ORBIT®

THE POWER OF PEOPLE

HT Cables

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THE QUALITY REVOLUTION

REASSURANCE OF SAFETY EVERYTIME

CONTENTS

About **Company**

Orbit Group of Companies is a renowned wiring and cabling solution partner, established in 1996. We have dominated the trade and engineering of wires and cables for over two decades with dynamic and pioneering technology.
Orbit wires and cables are designed and manufactured by the industry's best and are continually evolving to stay ahead of market demands. Our trusted products are designed and fabricated with efficiency and focus on the minutiae to ensure a satisfactory experience for every customer.

Orbit wires and cables are credited to be a one-stop enterprise that manufactures and sells a variety of wiring and cabling solutions for diverse applications. As an established enterprise we promise to deliver reliable and standard wiring and cabling solutions for your specific needs at a competitive price.

Message From **The Chairman**

Mr. RK Agarwal
Founder

One of the core purposes of Orbit Wires India Pvt. Ltd. is to build a long term relationship with people and organizations across the globe. Orbit Wires Company has proactively worked towards creating brand credibility and recognition by maintaining the industry standards of our products. We strive to be an innocuous company with safety as our precedence and aim to ultimately have zero accidents. We aspire to be the best cable manufacturer in the country and establish our brand identity through quality product delivery and commitment towards customer value.

Mr. Amit Agarwal
Managing Director

Ms. Neelam Bansel
Managing Director

Mr. Govinda Agarwal
Managing Director

Mission Vision & **Values**

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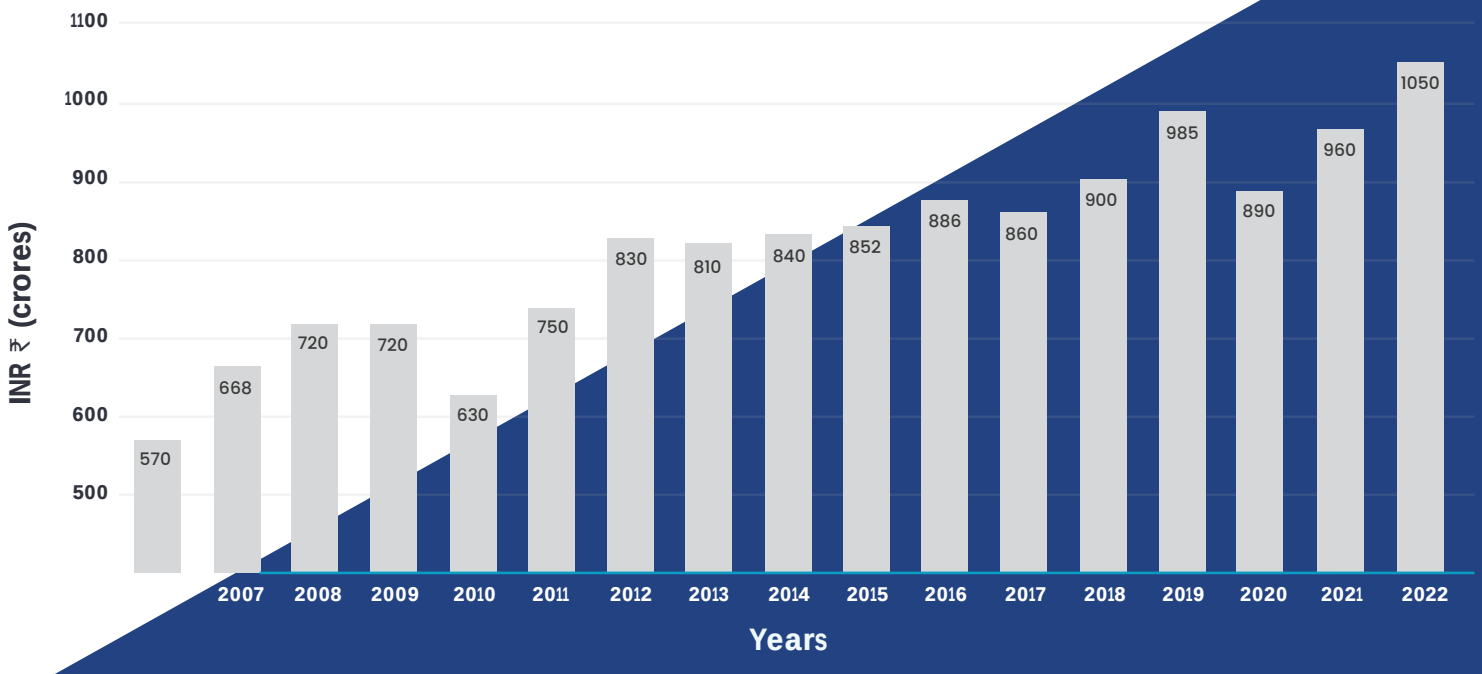


Certificates

QMS

EMS

HEALTH & SAFETY

CE

ROHS

CPRI

ORBIT HT CABLES

A high-voltage cable (HV cable) is a cable used for electric power transmission at high voltage. A cable includes a conductor and insulation. Cables are considered to be fully insulated. This means that they have a fully rated insulation system that will consist of insulation, semi-con layers, and a metallic shield. This is in contrast to an overhead line, which may include insulation but not fully rated for operating voltage (EG: tree wire). High-voltage cables of differing types have a variety of applications in instruments, ignition systems, and alternating current (AC) and direct current (DC) power transmission.

Application Standards :

XLPE CABLES : IS 7098 (PART 2)

VOLTAGE RATING : 3300 Volts Up to 33000 Volts (For XLPE).

PRODUCT RANGE : Single Core Cables - Up to 630 sq.mm. Three Core Cables - Up to 400 sq.mm.

QUALITY ASSURANCE TESTING :

Orbit is self sufficient to carry out all Routine & Type Tests in its own laboratory. It has world class Testing facilities for Routine & Type Tests.

Routine Tests : IS:7098 Part 2

Partial Discharge Test
High Voltage Test
Conductor Resistance Test. Routine Tests are performed on each manufactured length of cable in Routine Test Laboratory.

TYPE TESTS:

IS:7098 Part 2

Routine Tests
Type Tests
Acceptance Tests
Optional Tests
Special Tests (As Applicable)
The cable samples are type tested in-house to ensure conformance as to various standards.

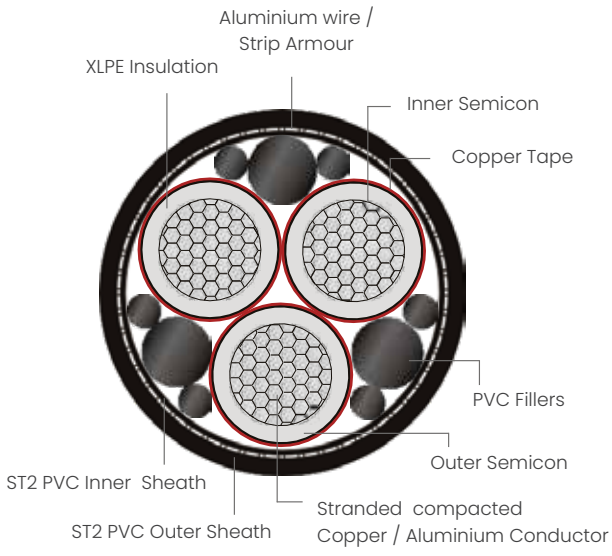
Orbit cables of various voltage grades are type tested at CPRI Bangalore. Short circuit tests on cable conductor and armour are successfully carried at CPRI Bangalore.

