24	16.5	610	63	56	1000
10	Stranded ○	0.7	0.3	1.8	16.0	300	-NA-	-NA-	-NA-	-NA-	1.4	1.24	18.0	740	88	75	1000
16	Stranded ⌓	0.7	0.3	1.8	14.0	425	-NA-	-NA-	-NA-	-NA-	1.4	1.40	17.0	770	113	98	1000
25	Stranded ⌓	0.9	0.3	2.0	17.0	640	4 x 0.8	1.40	18.5	910	1.6	1.40	20.0	1100	144	131	1000
35	Stranded ⌓	0.9	0.3	2.0	19.0	840	-do-	1.40	20.0	1025	1.6	1.40	22.0	1350	175	150	1000
50	Stranded ⌓	1.0	0.3	2.0	21.0	1120	-do-	1.40	22.5	1435	1.6	1.40	24.0	1670	206	194	1000
70	Stranded ⌓	1.1	0.3	2.0	23.0	1540	-do-	1.56	25.5	1910	1.6	1.56	27.0	2200	256	244	1000
95	Stranded ⌓	1.1	0.4	2.2	26.5	2075	-do-	1.56	28.0	2475	2.0	1.56	30.5	2925	300	288	500
120	Stranded ⌓	1.2	0.4	2.2	28.5	2535	-do-	1.56	30.5	2985	2.0	1.56	33.0	3485	344	331	500
150	Stranded ⌓	1.4	0.4	2.2	32.0	3070	-do-	1.72	34.0	3600	2.0	1.72	36.0	4100	388	381	500
185	Stranded ⌓	1.6	0.5	2.4	35.5	3800	-do-	1.72	37.0	4490	2.0	1.88	40.0	5040	438	438	500
240	Stranded ⌓	1.7	0.5	2.6	39.5	4870	-do-	1.88	41.0	5575	2.5	2.04	45.0	7370	506	512	500
300	Stranded ⌓	1.8	0.6	2.8	43.5	6075	-do-	2.04	45.5	6910	2.5	2.20	49.0	9010	562	581	500
400	Stranded ⌓	2.0	0.6	3.0	49.0	8050	-do-	2.36	51.0	8950	2.5	2.36	54.4	10250	612	662	500

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

THREE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 5 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular Shaped ○/△	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.	mm	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
4	Solid ○	0.7	0.3	1.8	14.0	140	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.0	460	34	31	1000
4	Stranded ○	0.7	0.3	1.8	15.5	160	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.0	510	34	31	1000
6	Solid ○	0.7	0.3	1.8	15.5	170	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.0	530	43	50	1000
6	Stranded ○	0.7	0.3	1.8	16.0	190	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.0	580	43	50	1000
10	Solid ○	0.7	0.3	1.8	17.0	220	-NA-	-NA-	-NA-	-NA-	1.40	1.24	18.0	640	57	67	1000
10	Stranded ○	0.7	0.3	1.8	18.0	230	-NA-	-NA-	-NA-	-NA-	1.40	1.24	19.0	680	57	67	1000
16	Stranded △	0.7	0.3	1.8	18.0	310	4 x 0.8	1.24	18.5	530	1.60	1.40	21.0	750	73	70	1000
25	Stranded △	0.9	0.3	2.0	20.0	460	-do-	1.40	20.5	770	1.60	1.40	23.0	990	94	96	500
35	Stranded △	0.9	0.3	2.0	21.5	575	-do-	1.40	23.0	900	1.60	1.40	25.0	1150	113	117	500
50	Stranded △	1.0	0.3	2.0	24.5	700	-do-	1.40	25.5	1100	1.60	1.56	27.5	1400	133	142	500
70	Stranded △	1.1	0.4	2.2	29.0	990	-do-	1.56	30.0	1425	2.00	1.56	32.0	1950	164	179	500
95	Stranded △	1.1	0.4	2.2	32.5	1250	-do-	1.56	33.5	1735	2.00	1.56	37.5	2300	196	221	500
120	Stranded △	1.2	0.4	2.2	34.5	1525	-do-	1.56	35.5	2050	2.00	1.72	39.5	2700	223	257	500
150	Stranded △	1.4	0.5	2.4	38.5	1900	-do-	1.72	40.5	2100	2.00	1.88	43.5	3200	249	292	500
185	Stranded △	1.6	0.5	2.6	43.5	2380	-do-	1.88	44.5	2500	2.50	2.04	48.5	4200	282	337	500
240	Stranded △	1.7	0.6	2.8	48.5	3000	-do-	2.04	49.0	3700	2.50	2.20	53.0	5100	326	399	500
300	Stranded △	1.8	0.6	3.0	51.5	3750	-do-	2.20	53.0	4500	2.50	2.36	57.5	5900	367	455	500
400	Stranded △	2.0	0.7	3.2	59.5	4760	-do-	2.52	58.5	5700	3.15	2.68	65.0	7900	418	530	500
500	Stranded △	2.2	0.7	3.6	66.0	6000	-do-	2.68	67.0	6900	3.15	2.84	73.0	9550	470	612	250
630	Stranded △	2.4	0.7	3.8	72.0	7550	-do-	2.84	73.0	8700	4.00	3.00	78.0	12500	529	707	250

