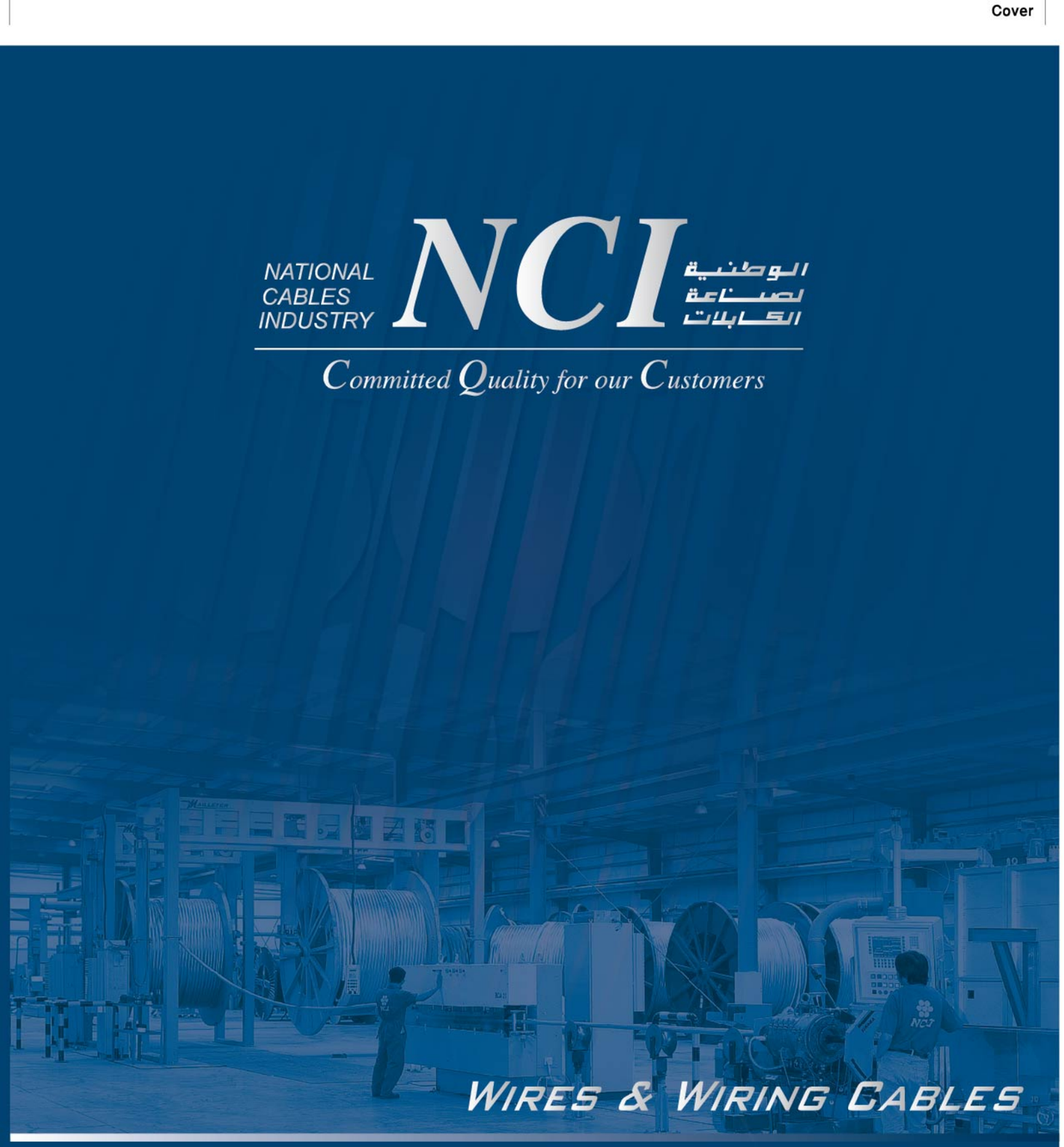
NATIONAL CABLES INDUSTRY

NCI

الوطنية لصناعة الكابلات

Committed Quality for our Customers



ISO 9001

MOHAMMED BIN RASHID AL MAKTOUM BUSINESS AWARD - 2005

GULF EXCELLENCE AWARD - 2006

SHARJAH Economic Excellence Award 2012

DUBAI QUALITY APPRECIATION PROGRAM

علامة الجودة الإماراتية
Emirates Quality Mark

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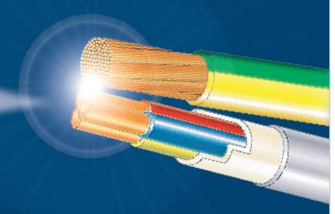
INNOVATIVE
PROCESSES AND
TECHNOLOGY STRATEGIES



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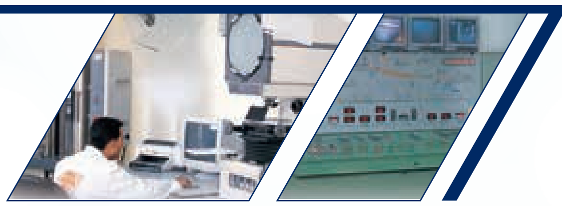


About NCI

INTRODUCTION

Power is the driving force of industries and the focus of advanced communities and aspiring Governments.

The unlimited ambitions, adopted by the **UAE** Government were behind the establishment of National Cables Industry, contributing to power distribution and transmission in the region.

As a leading manufacturer of wires and cables and with a mission of "POWER THE NATION" **NCI** manufactures cables based on strong technological base, continual improvement and maintains high Quality standards. **NCI** has devoted itself to development and continues to make steady strides towards a brighter future in **U.A.E.** and abroad by supplying Quality products in time.

NCI specializes in manufacturing of electrical wires, low medium and high voltage cables, fire retardant cables, low smoke and halogen free cables and overhead conductors for power transmission and distribution networks in compliance with British and other International Standards such as **IEC, DIN, ASTM, ICEA, AEIC, AS, NZS,** and **NFC** etc.

Quality: Effective Quality Management System is maintained at **NCI** as a key to long term operational reliability. Stringent quality control measures are implemented during procurement, during all stages of production and during final testing. Under professional control, NCI has demonstrated competence by obtaining Quality Management System **ISO-9001:2008** from **BASEC**, Product Certification Requirements from **BASEC** for "Enhanced Quality Management System for Product Related Functions", Occupational Health and Safety Management System **OHSAS 18001:2007** from **SGS,** Emirates Mark of Conformity from **Emirates Authority for Standardization and Metrology (ESMA).**