CONSTRUCTION OF HT CABLES:

Conductor	:	Stranded Class 2 - Annealed Plain / Tinned Copper / Aluminium - IS:8130.
Conductor Screen	:	Extruded semi-conducting compound – IS:7098 Part 2, IEC:60502.
Insulation	:	XLPE – IS : 7098 Part 2, IEC:60502.
Insulation Non-metallic Screen	:	Extruded semi-conducting compound – IS:7098 Part 2, IEC:60502.
Insulation Metallic Screen	:	Copper Wire / Tape or Aluminium Wire / Strip – IS:7098.
Fillers	:	PVC ST 2 as per IS:7098 Part 2.
Inner sheath/Bedding	:	Non Hygroscopic PVC * / Polypropelene Fiber to maintain roundness of cable.
Armour	:	IS:7098 Part 2, IS: 3975.
Outer Sheath	:	PVC ST 2, FR, FRLS as per IS:7098 Part 2.

Flame Retardant (FR), Flame Retardant Low Smoke (FRLS) and Low Smoke Zero Halogen & Flame Retardant (LSOH) Sheathed HT XLPE cables are also manufactured.

ORBIT MANUFACTURES FOLLOWING VOLTAGE GRADE CABLES AS PER IS-7098[PART-2]



3.3kV (E) and (UE) Unscreened & Screened Cables.
3.8/6.6 kV Screened Cables.
6.35/11 kV, Screened Cables i.e. 6.6 kV (UE)
11/11 kV Screened Cables. i.e. 11 kV (UE)

Size

35 Sq.mm up to 630 Sq.mm in Single Core Cables.
35 Sq.mm to 400 Sq.mm in Multi Cores Cables.

SELECTION OF 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,
Fault Level,
Load to be carried,
Possible overloading duration & magnitude,
Route length and voltage drop.
Mode of installation considering installation environment such as ambient & ground temperature chemical & physical properties of soil.
Flame retardant properties.

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

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

ORBIT GUIDELINES FOR SELECTION OF CABLES

Voltage Grade	:	1.9/3.3kV(E),3.3/3.3kV(UE),3.8/6.6kV(E),6.6/6.6kV(UE),6.35/11kV(E), 11 / 11 kV (UE).
Relevant Indian Standard	:	IS 7098 (Part-2) – 2011
Number of cores	:	Single & Three.
Conductor	:	Size - 35 Sq.mm to 400 Sq.mm in Single Core Cables & 630 Sq.mm to 400 Sq.mm in 3 Core cables.
Conductor Material	:	Copper / Aluminium
Type of Insulation	:	XLPE
Type of Inner Sheathing	:	PVC Wrapped / PVC Extruded.
Type of Armour	:	Unarmoured / Strip Armoured / Round Wire Armoured.
Type of Outer Sheath	:	PVC / Flame Retardant / Flame Retardant Low Smoke / Zero Halogen (LSOH).

(Length of cable required and drum length)

TECHNICAL DATA | CONDUCTOR RESISTANCE

The details to the above Guidelines are given in tables.

Table - 1

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

Nomnal Size of Conductor	Minimum no of wires		Maximum D.C. Resistance at 20° C		A.C. Resistance at 90° C	
	Compacted Round		Plain Copper	Aluminium	Plain Copper	Aluminium
(Sq.mm)	CU.	ALU.	Ohm/km	Ohm/Km	Ohm/Km	Ohm/Km
25	6	6	0.727	1.20	0.930	1.54
35	6	6	0.524	0.868	0.671	1.11
50	6	6	0.387	0.641	0.495	0.82
70	12	12	0.268	0.443	0.343	0.567
95	15	15	0.193	0.320	0.247	0.410
120	18	15	0.153	0.253	0.196	0.324
150	18	15	0.124	0.206	0.159	0.264
185	30	30	0.0991	0.164	0.127	0.210
240	34	30	0.0754	0.125	0.0965	0.160
300	34	30	0.0601	0.100	0.0769	0.130
400	53	53	0.0470	0.0778	0.0602	0.10
500	53	53	0.0366	0.0605	0.0468	0.0774
630	53	53	0.0283	0.0469	0.0362	0.060

Table - 2 SHORT CIRCUIT RATING FOR 1 SECOND DURATION FOR COPPER AND ALUMINIUM XLPE CABLES (CURRENT IN K. AMPS)

Nomnal Size	XLPE Insulated	
(Sq.mm)	Copper	Aluminium
25	3.6	2.4
35	5.0	3.3
50	7.1	4.7
70	10.0	6.6
95	13.6	9.0
120	17.1	11.3
150	21.4	14.2
185	26.4	17.5
240	34.3	22.6
300	42.9	28.3
400	57.1	37.7
500	71.4	47.2
630	90.0	59.4

CARRYING CAPACITY OF CABLES

XLPE Cables as per IS-7098 (Part-2)-1985

Max. Conductor Temperature during operation: 90° C

Max. Conductor Temperature during short Circuit: 250° C

Formula relating Short Circuit Rating with duration

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

Where,

It = Short Circuit Rating of t Seconds.

t = Duration in Seconds.

I sh = Short Circuit Rating for 1 Second

Table - 3 CAPACITANCE

Approximate Capacitance (Microfarads/km) for Single Core Cables

Size	Voltage Grade(kV)			
	1.9/3.3 & 3.3/3.3	3.8/6.6	6.6/6.6 & 6.35/11	11/11
35				
50	0.30	0.27	0.23	
70	0.34	0.31	0.27	0.18
95	0.39	0.34	0.31	0.20
120	0.43	0.37	0.33	0.22
150	0.49	0.42	0.36	0.24
185	0.52	0.44	0.39	0.25
240	0.59	0.50	0.43	0.28
300	0.67	0.53	0.48	0.32
400	0.76	0.55	0.53	0.36
500	0.77	0.57	0.50	0.39
630	0.81	0.64	0.69	0.43

Table - 4 CAPACITANCE

Approximate Capacitance (Microfarads/km) For Three Core Cables

Size	Voltage Grade(kV)			
	1.9/3.3 & 3.3/3.3	3.8/6.6	6.6/6.6 & 6.35/11	11/11
35	0.24	0.25	0.21	
50	0.27	0.27	0.22	
70	0.31	0.31	0.25	0.19
95	0.35	0.35	0.29	0.21
120	0.39	0.38	0.31	0.23
150	0.42	0.43	0.34	0.25
185	0.46	0.45	0.36	0.27
240	0.51	0.51	0.41	0.30
300	0.57	0.54	0.46	0.33
400	0.63	0.57	0.52	0.37