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

THREE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 6 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular Shaped ○/△	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.	mm	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
4	Solid ○	0.7	0.3	1.8	14.0	210	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.0	530	43	36	1000
4	Stranded ○	0.7	0.3	1.8	15.5	235	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.0	580	43	36	1000
6	Solid ○	0.7	0.3	1.8	15.5	280	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.0	640	54	47	1000
6	Stranded ○	0.7	0.3	1.8	16.0	300	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.0	680	54	47	1000
10	Stranded ○	0.7	0.3	1.8	18.0	415	-NA-	-NA-	-NA-	-NA-	1.40	1.24	19.0	865	72	62	1000
16	Stranded △	0.7	0.3	1.8	18.0	425	4 x 0.8	1.24	18.5	825	1.60	1.40	21.0	1040	92	79	1000
25	Stranded △	0.9	0.3	2.0	20.0	920	-do-	1.40	20.5	1235	1.60	1.40	23.0	1450	119	108	500
35	Stranded △	0.9	0.3	2.0	21.5	1225	-do-	1.40	23.0	1550	1.60	1.40	25.0	1800	144	132	500
50	Stranded △	1.0	0.3	2.0	24.5	1620	-do-	1.40	25.5	2020	1.60	1.56	27.5	2320	174	162	500
70	Stranded △	1.1	0.4	2.2	29.0	2290	-do-	1.56	30.0	2720	2.00	1.56	32.0	3250	210	198	500
95	Stranded △	1.1	0.4	2.2	32.5	3010	-do-	1.56	33.5	3500	2.00	1.56	37.5	4060	252	240	500
120	Stranded △	1.2	0.4	2.2	34.5	3750	-do-	1.56	35.5	4320	2.00	1.72	39.5	4920	288	276	500
150	Stranded △	1.4	0.5	2.4	38.5	4760	-do-	1.72	40.5	5280	2.00	1.88	43.5	5980	324	318	500
185	Stranded △	1.6	0.5	2.6	43.5	5810	-do-	1.88	44.5	6385	2.50	2.04	48.5	7630	360	366	500
240	Stranded △	1.7	0.6	2.8	48.5	7450	-do-	2.04	49.0	8150	2.50	2.20	53.0	9550	414	426	500
300	Stranded △	1.8	0.6	3.0	51.5	9310	-do-	2.20	53.0	10060	2.50	2.36	57.5	11460	462	480	250
400	Stranded △	2.0	0.7	3.2	59.5	12200	-do-	2.52	58.5	13125	3.15	2.68	65.0	15320	510	546	250

