



NATIONAL CABLE FACTORY LLC.

CATALOGUE





**NATIONAL
CABLE FACTORY LLC.**



OM CAB

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ABOUT US



NATIONAL
CABLE FACTORY LLC.

National Cables Factory LLC. is a recent entrant in its segment. A 100% Omani Company, it is the first in Dhofar Province and the third company, engaged in cable Manufacturing in Oman. It's range to start with is the LV segment and has its vision set to foray into MV/HV gradually in the years ahead. Being a recent entrant, it has the best of the present time in terms of technology and technical know-how, from Europe. It's a factory that is fully equipped to respond to customer requirements in a fast-moving market place without compromise of quality. We offer a complete range of services by our development center, pre-production and production teams. We are manufacturing and marketing building wires, flexible wires and power cables. With an educated young population and well-established peace and stability in the peninsula, continuous development is very important for us. In line with this dynamic spirit in this country, to ensure that next generations participate in the production, in 2015 we aimed to establish a cable production area with the courage and support we gained from local partners. Our production area started production by the end of 2017 and with this facility, we aim to be a highly technological and distinctive cable producer in Oman. National Cable Factory is established on an area of 40.000 square meters total in the Raysut industrial area. We start production in the first phase of 6000 square meters closed area. We will also start MV and HV cabling production which we think is very important for the development of Oman. Energy transmission has begun to gain importance in the world today. Energy production changes because greener and more natural systems are supported to save our planet. Therefore, we will also be giving priority to products that give importance to human health and innovative energy sources such as solar energy. We plan to lead the use of products without halogen gas emissions that put people's health at risk in living areas. As per Oman's friendly communications with its neighbors, we also aim to sell products to neighboring countries. Our company is in our country's second-largest province of Dhofar so we will be using regional advantages. We will keep close to the neighboring country markets and use alternative sales channels where necessary. In a new and dynamic formation with tangible goals, our aims are not limited to this. In the future, we look forward to historical and regional partnerships by reinforcing our relationships with our Asian friends We'd like to be an international producer who is spoken with its leading role and quality in the market.





QUALITY ASSURANCE

Quality Management System

As we control every stage of production, from design to delivery, we are able to guarantee high standards of quality across the board. Our facility, including our research & development department, use the latest cable equipment in the world.

We use quality raw materials, insulation and sheathing, to produce all our cables. Further, we test products at every stage of production as per international standards as well as client specifications. Every process is controlled and all the key process and performance indicators are monitored closely to ensure compliance to specifications and delivery schedules.

In addition to this, our raw materials, processes, factories and products undergo varied inspections by specialists from customers and overseas independent inspection agencies

HEALTH & SAFETY

National cable factory LLC is committed to providing quality services in a manner that ensures a safe and healthy working place for our employee and minimizes potential impact on the environment. we shall operate in compliance with all relevant environmental, health and safety legislation and shall strike to keep our business operations environmentally sound. The health and safety of our employees, customers and community in which we operate is paramount in all we do.

We shall

- Promote environmental, health and safety awareness among our employees and encourage them to work in an environmentally responsible manner by imparting training education and information about environmental, health and safety issues that may affect their work.
- Employee safe technologies, operating procedures and emergency plans to prevent injury and illness.
- Promote efficient use of materials and resources throughout our facility including water, electricity, raw materials and other resources, particularly those that are non-renewable.
- Reduce waste through re-use and recycling, environmentally friendly manner good industrial practice.
- Communicate our environmental commitment to clients, customers and the public and encourage them to support it.
- Strive continually to improve the performance of our environment, health and safety by periodically reviewing the objective and targets.

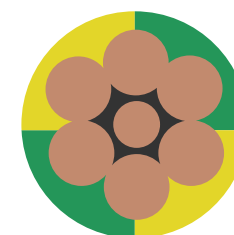
As a condition of employment, all employees are required to comply with all safety- and environmental-related rules and regulations. Each employee understands that they are individually responsible for their own safety and the safety of those around them.



PRODUCT

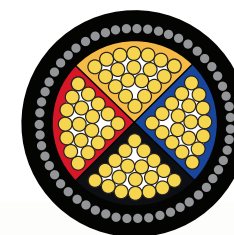
Building Wire **450/750V**

PVC Insulated Wires
LSZH Insulated Wires



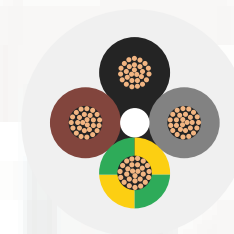
Power Cables **600/1000V**

XLPE Insulated Armoured Cables
XLPE Insulated Unarmoured Cables
PVC Insulated Armoured Cables
PVC Insulated Unarmoured Cable
LSZH Cables



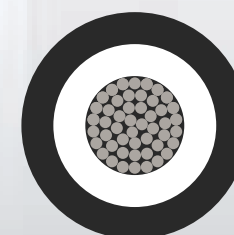
Flexible Cables **300/500V**

PVC Insulated Cables
LSZH Insulated Cables



Solar Cable

H1Z2Z2-K Solar Cable

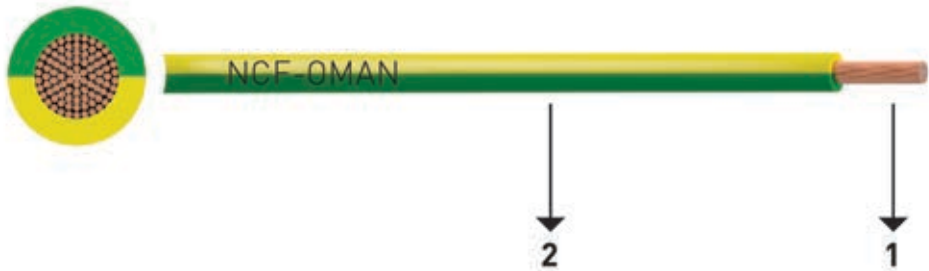


BUILDING WIRE

PVC INSULATED WIRES
LSZH INSULATED WIRES



SINGLE CORE NON-SHEATHED CABLES WITH THERMOPLASTIC PVC INSULATION



BS EN 50525-2-31

- STRUCTURE**
- 1. Flexible copper conductor
 - 2. PVC Insulation

APPLICATION

PVC panel wiring for use in the switch control, relay and instrumentation panels of power switchgear and for purposes such as internal connectors in rectifier equipment, motor starters and controllers.

Manufactured in accordance with European Harmonized Standard H05V-K and H07V-K, primarily used as flexible panel wire and is available in a wide range of different colors for this purpose. Designed for internal equipment wiring in switch control, relay and instrumentation panels of power switchgear, and for purposes such as internal connectors in rectifier equipment, motor starters and controllers, this flexible cable can be installed in open air, in conduits, or in Trunking.

CONSTRUCTION

- Conductor** Class 5 flexible copper conductor according to BS EN 60228
- Insulation** PVC (Polyvinyl Chloride) Type T11 according to BS EN 50363

CHARACTERISTICS

- Voltage Rating (Uo/U)** H05V-K: 300/500V
H07V-K: 450/750V
- Temperature Rating** Fixed: -30°C to +70°C
Flexed: -5°C to +70°C
- Minimum Bending Radius** <12: 5 x overall diameter
>12: 6 x overall diameter

- Core colour**
- | | | | | | |
|----|----|----|----|----|-----|
| BK | BL | RD | YL | OR | G-Y |
| WH | GY | BR | PK | VT | |

DIMENSIONS

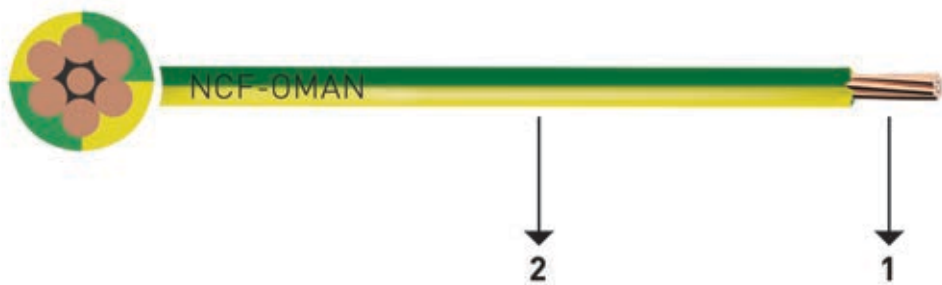
Table 1 - H05V-K, CU/PVC

Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Approx Overall Diameter	Approx Weight
mm ²	mm	mm	kg/km
0.50	0.6	2.2	9
0.75	0.6	2.4	11
1.00	0.6	2.5	14

Table 2 - H07V-K, CU/PVC

Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Approx Overall Diameter	Approx Weight
mm ²	mm	mm	kg/km
1.5	0.7	2.9	19
2.5	0.8	3.6	31
4	0.8	4.1	44
6	0.8	4.7	62
10	1.0	6.1	105
16	1.0	7.3	163
25	1.2	9	253
35	1.2	10.2	343
50	1.4	12.1	484
70	1.4	13.8	691
95	1.6	16.3	892

SINGLE CORE NON-SHEATHED CABLES WITH THERMOPLASTIC PVC INSULATION



BS EN 50525-2-31

STRUCTURE
1. Stranded copper conductor
2. PVC Insulation

APPLICATION

H05V-R/H07V-R is suitable for power and lighting circuits and building wiring. The cable is intended for use in semi-flush exposed conduits and embedded conduits as well as in closed installation ducts, and is ideal for the internal wiring of appliances.

CONSTRUCTION

Conductor H07V-R: Class 2 stranded copper conductor to BS EN 60228

Insulation PVC (Polyvinyl Chloride) Type T11 according to BS EN 50363

CHARACTERISTICS

Voltage Rating (Uo/U) H05V-R: 300/500V
H07V-R: 450/750V

Temperature Rating -15°C to +70°C

Minimum Bending Radius Up to 10mm²: 3 x overall diameter
10mm² to 25mm²: 4 x overall diameter
Above 25mm²: 5 x overall diameter

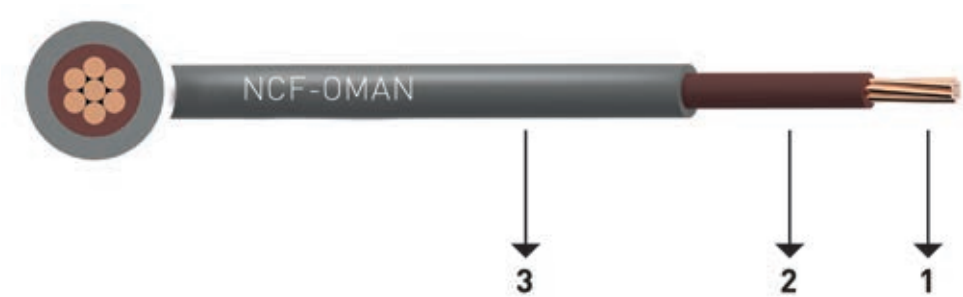
Core colour BK BL RD YL BR G-Y
WH GY

DIMENSIONS

Table 3 - H07V-R, CU/PVC

Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Approx Overall Diameter	Approx Weight
mm²	mm	mm	kg/km
1.5	0.7	2.9	22
2.5	0.8	3.6	32
4	0.8	4.1	50
6	0.8	4.7	71
10	1	5.9	110
16	1	6.8	164
25	1.2	8.4	256
35	1.2	9.4	346
50	1.4	11	473
70	1.4	12.7	674
95	1.6	14.7	913
120	1.6	16.2	1150
150	1.8	18	1416
185	2	20	1749
240	2.2	23	2317
300	2.4	25.2	3049
400	2.6	28.4	3657
500	2.8	31.8	4700
630	2.8	38.1	5890

PVC INSULATED, PVC SHEATHED CABLE - 300/500 V, SINGLE-CORE



BS 6004

- STRUCTURE**
1. Stranded Copper Conductor
2. PVC Insulation
3. PVC Sheath

DIMENSIONS

Table 4 - CU/PVC/PVC as per BS 6004

Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness of Sheath	Approx Overall Diameter	Approx Weight
mm ²	mm	mm	mm	kg/km
1.5	0.7	0.8	4.5	33
2.5	0.8	0.8	5.0	40
4	0.8	0.8	5.7	58
6	0.8	0.9	6.7	80
10	1.0	0.9	7.3	103
16	1.0	0.9	8.8	155
25	1.2	1.0	10.1	230
35	1.2	1.1	12.1	320

APPLICATION

Fixed installation in dry or damp areas for domestic and light industrial wiring. Also used in connection to (smart)meters.

CONSTRUCTION

- Conductor**1.5mm² to 35mm²: Class 2 stranded copper
- Insulation**PVC (Polyvinyl Chloride) Type T11 according to BS EN 50363
- Sheathing**PVC (Polyvinyl Chloride) Type 6

CHARACTERISTICS

- Voltage Rating (Uo/U)**300/500V
- Temperature Rating**-15°C to +70°C
- Minimum Bending Radius**Up to 6mm² - Fixed: 3 x overall diameter
10mm² to 35mm²: 4 x overall diameter

Core colour

BK

BL

RD

YL

BR

G-Y

WH

GY

SINGLE CORE NON-SHEATHED CABLES WITH HALOGEN-FREE CROSSLINKED INSULATION, AND LOW EMISSION OF SMOKE



APPLICATION

Suitable for use in conduit and for fixed, protected installation. For installations where fire, smoke emission and toxic fume create a potential risk to life and equipment.

CONSTRUCTION

Conductor	Class 2 stranded copper conductor
Insulation	LSZH (Low Smoke Zero Halogen) Type EI5

CHARACTERISTICS

Voltage Rating (Uo/U)	450/750V
Temperature Rating	Fixed: 0°C to +90°C
Minimum Bending Radius	6 x overall diameter

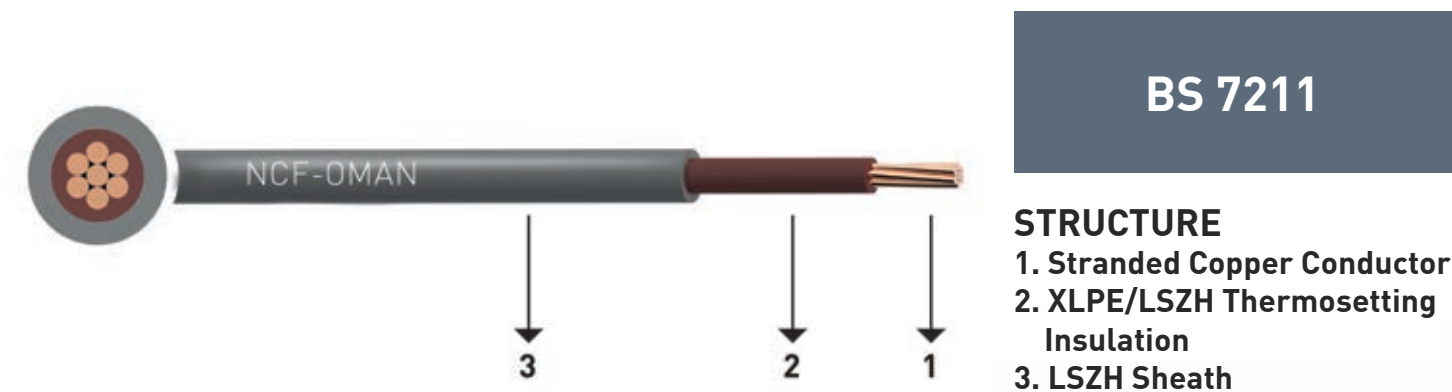
Core colour	BK BL RD YL OR G-Y WH GY BR PK VT
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DIMENSIONS

Table 5 - H07Z-R CU/LSZH

Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Approx Overall Diameter	Approx Weight
mm ²	mm	mm	kg/km
1.5	0.7	3.4	22
2.5	0.8	4.1	32
4	0.8	4.7	50
6	0.8	5.4	71
10	1.0	7.0	110
16	1.0	8.0	164
25	1.2	10.1	256
35	1.2	11.3	346
50	1.4	13.2	473
70	1.4	15.1	674
95	1.6	17.6	913
120	1.6	19.4	1150
150	1.8	21.6	1416
185	2.0	24.1	1749
240	2.2	27.5	2317
300	2.4	30.6	3049
400	2.6	34.3	3657
500	2.8	38.2	4700
630	2.8	42.2	5890

SINGLE CORE SHEATHED CABLES WITH CROSSLINKED INSULATION, AND LOW EMISSION OF SMOKE



APPLICATION

Fixed installation in walls, on boards and in channels or embedded in plaster. Low smoke emission and corrosive gasses in case of fire.