Table - 5 REACTANCE

Approximate Reactance At 50 Hz(Ohms/km) For Single Core Cables

Size	Voltage Grade(kV)							
	1.9/3.3 & 3.3/3.3		3.8/6.6		6.6/6.6 & 6.35/11		11/11	
	Arm	Un-Arm	Arm	Un-Arm	Arm	Un-Arm	Arm	Un-Arm
35								
50	0.115	0.104	0.119	0.110	0.133	0.127	0.133	0.125
70	0.109	0.098	0.113	0.105	0.123	0.118	0.126	0.119
95	0.104	0.095	0.108	0.100	0.116	0.111	0.120	0.114
120	0.100	0.092	0.104	0.101	0.112	0.107	0.117	0.110
150	0.096	0.088	0.101	0.093	0.109	0.104	0.112	0.106
185	0.094	0.087	0.099	0.091	0.107	0.101	0.110	0.103
240	0.091	0.084	0.096	0.089	0.104	0.097	0.106	0.100
300	0.088	0.081	0.093	0.086	0.100	0.094	0.102	0.096
400	0.086	0.079	0.091	0.085	0.096	0.091	0.098	0.092
500	0.085	0.078	0.088	0.083	0.093	0.089	0.095	0.090
630	0.083	0.077	0.087	0.081	0.092	0.086	0.094	0.087

Table - 6 REACTANCE

Approximate Reactance At 50 Hz (Ohms/km) For Three Core Cables

Size	Voltage Grade(kV)			
	1.9/3.3 & 3.3/3.3	3.8/6.6	6.6/6.6 & 6.35/11	11/11
35	0.094	0.104	0.111	
50	0.087	0.098	0.104	
70	0.084	0.094	0.100	0.129
95	0.081	0.090	0.095	0.123
120	0.078	0.087	0.092	0.117
150	0.076	0.085	0.089	0.114
185	0.075	0.083	0.087	0.110
240	0.073	0.081	0.085	0.106
300	0.072	0.079	0.082	0.103
400	0.071	0.078	0.079	0.099

CURRENT RATINGS

ORBIT 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 ORBIT technical data are intended as a guide, to assist operating engineers in selecting cables for safety and reliability.

Basic assumptions and conditions of installation :

Maximum Conductor Temperature : 90° C
Ambient Ground Temperature : 30° C
Ambient Air Temperature : 40° C
Thermal resistivity of soil : 150° C. Cm/W

Depth of laying (to the highest point of the cables laid direct in the ground)

3.3, 6.6 & 11kV Cables : 90 cm
*Max. Conductor temperature
at the end of a short circuit : 250° C

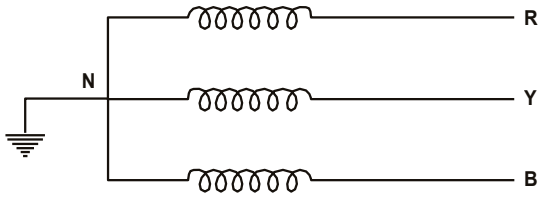
To obtain the maximum current carrying capacity of a cable operating at different conditions from the standard, various rating factors are to be multiplied, as follows :

$I_a = K \times I_s$ 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.

DIFFERENCE BETWEEN EARTHED AND UNEARTHED SYSTEM

EARTHED SYSTEM:

In the initial years,the generators and transformers were having capacities of few MVA and hence fault current was also less. The star point or neutral point was solidly grounded and this is called earthed system.

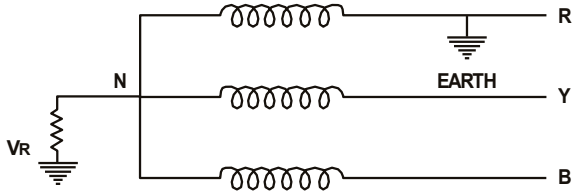


In this system if an earth fault occurs on any of the phases, the voltages of other two healthy phases with respect to the earth remain the same.

UNEARTHED SYSTEM:

Today generators of 500 MVA capacity are in commercial use. More over several mega power stations are connected to grid. Due to this, the fault level has increased tremendously. In case of an earth fault, a heavy current flows in to the fault and this may damage the costly generators and power transformers.

To reduce the fault current, the star point is connected to the earth through a resistance or a reactance as under:



RATING FACTORS

A). 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.							
Ambient Temp (°C)	15	20	25	30	35	40	45
Rating Factors	1.12	1.08	1.03	1.00	0.96	0.91	0.87

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

Depth of laying (cm)	3.3kV, 6.6kV & 11kV
90	1
105	0.99
120	0.98
150	0.96
180 or more	0.95

C). FOR VARIATION IN THERMAL RESISTIVITY OF SOIL

Thermal Resistivity of Soil (°C cm/w)	100	120	150	200	250	300
Factor	1.20	1.11	1.0	0.89	0.80	0.73

GROUP RATING FACTORS FOR SINGLE-CORE CABLES

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

Number of trefoils in group	Spacing between trefoils 3.3 to 11kV cables			
	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 on Racks / Trays in covered trench with removable covers where air circulation is restricted, Trefoils are separated by two cable diameter horizontally and the trays are in tiers having 300 mm 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

C). As above B but cables laid 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 inside concrete trench with removable covers, on cable trays where air circulation is restricted.The cables spaced by one cable diameter and trays are in tiers spaced by 300 mm.The clearance between the wall and the cable 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

B) Cable laid on cable trays exposed to air , 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	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

C) Cables laid on cable trays exposed to air, the cables touching and trays are in tiers spaced by 300 mm. 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 mm	30 mm	45 mm
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

WEIGHT, DIMENSION DATA & CURRENT CARRYING CAPACITY OF CABLES

TABLE 7-3.8 / 6.6 KV (E) HT XLPE SINGLE CORE ALUMINIUM CONDUCTOR CABLES

"ORBIT" SINGLE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	UNARMOURED CABLE			Minimum Thickness of Inner Sheath	ALUMINIUM STRIP ARMOURED CABLE				ALUMINIUM ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
		Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter of Cable	Approx. Weight of Cable.		Nominal Dimesion of Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimesion of Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable.	Approx. Weight of Cable.	In Ground at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	2.8	2.0	19	450	0.30	0.8	1.4	20	550	1.6	1.40	21.5	620	120	105	145	500
50	2.8	2.0	20	500	0.30	0.8	1.4	21	600	1.6	1.40	22.5	700	140	125	170	500
70	2.8	2.0	22	600	0.30	0.8	1.4	23	750	1.6	1.40	24.5	800	175	155	215	500
95	2.8	2.0	23.5	750	0.30	0.8	1.4	24.5	850	1.6	1.40	26	950	205	180	260	500
120	2.8	2.0	25	850	0.30	0.8	1.4	26	950	1.6	1.40	28	1050	235	205	305	500
150	2.8	2.0	26	950	0.30	0.8	1.4	27.5	1100	1.6	1.56	29.5	1200	260	230	345	500
185	2.8	2.0	28	1100	0.30	0.8	1.56	30	1250	1.6	1.56	31.5	1400	295	260	395	500
240	2.8	2.2	31	1350	0.40	0.8	1.56	32	1500	2.0	1.56	34.5	1700	340	300	470	500
300	3.0	2.2	33.5	1550	0.40	0.8	1.56	35	1750	2.0	1.56	37	2000	385	335	540	500
400	3.3	2.2	37.5	1950	0.40	0.8	1.56	39	2200	2.0	1.72	41.5	2450	440	380	630	500
500	3.5	2.4	41	2400	0.50	0.8	1.72	42.5	2650	2.0	1.88	45.5	2950	495	430	730	500
630	3.5	2.4	44.5	2850	0.50	0.8	1.88	46.5	3200	2.0	1.88	49	3450	560	480	840	500