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

THREE AND HALF CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 7 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular Shaped ○/△	Nominal Thickness of XLPE Insulation Main / Neutral		Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
					Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.	mm	mm	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
25/16	Stranded △	0.9	0.7	0.3	2.0	22	525	4 x 0.80	1.40	23.0	850	1.6	1.40	25.5	1050	94	96	500
35/16	Stranded △	0.9	0.7	0.3	2.0	24	625	-do-	1.40	25.0	980	1.6	1.40	26.5	1200	113	117	-do-
50/25	Stranded △	1.0	0.9	0.3	2.0	27.5	800	-do-	1.40	28.0	1240	1.6	1.56	29.5	1500	133	142	-do-
70/35	Stranded △	1.1	0.9	0.4	2.2	31.0	1100	-do-	1.56	32.0	1600	2.0	1.56	34.0	2050	164	179	-do-
95/50	Stranded △	1.1	1.0	0.4	2.2	35.0	1400	-do-	1.56	36.0	1900	2.0	1.56	38.0	2450	196	221	-do-
120/70	Stranded △	1.2	1.1	0.4	2.2	37.5	1650	-do-	1.72	39.0	2300	2.0	1.72	41.0	2800	223	257	-do-
150/70	Stranded △	1.4	1.1	0.5	2.4	41.0	2000	-do-	1.72	42.0	2650	2.0	1.88	45.0	3350	249	292	-do-
185/95	Stranded △	1.6	1.1	0.5	2.6	46.5	2550	-do-	1.88	47.5	3250	2.5	2.04	50.0	4500	282	337	-do-
240/120	Stranded △	1.7	1.2	0.6	2.8	52.5	3200	-do-	2.04	53.5	4100	2.5	2.20	56.0	5450	326	399	-do-
300/150	Stranded △	1.8	1.4	0.6	3.0	56.0	4000	-do-	2.20	57.0	4950	2.5	2.36	61.0	6400	367	455	-do-
400/185	Stranded △	2.0	1.6	0.7	3.4	64.0	5250	-do-	2.52	65.0	6150	3.15	2.68	70.0	8300	418	530	-do-
500/240	Stranded △	2.2	1.7	0.7	3.6	72.5	6500	-do-	2.68	73.5	7600	3.15	2.84	77.0	10000	470	612	250

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

THREE AND HALF CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 8 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular Shaped ○/△	Nominal Thickness of XLPE Insulation Main / Neutral		Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
					Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.	mm	mm	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
25/16	Stranded △	0.9	0.7	0.3	2.0	22.0	1080	4 x 0.80	1.40	23	1410	1.6	1.40	24.0	1610	119	108	500
35/16	Stranded △	0.9	0.7	0.3	2.0	24.0	1370	-do-	1.40	25	1725	1.6	1.40	26.0	1950	144	132	-do-
50/25	Stranded △	1.0	0.9	0.3	2.0	27.5	1875	-do-	1.40	28	2325	1.6	1.56	29.0	2580	174	162	-do-
70/35	Stranded △	1.1	0.9	0.4	2.2	31.0	2620	-do-	1.56	32	3110	2.0	1.56	34.0	3560	210	198	-do-
95/50	Stranded △	1.1	1.0	0.4	2.2	35.0	3475	-do-	1.56	36	8975	2.0	1.56	37.5	4525	252	240	-do-
120/70	Stranded △	1.2	1.1	0.4	2.2	39.0	4315	-do-	1.72	40	4960	2.0	1.72	41.0	5460	288	276	-do-
150/70	Stranded △	1.4	1.1	0.5	2.4	43.0	5220	-do-	1.72	44	5870	2.0	1.88	45.0	6570	324	318	-do-
185/95	Stranded △	1.6	1.1	0.5	2.6	48.0	6575	-do-	1.88	50	7275	2.5	2.04	50.0	8520	360	366	-do-
240/120	Stranded △	1.7	1.2	0.6	2.8	54.0	8400	-do-	2.04	55	9300	2.5	2.20	56.0	10650	414	426	250
300/150	Stranded △	1.8	1.4	0.6	3.0	57.0	10500	-do-	2.20	58	11500	2.5	2.36	61.0	12400	462	480	250
400/185	Stranded △	2.0	1.6	0.7	3.4	65.0	13820	-do-	2.52	66	14720	3.15	2.68	70.0	16875	510	546	250