CONSTRUCTION

Conductor	Class 2 stranded copper conductor
Insulation	XLPE Type GP 8 or LSZH (Low Smoke Zero Halogen) Type EI5
Sheathing	LSZH (Low Smoke Zero Halogen)

CHARACTERISTICS

Voltage Rating (Uo/U)	450/750V
Temperature Rating	Maximum operating temperature: +90°C Maximum short circuit: 250°C
Minimum Bending Radius	6 x overall diameter
Sheath Color	WH - other colors are available upon customer request

DIMENSIONS

Table 6 - CU/XLPE/LSZH or CU/LSZH/LSZH as per BS 7211

Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness of Sheath	Approx Overall Diameter	Approx Weight
mm ²	mm	mm	mm	kg/km
1.5	0.7	0.8	5.2	41
2.5	0.7	0.8	5.6	55
4	0.7	0.9	6.4	82
6	0.7	0.9	7.1	103
10	0.7	0.9	8.1	155
16	0.7	0.9	9.2	225
25	0.9	1.0	11.4	310
35	0.9	1.1	12.8	420



ELECTRICAL CHARACTERISTICS

Table 7 - Single Core PVC Insulated, unarmoured sheathed or non-sheathed
Current Carrying Capacity

Ambient temperature: 30°C
Conductor operating temperature: 70°C

Nominal Cross- Sectional Area mm²	Reference Method A (Enclosed in Conduit In Thermally Insulating Wall Etc.) Amps		Reference Method B (Enclosed in Conduit On A Wall or In a Trunking Etc.) Amps		Reference Method C (Clipped Direct) Amps		Reference Method F (In Free Air or On A Perforated Cable Tray Etc. Horizontal or Vertical Etc.) Amps				
							Touching			Spaced by One Diameter	
										2 Cables Single- Phase AC or DC or Cables Three- Phase AC Flat	
	2 Cables Single - Phase AC Or DC	3 Or 4 Cables Three - Phase AC	2 Cables Single - Phase AC Or DC	3 Or 4 Cables Three- Phase AC	2 Cables Single - Phase AC Or DC Flat or Touching	3 Or 4 Cables Three - Phase AC Flat and Touching Or Trefoil	2 Cables Single- Phase AC Or DC Flat	3 Cables Three- Phase AC Flat	3 Cables Three - Phase AC Trefoil	Horizontal	Vertical
1.5	14.5	13.5	17.5	15.5	20	18	-	-	-	-	-
2.5	20	18	24	21	27	25	-	-	-	-	-
4	26	24	32	28	37	33	-	-	-	-	-
6	34	31	41	36	47	43	-	-	-	-	-
10	46	42	57	50	65	59	-	-	-	-	-
16	61	56	76	68	87	79	-	-	-	-	-
25	80	73	101	89	114	104	131	114	110	146	130
35	99	89	125	110	141	129	162	143	137	181	162
50	119	108	151	134	182	167	196	174	167	219	197
70	151	136	192	171	234	214	251	225	216	281	254
95	182	164	232	207	284	261	304	275	264	341	311
120	210	188	269	239	330	303	352	321	308	396	362
150	240	216	300	262	381	349	406	372	356	456	419
185	273	245	341	296	436	400	463	427	409	521	480
240	321	286	400	346	515	472	546	507	485	615	569
300	367	328	458	394	594	545	629	587	561	709	659
400	-	-	546	467	694	634	754	689	656	852	795
500	-	-	626	533	792	723	868	789	749	982	920
630	-	-	720	611	904	826	1005	905	855	1138	1070

Table 8 - Single Core PVC Insulated, unarmoured sheathed or non-sheathed Voltage Drop

Nominal Cross- Sectional Area mm²	2 Cables Single-Phase Ac mV/A/m												3 Or 4 Cables Three-Phase Ac mV/A/m									
	2 Cables Dc mV/A/m	Reference Methods A And B (Enclosed In Conduit or Trunking)			Reference Methods C, F (Clipped Direct, On Tray or In Free Air)			Reference Methods A And B (Enclosed in Conduit Or Trunking)			Reference Methods C, F (Clipped Direct, On Tray or In Free Air)											
					Cable Touching		Cable Spaced				Cable Touching Trefoil			Cable Touching Flat			Cable Spaced* Flat					
1.5	28	29			29		29		25			25			25			25				
2.5	18	18			18		18		15			15			15			15				
4	11	11			11		11		9.5			9.5			9.5			9.5				
6	7.3	7.3			7.3		7.3		6.4			6.4			6.4			6.4				
10	4.4	4.4			4.4		4.4		3.8			3.8			3.8			3.8				
16	2.8	2.8			2.8		2.8		2.4			2.4			2.4			2.4				
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.75	1.80	0.33	1.80	1.75	0.20	1.75	1.75	0.29	1.80	1.50	0.29	1.55	1.50	0.18	1.50	0.15	0.25	1.55	1.50	0.32	1.55
35	1.25	1.30	0.31	1.30	1.25	0.20	1.25	1.25	0.28	1.30	1.10	0.27	1.10	1.10	0.17	1.10	1.10	0.24	1.10	1.10	0.32	1.15
50	0.93	0.95	0.30	1.00	0.93	0.19	0.95	0.93	0.28	0.97	0.81	0.26	0.85	0.80	0.17	0.82	0.80	0.24	0.84	0.80	0.32	0.86
70	0.63	0.65	0.29	0.72	0.63	0.19	0.66	0.63	0.27	0.69	0.56	0.25	0.61	0.55	0.16	0.57	0.55	0.24	0.60	0.55	0.31	0.63
95	0.46	0.49	0.28	0.56	0.47	0.18	0.50	0.47	0.27	0.54	0.42	0.24	0.48	0.41	0.16	0.43	0.41	0.23	0.47	0.40	0.31	0.51
120	0.36	0.39	0.27	0.47	0.37	0.18	0.41	0.37	0.26	0.45	0.33	0.23	0.41	0.32	0.15	0.36	0.32	0.23	0.40	0.32	0.30	0.44
150	0.29	0.31	0.27	0.41	0.30	0.18	0.34	0.29	0.26	0.39	0.27	0.23	0.36	0.26	0.15	0.30	0.26	0.23	0.34	0.26	0.30	0.40
185	0.23	0.25	0.27	0.37	0.24	0.17	0.29	0.24	0.26	0.35	0.22	0.23	0.32	0.21	0.15	0.26	0.21	0.22	0.31	0.21	0.30	0.36
240	0.18	0.20	0.26	0.33	0.19	0.17	0.25	0.19	0.25	0.31	0.17	0.23	0.29	0.16	0.15	0.22	0.16	0.22	0.27	0.16	0.29	0.34
300	0.15	0.16	0.26	0.31	0.15	0.17	0.22	0.15	0.25	0.29	0.14	0.23	0.27	0.13	0.14	0.19	0.13	0.22	0.25	0.13	0.29	0.32
400	0.11	0.13	0.26	0.29	0.12	0.16	0.20	0.12	0.25	0.27	0.12	0.22	0.25	0.11	0.14	0.18	0.11	0.21	0.24	0.10	0.29	0.31
500	0.086	0.11	0.26	0.28	0.98	0.155	0.185	0.093	0.24	0.26	0.10	0.22	0.25	0.086	0.135	0.16	0.086	0.21	0.23	0.081	0.29	0.30
630	0.068	0.094	0.25	0.27	0.081	0.155	0.175	0.076	0.24	0.25	0.08	0.22	0.24	0.072	0.135	0.15	0.072	0.21	0.22	0.066	0.28	0.29

Conductor operating temperature: 70°C
r = Resistive Component, x = Reactive Component, z = Impedance Value
*Spacings larger than one cable diameter will result in a large voltage drop

-For cables having conductors of 16mm² or less cross-sectional area their inductances can be ignored and (mV/A/m) r values only are tabulated. For cables having conductors greater than 16mm², cross sectional area the impedance values are given as (mV/A/m) z, together with the resistive component (mV/A/m) r and the reactive component (mV/A/m) x.

Table 9 - Single Core LSZH/XLPE Insulated, unarmoured sheathed or non-sheathed
Current Carrying Capacity

Ambient temperature: 30°C
Conductor operating temperature: 70°C

Nominal Cross- Sectional Area mm²	Reference Method A (Enclosed in Conduit In Thermally Insulating Wall Etc.) Amps		Reference Method B (Enclosed in Conduit On A Wall or In a Trunking Etc.) Amps		Reference Method C (Clipped Direct) Amps		Touching		
	2 Cables Single - Phase AC Or DC	3 Or 4 Cables Three - Phase AC	2 Cables Single - Phase AC Or DC	3 Or 4 Cables Three - Phase AC	2 Cables Single- Phase AC Or DC Flat or Touching	3 Or 4 Cables Three - Phase AC Flat and Touching Or Trefoil	2 Cables Single - Phase AC Or DC Flat	3 Cables Three- Phase AC Flat	3 Cables Three- Phase AC Trefoil
1.5	19	17	23	20	25	23	-	-	-
2.5	26	23	31	28	34	31	-	-	-
4	35	31	42	37	46	41	-	-	-
6	45	40	54	48	59	54	-	-	-
10	61	54	75	66	81	74	-	-	-
16	81	73	100	88	109	99	-	-	-
25	106	95	133	117	143	130	161	141	135
35	31	117	164	144	176	161	200	176	169
50	158	141	198	175	228	209	242	216	207
70	200	179	253	222	293	268	310	279	268
95	241	216	306	269	355	326	377	342	328
120	278	249	354	312	413	379	437	400	383
150	318	285	393	342	476	436	504	464	444
185	362	324	449	384	545	500	575	533	510
240	424	380	528	450	644	590	679	634	607
300	486	435	603	514	743	681	783	736	703
400	-	-	683	584	868	793	940	868	823
500	-	-	783	666	990	904	1083	998	946
630	-	-	900	764	1130	1033	1254	1151	1088

Table 10 - Single Core LSZH/XLPE Insulated, unarmoured sheathed or non-sheathed Voltage Drop

Nominal Cross - Sectional Area mm ²	2 Cables Dc	2 Cables Single-Phase Ac mV/A/m									3 Or 4 Cables Three-Phase Ac mV/A/m											
		Reference Methods A And B (Enclosed In Conduit or Trunking)	Reference Methods C, F (Clipped Direct, On Tray or In Free Air)						Reference Methods A And B (Enclosed in Conduit Or Trunking)	Reference Methods C, F (Clipped Direct, On Tray or In Free Air)												
			Cable Touching			Cable Spaced				Cable Touching Trefoil			Cable Touching Flat			Cable Spaced* Flat						
1.5	31	31	31	31	31	31	31	31	31	31	27	27	27	27	27	27	27	27	27	27	27	27
2.5	19	19	19	19	19	19	19	19	19	19	16	16	16	16	16	16	16	16	16	16	16	16
4	12	12	12	12	12	12	12	12	12	12	10	10	10	10	10	10	10	10	10	10	10	10
6	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
10	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4	4	4	4	4	4	4	4	4	4	4	4
16	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.19	1.85	1.85	0.28	1.85	1.60	0.27	1.65	1.60	0.165	1.60	1.60	0.19	1.60	1.60	0.27	1.65
35	1.35	1.35	0.29	1.35	1.35	0.18	1.35	1.35	0.27	1.35	1.15	0.25	1.15	1.15	0.155	1.15	1.15	0.18	1.15	1.15	0.26	1.20
50	0.99	1.00	0.29	1.05	0.99	0.18	1.00	0.99	0.27	1.00	0.87	0.25	0.90	0.86	0.155	0.87	0.86	0.18	0.87	0.86	0.26	0.89
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.68	0.26	0.73	0.60	0.24	0.65	0.59	0.15	0.61	0.59	0.175	0.62	0.59	0.25	0.65
95	0.49	0.51	0.27	0.58	0.49	0.17	0.52	0.49	0.26	0.56	0.44	0.23	0.50	0.43	0.145	0.45	0.43	0.17	0.46	0.43	0.25	0.49
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.39	0.25	0.47	0.35	0.23	0.42	0.34	0.14	0.37	0.34	0.165	0.38	0.34	0.24	0.42
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.32	0.25	0.41	0.29	0.23	0.37	0.28	0.14	0.31	0.28	0.165	0.32	0.28	0.24	0.37
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.25	0.25	0.36	0.23	0.23	0.32	0.22	0.14	0.26	0.22	0.165	0.28	0.22	0.24	0.33
240	0.19	0.21	0.26	0.33	0.20	0.16	0.25	0.195	0.25	0.31	0.185	0.22	0.29	0.17	0.14	0.22	0.17	0.165	0.24	0.17	0.24	0.29
300	0.155	0.175	0.25	0.31	0.16	0.16	0.22	0.155	0.25	0.29	0.15	0.22	0.27	0.14	0.14	0.195	0.135	0.16	0.21	0.135	0.24	0.27
400	0.12	0.14	0.25	0.29	0.13	0.155	0.20	0.125	0.24	0.27	0.125	0.22	0.25	0.11	0.135	0.175	0.11	0.16	0.195	0.11	0.24	0.26
500	0.093	0.12	0.25	0.28	0.105	0.155	0.185	0.098	0.24	0.26	0.10	0.22	0.24	0.09	0.135	0.16	0.088	0.16	0.18	0.085	0.24	0.25
630	0.072	0.10	0.25	0.27	0.086	0.155	0.175	0.078	0.24	0.25	0.088	0.21	0.23	0.074	0.135	0.15	0.071	0.16	0.17	0.068	0.23	0.24

Conductor operating temperature: 70°C
r = Resistive Component, x = Reactive Component, z = Impedance Value
*Spacings larger than those specified in Method 12 (see table 4A of the 17th Edition of IEE Wiring Regulations) will result in larger volt drop

- For cables having conductors of 16mm2 or less cross-sectional area their inductances can be ignored and (mV/A/m) r values only are tabulated. For cables having conductors greater than 16mm2, cross sectional area the impedance values are given as (mV/A/m) z, together with the resistive component (mV/A/m) r and the reactive component (mV/A/m) x.

Table 11 - DE-RATING FACTORS

For Ambient Air Temperatures other than 30°C

AMBIENT TEMPERATURE	30°C	35°C	40°C	45°C	50°C	55°C	60°C
PVC	1	0.94	0.87	0.79	0.71	0.61	0.5
XLPE/LSF	1.00	0.96	0.91	0.87	0.82	0.76	0.71

The above table is in accordance with Table 4B1 of the 17th Edition of IEE Wiring Regulations

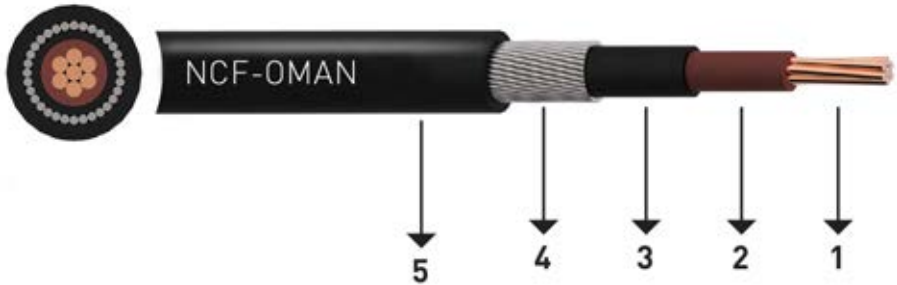
POWER CABLES

XLPE INSULATED ARMoured CABLES
XLPE INSULATED UNARMoured CABLES
PVC INSULATED ARMoured CABLES
PVC INSULATED UNARMoured CABLE
LSZH CABLES



XLPE INSULATED ARMoured POWER CABLES

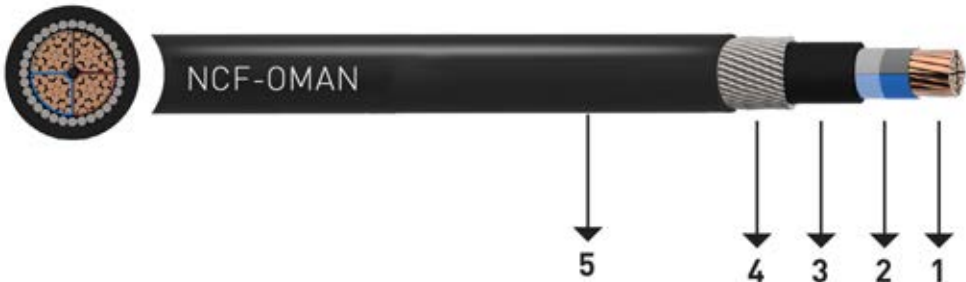
Single Core XLPE Insulated Armoured Cables - Figure 1



BS 5467
IEC 60502-1

- STRUCTURE**
- 1. Circular Stranded Conductor
 - 2. XLPE Insulation
 - 3. PVC Bedding
 - 4. Aluminium Wire Armour
 - 5. PVC Oversheath

MultiCore XLPE Insulated Armoured Cables - Figure 2



- STRUCTURE**
- 1. Shaped Stranded Conductor
 - 2. XLPE Insulation
 - 3. PVC Bedding
 - 4. Steel Wire Armour
 - 5. PVC Oversheath

APPLICATION

Power and auxiliary control cables for use in power networks, underground, outdoor and indoor applications and for use in cable ducting.