TABLE 8 - 3.8 / 6.6 KV (E) HT XLPE SINGLE CORE COPPER CONDUCTOR CABLES

"ORBIT" SINGLE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	UNARMOURED CABLE			Minimum Thickness of Inner Sheath	ALUMINIUM STRIP ARMOURED CABLE				ALUMINIUM ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
		Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter of Cable	Approx. Weight of Cable.		Nominal Dimesion of Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimesion of Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable.	Approx. Weight of Cable.	In Ground at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	2.8	2.0	19	670	0.30	0.8	1.4	20	750	1.6	1.40	21.5	850	155	140	185	500
50	2.8	2.0	20	850	0.30	0.8	1.4	21	900	1.6	1.40	22.5	1000	185	160	220	500
70	2.8	2.0	22	1050	0.30	0.8	1.4	23	1150	1.6	1.40	24.5	1250	225	195	275	500
95	2.8	2.0	23.5	1300	0.30	0.8	1.4	24.5	1450	1.6	1.40	26	1550	265	235	340	500
120	2.8	2.0	25	1600	0.30	0.8	1.4	26	1700	1.6	1.40	28	1800	300	265	390	500
150	2.8	2.0	26	1900	0.30	0.8	1.4	27.5	2050	1.6	1.56	29.5	2150	335	295	440	500
185	2.8	2.0	28	2250	0.30	0.8	1.56	30	2400	1.6	1.56	31.5	2550	380	330	510	500
240	2.8	2.2	31	2850	0.40	0.8	1.56	32	3000	2.0	1.56	34.5	3200	435	380	600	500
300	3.0	2.2	33.5	3450	0.40	0.8	1.56	35	3600	2.0	1.56	37	3850	490	425	680	500
400	3.3	2.2	37.5	4450	0.40	0.8	1.56	39	4650	2.0	1.72	41.5	4950	550	480	790	500
500	3.5	2.4	41	5500	0.50	0.8	1.72	42.5	5750	2.0	1.88	45.5	6050	610	530	910	500
630	3.5	2.4	44.5	6750	0.50	0.8	1.88	46.5	7100	2.0	1.88	49	7350	680	580	1030	500

TABLE 9 - 6.35/11 KV (E), 6.6/6.6 KV (UE) HT XLPE SINGLE CORE ALUMINIUM CONDUCTOR CABLES

"ORBIT" SINGLE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	UNARMOURED CABLE			Minimum Thickness of Inner Sheath	ALUMINIUM STRIP ARMOURED CABLE				ALUMINIUM ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
		Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter of Cable	Approx. Weight of Cable.		Nominal Dimesion of Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimesion of Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable.	Approx. Weight of Cable.	In Ground at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	3.6	2.0	20.5	550	0.30	0.8	1.4	23.0	650	1.6	1.40	23.5	750	120	105	145	500
50	3.6	2.0	22	600	0.30	0.8	1.4	24.0	700	1.6	1.40	24.5	800	140	125	170	500
70	3.6	2.0	23.3	700	0.30	0.8	1.4	25.5	800	1.6	1.40	26.5	950	175	155	215	500
95	3.6	2.0	25	800	0.30	0.8	1.4	27.5	950	1.6	1.40	28	1050	205	180	260	500
120	3.6	2.0	27	950	0.30	0.8	1.4	29.0	1050	1.6	1.56	30	1200	235	205	305	500
150	3.6	2.0	28	1050	0.30	0.8	1.56	30.5	1200	1.6	1.56	31.5	1350	260	230	345	500
185	3.6	2.2	30.5	1250	0.40	0.8	1.56	33.0	1400	2.0	1.56	33.5	1600	295	260	395	500
240	3.6	2.2	34	1450	0.40	0.8	1.56	35.0	1600	2.0	1.56	36	1850	340	300	470	500
300	3.6	2.2	34.5	1650	0.40	0.8	1.56	37.0	1850	2.0	1.56	38	2100	385	335	540	500
400	3.6	2.2	37.5	2000	0.40	0.8	1.72	40.5	2250	2.0	1.72	41.5	2550	440	380	630	500
500	3.6	2.4	41	2450	0.50	0.8	1.72	43	2650	2.0	1.88	44.5	3000	495	430	730	500
630	3.6	2.4	44.5	2900	0.50	0.8	1.88	46.5	3200	2.0	1.88	43	3450	560	480	840	500

TABLE 10 - 6.35/11 KV (E), 6.6/6.6 KV (UE) HT XLPE SINGLE CORE COPPER CONDUCTOR CABLES

"ORBIT" SINGLE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	UNARMOURED CABLE			Minimum Thickness of Inner Sheath	ALUMINIUM STRIP ARMOURED CABLE				ALUMINIUM ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
		Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter of Cable	Approx. Weight of Cable.		Nominal Dimesion of Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimesion of Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable.	Approx. Weight of Cable.	In Ground at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	3.6	2.0	21.5	750	0.30	0.8	1.4	23.0	850	1.6	1.40	24.5	950	155	140	185	500
50	3.6	2.0	23.0	900	0.30	0.8	1.4	24.0	1000	1.6	1.40	25.5	1110	185	160	220	500
70	3.6	2.0	24.5	1150	0.30	0.8	1.4	25.5	1250	1.6	1.40	27.5	1350	225	195	275	500
95	3.6	2.0	26.0	1400	0.30	0.8	1.4	27.5	1550	1.6	1.40	29.0	1650	265	235	340	500
120	3.6	2.0	28.0	1650	0.30	0.8	1.4	29.0	1800	1.6	1.56	31.0	1950	300	265	390	500
150	3.6	2.0	29.0	1950	0.30	0.8	1.56	30.5	2150	1.6	1.56	32.5	2250	335	295	440	500
185	3.6	2.2	31.5	2400	0.40	0.8	1.56	33.0	2550	2.0	1.56	35.5	2750	380	330	510	500
240	3.6	2.2	33.5	2900	0.40	0.8	1.56	35.0	3100	2.0	1.56	38.0	3350	435	380	600	500
300	3.6	2.2	36.0	3500	0.40	0.8	1.56	37.0	3700	2.0	1.56	40.0	3950	490	425	680	500
400	3.6	2.2	39.0	4500	0.40	0.8	1.72	40.5	4750	2.0	1.72	43.5	5050	550	480	790	500
500	3.6	2.4	42.5	5500	0.50	0.8	1.72	44.0	5800	2.0	1.88	46.5	6100	610	530	910	500
630	3.6	2.4	46.0	6800	0.50	0.8	1.88	47.5	7100	2.0	1.88	50.0	7350	680	580	1030	500