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

FOUR CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 9 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular Shaped ○/△	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.	mm	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
4	Solid ○	0.7	0.3	1.8	15.0	160	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.5	510	34	31	1000
4	Stranded ○	0.7	0.3	1.8	16.0	180	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.5	560	34	31	1000
6	Solid ○	0.7	0.3	1.8	16.5	200	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.5	580	43	50	1000
6	Stranded ○	0.7	0.3	1.8	17.5	215	-NA-	-NA-	-NA-	-NA-	1.40	1.24	18.5	625	43	50	1000
10	Solid ○	0.7	0.3	1.8	18.0	250	-NA-	-NA-	-NA-	-NA-	1.40	1.40	19.0	700	57	67	1000
10	Stranded ○	0.7	0.3	1.8	18.5	260	-NA-	-NA-	-NA-	-NA-	1.40	1.40	20.5	765	57	67	1000
16	Stranded △	0.7	0.3	1.8	17.5	350	4 x 0.8	1.40	20.0	715	1.60	1.40	21.0	895	73	70	500
25	Stranded △	0.9	0.3	2.0	21.0	550	-do-	1.40	23.0	940	1.60	1.40	25.0	1150	94	96	-do-
35	Stranded △	0.9	0.3	2.0	23.5	680	-do-	1.40	25.0	1050	1.60	1.40	26.5	1325	113	117	-do-
50	Stranded △	1.0	0.3	2.0	26.0	875	-do-	1.56	28.0	1280	1.60	1.56	29.5	1640	133	142	-do-
70	Stranded △	1.1	0.4	2.2	30.5	1200	-do-	1.56	32.0	1700	2.00	1.56	34.0	2175	164	179	-do-
95	Stranded △	1.1	0.4	2.2	33.5	1530	-do-	1.56	35.0	2100	2.00	1.72	38.0	2775	196	221	-do-
120	Stranded △	1.2	0.5	2.4	37.5	1850	-do-	1.72	39.0	2600	2.00	1.88	42.0	3250	223	257	-do-
150	Stranded △	1.4	0.5	2.6	42.0	2280	-do-	1.88	43.5	3000	2.50	2.04	47.0	4175	249	292	-do-
185	Stranded △	1.6	0.5	2.8	46.5	2800	-do-	2.04	48.0	3650	2.50	2.20	52.0	5000	282	337	-do-
240	Stranded △	1.7	0.6	3.0	52.5	3700	-do-	2.20	54.0	4700	2.50	2.36	57.5	6050	326	399	-do-
300	Stranded △	1.8	0.7	3.2	58.0	4600	-do-	2.36	59.5	5600	3.15	2.52	64.5	7850	367	455	250
400	Stranded △	2.0	0.7	3.6	65.5	6000	-do-	2.68	66.5	7000	3.15	2.84	71.5	9500	418	530	250