CONSTRUCTION

Conductor	Class 2 stranded copper conductor according to BS EN 60228
Insulation	XLPE (Cross-Linked Polyethylene)
Bedding	PVC (Polyvinyl Chloride)
Armour	AWA (Single Core)/SWA(MultiCore)
Sheath	PVC (Polyvinyl Chloride)

CHARACTERISTICS

Voltage Rating (Uo/U)	600/1000V
Temperature Rating	Fixed: -25°C to +90°C
Minimum Bending Radius	8 x overall diameter
Core Identification	1 core: Black 2 core: Red & Black 3 core: Red, Yellow & Black 4 core: Red, Yellow, Blue & Black Alternative Core Identification: White cores with Black numbers

Sheath Color **BK**

DIMENSIONS Single Core Armoured Cable

Table 12 - Single Core BS 5467 CU/XLPE/PVC/AWA/PVC

No of core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Bedding	Nominal Diameter Of Armour wire	Nominal thickness of oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
1	50	1.0	0.8	0.9	1.5	17.5	635
1	70	1.1	0.8	1.25	1.5	20.2	900
1	95	1.1	0.8	1.25	1.6	22.3	1170
1	120	1.2	0.8	1.25	1.6	24.2	1420
1	150	1.4	1.0	1.6	1.7	27.4	1800
1	185	1.6	1.0	1.6	1.8	30.0	2195
1	240	1.7	1.0	1.6	1.8	32.8	2785
1	300	1.8	1.0	1.6	1.9	35.6	3410
1	400	2.0	1.2	2.0	2.0	40.5	4385
1	500	2.2	1.2	2.0	2.1	44.2	5420
1	630	2.4	1.2	2.0	2.2	48.8	6925

DIMENSIONS Multi Core Armoured Cables

Table 13 - Two Core BS 5467 CU/XLPE/PVC/SWA/PVC

No of core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Bedding	Nominal Diameter of Armour wire	Nominal thickness of oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
2	1.5	0.6	0.8	0.9	1.3	12.1	270
2	2.5	0.7	0.8	0.9	1.4	13.6	320
2	4	0.7	0.8	0.9	1.4	14.7	385
2	6	0.7	0.8	0.9	1.4	15.9	460
2	10	0.7	0.8	0.9	1.5	18.0	620
2	16	0.7	0.8	1.25	1.5	20.4	845
2	25	0.9	0.8	1.25	1.6	20.4	1000
2	35	0.9	1.0	1.6	1.7	23.3	1420
2	50	1.0	1.0	1.6	1.8	25.8	1720
2	70	1.1	1.0	1.6	1.9	29.0	2240
2	95	1.1	1.2	2.0	2.0	33.1	3060
2	120	1.2	1.2	2.0	2.1	36.1	3670
2	150	1.4	1.2	2.0	2.2	39.3	4365
2	185	1.6	1.4	2.5	2.4	44.7	5605
2	240	1.7	1.4	2.5	2.5	49.0	7105
2	300	1.8	1.6	2.5	2.6	53.5	8575

Table 14 - Three Core BS 5467 CU/XLPE/PVC/SWA/PVC

No of core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Bedding	Nominal Diameter of Armour wire	Nominal thickness of oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
3	1.5	0.6	0.8	0.9	1.3	12.6	300
3	2.5	0.7	0.8	0.9	1.4	14.1	360
3	4	0.7	0.8	0.9	1.4	15.3	440
3	6	0.7	0.8	0.9	1.4	16.6	535
3	10	0.7	0.8	1.25	1.5	19.5	835
3	16	0.7	0.8	1.25	1.6	21.6	1040
3	25	0.9	1.0	1.6	1.7	23.6	1475
3	35	0.9	1.0	1.6	1.8	25.7	1850
3	50	1.0	1.0	1.6	1.8	28.5	2285
3	70	1.1	1.0	1.6	1.9	32.2	3025
3	95	1.1	1.2	2.0	2.1	37.0	4170
3	120	1.2	1.2	2.0	2.2	40.4	5060
3	150	1.4	1.4	2.5	2.3	45.5	6500
3	185	1.6	1.4	2.5	2.4	49.8	7720
3	240	1.7	1.4	2.5	2.6	55.1	9730
3	300	1.8	1.6	2.5	2.7	60.2	11880

Table 15 - Four Core BS 5467 CU/XLPE/PVC/SWA/PVC

No of core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Bedding	Nominal Diameter of Armour wire	Nominal thickness of oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
4	1.5	0.6	0.8	0.9	1.3	13.3	335
4	2.5	0.7	0.8	0.9	1.4	15.0	415
4	4	0.7	0.8	0.9	1.4	16.4	505
4	6	0.7	0.8	1.25	1.5	18.7	735
4	10	0.7	0.8	1.25	1.5	21.1	960
4	16	0.7	0.8	1.25	1.6	23.4	1245
4	25	0.9	1.0	1.6	1.7	26.1	1860
4	35	0.9	1.0	1.6	1.8	28.6	2320
4	50	1.0	1.0	1.6	1.9	32.0	2860
4	70	1.1	1.2	2.0	2.1	37.7	4135
4	95	1.1	1.2	2.0	2.2	41.7	5290
4	120	1.2	1.4	2.5	2.3	47.1	6925
4	150	1.4	1.4	1.4	2.4	51.4	8235
4	185	1.6	1.4	1.4	2.6	56.6	9995
4	240	1.7	1.6	1.6	2.7	63.0	12565
4	300	1.8	1.6	1.6	2.9	68.8	15195

Table 16 - Three and Half Core IEC 60502-1 CU/XLPE/PVC/SWA/PVC

Nominal Cross Sectional Area Of Phase	Nominal Cross Sectional Area Of Neutral	Nominal Thickness Of Insulation In Phase	Nominal Thickness Of Insulation In Neutral	Approximate Thickness Of Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
mm²	mm²	mm	mm	mm	mm	mm	mm	kg/km
25	16	0.9	0.7	1.0	1.6	1.8	26.0	1190
35	16	0.9	0.7	1.0	1.6	1.8	29.0	1370
50	25	1.0	0.9	1.0	1.6	1.9	31.0	1630
70	35	1.1	0.9	1.2	2.0	2.1	37.0	2350
95	50	1.1	1.0	1.2	2.0	2.2	40.0	2830
120	70	1.2	1.1	1.2	2.0	2.4	46.0	3425
150	70	1.4	1.1	1.4	2.5	2.5	51.0	4395
185	95	1.6	1.1	1.4	2.5	2.7	57.0	5230
240	120	1.7	1.2	1.6	2.5	2.9	63.0	6280
300	150	1.8	1.4	1.6	2.5	3.0	68.0	7285

Table 17 - Five Core BS 5467 CU/XLPE/PVC/SWA/PVC

No of core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Bedding	Nominal Diameter of Armour wire	Nominal thickness of oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
5	1.5	0.6	0.8	0.9	1.4	14.3	415
5	2.5	0.7	0.8	0.9	1.4	16.1	502
5	4	0.7	0.8	0.9	1.5	17.8	620
5	6	0.7	0.8	1.25	1.5	20.0	883
5	10	0.7	0.8	1.25	1.6	22.9	1182
5	16	0.7	1.0	1.6	1.7	26.6	1735
5	25	0.9	1.0	1.6	1.8	31.5	2333
5	35	0.9	1.0	1.6	1.9	34.8	3083
5	50	1.0	1.2	2.0	2.0	40.4	4198
5	70	1.1	1.2	2.0	2.2	46.3	5584

Table 18 - Multi Core Auxiliary/Control Cables BS 5467 CU/XLPE/PVC/SWA/PVC

No of core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Bedding	Nominal Diameter of Armour wire	Nominal thickness of oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
7	1.5	0.6	0.8	0.9	1.4	15.2	494
12	1.5	0.6	0.8	1.25	1.5	19.4	839
19	1.5	0.6	0.8	1.25	1.6	22.2	1073
27	1.5	0.6	1.0	1.6	1.7	26.7	1592
37	1.5	0.6	1.0	1.6	1.7	29.0	1917
7	2.5	0.7	0.8	0.9	1.4	17.1	581
12	2.5	0.7	0.8	1.25	1.6	22.4	1042
19	2.5	0.7	1.0	1.6	1.7	26.6	1536
27	2.5	0.7	1.0	1.6	1.8	30.7	2036
37	2.5	0.7	1.0	1.6	1.8	33.8	2471
7	4	0.7	0.8	1.25	1.5	19.7	866
12	4	0.7	1.0	1.6	1.6	25.7	1481
19	4	0.7	1.0	1.6	1.7	29.3	1940
27	4	0.7	1.0	1.6	1.9	34.4	2616
37	4	0.7	1.2	2.0	2.0	39.2	3535

XLPE INSULATED UNARMoured POWER CABLES



BS 7889
IEC 60502-1

- STRUCTURE**
- 1. Solid Copper Conductor or stranded circular or circular compacted conductor
 - 2. XLPE Insulation
 - 3. PVC Bedding
 - 4. PVC Sheath

APPLICATION

These power and control cables are used for electricity supply in low voltage installation systems. They are well adapted to underground use in industrial applications with an additional mechanical protection. These cables can be fixed on cable trays, within conduits or fixed to walls.

CONSTRUCTION

- Conductor

RE: Class 1 solid copper conductor according to BS EN 60228
RM: Class 2 stranded circular or circular compacted conductor according to BS EN 60228
- Insulation

XLPE (Cross-Linked Polyethylene)
- Bedding

PVC (Polyvinyl Chloride)
- Sheath

PVC (Polyvinyl Chloride)

CHARACTERISTICS

- Voltage Rating (Uo/U)

600/1000V
- Temperature Rating

During installation -5°C to +50°C
Fixed Installation: -20°C to +90°C
Permissible operating temperature at conductor +90°C (Short circuit temperature: 250°C)
- Minimum Bending Radius

12 x overall diameter
- Core Identification

1 core: Black
2 core: Red, Black
3 core: Red, Yellow, Black
4 core: Red, Yellow, Blue, Black
Alternative Core Identification: White cores with Black numbers
- Sheath Colour

BK

DIMENSIONS Single Core Unarmoured Cable

Table 19 - Single Core CU/XLPE/PVC as per IEC 60502-1 or BS 7889

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
1	1.5	0.7	1.4	6.0	55
1	2.5	0.7	1.4	6.5	64
1	4	0.7	1.4	7.0	87
1	6	0.7	1.4	7.5	105
1	10	0.7	1.4	8.5	150
1	16	0.7	1.4	9.0	205
1	25	0.9	1.4	11.0	310
1	35	0.9	1.4	12.0	415
1	50	1.0	1.4	13.0	530
1	70	1.1	1.4	15.0	732
1	95	1.1	1.5	17.0	990
1	120	1.2	1.5	19.0	1219
1	150	1.4	1.6	21.0	1498
1	185	1.6	1.6	23.0	1860
1	240	1.7	1.7	26.0	2415
1	300	1.8	1.8	28.0	3020
1	400	2.0	1.9	32.0	3825
1	500	2.2	2.0	35.0	4810
1	630	2.4	2.2	40.0	6265

DIMENSIONS Multi Core Unarmoured Cables

Table 20 - Two Core CU/XLPE/PVC as per IEC 60502-1 or BS 7889

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
2	1.5	0.7	1.8	10.0	132
2	2.5	0.7	1.8	11.0	165
2	4	0.7	1.8	12.0	210
2	6	0.7	1.8	13.0	270
2	10	0.7	1.8	15.0	385
2	16	0.7	1.8	17.0	485
2	25	0.9	1.8	16.0	635
2	35	0.9	1.8	18.0	832
2	50	1.0	1.8	21.0	1085
2	70	1.1	1.8	23.0	1494
2	95	1.1	1.9	26.0	2023
2	120	1.2	2.0	28.0	2515
2	150	1.4	2.2	32.0	3095
2	185	1.6	2.3	34.0	3855
2	240	1.7	2.5	41.0	5030
2	300	1.8	2.7	45.0	6265

Table 21 - Three Core CU/XLPE/PVC as per IEC 60502-1 or BS 7889

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
3	1.5	0.7	1.8	11	152
3	2.5	0.7	1.8	12	190
3	4	0.7	1.8	13	250
3	6	0.7	1.8	14	330
3	10	0.7	1.8	16	480
3	16	0.7	1.8	18	650
3	25	0.9	1.8	18	900
3	35	0.9	1.8	21	1192
3	50	1.0	1.8	23	1560
3	70	1.1	1.9	27	2184
3	95	1.1	2.0	30	2948
3	120	1.2	2.1	34	3690
3	150	1.4	2.3	38	4555
3	185	1.6	2.4	40	5670
3	240	1.7	2.6	47	7385
3	300	1.8	2.8	52	9205

Table 22 - Four Core CU/XLPE/PVC as per IEC 60502-1 or BS 7889

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
4	1.5	0.7	1.8	14.0	335
4	2.5	0.7	1.8	15.0	409
4	4	0.7	1.8	16.0	507
4	6	0.7	1.8	18.0	735
4	10	0.7	1.8	21.0	955
4	16	0.7	1.8	23.0	1235
4	25	0.9	1.8	26.0	1845
4	35	0.9	1.8	29.0	2305
4	50	1.0	1.8	31.0	2860
4	70	1.1	2.0	37.0	4132
4	95	1.1	2.1	40.0	5300
4	120	1.2	2.3	47.0	6924
4	150	1.4	2.4	51.0	8223
4	185	1.6	2.6	56.0	9995
4	240	1.7	2.8	62.0	12560
4	300	1.8	3	68.0	15200

Table 23 -Three & Half Core CU/XLPE/PVC as per IEC 60502-1

Nominal Cross Sectional Area Of Phase	Nominal Cross Sectional Area Of Neutral	Nominal Thickness Of Insulation In Phase	Nominal Thickness Of Insulation In Neutral	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
mm²	mm²	mm	mm	mm	mm	kg/km
25	16	0.9	0.7	1.8	21.0	1075
35	16	0.9	0.7	1.8	24.0	1360
50	25	1.0	0.9	1.8	26.0	1810
70	35	1.1	0.9	1.9	30.0	2535
95	50	1.1	1.0	2.1	34.0	3445
120	70	1.2	1.1	2.2	39.0	4395
150	70	1.4	1.1	2.3	43.0	5245
185	95	1.6	1.1	2.5	49.0	6635
240	120	1.7	1.2	2.7	54.0	8595
300	150	1.8	1.4	2.9	60.0	10670