TABLE 11 - 11/ 11 KV (UE) HT XLPE SINGLE CORE ALUMINIUM CONDUCTOR CABLES

"ORBIT" SINGLE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	UNARMOURED CABLE			Minimum Thickness of Inner Sheath	ALUMINIUM STRIP ARMOURED CABLE				ALUMINIUM ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
		Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter of Cable	Approx. Weight of Cable.		Nominal Dimesion of Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimesion of Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable.	Approx. Weight of Cable.	In Ground at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
70	5.5	2.0	28	850	0.30	0.8	1.56	30.0	1050	1.6	1.56	31.5	1150	175	155	215	500
95	5.5	2.0	29.5	980	0.30	0.8	1.56	31	1200	2.0	1.56	33.5	1350	205	180	260	500
120	5.5	2.2	31.5	1150	0.40	0.8	1.56	32.5	1300	2.0	1.56	35.5	1500	235	205	305	500
150	5.5	2.2	33	1260	0.40	0.8	1.56	34	1450	2.0	1.56	36	1650	260	230	345	500
185	5.5	2.2	34.5	1430	0.40	0.8	1.56	36	1600	2.0	1.56	38	1850	295	260	395	500
240	5.5	2.2	36.5	1650	0.40	0.8	1.56	38	1850	2.0	1.72	41	2150	340	300	470	500
300	5.5	2.2	38.5	1900	0.40	0.8	1.72	40.5	2150	2.0	1.72	43	2400	385	335	540	500
400	5.5	2.4	42	2300	0.50	0.8	1.72	44	2600	2.0	1.88	46.5	2900	440	380	630	500
500	5.5	2.4	45	2700	0.50	0.8	1.88	47	3000	2.5	2.04	51	3500	495	430	730	500
630	5.5	2.6	48.5	3200	0.50	0.8	1.88	50.5	3500	2.5	2.04	53.5	4050	560	480	840	500

TABLE 12 - 11 / 11 KV (UE) HT XLPE SINGLE CORE COPPER CONDUCTOR CABLES

"ORBIT" SINGLE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	UNARMOURED CABLE			Minimum Thickness of Inner Sheath	ALUMINIUM STRIP ARMOURED CABLE				ALUMINIUM ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
		Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter of Cable	Approx. Weight of Cable.		Nominal Dimesion of Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimesion of Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable.	Approx. Weight of Cable.	In Ground at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
70	5.5	2.0	28.5	1300	0.30	0.8	1.56	30.0	1500	1.6	1.56	31.5	1600	225	195	275	500
95	5.5	2.0	30.0	1550	0.30	0.8	1.56	32.0	1800	2.0	1.56	34.0	1950	265	235	340	500
120	5.5	2.2	32.0	1900	0.40	0.8	1.56	33.5	2050	2.0	1.56	36.0	2250	300	265	390	500
150	5.5	2.2	33.5	2200	0.40	0.8	1.56	35.0	2400	2.0	1.56	37.0	2600	335	295	440	500
185	5.5	2.2	35.5	2600	0.40	0.8	1.56	37.0	2750	2.0	1.56	39.0	3000	380	330	510	500
240	5.5	2.2	37.5	3150	0.40	0.8	1.56	39.0	3350	2.0	1.72	42.0	3650	435	380	600	500
300	5.5	2.2	39.5	3750	0.40	0.8	1.72	41.5	4000	2.0	1.72	44.0	4250	490	425	680	500
400	5.5	2.4	43.0	4800	0.50	0.8	1.72	45.0	5100	2.0	1.88	47.5	5400	550	480	790	500
500	5.5	2.4	46.0	5800	0.50	0.8	1.88	48.0	6100	2.5	2.04	52.0	6600	610	530	910	500
630	5.5	2.6	50.0	7100	0.50	0.8	1.88	51.5	7400	2.5	2.04	55.0	7950	680	580	1030	500

TABLE 13 - 1.9/3.3 KV (E) & 3.3/3.3 KV (UE) HT XLPE THREE CORE ALUMINIUM CONDUCTOR CABLES

"ORBIT" THREE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED SCREENED CABLES CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	Minimum Thickness of Inner Sheath	UNARMOURED CABLE			FORMED WIRE / STRIP ARMOURED CABLE				ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter 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 at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	2.2	0.4	2.2	36.5	1500	0.8	1.56	37.0	1950	2.0	1.72	39.5	2600	115	97	125	500
50	2.2	0.4	2.2	38.5	1700	0.8	1.72	39.5	2200	2.0	1.72	41.5	2900	130	115	150	500
70	2.2	0.5	2.4	43	2150	0.8	1.72	43	2650	2.0	1.88	46	3450	160	140	190	500
95	2.2	0.5	2.6	46	2600	0.8	1.88	46.5	3150	2.5	2.04	50.5	4400	190	165	230	500
120	2.2	0.5	2.6	48.5	3000	0.8	2.04	50.5	3650	2.5	2.04	53.5	5000	220	190	260	500
150	2.2	0.6	2.8	53	3500	0.8	2.04	53	4100	2.5	2.2	56.5	5550	245	210	295	500
185	2.2	0.6	3.0	57.5	4150	0.8	2.2	57.5	4800	2.5	2.36	61	6350	275	240	335	500
240	2.2	0.7	3.0	62.5	4900	0.8	2.36	63	5750	2.5	2.36	66	7350	315	275	395	500
300	2.2	0.7	3.2	67	5850	0.8	2.52	68	6650	3.15	2.68	72	9250	355	310	450	500
400	2.2	0.7	3.6	75	7300	0.8	2.68	74.5	8100	3.15	2.84	79	11000	400	350	520	500

TABLE 14 - 1.9/3.3 KV (E) & 3.3/3.3 (UE) KV HT XLPE THREE CORE COPPER CONDUCTOR CABLES

"ORBIT" THREE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED SCREENED CABLES CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	Minimum Thickness of Inner Sheath	UNARMOURED CABLE			FORMED WIRE / STRIP ARMOURED CABLE				ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter 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 at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	2.2	0.4	2.2	38.0	2150	0.8	1.56	37.0	2600	2.0	1.72	40.5	3250	145	125	165	500
50	2.2	0.4	2.2	40.0	2650	0.8	1.72	39.5	3150	2.0	1.72	42.5	3800	170	150	195	500
70	2.2	0.5	2.4	44.5	3450	0.8	1.72	44.0	3950	2.0	1.88	47.0	4750	210	180	240	500
95	2.2	0.5	2.6	48.5	4350	0.8	1.88	47.5	4950	2.5	2.04	51.5	6150	250	215	295	500
120	2.2	0.5	2.6	52.0	5250	0.8	2.04	51.5	5900	2.5	2.04	55.5	7200	280	240	335	500
150	2.2	0.6	2.8	55.5	6300	0.8	2.04	54.5	6900	2.5	2.2	58.5	8350	310	270	380	500
185	2.2	0.6	3.0	60.0	7600	0.8	2.2	59.0	8250	2.5	2.36	63.0	9800	350	305	430	500
240	2.2	0.7	3.0	65.0	9350	0.8	2.36	64.5	10250	2.5	2.36	68.0	11800	400	350	500	500
300	2.2	0.7	3.2	70.0	11400	0.8	2.52	70.0	12250	3.15	2.68	75.0	14850	445	390	510	500
400	2.2	0.7	3.6	78.0	14750	0.8	2.68	76.5	15550	3.15	2.84	82.0	18450	500	440	650	250