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

FOUR CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 10 1100 Volts

WEIGHT & DIMENSIONS

Nominal size of Conductor	Form of Conductor Circular Shaped ○/△	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq. mm.	mm	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
4	Solid ○	0.7	0.3	1.8	15.0	260	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.5	610	43	36	1000
4	Stranded ○	0.7	0.3	1.8	16.0	280	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.5	660	43	36	1000
6	Solid ○	0.7	0.3	1.8	16.5	350	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.5	730	54	47	1000
6	Stranded ○	0.7	0.3	1.8	17.5	365	-NA-	-NA-	-NA-	-NA-	1.40	1.24	18.5	775	54	47	1000
10	Stranded ○	0.7	0.3	1.8	18.5	510	-NA-	-NA-	-NA-	-NA-	1.40	1.40	20.5	1010	72	62	1000
16	Stranded △	0.7	0.3	1.8	17.5	750	4 x 0.8	1.40	20.0	1050	1.60	1.40	21.0	1275	92	79	500
25	Stranded △	0.9	0.3	2.0	21.0	1170	-do-	1.40	23.0	1520	1.60	1.40	25.0	1770	119	108	-do-
35	Stranded △	0.9	0.3	2.0	23.5	1550	-do-	1.40	25.0	1915	1.60	1.40	26.5	2190	144	132	-do-
50	Stranded △	1.0	0.3	2.0	26.0	2110	-do-	1.56	28.0	2510	1.60	1.56	29.5	2875	174	162	-do-
70	Stranded △	1.1	0.4	2.2	30.5	2925	-do-	1.56	32.0	3430	2.00	1.56	34.0	3900	210	198	-do-
95	Stranded △	1.1	0.4	2.2	33.5	3880	-do-	1.56	35.0	4450	2.00	1.72	38.0	5125	252	240	-do-
120	Stranded △	1.2	0.5	2.4	37.5	4825	-do-	1.72	39.0	5575	2.00	1.88	42.0	6225	288	276	-do-
150	Stranded △	1.4	0.5	2.6	42.0	6000	-do-	1.88	43.5	6710	2.50	2.04	47.0	7890	324	318	-do-
185	Stranded △	1.6	0.5	2.8	46.5	7380	-do-	2.04	48.0	8225	2.50	2.20	52.0	9580	360	366	-do-
240	Stranded △	1.7	0.6	3.0	52.5	9650	-do-	2.20	54.0	10340	2.50	2.36	57.5	12000	414	426	250
300	Stranded △	1.8	0.7	3.2	58.0	12025	-do-	2.36	59.5	13025	3.15	2.52	64.5	15275	462	480	250

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

1100 VOLTS MULTICORE CONTROL CABLE WITH SOLID COPPER CONDUCTOR OF SIZE 1.5 SQ. MM XLPE INSULATED, UNARMOURED IN ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

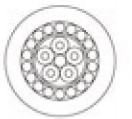

TABLE - WD 11 Solid & Strandes $

WEIGHT & DIMENSIONS

Number of Cores	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
No. s	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
2	0.7	0.3	1.8	10.0	140	-NA-	-NA-	-NA-	-NA-	1.4	1.24	12.5	370	33	29	1000
3	-do-	0.3	1.8	10.5	160	-NA-	-NA-	-NA-	-NA-	1.4	1.24	13.0	390	25	22	1000
4	-do-	0.3	1.8	11.5	200	-NA-	-NA-	-NA-	-NA-	1.4	1.24	13.5	415	25	22	1000
5	-do-	0.3	1.8	12.5	225	-NA-	-NA-	-NA-	-NA-	1.4	1.24	14.5	465	24	21	1000
6	-do-	0.3	1.8	13.5	250	-NA-	-NA-	-NA-	-NA-	1.4	1.24	15.5	500	22	19	1000
7	-do-	0.3	1.8	13.5	260	-NA-	-NA-	-NA-	-NA-	1.4	1.24	15.5	520	21	18	1000
8	-do-	0.3	1.8	14.5	280	-NA-	-NA-	-NA-	-NA-	1.4	1.24	16.5	580	20	18	1000
9	-do-	0.3	1.8	15.5	315	-NA-	-NA-	-NA-	-NA-	1.4	1.24	17.5	630	19	17	1000
10	-do-	0.3	1.8	17.0	340	-NA-	-NA-	-NA-	-NA-	1.4	1.24	18.5	655	18	16	1000
12	-do-	0.3	1.8	17.5	390	-NA-	-NA-	-NA-	-NA-	1.4	1.24	19.0	720	17	15	1000
14	-do-	0.3	1.8	18.0	430	-NA-	-NA-	-NA-	-NA-	1.4	1.40	20.0	825	16	14	1000
16	-do-	0.3	1.8	18.5	475	4 x 0.80	1.40	19.0	750	1.6	1.40	21.0	925	16	14	1000
19	-do-	0.3	1.8	19.5	540	-do-	-do-	20.0	815	1.6	1.40	22.0	1010	15	13	1000
21	-do-	0.3	2.0	20.5	600	-do-	-do-	21.0	900	1.6	1.40	23.0	1150	14	12	500
24	-do-	0.3	2.0	22.5	665	-do-	-do-	23.0	1000	1.6	1.40	25.0	1250	13	12	500
27	-do-	0.3	2.0	23.0	750	-do-	-do-	23.5	1050	1.6	1.40	25.5	1330	13	11	500
30	-do-	0.3	2.0	23.5	820	-do-	-do-	24.0	1125	1.6	1.40	26.0	1400	12	11	500
33	-do-	0.3	2.0	24.0	910	-do-	-do-	25.0	1225	1.6	1.40	27.0	1475	12	10	500
37	-do-	0.3	2.0	25.0	975	-do-	-do-	26.0	1325	1.6	1.40	28.0	1550	11	10	500
44	-do-	0.3	2.0	28.0	1150	-do-	-do-	28.5	1500	1.6	1.56	30.5	1850	11	9	500
52	-do-	0.3	2.0	29.0	1300	-do-	1.56	30.5	1700	1.6	1.56	32.0	2050	10	9	500
61	-do-	0.4	2.2	31.0	1500	-do-	1.56	32.0	1950	2.0	1.56	34.5	2550	9	8	500