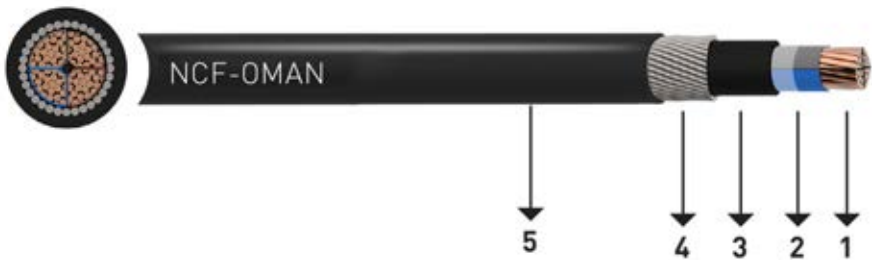
Table 24 - Five Core CU/XLPE/PVC as per IEC 60502-1

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
5	1.5	0.7	1.8	12.0	200
5	2.5	0.7	1.8	13.0	265
5	4	0.7	1.8	15.0	355
5	6	0.7	1.8	16.0	475
5	10	0.7	1.8	19.0	700
5	16	0.7	1.8	21.0	985
5	25	0.9	1.8	25.0	1500
5	35	0.9	1.8	28.0	1975
5	50	1.0	1.9	32.0	2645
5	70	1.1	2.1	37.0	3725

Table 25 - Multi Core Auxiliary/Control Cables CU/XLPE/PVC as per IEC 60502-1

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
7	1.5	0.7	1.8	13.0	250
12	1.5	0.7	1.8	17.0	378
19	1.5	0.7	1.8	19.0	533
27	1.5	0.7	1.8	23.0	725
37	1.5	0.7	1.8	25.0	942
7	2.5	0.7	1.8	14.0	321
12	2.5	0.7	1.8	18.0	515
19	2.5	0.7	1.8	21.0	746
27	2.5	0.7	1.8	25.0	1014
37	2.5	0.7	1.8	28.0	1332
7	4	0.7	1.8	16.0	452
12	4	0.7	1.8	20.0	710
19	4	0.7	1.8	24.0	1053
27	4	0.7	1.8	28.0	1455
37	4	0.7	1.9	32.0	1925

PVC INSULATED ARMoured POWER CABLES



BS 6346
IEC 60502-1

STRUCTURE

- 1. Shaped Stranded Conductor
- 2. PVC Insulation
- 3. PVC Filling
- 4. Steel Wire Armour
- 5. PVC Outer Sheath

APPLICATION

These power and control cables are used for electricity supply in low voltage installation system. They are well adapted to underground use in industrial applications where chemical and mechanical protections are needed (refinery areas, chemical plant...).

CONSTRUCTION

Conductor	RM: Class 2 stranded circular or circular compacted conductor according to BS EN 60228
Insulation	PVC Type TI-1
Bedding	PVC (Polyvinyl Chloride)
Armouring	AWA (Single Core) SWA (Multicores)
Sheath	PVC Type TM-1

CHARACTERISTICS

Voltage Rating (Uo/U)	600/1000V
Temperature Rating	-20°C to +90°C
Minimum Bending Radius	Single Core: 10 x overall diameter Multicores: 8 x overall diameter
Core Identification	1 core: Black 2 core: Red, Black 3 core: Red, Yellow, Black 4 core: Red, Yellow,Blue, Black Alternative Core Identification: White cores with Black numbers

Sheath Colour **BK**

DIMENSIONS Single Core Armoured Cable PVC insulated

Table 26 - Single Core CU/PVC/AWA/PVC as per BS 6346

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
1	50	1.4	0.8	1.25	1.5	19.1	720
1	70	1.4	0.8	1.25	1.6	21.1	944
1	95	1.6	0.8	1.25	1.6	23.4	1242
1	120	1.6	1.0	1.6	1.7	26.3	1580
1	150	1.8	1.0	1.6	1.7	28.3	1885
1	185	2.0	1.0	1.6	1.8	30.8	2285
1	240	2.2	1.0	1.6	1.9	34.1	2915
1	300	2.4	1.0	1.6	1.9	37.0	3560
1	400	2.6	1.2	2.0	2.1	42.0	4590
1	500	2.8	1.2	2.0	2.1	45.6	5642
1	630	2.8	1.2	2.0	2.2	49.7	7180

DIMENSIONS Multi Core Armoured Cables PVC insulated

Table 27 - Two Core CU/PVC/SWA/PVC as per BS 6346

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
2	1.5	0.6	0.8	0.9	1.4	12.3	295
2	2.5	0.7	0.8	0.9	1.4	13.6	344
2	4	0.8	0.8	0.9	1.4	15.1	447
2	6	0.8	0.8	0.9	1.5	16.5	540
2	10	1.0	0.8	1.25	1.6	20.1	805
2	16	1.0	0.8	1.25	1.6	21.9	910
2	25	1.2	1.0	1.6	1.7	23.0	1220
2	35	1.2	1.0	1.6	1.8	24.8	1505
2	50	1.4	1.0	1.6	1.9	27.8	1880
2	70	1.4	1.0	1.6	1.9	30.4	2372
2	95	1.6	1.2	2.0	2.1	35.5	3320
2	120	1.6	1.2	2.0	2.2	38.0	3889
2	150	1.8	1.2	2.0	2.3	41.3	4608
2	185	2.0	1.4	2.5	2.4	46.4	5905
2	240	2.2	1.4	2.5	2.5	51.2	7515
2	300	2.4	1.6	2.5	2.7	56.4	9080

Table 28 - Three Core CU/PVC/SWA/PVC as per BS 6346

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
3	1.5	0.6	0.8	0.9	1.4	12.8	330
3	2.5	0.7	0.8	0.9	1.4	14.1	389
3	4	0.8	0.8	0.9	1.4	15.8	517
3	6	0.8	0.8	1.25	1.5	18.0	725
3	10	1.0	0.8	1.25	1.6	21.2	935
3	16	1.0	0.8	1.25	1.6	23.1	1125
3	25	1.2	1.0	1.6	1.7	25.0	1585
3	35	1.2	1.0	1.6	1.8	27.1	1985
3	50	1.4	1.0	1.6	1.9	30.5	2490
3	70	1.4	1.2	2.0	2.0	35.0	3487
3	95	1.6	1.2	2.0	2.1	39.3	4480
3	120	1.6	1.2	2.0	2.2	42.2	5359
3	150	1.8	1.4	2.5	2.4	47.5	6858
3	185	2.0	1.4	2.5	2.5	51.9	8140
3	240	2.2	1.6	2.5	2.6	57.8	10315
3	300	2.4	1.6	2.5	2.8	63.2	12515

Table 29 - Four Core CU/PVC/SWA/PVC as per BS 6346

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
4	1.5	0.6	0.8	0.9	1.4	13.5	370
4	2.5	0.7	0.8	0.9	1.4	15.0	439
4	4	0.8	0.8	1.25	1.5	17.8	702
4	6	0.8	0.8	1.25	1.5	19.2	840
4	10	1.0	0.8	1.25	1.6	22.8	1085
4	16	1.0	1.0	1.6	1.7	26.3	1570
4	25	1.2	1.0	1.6	1.8	27.8	1995
4	35	1.2	1.0	1.6	1.9	30.3	2480
4	50	1.4	1.2	2.0	2.0	35.4	3385
4	70	1.4	1.2	2.0	2.1	39.2	4372
4	95	1.6	1.2	2.0	2.2	44.3	5665
4	120	1.6	1.4	2.5	2.4	49.3	7324
4	150	1.8	1.4	2.5	2.5	53.6	8673
4	185	2.0	1.6	2.5	2.6	59.0	10580
4	240	2.2	1.6	2.5	2.8	65.7	13240
4	300	2.4	1.6	2.5	3.0	72.0	16025

Table 30 - Three and Half Core CU/PVC/SWA/PVC as per IEC 60502-1

Nominal Cross Sectional Area Of Phase	Nominal Cross Sectional Area Of Neutral	Nominal Thickness Of Insulation In Phase	Nominal Thickness Of Insulation In Neutral	Nominal Thickness Of Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
mm²	mm²	mm	mm	mm	mm	mm	mm	kg/km
25	16	1.2	1.0	1.0	1.6	1.8	27.5	1890
35	16	1.2	1.0	1.0	1.6	1.9	30.0	2274
50	25	1.4	1.2	1.0	2.0	2.0	33.5	3102
70	35	1.4	1.2	1.2	2.0	2.1	38.0	4035
95	50	1.6	1.4	1.2	2.0	2.3	42.5	5205
120	70	1.6	1.4	1.4	2.5	2.5	49.0	6840
150	70	1.8	1.4	1.4	2.5	2.6	53.0	7925
185	95	2.0	1.6	1.4	2.5	2.7	58.5	9645
240	120	2.2	1.6	1.6	2.5	2.9	64.5	12050
300	150	2.4	1.8	1.6	2.5	2.9	69.5	14507

Table 31 - Five Core CU/PVC/SWA/PVC as per BS 6346

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
5	1.5	0.6	0.8	0.9	1.4	14.3	420
5	2.5	0.7	0.8	0.9	1.5	16.3	520
5	4	0.8	0.8	1.25	1.5	19.0	805
5	6	0.8	0.8	1.25	1.6	20.9	985
5	10	1.0	1.0	1.6	1.7	25.8	1440
5	16	1.0	1.0	1.6	1.7	28.4	1795
5	25	1.2	1.0	1.6	1.9	33.5	2452
5	35	1.2	1.0	1.6	1.9	36.6	3035
5	50	1.4	1.2	2.0	2.1	43.0	4309
5	70	1.4	1.2	2.0	2.2	48.1	5593

DIMENSIONS Single Core Unarmoured Cable PVC Insulated

Table 32 - Single Core CU/PVC/PVC as per IEC 60502-1

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
1	1.5	0.8	1.4	7.0	55
1	2.5	0.8	1.4	7.5	70
1	4	1.0	1.4	8.5	95
1	6	1.0	1.4	9.0	120
1	10	1.0	1.4	10.0	165
1	16	1.0	1.4	11.0	220
1	25	1.2	1.4	12.5	325
1	35	1.2	1.4	13.5	420
1	50	1.4	1.4	15.0	555
1	70	1.4	1.4	16.5	760
1	95	1.6	1.5	19.0	1035
1	120	1.6	1.5	20.5	1270
1	150	1.8	1.6	22.5	1560
1	185	2.0	1.7	24.5	1945
1	240	2.2	1.8	27.5	2535
1	300	2.4	1.9	30.5	3145
1	400	2.6	2.0	33.5	3985
1	500	2.8	2.1	37.5	4990
1	630	2.8	2.2	41.0	6460

DIMENSIONS Multi Core Unarmoured Cables PVC Insulated

Table 33 - Two Core CU/PVC/PVC as per IEC 60502-1

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
2	1.5	0.8	1.8	11.0	140
2	2.5	0.8	1.8	12.0	175
2	4	1.0	1.8	14.0	245
2	6	1.0	1.8	15.0	315
2	10	1.0	1.8	17.0	435
2	16	1.0	1.8	18.5	540
2	25	1.2	1.8	18.0	680
2	35	1.2	1.8	20.0	885
2	50	1.4	1.8	23.0	1160
2	70	1.4	1.9	25.5	1590
2	95	1.6	2.0	28.5	2160
2	120	1.6	2.1	30.5	2650
2	150	1.8	2.2	34.0	3250
2	185	2.0	2.4	36.5	4040
2	240	2.2	2.6	44.0	5305
2	300	2.4	2.7	48.5	6560

Table 34 - Three Core CU/PVC/PVC as per IEC 60502-1

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
3	1.5	0.8	1.8	11.5	165
3	2.5	0.8	1.8	12.5	210
3	4	1.0	1.8	14.5	300
3	6	1.0	1.8	16.0	385
3	10	1.0	1.8	18.0	545
3	16	1.0	1.8	19.5	720
3	25	1.2	1.8	20.0	970
3	35	1.2	1.8	22.5	1270
3	50	1.4	1.8	26.0	1675
3	70	1.4	2.0	29.0	2320
3	95	1.6	2.1	33.0	3165
3	120	1.6	2.2	36.5	3910
3	150	1.8	2.3	40.0	4795
3	185	2.0	2.5	43.0	5960
3	240	2.2	2.7	49.5	7790
3	300	2.4	2.9	55.5	9685

Table 35 - Four Core CU/PVC/PVC as per IEC 60502-1

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	kg/km
4	1.5	0.8	1.8	12.5	195
4	2.5	0.8	1.8	13.5	250
4	4	1.0	1.8	15.5	365
4	6	1.0	1.8	17.0	470
4	10	1.0	1.8	19.5	650
4	16	1.0	1.8	21.5	910
4	25	1.2	1.8	23.5	1275
4	35	1.2	1.8	26.0	1665
4	50	1.4	1.9	28.5	2205
4	70	1.4	2.1	32.5	3060
4	95	1.6	2.2	37.0	4180
4	120	1.6	2.4	42.0	5190
4	150	1.8	2.5	46.5	6360
4	185	2.0	2.7	51.5	7930
4	240	2.2	2.9	58.0	10340
4	300	2.4	3.1	64.0	12835

Table 36 - Three and Half Core CU/PVC/PVC as per IEC 60502-1

Nominal Cross Sectional Area Of Phase	Nominal Cross Sectional Area Of Neutral	Nominal Thickness Of Insulation In Phase	Nominal Thickness Of Insulation In Neutral	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
mm ²	mm ²	mm	mm	mm	mm	kg/km
25	16	1.2	1.0	1.8	23.5	1175
35	16	1.2	1.0	1.8	26.0	1475
50	25	1.4	1.2	1.9	28.5	1985
70	35	1.4	1.2	2.0	32.5	2720
95	50	1.6	1.4	2.2	37.0	3715
120	70	1.6	1.4	2.3	42.0	4670
150	70	1.8	1.4	2.4	46.0	5565
185	95	2.0	1.6	2.6	51.5	7025
240	120	2.2	1.6	2.8	57.5	9100
300	150	2.4	1.8	3.0	63.5	11275

Table 37 - Five Core CU/PVC/PVC as per IEC 60502-1

No Of Core (No)	Nominal Cross Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm ²	mm	mm	mm	kg/km
5	1.5	0.8	1.8	13.5	230
5	2.5	0.8	1.8	14.5	300
5	4	1.0	1.8	17.0	435
5	6	1.0	1.8	18.5	565
5	10	1.0	1.8	21.5	785
5	16	1.0	1.8	23.5	1070
5	25	1.2	1.8	27.5	1585
5	35	1.2	1.9	30.5	2085
5	50	1.4	2.1	35.0	2915
5	70	1.4	2.2	39.5	4030

CONDUCTORS Specifications

Table 38 - Class 2 Stranded Conductors for Single Core and Multi-Core Cables

Cross	Minimum No. Of Wires In Conductor						Maximum Resistance Of Conductor At 20°C		
Sectional Area mm ²	Circular		Circular Compacted		Shaped		Annealed Copper Conductor		Aluminium or Aluminium Alloy conductor Ohm/km
	Cu	Al	Cu	Al	Cu	Al	Plain Wires Ohm/Km	Metal-Coated Wires Ohm/Km	
1,5	7	-	6	-	-	-	12.1	12,2	-
2,5	7	-	6	-	-	-	7.41	7,56	-
4	7	-	6	-	-	-	4.61	4,70	-
6	7	-	6	-	-	-	3.08	3,11	-
10	7	7	6	6	-	-	1.83	1,84	3,08
16	7	7	6	6	-	-	1.15	1,16	1,91
25	7	7	6	6	6	6	0.727	0,734	1,20
35	7	7	6	6	6	6	0.524	0,529	0,868
50	19	19	6	6	6	6	0.387	0,391	0,641
70	19	19	12	12	12	12	0.268	0,270	0,443
95	19	19	15	15	15	15	0.193	0,195	0,320
120	37	37	18	15	18	15	0.153	0,154	0,253
150	37	37	18	15	18	15	0.124	0,126	0,206
185	37	37	30	30	30	30	0.0991	0,100	0,164
240	37	37	34	30	34	30	0.0754	0,0762	0,125
300	61	61	34	30	34	30	0.0601	0,0607	0,100
400	61	61	53	53	53	53	0.047	0,0475	0,0778
500	61	61	53	53	53	53	0.0366	0,0369	0,0605
630	91	91	53	53	53	53	0.0283	0,0286	0,0469