TABLE 15 - 3.8 / 6.6 KV (E) HT XLPE THREE CORE ALUMINIUM CONDUCTOR CABLES

"ORBIT" THREE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	Minimum Thickness of Inner Sheath	UNARMOURED CABLE			FORMED WIRE / STRIP ARMOURED CABLE				ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter 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 at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	2.8	0.4	2.2	38.5	1600	0.8	1.72	40.0	2200	2.0	1.72	42	2800	115	97	125	500
50	2.8	0.5	2.4	41.5	1950	0.8	1.72	42.5	2500	2.0	1.88	44.5	3200	130	115	150	500
70	2.8	0.5	2.6	45.5	2350	0.8	1.88	46	3000	2.0	1.88	48	3700	160	140	190	500
95	2.8	0.5	2.6	49	2800	0.8	1.88	49.5	3400	2.5	2.04	52.5	4700	190	165	230	500
120	2.8	0.6	2.8	53	3300	0.8	2.04	54	4000	2.5	2.20	57	5400	220	190	260	500
150	2.8	0.6	2.8	56	3800	0.8	2.2	56.5	4500	2.5	2.2	59.5	5900	245	210	295	500
185	2.8	0.6	3.0	61	4400	0.8	2.2	60.5	5150	2.5	2.36	63.5	6700	275	240	335	500
240	2.8	0.7	3.2	65	5300	0.8	2.36	68	6100	3.15	2.52	70.5	8600	315	275	395	500
300	3.0	0.7	3.4	71	6300	0.8	2.52	71.5	7160	3.15	2.68	76	9900	355	310	450	500
400	3.3	0.7	3.8	80	8000	0.8	2.84	80	9000	4.0	3.0	86.5	13200	400	350	520	500

TABLE 16 - 3.8/6.6 KV (E) HT XLPE THREE CORE COPPER CONDUCTOR CABLES

"ORBIT" THREE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	Minimum Thickness of Inner Sheath	UNARMOURED CABLE			FORMED WIRE / STRIP ARMOURED CABLE				ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter 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 at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	2.8	0.4	2.2	40.0	2250	0.8	1.72	40.0	2850	2.0	1.72	43.0	3450	145	125	165	500
50	2.8	0.5	2.4	43.0	2850	0.8	1.72	42.5	3400	2.0	1.88	45.5	4150	170	150	195	500
70	2.8	0.5	2.6	47.0	3650	0.8	1.88	47.0	4250	2.0	1.88	49.5	5000	210	180	240	500
95	2.8	0.5	2.6	51.0	4550	0.8	1.88	50.5	5200	2.5	2.04	54.0	6500	250	215	295	500
120	2.8	0.6	2.8	55.0	5500	0.8	2.04	55.0	6200	2.5	2.20	58.5	7600	280	240	335	500
150	2.8	0.6	2.8	58.0	6550	0.8	2.2	58.0	7250	2.5	2.2	61.0	8700	310	270	380	500
185	2.8	0.6	3.0	63.0	7850	0.8	2.2	62.0	8600	2.5	2.36	66.0	10150	350	305	430	500
240	2.8	0.7	3.2	68.0	9800	0.8	2.36	67.5	10550	3.15	2.52	73.0	13050	400	350	500	500
300	3.0	0.7	3.4	74.0	11900	0.8	2.52	73.5	12750	3.15	2.68	78.5	15450	445	390	570	250
400	3.3	0.7	3.8	83.0	15400	0.8	2.84	82.0	16400	4.0	3.0	89.0	20650	500	440	650	200

TABLE 17 - 6.35 / 11 KV (E) HT XLPE THREE CORE ALUMINIUM CONDUCTOR CABLES

"ORBIT" THREE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	Minimum Thickness of Inner Sheath	UNARMOURED CABLE			FORMED WIRE / STRIP ARMOURED CABLE				ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter 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 at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	3.6	0.5	2.4	43.5	1950	0.8	1.72	44.0	2500	2.0	1.88	45.5	3250	115	97	125	500
50	3.6	0.5	2.6	46.5	2250	0.8	1.88	46.5	2850	2.5	2.04	49.5	4000	130	115	150	500
70	3.6	0.5	2.6	50.5	2650	0.8	1.88	50.5	3300	2.5	2.04	53.5	4600	160	140	190	500
95	3.6	0.6	2.8	54.5	3150	0.8	2.04	54.5	3850	2.5	2.20	58.0	5250	190	165	230	500
120	3.6	0.6	2.8	58.0	3600	0.8	2.2	58.5	4400	2.5	2.20	61.5	5850	220	190	260	500
150	3.6	0.6	3.0	61.0	4100	0.8	2.2	61.0	4900	2.5	2.36	64.5	6450	245	210	295	500
185	3.6	0.7	3.2	66.0	4850	0.8	2.36	66.0	5650	3.15	2.52	71.0	8100	275	240	335	500
240	3.6	0.7	3.4	71.5	5700	0.8	2.52	71.5	6600	3.15	2.68	76.0	9250	315	275	395	500
300	3.6	0.7	3.6	76.5	6650	0.8	2.68	76.5	7600	3.15	2.84	81.0	10400	355	310	450	250
400	3.6	0.7	3.8	83.5	8100	0.8	2.84	83.5	9100	4.0	3.0	90.0	13450	400	350	520	250

TABLE 18 - 6.35 / 11 KV (E) HT XLPE THREE CORE COPPER CONDUCTOR CABLES

"ORBIT" THREE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES

CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	Minimum Thickness of Inner Sheath	UNARMOURED CABLE			FORMED WIRE / STRIP ARMOURED CABLE				ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter 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 at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
35	3.6	0.5	2.4	43.5	2600	0.8	1.72	44.0	3150	2.0	1.88	45.5	3900	145	125	165	500
50	3.6	0.5	2.6	46.5	3150	0.8	1.88	46.5	3750	2.5	2.04	49.5	4950	170	150	195	500
70	3.6	0.5	2.6	50.5	3950	0.8	1.88	50.5	4600	2.5	2.04	53.5	5900	210	180	240	500
95	3.6	0.6	2.8	54.5	4950	0.8	2.04	54.5	5600	2.5	2.20	58.0	7000	250	215	295	500
120	3.6	0.6	2.8	58.0	5850	0.8	2.2	58.5	6650	2.5	2.20	61.5	8100	280	240	335	500
150	3.6	0.6	3.0	61.0	6900	0.8	2.2	61.0	7650	2.5	2.36	64.5	9250	310	270	380	500
185	3.6	0.7	3.2	66.0	8300	0.8	2.36	66.0	9100	3.15	2.52	71.0	11550	350	305	430	500
240	3.6	0.7	3.4	71.5	10200	0.8	2.52	71.5	11050	3.15	2.68	76.0	13700	400	350	500	250
300	3.6	0.7	3.6	76.5	12200	0.8	2.68	76.5	13150	3.15	2.84	81.0	15950	445	390	570	250
400	3.6	0.7	3.8	83.5	15550	0.8	2.84	83.5	16550	4.0	3.0	90.0	20900	500	440	650	250