$ The Weight and Dimensions of Cables with Stranded conductor will be comparatively more than that of Solid conductor,whereas all other parameters are same.

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

1100 VOLTS MULTICORE CONTROL CABLE WITH SOLID COPPER CONDUCTOR OF SIZE 2.5 SQ. MM XLPE INSULATED, UNARMOURED AND IN ARMOURED CABLE CONFORMING TO IS 7098 PART-1/1988

TABLE - WD 12 Solid & Stranded $

WEIGHT & DIMENSIONS

Number of Cores	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating		* Normal Delivery Length.
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
No. s	mm	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	mm	mm	mm	Kg./Km	Amps.	Amps.	Mtrs.
2	0.7	0.3	1.8	11.5	185	-NA-	-NA-	-NA-	-NA-	1.4	1.24	13.5	380	39	32	1000
3	-do-	0.3	1.8	12.0	220	-NA-	-NA-	-NA-	-NA-	1.4	1.24	14.0	425	34	30	1000
4	-do-	0.3	1.8	13.0	260	-NA-	-NA-	-NA-	-NA-	1.4	1.24	14.5	500	34	30	1000
5	-do-	0.3	1.8	14.0	300	-NA-	-NA-	-NA-	-NA-	1.4	1.24	15.5	525	31	28	1000
6	-do-	0.3	1.8	15.0	340	-NA-	-NA-	-NA-	-NA-	1.4	1.24	16.5	600	29	26	1000
7	-do-	0.3	1.8	15.0	360	-NA-	-NA-	-NA-	-NA-	1.4	1.24	16.5	625	27	25	1000
8	-do-	0.3	1.8	16.0	400	-NA-	-NA-	-NA-	-NA-	1.4	1.24	18.0	700	26	24	1000
9	-do-	0.3	1.8	16.5	450	-NA-	-NA-	-NA-	-NA-	1.4	1.40	19.5	800	25	22	1000
10	-do-	0.3	1.8	17.5	475	4 x 0.80	1.24	19.0	700	1.6	1.40	21.0	875	24	21	1000
12	-do-	0.3	1.8	18.0	550	4 x 0.80	1.40	19.5	760	1.6	1.40	21.5	975	22	20	1000
14	-do-	0.3	1.8	19.0	625	4 x 0.80	1.40	20.0	850	1.6	1.40	22.0	1050	21	19	1000
16	-do-	0.3	2.0	20.5	680	4 x 0.80	1.40	21.5	920	1.6	1.40	23.5	1160	20	18	1000
19	-do-	0.3	2.0	21.5	770	4 x 0.80	1.40	22.5	1025	1.6	1.40	24.5	1250	19	17	1000
21	-do-	0.3	2.0	22.5	860	4 x 0.80	1.40	23.5	1140	1.6	1.40	25.5	1350	18	16	500
24	-do-	0.3	2.0	24.5	950	4 x 0.80	1.40	25.5	1250	1.6	1.40	27.5	1500	17	16	500
27	-do-	0.3	2.0	25.5	1050	4 x 0.80	1.40	26.5	1350	1.6	1.40	28.5	1625	16	16	500
30	-do-	0.3	2.0	26.0	1150	4 x 0.80	1.40	27.5	1550	1.6	1.40	29.0	1760	16	14	500
33	-do-	0.3	2.0	27.0	1250	4 x 0.80	1.40	28.5	1630	1.6	1.56	30.5	1950	15	14	500
37	-do-	0.3	2.0	28.0	1350	4 x 0.80	1.40	29.5	1710	1.6	1.56	31.5	2080	15	13	500
44	-do-	0.4	2.2	32.0	1650	4 x 0.80	1.56	33.0	2100	2.0	1.56	35.5	2600	14	12	500
52	-do-	0.4	2.2	33.5	1950	4 x 0.80	1.56	34.5	2350	2.0	1.56	37.5	2900	13	12	500
61	-do-	0.4	2.2	35.0	2150	4 x 0.80	1.56	36.0	2625	2.0	1.56	39.0	3400	12	11	500