The above table is in accordance with BS EN 60228 (previously BS 6360)

ELECTRICAL CHARACTERISTICS

Table 39 - 600/1000V Single Core Copper Armoured Cable / Unarmoured Cable

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop 3 Single Core Cables (3 Phase System)	
	Single core in trefoil					
	A		A	A		Trefoil
	Unarmoured	Armoured	Armoured	Armoured		
1.5	22	-	-	-	26.73	
2.5	30	-	-	-	16.37	
4	39	-	-	-	10.19	
6	49	-	-	-	6.81	
10	67	67	82	78	4.04	
16	92	92	108	101	2.56	
25	123	123	139	134	1.62	
35	146	146	165	154	1.18	
50	174	180	199	199	0.878	
70	222	230	244	239	0.620	
95	275	282	292	281	0.463	
120	321	328	332	315	0.379	
150	371	377	371	341	0.326	
185	430	433	417	376	0.276	
240	513	510	480	421	0.235	
300	594	581	536	459	0.212	
400	692	664	594	488	0.192	
500	801	751	658	529	0.179	
630	925	846	723	571	0.168	

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 40 - 600/1000V Two Core Armoured Cable /Unarmoured Cable

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop (1 Phase System)
	Two Core Armoured Cables				
	A		A	A	Trefoil
	Unarmoured	Armoured	Armoured	Armoured	V/A/km
1.5	22	24	33	27	30.86
2.5	30	32	42	35	18.9
4	39	43	56	46	11.76
6	50	55	70	58	7.86
10	67	74	94	77	4.66
16	97	98	121	99	2.94
25	122	128	157	127	1.86
35	151	158	188	153	1.35
50	183	190	223	181	1.00
70	232	239	273	224	0.702
95	287	295	328	269	0.516
120	335	341	372	307	0.419
150	383	389	417	345	0.352
185	444	449	470	391	0.295
240	529	530	544	453	0.245
300	611	605	609	509	0.216
400	711	696	687	575	0.192

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 41 - 600/1000V Three & Four Core Copper Armoured/Unarmoured Cable

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop (3 Phase System)
	Three Core & Four Core Armoured Cables				
	A		A	A	Trefoil
	Unarmoured	Armoured	Armoured	Armoured	V/A/km
1.5	19	20	28	22	26.73
2.5	27	27	36	29	16.37
4	34	37	47	39	10.19
6	44	46	59	48	6.81
10	58	64	79	65	4.04
16	83	83	102	83	2.55
25	105	109	131	107	1.61
35	129	134	157	128	1.17
50	157	163	187	152	0.866
70	200	205	229	187	0.608
95	246	253	274	226	0.447
120	288	293	312	258	0.363
150	330	335	349	291	0.305
185	381	386	394	329	0.256
240	454	456	455	380	0.212
300	524	519	509	427	0.187
400	608	597	574	490	0.167

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 42 - 600/1000V Single Core Aluminium, XLPE Insulated Cable

Current Carrying Capacity & Voltage Drop

Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop 3 Single Core Cables (3 Phase System)
	Single core in trefoil				
	A		A	A	Trefoil
	Unarmoured	Armoured	Armoured	Armoured	V/A/km
16	72	72	84	79	4.25
25	94	94	109	103	2.68
35	118	118	127	123	1.93
50	129	135	152	153	1.44
70	165	172	187	186	1.00
95	204	211	224	219	0.733
120	237	245	255	248	0.587
150	274	282	285	271	0.490
185	319	325	322	301	0.402
240	381	385	372	341	0.324
300	442	441	418	377	0.276
400	535	526	481	415	0.236
500	619	595	534	451	0.209
630	713	672	589	485	0.188

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 43 - 600/1000V Two Core Aluminium Armoured/Unarmoured Cable

Current Carrying Capacity & Voltage Drop

Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop (1 Phase System)
	Two Core				Trefoil
	A		A	A	V/A/km
	Unarmoured	Armoured	Armoured	Armoured	
16	73	74	93	76	4.90
25	90	95	119	96	3.08
35	111	116	142	116	2.23
50	134	140	169	138	1.65
70	171	177	207	169	1.15
95	211	218	248	204	0.835
120	235	235	266	232	0.668
150	269	269	304	256	0.550
185	308	308	349	293	0.448
240	364	364	406	336	0.356
300	409	409	450	372	0.298
400	470	470	492	425	0.249

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 44 - 600/1000V Three & Four Core Aluminium Armoured/Unarmoured Cable

Current Carrying Capacity & Voltage Drop

Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop (3 Phase System)
	Three Core & Four Core Armoured Cables				Trefoil
	A		A	A	V/A/km
	Unarmoured	Armoured	Armoured	Armoured	
16	63	63	78	64	4.25
25	79	83	100	82	2.67
35	97	101	120	97	1.93
50	118	122	142	116	1.43
70	150	154	175	144	0.994
95	185	190	210	173	0.723
120	216	221	239	198	0.578
150	247	253	267	223	0.476
185	287	293	304	253	0.388
240	342	346	352	294	0.308
300	395	396	396	332	0.258
400	420	420	428	357	0.216

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 45 - 600/1000V Single Core Copper Armoured/Unarmoured Cable PVC Insulated

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop 3 Single Core Cables (3 Phase System)
	Single core in trefoil				
	A		A	A	Trefoil
					V/A/km
	Unarmoured	Armoured	Armoured	Armoured	
1.5	16	-	-	-	25.10
2.5	22	-	-	-	15.40
4	29	-	-	-	9.60
6	36	-	-	-	6.40
10	49	49	68	64	3.80
16	67	67	89	84	2.40
25	90	90	115	111	1.50
35	107	107	136	127	1.10
50	123	129	162	159	0.828
70	156	163	198	193	0.587
95	194	200	238	226	0.442
120	226	232	270	249	0.365
150	260	265	301	274	0.314
185	302	303	338	300	0.268
240	360	356	388	335	0.229
300	415	407	434	367	0.206
400	484	462	480	391	0.191
500	557	520	528	418	0.178
630	641	582	577	450	0.166

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 46 - 600/1000V Two Core Copper Armoured/Unarmoured Cable PVC Insulated

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop (1 Phase System)
	Two Core				
	A		A	A	Trefoil
	Unarmoured	Armoured	Armoured	Armoured	V/A/km
1.5	16	16	26	21	28.96
2.5	22	22	33	27	17.74
4	29	29	44	36	11.04
6	37	38	55	46	7.38
10	48	52	74	61	4.38
16	65	68	95	78	2.77
25	87	91	126	103	1.75
35	107	111	152	123	1.26
50	130	135	180	146	0.94
70	163	169	222	180	0.662
95	202	209	266	217	0.488
120	235	241	302	247	0.40
150	269	274	338	277	0.337
185	311	317	382	314	0.284
240	370	374	441	364	0.239
300	426	426	493	408	0.213
400	495	488	554	459	0.192

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 47 - 600/1000V Three & Four Core Copper Armoured/Unarmoured Cable PVC Insulated

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop (3 Phase System)
	Three Core & Four Core Armoured Cables				
	A		A	A	Trefoil
	Unarmoured	Armoured	Armoured	Armoured	V/A/km
1.5	14	14	22	18	25.1
2.5	20	19	28	23	15.4
4	25	25	38	30	9.6
6	32	32	47	38	6.4
10	42	44	62	51	3.8
16	56	58	81	66	2.4
25	74	78	106	86	1.5
35	91	95	127	103	1.10
50	111	115	150	122	0.816
70	141	146	186	152	0.573
95	174	180	223	182	0.423
120	202	208	254	208	0.346
150	231	238	284	234	0.292
185	267	273	321	265	0.246
240	318	322	370	306	0.207
300	365	366	414	342	0.184
400	423	420	464	392	0.166

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 48 - 600/1000V Single Core Copper Armoured Cable / Unarmoured Cable

Current Carrying Capacity & Voltage Drop

Cross Sectional Area mm²	In Air		In Ground	In Duct	Approx Voltage Drop 3 Single Core Cables (3 Phase System)
	Single core in trefoil				
	A		A	A	Trefoil
	Unarmoured	Armoured	Armoured	Armoured	V/A/km
16	52	52	69	65	4.00
25	69	69	90	85	2.50
35	86	86	105	102	1.80
50	92	94	123	123	1.35
70	117	119	150	150	0.94
95	144	146	181	178	0.691
120	168	170	206	202	0.558
150	193	194	230	224	0.464
185	224	226	261	245	0.383
240	268	267	302	278	0.31
300	311	307	339	307	0.265
400	357	357	340	347	0.23
500	394	394	361	393	0.21
630	447	447	410	447	0.185

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 49 - 600/1000V Two Core Aluminium Armoured/Unarmoured Cable, PVC Insulated

Current Carrying Capacity & Voltage Drop

Cross Sectional Area mm ²	In Air		In Ground	In Duct	Approx Voltage Drop (1 Phase System)
	Two Core				
	A		A	A	Trefoil
	Unarmoured	Armoured	Armoured	Armoured	V/A/km
16	50	52	73	60	4.60
25	64	66	94	77	2.89
35	78	80	114	92	2.09
50	96	97	134	110	1.55
70	121	124	167	136	1.08
95	149	152	200	163	0.786
120	172	172	219	191	0.628
150	197	197	251	211	0.520
185	226	226	287	242	0.425
240	267	267	334	277	0.339
300	299	299	371	307	0.287
400	344	344	402	351	0.243

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 50 - 600/1000V Three & Four Core Aluminium Armoured Cable PVC Insulated

Current Carrying Capacity & Voltage Drop

Cross Sectional Area mm ²	In Air		In Ground	In Duct	Approx Voltage Drop (3 Phase System)
	Three Core & Four Core Armoured Cables				
	A		A	A	Trefoil
	Unarmoured	Armoured	Armoured	Armoured	V/A/km
16	42	44	62	50	4.0
25	56	57	80	65	2.5
35	68	70	96	78	1.8
50	83	86	114	93	1.3
70	106	108	141	115	0.934
95	131	134	170	139	0.681
120	151	155	194	159	0.544
150	174	177	218	178	0.450
185	200	205	247	203	0.368
240	239	245	288	238	0.294
300	276	282	326	270	0.249
400	308	308	353	286	0.210

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 51 - RATING FACTORS FOR VARIATION IN AMBIENT TEMPERATURE FOR CABLES LAID DIRECT IN GROUND OR IN DUCTS (FOR INSTALLATION IN GROUND & DUCTS ONLY)

Insulation	Ground temperature °C								
	15	20	25	30	35	40	45	50	55
XLPE	1.16	1.13	1.09	1.04	1.00	0.95	0.90	0.85	0.80
PVC	1.25	1.19	1.12	1.06	1.00	0.93	0.88	0.84	0.77

Table 52 - RATING FACTORS FOR DEPTH OF LAYING FOR CABLES LAID DIRECT IN GROUND

Depth (M)	In Ground		
	Upto 50 mm2	70 mm² to 300 mm2	Above 300 mm2
0.5	1	1	1
0.6	0.99	0.98	0.97
0.75	0.975	0.965	0.947
0.8	0.970	0.960	0.940
1.0	0.950	0.930	0.920
1.25	0.940	0.920	0.890
1.5	0.930	0.900	0.870
1.75	0.920	0.890	0.860
2.0	0.910	0.880	0.850

Table 53 - RATING FACTORS FOR DEPTH OF LAYING FOR CABLES LAID DIRECT IN DUCTS

Depth (M)	In Duct	
	Single Core	Multicore
0.5	1	1
0.6	0.98	0.99
0.75	0.957	0.982
0.8	0.950	0.980
1.0	0.930	0.960
1.25	0.910	0.950
1.5	0.890	0.940
1.75	0.880	0.940
2.0	0.870	0.930

Table 54 - Rating factors for variation in thermal resistivity of soil (average values), (FOR INSTALLATION IN GROUND)

Conductor Size mm²	Soil Thermal Resistivity						
	0.8	0.9	1.0	1.2	1.5	2.0	2.5
Single Core Cables							
Up to 150	1.16	1.11	1.07	1.00	0.91	0.81	0.73
185 to 630	1.17	1.12	1.07	1.00	0.91	0.80	0.73
Multi Core Cables							
Up to 16	1.12	1.08	1.05	1.00	0.93	0.84	0.77
25-150	1.14	1.10	1.06	1.00	0.92	0.82	0.75
185-400	1.15	1.10	1.07	1.00	0.92	0.81	0.74

Table 55 - Rating factors for variation in thermal resistivity of soil (average values), (FOR INSTALLATION IN DUCT)

Conductor Size mm²	Soil Thermal Resistivity						
	0.8	0.9	1.0	1.2	1.5	2.0	2.5
Single Core Cables							
Up to 150	1.10	1.07	1.04	1.00	0.94	0.86	0.80
185 to 630	1.11	1.08	1.05	1.00	0.93	0.85	0.79
Multi Core Cables							
Up to 16	1.04	1.03	1.02	1.00	0.97	0.92	0.88
25-150	1.06	1.04	1.03	1.00	0.95	0.90	0.85
185-400	1.07	1.05	1.03	1.00	0.95	0.88	0.83

Table 56 - Group rating factors for multicore cables in flat formation
(FOR INSTALLATION IN GROUND)

Number of cables in Group	Touching	Spacing			
		15cm	30cm	45cm	60cm
2	0.81	0.87	0.91	0.93	0.95
3	0.7	0.78	0.84	0.88	0.9
4	0.63	0.74	0.81	0.86	0.89
5	0.59	0.7	0.78	0.84	0.87
6	0.55	0.68	0.77	0.83	0.87
7	0.52	0.66	0.75	0.82	0.86
8	0.5	0.64	0.75	0.81	0.86
9	0.48	0.63	0.74	0.81	0.85
10	0.47	0.62	0.73	0.8	0.85
11	0.45	0.61	0.73	0.8	0.85
12	0.44	0.6	0.72	0.8	0.84

Table 57 - Group rating factors for circuits of three single core cables, in trefoil or laid touching in flat horizontal formation (FOR INSTALLATION IN GROUND)

Number of cables in Group	Touching	Spacing			
		15cm	30cm	45cm	60cm
2	0.78	0.83	0.88	0.91	0.93
3	0.66	0.73	0.79	0.84	0.87
4	0.61	0.68	0.73	0.81	0.85
5	0.56	0.64	0.73	0.79	0.83
6	0.53	0.61	0.71	0.78	0.82
7	0.5	0.59	0.69	0.76	0.82
8	0.49	0.57	0.68	0.76	0.81
9	0.47	0.56	0.67	0.75	0.81
10	0.46	0.55	0.67	0.75	0.80
11	0.44	0.54	0.66	0.74	0.80
12	0.43	0.53	0.66	0.74	0.80

Table 58 - Group rating factors for multicore cables in flat formation
(FOR INSTALLATION IN DUCT)