TABLE 19 - 11 / 11 KV (UE) HT XLPE THREE CORE ALUMINIUM CONDUCTOR CABLES

"ORBIT" THREE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	Minimum Thickness of Inner Sheath	UNARMOURED CABLE			FORMED WIRE / STRIP ARMOURED CABLE				ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter 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 at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
70	5.5	0.6	3.0	59.5	3550	0.8	2.2	59.5	4300	2.5	2.36	63.0	5900	160	140	190	500
95	5.5	0.6	3.2	63.5	4100	0.8	2.36	63.5	4900	3.15	2.52	68.5	7250	190	165	230	500
120	5.5	0.7	3.2	67.5	4650	0.8	2.36	67.5	5500	3.15	2.52	72.0	8000	220	190	260	500
150	5.5	0.7	3.4	70.5	5200	0.8	2.52	70.5	6100	3.15	2.68	75.0	8650	245	210	295	500
185	5.5	0.7	3.4	74.5	5900	0.8	2.68	74.5	6950	3.15	2.84	80.0	9650	275	240	335	500
240	5.5	0.7	3.6	80.0	6850	0.8	2.84	80.0	7900	3.15	3.0	85.0	10850	315	275	395	250
300	5.5	0.7	3.8	85.0	7850	0.8	3.0	85.5	8950	4.0	3.0	91.0	13250	355	310	450	250
400	5.5	0.7	4.0	92.0	9400	0.8	3.0	92.0	10500	4.0	3.0	98.0	15200	400	350	520	250

TABLE 20 - 11 / 11 KV (UE) HT XLPE THREE CORE COPPER CONDUCTOR CABLES

"ORBIT" THREE CORE COPPER CONDUCTOR, XLPE INSULATED, UNARMOURED & ARMOURED CABLES CONFORMING TO IS: 7098 PART-2/1985:

Nominal Size of Conductor	Nominal Thickness of XLPE Insulation	Minimum Thickness of Inner Sheath	UNARMOURED CABLE			FORMED WIRE / STRIP ARMOURED CABLE				ROUND WIRE ARMOURED CABLE				CURRENT CARRYING CAPACITY			*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diaeter 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 at 30° C.	In Duct at 30° C.	In Air at 40° C.	
Sq.mm.	mm	mm	mm	Kg/Km	mm	mm	mm	mm	Kg/Km	mm	mm	mm	Kg/Km	Amps.	Amps.	Amps.	Mtrs.
70	5.5	0.6	3.0	59.5	4900	0.8	2.2	59.5	5600	2.5	2.36	63.0	7150	210	180	240	500
95	5.5	0.6	3.2	63.5	5900	0.8	2.36	63.5	6700	3.15	2.52	68.5	9000	250	215	295	500
120	5.5	0.7	3.2	67.5	6900	0.8	2.36	67.5	7750	3.15	2.52	72.0	10250	280	240	335	500
150	5.5	0.7	3.4	70.5	8000	0.8	2.52	70.5	8900	3.15	2.68	75.0	11450	310	270	380	500
185	5.5	0.7	3.4	74.5	9300	0.8	2.68	74.5	10300	3.15	2.84	80.0	13100	350	305	430	250
240	5.5	0.7	3.6	80.0	11300	0.8	2.84	80.0	12350	3.15	3.0	85.0	15350	400	350	500	250
300	5.5	0.7	3.8	85.0	13400	0.8	3.0	85.5	14500	4.0	3.0	91.0	18850	445	390	570	250
400	5.5	0.7	4.0	92.0	16850	0.8	3.0	92.0	17950	4.0	3.0	98.0	22650	500	440	650	250

CABLE HANDLING AND STORAGE

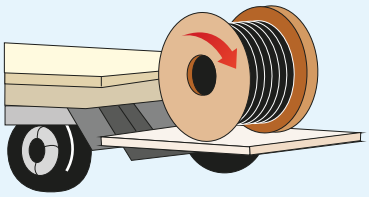
Great care is taken in the manufacturing of cable to ensure quality at every stage.

Handling of cable at site is the next important factor to ensure that by mishandling the cable, the outer sheath and insulation shall not damaged.

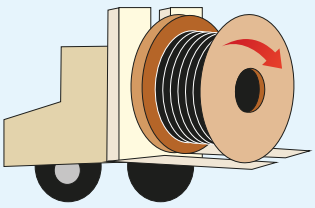
The handling is generally carried out by unskilled or semi-skilled men, strict supervision should be maintained so that the cables, which can be very easily damaged, is handled with great care.

DO

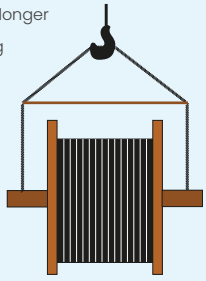
When offloading reels from a truck, lower reels carefully using a hydraulic gate, hoist or forklift truck.



If a forklift is used for handling and shifting the cable drum, the forks shall approach the reel from the flange side. The forks shall be positioned such that the reel is lifted with both reel flanges.

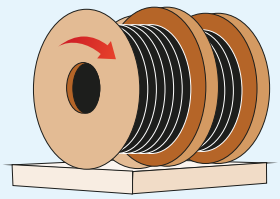


When using a hoist, install a mandrel through the reel arbor holes and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges.



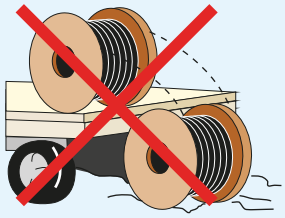
It is always safer to use a strong and well-drained surface for storing drums. If possible, the drums should be raised from the ground by the insertion of wooden planks, etc, below and on both sides of the drums: some check pieces should be placed so as not to allow the drums to be rolled and easily. Cable drums should also be stored away from the direct sun and rains.

Reason: Direct sunrays can cause deterioration due to UV rays and rain can cause damage to wooden drum, resulting drum collapse after a few months.

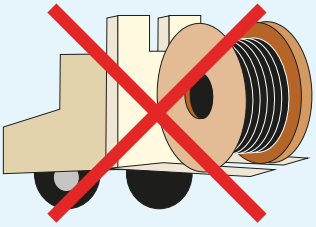


DON'T

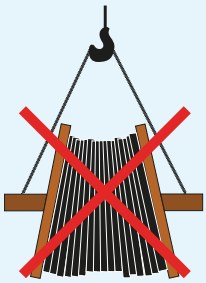
Never drop reels. If reels must be rolled, roll in opposite direction of the cable wraps to keep cable from loosening on the reel.



Do not allow the lift forks to contact the cable. Care must be taken by the forklift operator not to make sudden turns or stops.

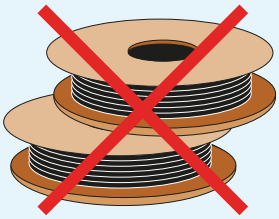


This may lead to the bending of the reel flanges and mashing the cable.



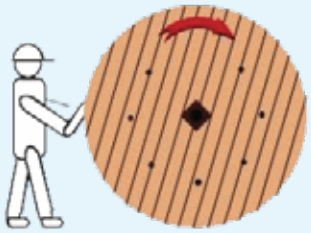
Multiple reels stacked on top of each other (Pancake Storage) is not recommended for cable drums. The weight of the stack can total thousands of kgs. creating an enormous load on the bottom reel. Also, damage to the reel and/or cable will likely occur when the reel is flipped for transit.

A concentration of stress on the reel flange may cause it to break and subsequently damage the cable.