$ The Weight and Dimensions of Cables with Stranded conductor will be comparatively more than that of Solid conductor, whereas all other parameters are same.
The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is ± 5 %. Length more than normal as per customer request.

HANDLING STORAGE AND LAYING OF XLPE CABLES

A) HANDLING :

1) The cable with or without drum shall not be thrown or dropped on the ground from the carriers such as trucks or railway wagons, during unloading.

2) The cable drum shall be unloaded with the help of cranes or fork lifts or using a proper ramp having inclination 1:3 to 1:4 in order to avoid mechanical damage to the outer layers of cables.

3) The cable drums shall be lifted or stored with its flanges always vertical.

4) The cable drum shall be rolled in the direction of arrow only, in order to avoid loosening of cable winding. The drum shall not be rolled on rocky, uneven surface and for longer distances, it may damage the drum and cable.

B) STORAGE :

1) The cables shall be stored in dry covered places having concrete / firm surface capable of bearing the load of drum.

2) The cable ends shall be sealed properly in order to prevent moisture ingress.

3) Antirodent / termite repulsion treatment shall be applied to the site where the drum are stored for very long period of time.

C) LAYING :

1) Polycab recommends the laying and installation of cables as per IS:1255/84.

2) Care shall be taken during laying to avoid sharp bending, and twisting .

3) Cable shall be un wound from the drum by lifting the drum on the center shaft supported both ends with suitable jacks / stands.

4) Under no circumstances the cable winding shall be lifted off a coil or drum lying flat at the flanges. This would cause serious twist and damages.

5) Suitable protection shall be provided to the cables against mechanical damages, it includes covers, pipes etc.

D) Recommended minimum bending radius for 1100 volts heavy duty cables :

Single Core - 15 x D Where D= Diameter of cable in mm

MultiCore - 12 x D

E) Recommended safe Pulling force with stockings :

a) For Unarmoured Cable : $P = 5 D^2$ Where P= Pulling Force

b) For Armoured Cable : $P = 9 D^2$ D= Diameter of cable in mm

F) Recommended safe pulling force when pulled with pulling eye :

a) For Aluminium Conductors : 30 N/mm^2

b) For Copper Condxuctor : 50 N/mm^2

Note : All figures given in various tables are indicative only.