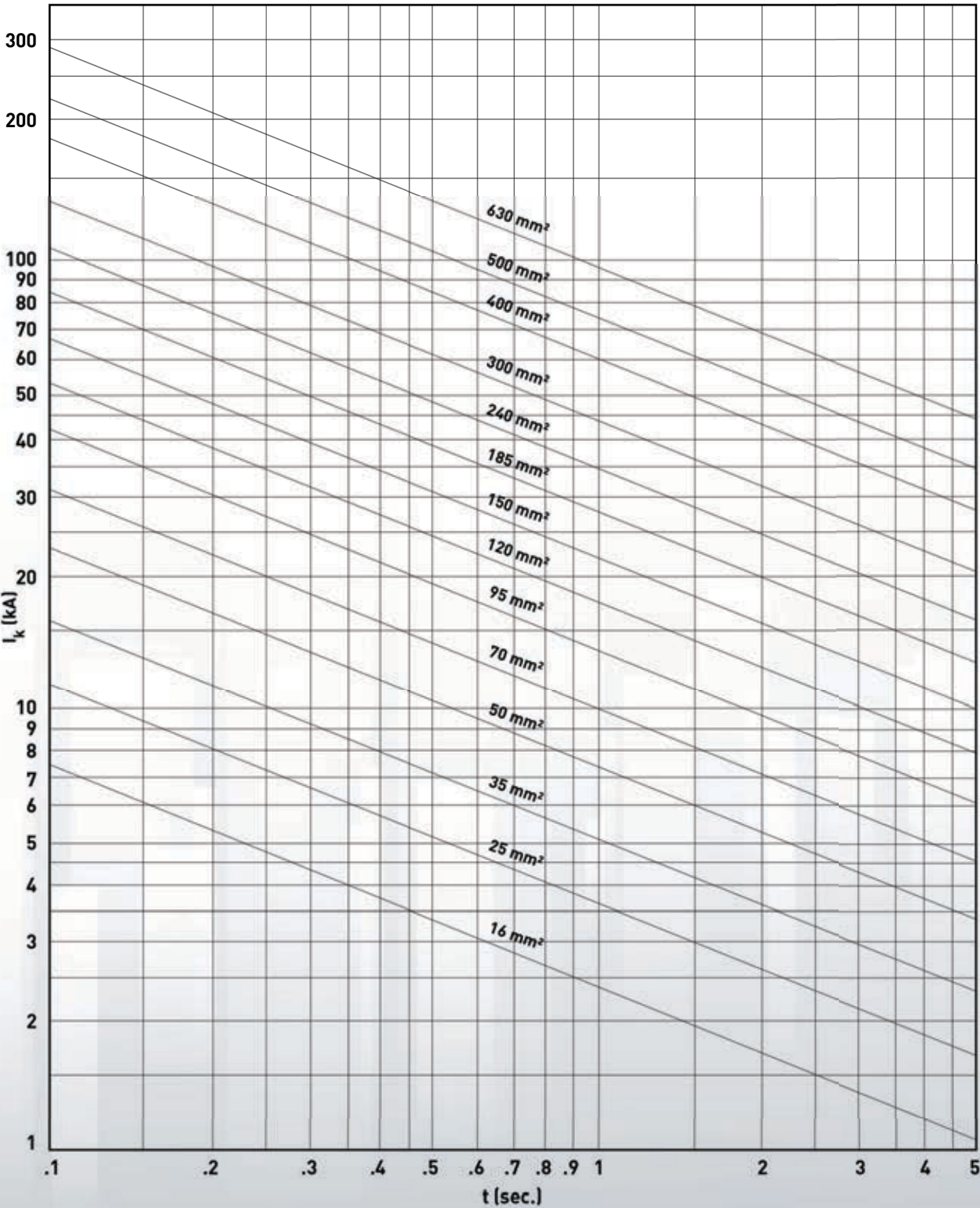
Number of cables in Group	Touching	Spacing		
		30cm	45cm	60cm
2	0.9	0.93	0.95	0.96
3	0.83	0.88	0.91	0.93
4	0.79	0.85	0.89	0.92
5	0.75	0.83	0.88	0.91
6	0.73	0.82	0.87	0.9
7	0.71	0.81	0.86	0.89
8	0.7	0.8	0.85	0.89
9	0.68	0.79	0.85	0.89
10	0.67	0.79	0.85	0.89
11	0.66	0.78	0.84	0.88
12	0.66	0.78	0.84	0.88

Table 59 - Group rating factors for circuits of three single core cables, in trefoil or laid touching in flat horizontal formation (FOR INSTALLATION IN DUCT)

Number of cables in Group	Touching	Spacing	
		45cm	60cm
2	0.87	0.91	0.93
3	0.78	0.84	0.87
4	0.74	0.81	0.85
5	0.7	0.79	0.83
6	0.69	0.78	0.82
7	0.67	0.76	0.82
8	0.66	0.76	0.81
9	0.65	0.75	0.81
10	0.64	0.75	0.8
11	0.63	0.74	0.8
12	0.63	0.74	0.8

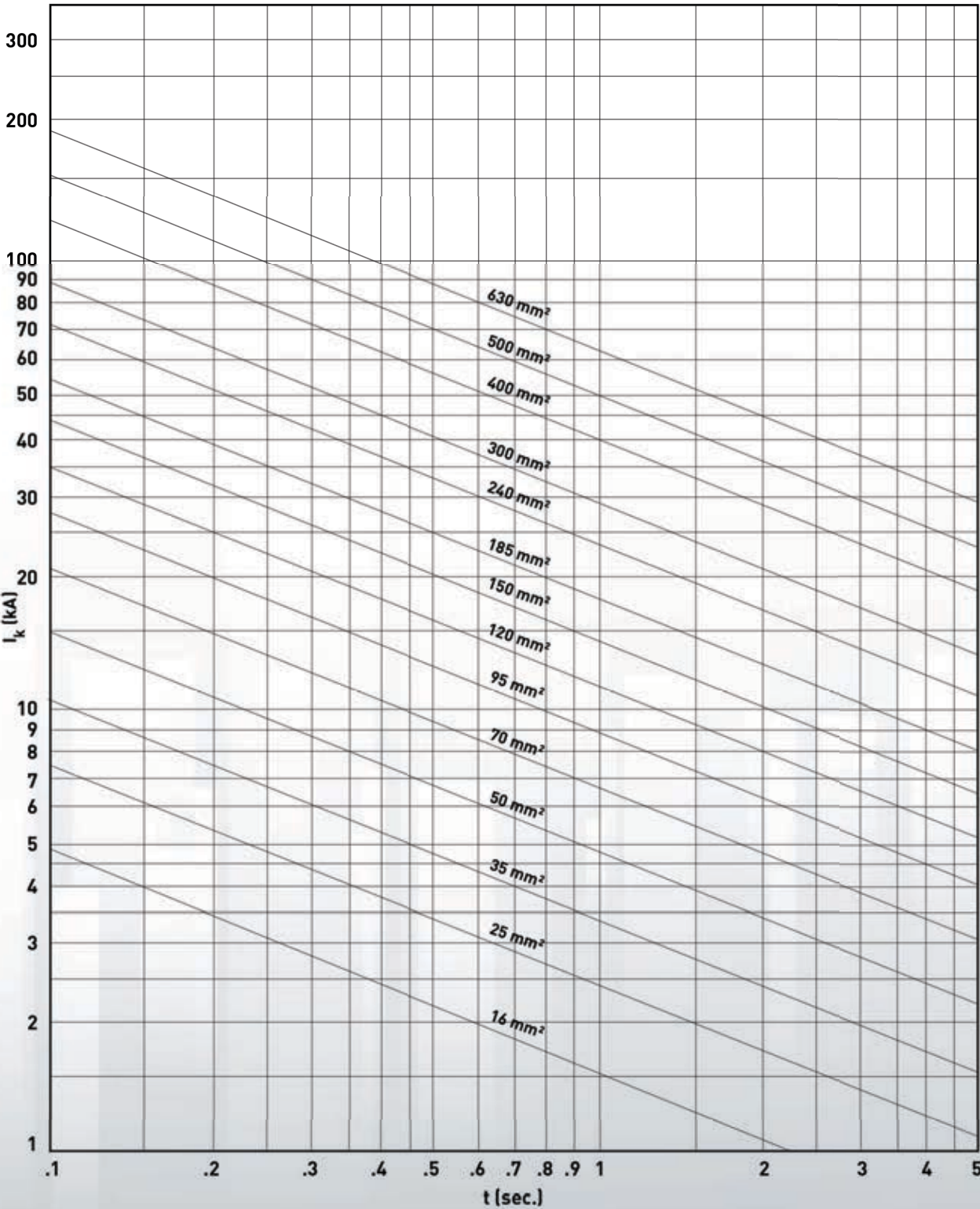
Short circuit current curves for CU/XLPE

$I_{SC} = \frac{KA}{\sqrt{t}}$
K= 0.143
A = Conductor Area in Sqmm
t = Short Circuit Time in Sec.



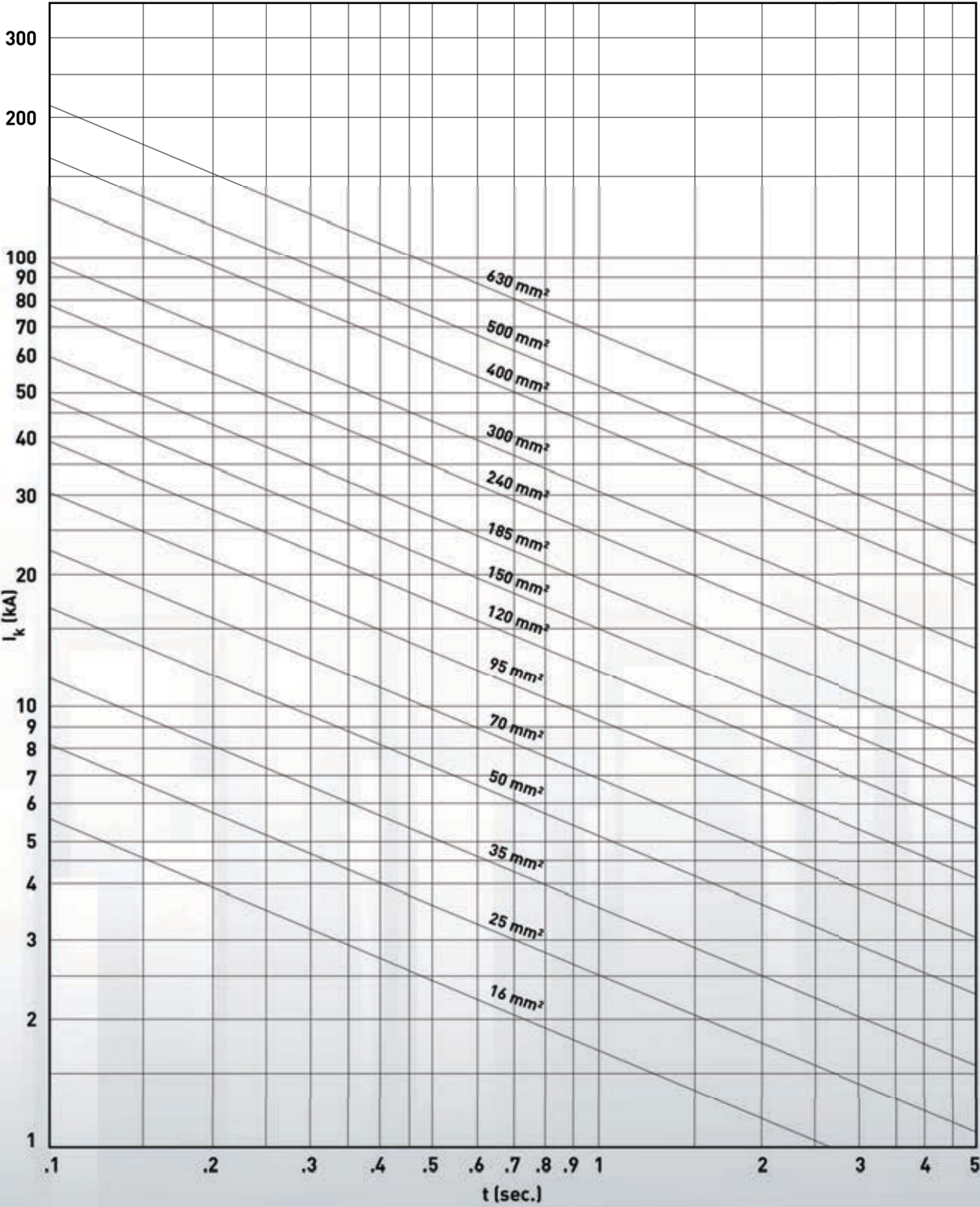
Short circuit current curves for AL/XLPE

$I_{SC} = \frac{KA}{\sqrt{t}}$
K= 0.094
A = Conductor Area in Sqmm
t = Short Circuit Time in Sec.



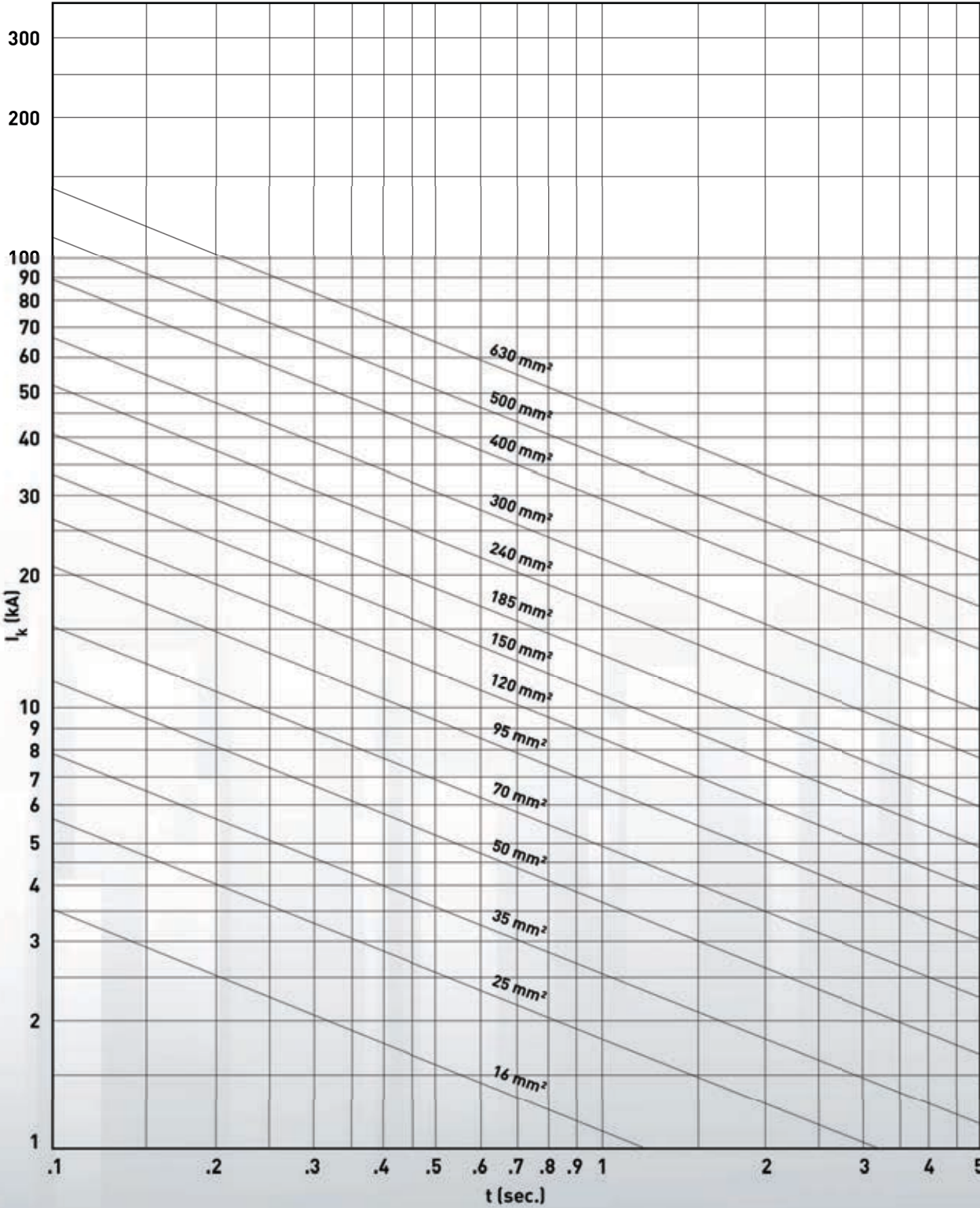
Short circuit current curves for CU/PVC

$I_{sc} = \frac{KA}{\sqrt{t}}$
K=0.115 up to 300mm² , 0.1028 from 400mm² and above
A = Conductor Area in mm²
t = Short Circuit Time in Sec.