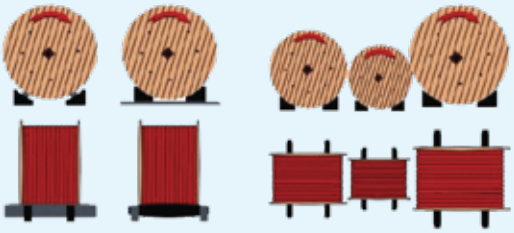


DO

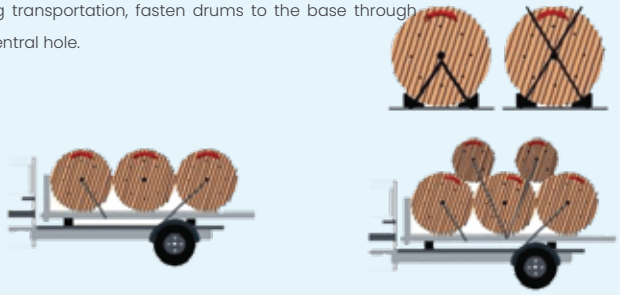
Always use proper stoppers to prevent the drum from rolling.



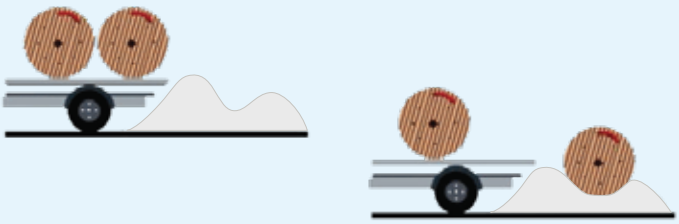
Ensure stoppers for every drum, to prevent mishaps during storage. Place the wedges by the flanges/full width of the drum



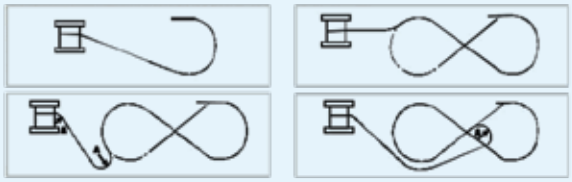
During transportation, fasten drums to the base through the central hole.



Use a winch, forklift or makeshift ramp



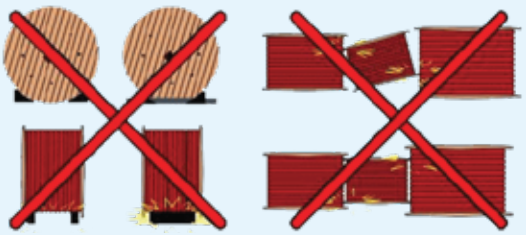
ON THE GROUND CABLE CAN BE FLAKED IN A FIGURE OF EIGHT FORMATION



DON'T

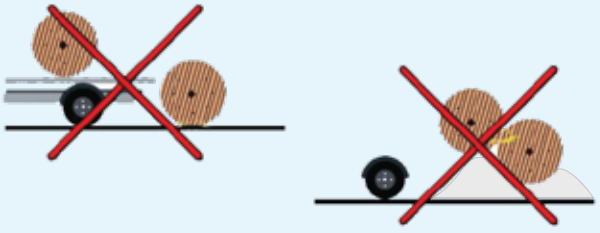
When rolling in the direction of the arrow, never roll for more than 5 meters, Otherwise the cable may become unfit for use.

Allow the drums to roll at any cost. Stack the drums on non-triangular / non-square wedges.

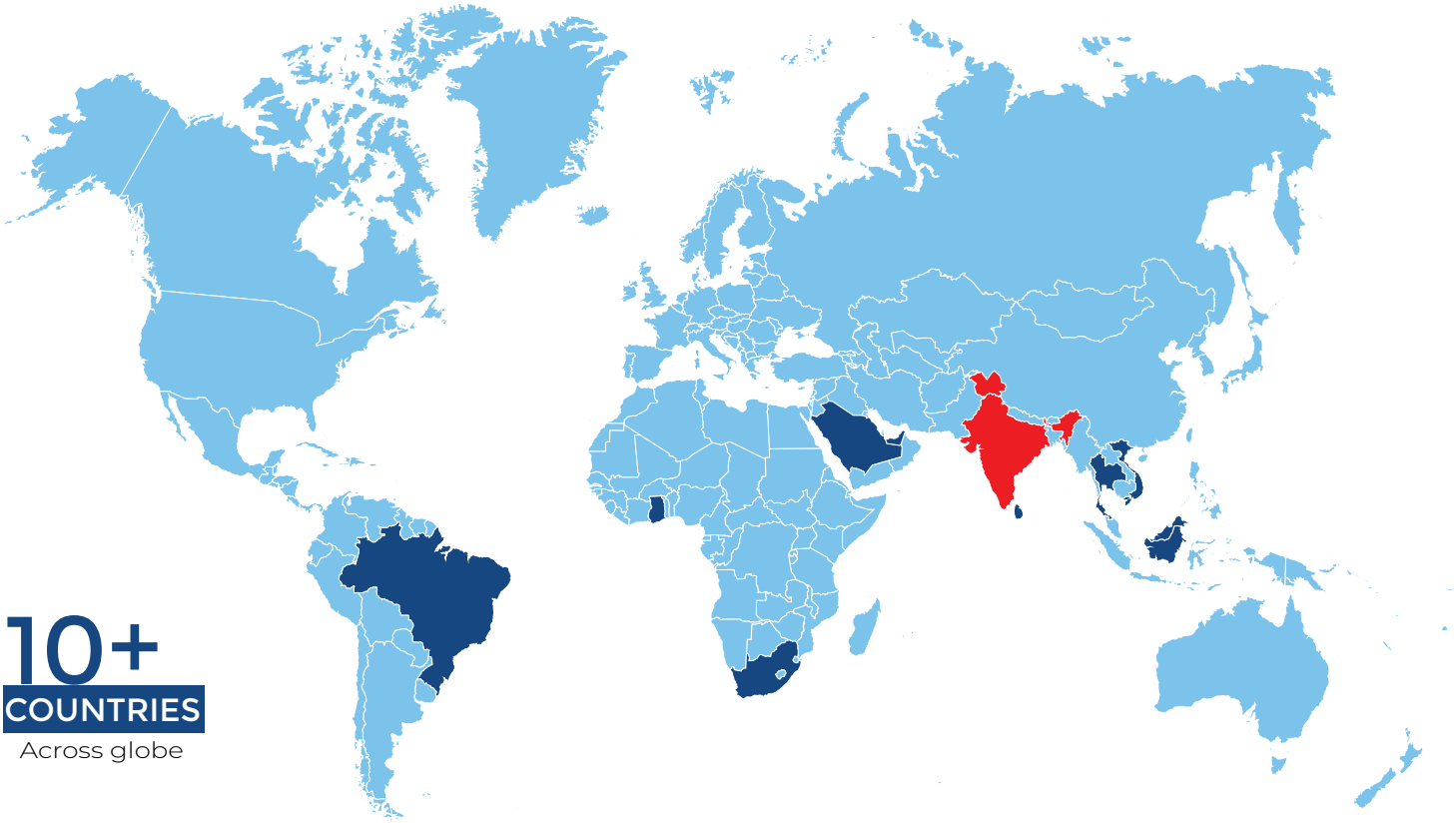


fasten without taking adequate care. Always use support, and tie the drum from both the front and rear.

Allow one drum to strike another



DON'T ATTEMPT COILING OF CABLE ON THE GROUND



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Telangana	:	Suryakiran complex, 203, Second Floor, SD Road, Secunderabad, Telangana-500003.
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Notes:

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