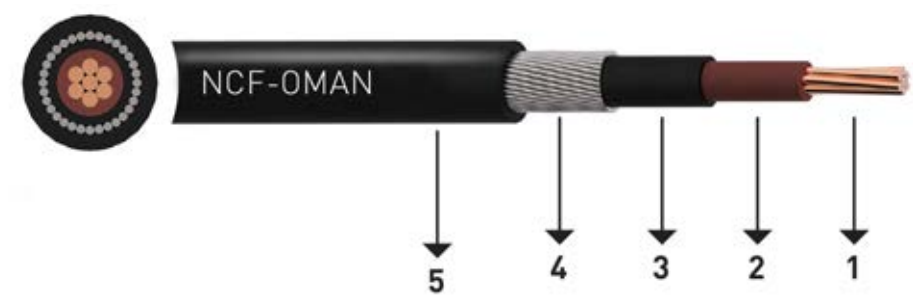
Short circuit current curves for AL/PVC

$I_{sc} = \frac{KA}{\sqrt{t}}$
K=0.076 up to 300mm² , 0.068 from 400mm² and above
A = Conductor Area in mm²
t = Short Circuit Time in Sec.



LOW SMOKE ZERO HALOGEN

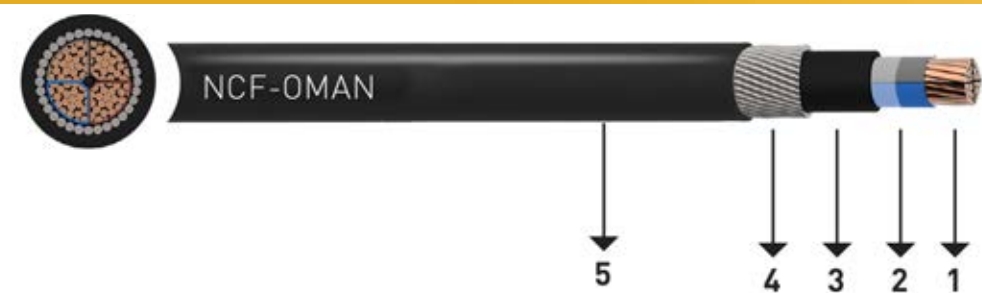
Single Core XLPE Insulated Armoured Cables



**BS 6724
IEC 60502-1**

- CONSTRUCTION:**
- 1. Circular Stranded Conductor
 - 2. XLPE Insulation
 - 3. LSZH Filling
 - 4. Aluminium Wire Armour
 - 5. LSZH Outer Sheath

MultiCore XLPE Insulated Armoured Cables



- CONSTRUCTION:**
- 1. Shaped Stranded Conductor
 - 2. XLPE Insulation
 - 3. LSZH Filling
 - 4. Steel Wire Armour
 - 5. LSZH Outer Sheath

APPLICATION

Power and auxiliary control cables for use in power networks, underground, outdoor and indoor applications and for use in cable ducting. For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.

CONSTRUCTION

Conductor	Class 2 stranded copper conductor according to BS EN 60228
Insulation	XLPE (Cross-Linked Polyethylene) Type GP8
Bedding	LSZH (Low Smoke Zero Halogen) Type LTS1
Armour	AWA (Single Core)/SWA(MultiCore)
Sheath	LSZH (Low Smoke Zero Halogen) Type LTS1

CHARACTERISTICS

Voltage Rating (Uo/U)	600/1000V
Temperature Rating	Fixed: -25°C to +90°C
Minimum Bending Radius	8 x overall diameter
Core Identification	1 core: Black 2 core: Red, Black 3 core: Red, Yellow, Black 4 core: Red, Yellow, Blue, Black Alternative Core Identification: White cores with Black numbers

Sheath Color **BK**

DIMENSIONS Single Core Armoured Cable

Table 60 - Single Core BS 6724/IEC 60502-1 CU/XLPE/LSZH/AWA/LSZH

No Of Core (No)	Nominal Cross-Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
1	50	1.0	0.8	0.9	1.5	17.5	630
1	70	1.1	0.8	1.25	1.5	20.2	890
1	95	1.1	0.8	1.25	1.6	22.3	1165
1	120	1.2	0.8	1.25	1.6	24.2	1415
1	150	1.4	1.0	1.6	1.7	27.4	1790
1	185	1.6	1.0	1.6	1.8	30.0	2180
1	240	1.7	1.0	1.6	1.8	32.8	2760
1	300	1.8	1.0	1.6	1.9	35.6	3375
1	400	2.0	1.2	2.0	2.0	40.5	4370
1	500	2.2	1.2	2.0	2.1	44.2	5400
1	630	2.4	1.2	2.0	2.2	48.8	6915

DIMENSIONS Multi Core Armoured Cables

Table 61 - Two Core BS 6724/IEC 60502-1 CU/XLPE/LSZH/SWA/LSZH

No Of Core (No)	Nominal Cross-Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
2	1.5	0.6	0.8	0.9	1.3	12.1	270
2	2.5	0.7	0.8	0.9	1.4	13.6	320
2	4	0.7	0.8	0.9	1.4	14.7	385
2	6	0.7	0.8	0.9	1.4	15.9	460
2	10	0.7	0.8	0.9	1.5	18.0	620
2	16	0.7	0.8	1.25	1.5	20.4	845
2	25	0.9	0.8	1.25	1.6	20.4	1000
2	35	0.9	1.0	1.6	1.7	23.3	1420
2	50	1.0	1.0	1.6	1.8	25.8	1720
2	70	1.1	1.0	1.6	1.9	29.0	2240
2	95	1.1	1.2	2.0	2.0	33.1	3060
2	120	1.2	1.2	2.0	2.1	36.1	3670
2	150	1.4	1.2	2.0	2.2	39.3	4365

Table 62 - Three Core BS 6724/IEC 60502-1 CU/XLPE/LSZH/SWA/LSZH

No Of Core (No)	Nominal Cross-Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
3	1.5	0.6	0.8	0.9	1.3	12.6	300
3	2.5	0.7	0.8	0.9	1.4	14.1	360
3	4	0.7	0.8	0.9	1.4	15.3	440
3	6	0.7	0.8	0.9	1.4	16.6	535
3	10	0.7	0.8	1.25	1.5	19.5	835
3	16	0.7	0.8	1.25	1.6	21.6	1040
3	25	0.9	1.0	1.6	1.7	23.6	1475
3	35	0.9	1.0	1.6	1.8	25.7	1850
3	50	1.0	1.0	1.6	1.8	28.5	2285
3	70	1.1	1.0	1.6	1.9	32.2	3025
3	95	1.1	1.2	2.0	2.1	37.0	4170
3	120	1.2	1.2	2.0	2.2	40.4	5060
3	150	1.4	1.4	2.5	2.3	45.5	6500

Table 63 - Four Core BS 6724/IEC 60502-1 CU/XLPE/LSZH/SWA/LSZH

No Of Core (No)	Nominal Cross-Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
4	1.5	0.6	0.8	0.9	1.3	13.3	335
4	2.5	0.7	0.8	0.9	1.4	15.0	415
4	4	0.7	0.8	0.9	1.4	16.4	505
4	6	0.7	0.8	1.25	1.5	18.7	735
4	10	0.7	0.8	1.25	1.5	21.1	960
4	16	0.7	0.8	1.25	1.6	23.4	1245
4	25	0.9	1.0	1.6	1.7	26.1	1860
4	35	0.9	1.0	1.6	1.8	28.6	2320
4	50	1.0	1.0	1.6	1.9	32.0	2860
4	70	1.1	1.2	2.0	2.1	37.7	4135
4	95	1.1	1.2	2.0	2.2	41.7	5290
4	120	1.2	1.4	2.5	2.3	47.1	6925
4	150	1.4	1.4	2.5	2.4	51.4	8235
4	185	1.6	1.4	2.5	2.6	56.6	9995
4	240	1.7	1.6	2.5	2.7	63.0	12565
4	300	1.8	1.6	2.5	2.9	68.8	15195

Table 64 - Five Core BS 6724/IEC 60502-1 CU/XLPE/LSZH/SWA/LSZH

No Of Core (No)	Nominal Cross-Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
5	1.5	0.6	0.8	0.9	1.4	14.3	410
5	2.5	0.7	0.8	0.9	1.4	16.1	502
5	4	0.7	0.8	0.9	1.5	17.8	623
5	6	0.7	0.8	1.25	1.5	20.0	876
5	10	0.7	0.8	1.25	1.6	22.9	1165
5	16	0.7	1.0	1.6	1.7	26.6	1742
5	25	0.9	1.0	1.6	1.8	31.5	2323
5	35	0.9	1.0	1.6	1.9	34.8	2932
5	50	1.0	1.2	2.0	2.0	40.4	4192

Table 65 - Multi Core Auxiliary/Control Cables BS 6724/IEC 60502-1 CU/XLPE/LSZH/SWA/LSZH

No Of Core (No)	Nominal Cross-Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Extruded Bedding	Nominal Diameter Of Armour Wire	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight
#	mm²	mm	mm	mm	mm	mm	kg/km
7	1.5	0.6	0.8	0.9	1.4	15.2	470
12	1.5	0.6	0.8	1.25	1.5	19.4	780
19	1.5	0.6	0.8	1.25	1.6	22.2	1000
27	1.5	0.6	1.0	1.6	1.7	26.7	1500
37	1.5	0.6	1.0	1.6	1.7	29.0	1800
7	2.5	0.7	0.8	0.9	1.4	17.1	581
12	2.5	0.7	0.8	1.25	1.6	22.4	1042
19	2.5	0.7	1.0	1.6	1.7	26.6	1536
27	2.5	0.7	1.0	1.6	1.8	30.7	2036
37	2.5	0.7	1.0	1.6	1.8	33.8	2471
7	4	0.7	0.8	1.25	1.5	19.7	866
12	4	0.7	1.0	1.6	1.6	25.7	1481
19	4	0.7	1.0	1.6	1.7	29.3	1940
27	4	0.7	1.0	1.6	1.9	34.4	2616
37	4	0.7	1.2	2.0	2.0	39.2	3535

ELECTRICAL CHARACTERISTICS CU/XLPE/LSZH/SWA/LSZH

Table 66 - 600/1000V Single Core LSZH Copper Armoured Cable

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air	In Ground	In Duct	Approx Voltage Drop 3 Single Core Cables (3 Phase System)	Impedance
	A	A	A	Trefoil	
	Armoured	Armoured	Armoured	V/A/m	
10	67	82	78	4.04	2.33
16	92	108	101	2.56	1.48
25	123	139	134	1.62	0.936
35	146	165	154	1.18	0.679
50	180	199	199	0.878	0.507
70	230	244	239	0.620	0.358
95	282	292	281	0.463	0.267
120	328	332	315	0.379	0.220
150	377	371	341	0.326	0.188
185	433	417	376	0.276	0.160
240	510	480	421	0.235	0.135
300	581	536	459	0.212	0.121
400	664	594	488	0.192	0.110
500	751	658	529	0.179	0.103
630	846	723	571	0.168	0.097

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 67 - 600/1000V Two Core Copper LSZH Armoured Cable

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air	In Ground	In Duct	Approx Voltage Drop	Impedance
	A	A	A	Trefoil	
	Armoured	Armoured	Armoured	V/A/Km	
1.5	24	33	27	30.86	15.4
2.5	32	42	35	18.9	9.45
4	43	56	46	11.76	5.88
6	55	70	58	7.86	3.93
10	74	94	77	4.66	2.33
16	98	121	99	2.94	1.47
25	128	157	127	1.86	0.931
35	158	188	153	1.35	0.673
50	190	223	181	1.00	0.500
70	239	273	224	0.702	0.350
95	295	328	269	0.516	0.258
120	341	372	307	0.419	0.210
150	389	417	345	0.352	0.176
185	449	470	391	0.295	0.147
240	530	544	453	0.245	0.122
300	605	609	509	0.216	0.107
400	696	687	575	0.192	0.095

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 68 - 600/1000V Three & Four Core LSZH Copper Armoured Cable

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air	In Ground	In Duct	Approx Voltage Drop (3 Phase System)	Impedance
	Three Core & Four Core Armoured Cables			Trefoil	W/Km
	A	A	A		
	Armoured	Armoured	Armoured		
1.5	20	28	22	26.73	15.4
2.5	27	36	29	16.37	9.45
4	37	47	39	10.19	5.88
6	46	59	48	6.81	3.93
10	64	79	65	4.04	2.33
16	83	102	83	2.55	1.47
25	109	131	107	1.61	0.931
35	134	157	128	1.17	0.673
50	163	187	152	0.866	0.500
70	205	229	187	0.608	0.350
95	253	274	226	0.447	0.258
120	293	312	258	0.363	0.210
150	335	349	291	0.305	0.176
185	386	394	329	0.256	0.147
240	456	455	380	0.212	0.122
300	519	509	427	0.187	0.107
400	597	574	490	0.167	0.095

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 69 - 600/1000V Five Core LSZH Copper Armoured Cable

Current Carrying Capacity & Voltage Drop

Copper Cross Sectional Area mm²	In Air	In Ground	In Duct	Approx Voltage Drop (3 Phase System)	Impedance
	Five Core Armoured Cables			Trefoil	W/Km
	A	A	A		
	Armoured	Armoured	Armoured		
1.5	17	24	19	26.7	15.4
2.5	23	30	25	16.4	9.45
4	31	40	33	10.2	5.88
6	40	50	42	6.81	3.93
10	53	68	55	4.04	2.33
16	71	87	71	2.55	1.47
25	92	113	91	1.61	0.931
35	114	135	110	1.17	0.673
50	137	161	130	0.867	0.500
70	172	197	161	0.606	0.350

Operating Conditions

Ambient air temp. 50 °C

Ground temp. 35 °C

Depth of Laying 0.50 m

Thermal Resistivity 1.2 K.m/W
of Soil

Table 70 - RATING FACTORS FOR VARIATION IN AMBIENT TEMPERATURE FOR LSZH CABLES LAID DIRECT IN GROUND

Maximum Conductor Temprature	Ground temperature °C							
	10	15	20	25	30	40	45	50
90°C	1.21	1.16	1.13	1.08	1.03	0.95	0.9	0.86

Table 71 - RATING FACTORS FOR VARIATION IN AMBIENT TEMPERATURE FOR LSZH CABLES LAID DIRECT IN AIR

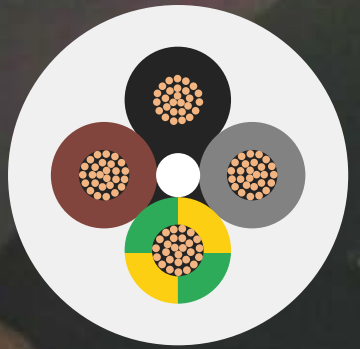
Maximum Conductor Temprature	Air temperature ° C							
	20	25	30	35	40	45	55	60
90°C	1.35	1.28	1.23	1.18	1.13	1.06	0.94	0.89

Table 72 - Correction factors for depth of laying other than 0.5 m for LSZH cables in ducts

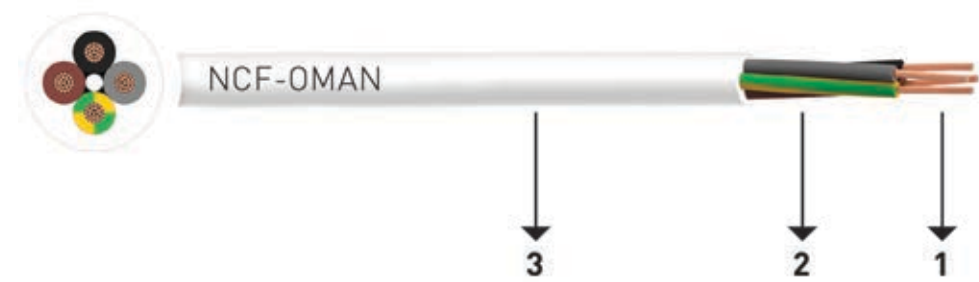
Depth of Laying	4 Core Cables
0.5	1
0.6	0.99
0.45	0.98
1	0.96
1.25	0.95
1.5	0.94
1.75	0.94
2	0.93
2.5	0.92

FLEXIBLE CABLES

PVC INSULATED WIRES
LSZH INSULATED WIRES



MULTICORE FLEXIBLE CABLE



BS EN 50525-2-11
CONSTRUCTION:
1. Flexible copper conductor
2. PVC Type TI2
3. PVC Type TM2

APPLICATION

Ordinary duty PVC cable for use in domestic appliances, kitchens and offices. For use with light portable appliances such as radios, table lamps and office equipment. Generally unsuitable for outdoor use or industrial applications.

CONSTRUCTION

Conductor	Class 5 flexible copper conductor according to BS EN 60228
Insulation	PVC (Polyvinyl Chloride) Type TI2 according to BS EN 50363
Sheath	PVC (Polyvinyl Chloride) Type TM2 according to BS EN 50363

CHARACTERISTICS

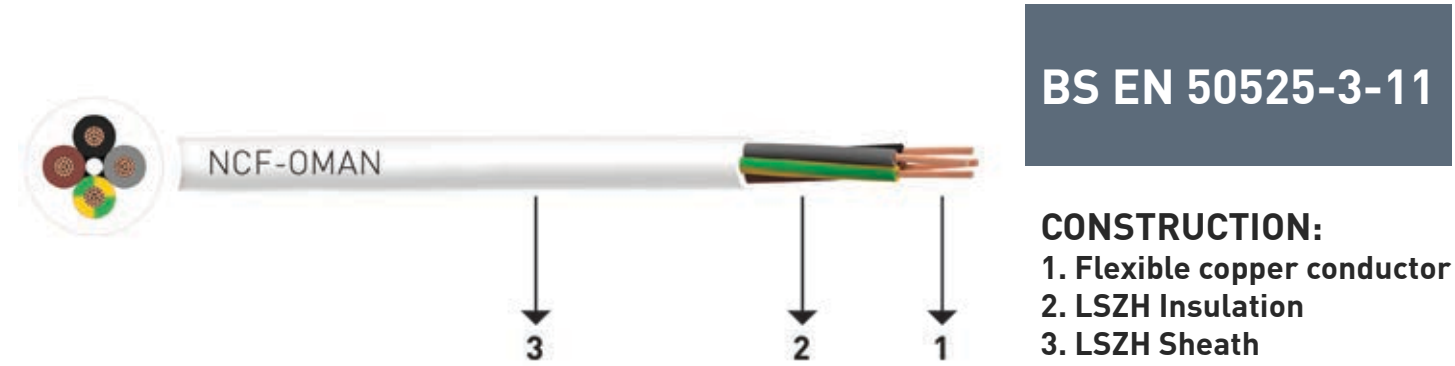
Voltage Rating (Uo/U)	300/500V
Temperature Rating	Flexed: 5°C to 70°C
Minimum Bending Radius	Flexed: 8 x overall diameter
Core Identification	2 core: Blue Brown 3 core: Green/Yellow Blue Brown 4 core: Green/Yellow Brown Black Grey 5 core: Green/Yellow Brown Black Grey Blue
Sheath Color	BK WH

DIMENSIONS

Table 73 - H05VV-F, CU/PVC/PVC

No Of Core (No)	Nominal Cross-Sectional Area mm ²	Nominal Thickness Of Insulation mm	Nominal Thickness Of Oversight mm	Approx Overall Diameter mm	Approx Weight kg/km
2	0.75	0.6	0.8	6.3	57
2	1	0.6	0.8	6.6	65
2	1.5	0.7	0.8	7.4	84
2	2.5	0.8	1.0	9.1	130
3	0.75	0.6	0.8	6.7	68
3	1	0.6	0.8	7	78
3	1.5	0.7	0.9	8.1	108
3	2.5	0.8	1.1	9.9	163
3	4	0.8	1.2	11.3	227
4	0.75	0.6	0.8	7.3	82
4	1	0.6	0.9	7.9	100
4	1.5	0.7	1.0	9	134
4	2.5	0.8	1.1	10.8	201
5	0.75	0.6	0.9	8.1	102
5	1	0.6	0.9	8.6	120
5	1.5	0.7	1.1	10	166

MULTICORE FLEXIBLE CABLE



APPLICATION

Used as an indoor general wiring cable primarily for installations in public areas. Examples include use on pendant lighting drops or as a general supply lead within hospital or airport projects. For installation where fire, smoke emission and toxic fumes create a potential risk to life and equipment.

CONSTRUCTION

Conductor	Class 5 flexible copper conductor according to BS EN 60228
Insulation	LSZH (Low Smoke Zero Halogen) Type TI6
Sheath	LSZH (Low Smoke Zero Halogen) Type TM7

CHARACTERISTICS

Voltage Rating (Uo/U)	300/500V
Temperature Rating	+5°C to +70°C
Minimum Bending Radius	5 x overall diameter
Core Identification	2 core: Blue, Brown 3 core: Green/Yellow, Blue, Brown 4 core: Green/Yellow, Brown, Black, Grey 5 core: Green/Yellow, Brown, Black, Grey, Blue
Sheath Color	BK WH

DIMENSIONS

Table 74 - H05Z1Z1-F, CU/LSZH/LSZH

No Of Core (No)	Nominal Cross-Sectional Area mm²	Nominal Thickness Of Insulation mm	Nominal Thickness Of Oversheath mm	Approx Overall Diameter mm	Approx Weight kg/km
2	0.75	0.6	0.8	6.3	57
2	1	0.6	0.8	6.6	65
2	1.5	0.7	0.8	7.4	84
2	2.5	0.8	1.0	9	130
2	4	0.8	1.1	10.4	180
3	0.75	0.6	0.8	6.7	68
3	1	0.6	0.8	7	78
3	1.5	0.7	0.9	8	107
3	2.5	0.8	1.1	9.9	163
3	4	0.8	1.2	11.1	212
4	0.75	0.6	0.8	7.3	83
4	1	0.6	0.9	7.9	100
4	1.5	0.7	1.0	9	134
4	2.5	0.8	1.1	10.8	201
4	4	0.8	1.2	12.2	290
5	0.75	0.6	0.9	8.1	103
5	1	0.6	0.9	8.3	130
5	1.5	0.7	1.1	10.4	170
5	2.5	0.8	1.2	12.1	255
5	4	0.8	1.4	15	360

Table 75 - Class 5 Flexible Conductors for Single Core and Multi-Core Cables

Nominal Cross Sectional Area of Conductor mm ²	Maximum Diameter Of Wires In Conductor mm	Maximum Resistance of Conductor at 20°C
		Plain wires ohms/km
0.5	0.21	39
0.75	0.21	26
1	0.21	19.5
1.5	0.26	13.3
2.5	0.26	7.98
4	0.31	4.95
6	0.31	3.30
10	0.41	1.91
16	0.41	1.21
25	0.41	0.78
35	0.41	0.554
50	0.41	0.386
70	0.51	0.272
95	0.51	0.206
120	0.51	0.161
150	0.51	0.129
185	0.51	0.106
240	0.51	0.0801

Table 76 - MultiCore Flexible Cables Current Carrying Capacity and Mass supportable

Nominal Cross Sectional Area of Conductor mm ²	Current Carrying Capacity Amps		Maximum Mass Supportable by Twin flexible cord Kg
	Single-Phase AC	Three-Phase AC	
0.75	6	6	3
1	10	10	5
1.5	16	16	5
2.5	25	20	5
4	32	25	5

Table 77 - MultiCore Flexible Cables Voltage Drop

Nominal Cross Sectional Area of Conductor mm ²	Dc Or Single-Phase Ac mV/A/m	Three-Phase Ac mV/A/m
0.75	62	54
1	46	40
1.5	32	27
2.5	19	16
4	12	10

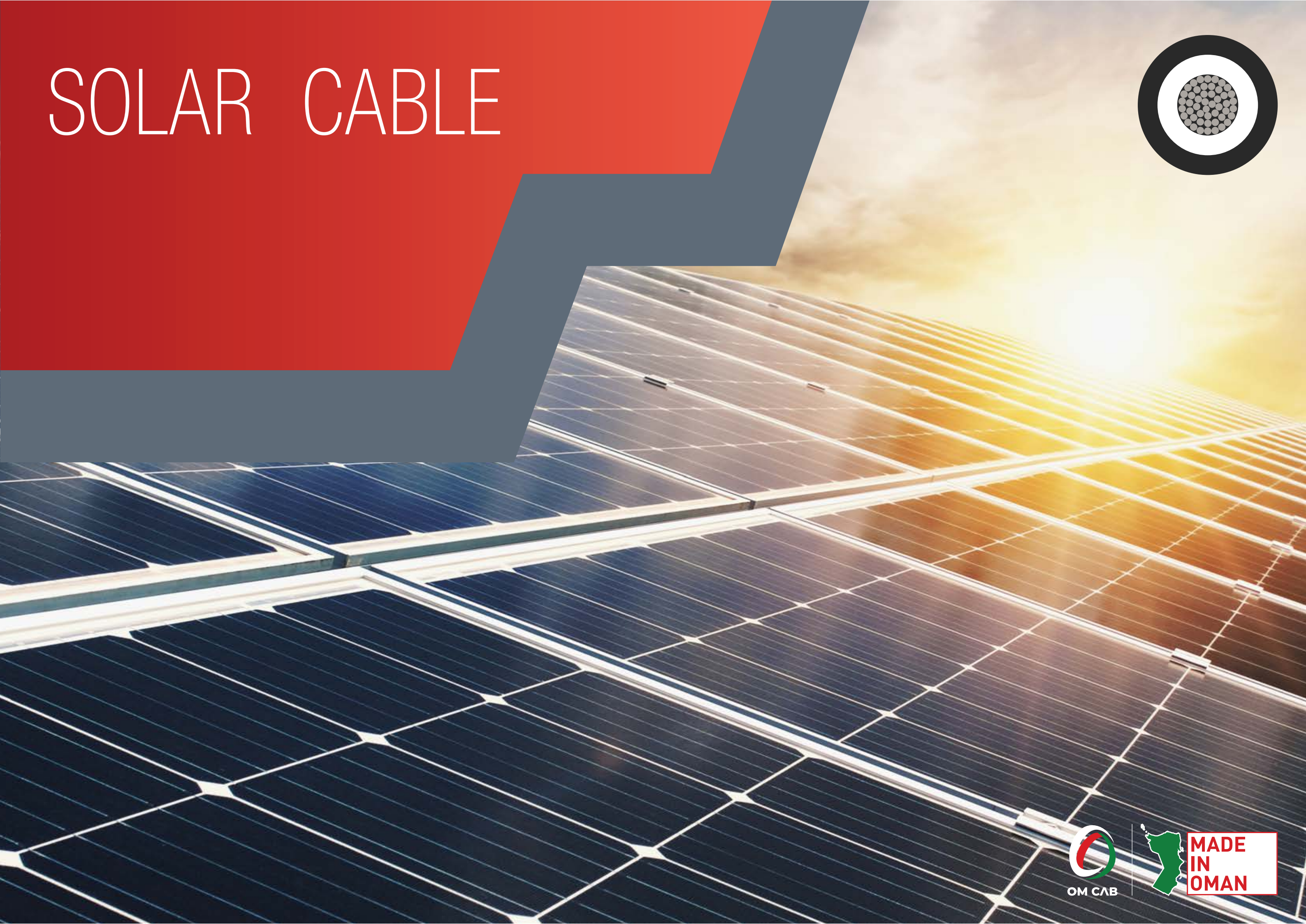
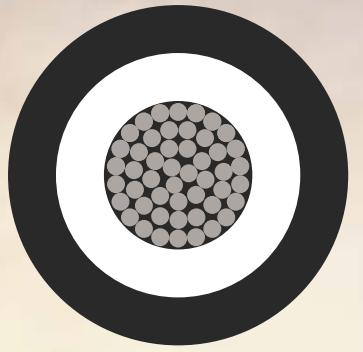
Table 78 - DE-RATING FACTORS

For Ambient Air Temperatures other than 30°C

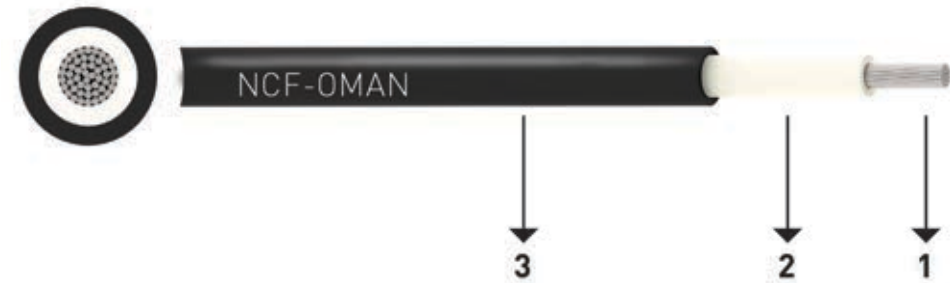
AMBIENT TEMPERATURE	35°C	40°C	45°C	50°C	55°C
DE-Rating Factor	0.91	0.82	0.71	0.58	0.41

The above table is in accordance with Table 4F3A of the 17th Edition of IEE Wiring Regulations

SOLAR CABLE



SOLAR CABLE



BS EN 50618

CONSTRUCTION:
1. Flexible tinned copper
2. Halogen-free cross-linked compound
3. Halogen-free cross-linked, flame retardant compound

APPLICATION

Updated harmonised (H1Z2Z2-K) European standard solar cable intended for the interconnection within photovoltaic systems such as solar panel arrays. Suitable for fixed installations, internal and external, within conduit or systems, but not direct burial applications. Our solar cable is ozone-resistant according to BS EN 50396, UV resistant according to HD 605/A1, and is tested for durability according to EN 60216. For installations where fire, smoke emissions and toxic fumes create a potential risk to life and equipment.

CONSTRUCTION

Conductor	Class 5 flexible tinned copper conductor
Insulation	Halogen-free cross-linked compound
Sheath	Halogen-free cross-linked, flame retardant compound

CHARACTERISTICS

Voltage Rating (Uo/U)	AC: 1000/1000V DC: 1500/1500V
Temperature Rating	Fixed: -40°C to +90°C
Minimum Bending Radius	Fixed: 4 x overall diameter Flexed: 5 x overall diameter
Maximum Voltage (Umax)	1.8kV DC (conductor/conductor, non earthed system, circuit not under load)
Maximum Conductor Temperature	+120°C (for 20000h)
Test Voltage	Test Voltage 6.5kV AC according to BS EN 50395

Sheath Color **BK**

DIMENSIONS

Table 79 - H1Z2Z2-K Solar Cable

No Of Core (No)	Nominal Cross-Sectional Area	Nominal Thickness Of Insulation	Nominal Thickness Of Oversheath	Approx Overall Diameter	Approx Weight	Minimum Tensile Strength In Operation
	mm ²	mm	mm	mm	kg/km	N
1	2.5	0.7	0.8	5.9	40	37
1	4	0.7	0.8	6.6	56	60
1	6	0.7	0.8	7.4	73	90
1	10	0.7	0.8	8.8	115	150
1	16	0.7	0.9	10.1	170	240
1	25	0.9	1.0	12.5	270	375
1	35	0.9	1.1	14.0	365	525
1	50	1.0	1.2	16.3	508	750
1	70	1.1	1.2	18.7	729	1050
1	95	1.1	1.3	20.8	923	1350
1	120	1.2	1.3	22.8	1178	1800
1	150	1.4	1.4	25.5	1460	2250
1	185	1.6	1.6	28.5	1777	2775
1	240	1.7	1.7	32.1	2252	3600

Table 80 - Class 5 Flexible Tinned Copper Conductors for Single Core

Nominal Cross Sectional Area of Conductor mm ²	Maximum Resistance of Conductor at 20°C	
	Metal-Coated Wires ohms/km	
2.5	8.21	
4	5.09	
6	3.39	
10	1.95	
16	1.24	
25	0.795	
35	0.565	
50	0.393	
70	0.277	
95	0.21	
120	0.164	
150	0.132	
185	0.108	
240	0.0817	

Table 81 - Current Carrying Capacity for Solar Cables

No of core (No)	Nominal Cross Sectional Area of Conductor	Maximum Current Carrying Capacity in Air
	mm²	Amps
1	2.5	41
1	4	55
1	6	70
1	10	98
1	16	132
1	25	176
1	35	218
1	50	276
1	70	347
1	95	416
1	120	488
1	150	566
1	185	644
1	240	775

**Based on 60°C ambient temperature

Table 82 - DE-RATING FACTORS for Solar Cables

For Ambient Air Temperatures other than 30°C

AMBIENT TEMPERATURE	UP to 60°C	70°C	80°C	90°C	100°C	110°C
DE-Rating Factor	1.00	0.91	0.82	0.71	0.58	0.41





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