BASEC is a government-nominated independent non-profit making organization and a leader in product certification for more than 30 years and seeks to ensure National, European and International Manufacturers and their products in cable industry reach relevant standard.

NCI, understands customers needs and requirements that apply to their specific projects, offering an unparallel after-sales services. Our professional dedicated staff is always ready to promptly respond to clients, wherever they are.

Building wires are generally used to carry electrical current in almost every industrial, residential, commercial building. National Cables Industry (NCI) is a leading manufacturer of electrical building wire and cables in the UAE. NCI supplies both residential wire for electrical wiring in homes, apartments and manufactures wires for commercial and industrial buildings.

This catalogue lists wires, cables and cords rated 300/300V, 300/500V and 450/750V used for electric power, lighting, internal wiring , electric power, domestic, office and similar environments as specified in IEC 60227, BS EN 50525-2-31 (BS 6004), BS EN 50525-2-11 (BS 6500), BS 6231 and BS EN 50525-3-41 (BS 7211).

In addition to the above, National Cables Industry manufactures variety of cables and conductors to National and International Standards to meet specific customer needs and specifications.

CU/PVC WIRES 450/750 VOLTS *(ROUND SOLID)*

Copper Conductor PVC insulation, BS EN 50525-2-31 (BS 6004) and IEC 60227

H07V-U as per BS EN 50525-2-31 (BS 6004) Type IEC 01 as per IEC 60227
Conductor: Round Solid (Class 1)
Insulation: PVC – Type TI 1 as per BS EN 50525-2-31 (BS 6004), Type C as per IEC 60227
Based on special request, PVC insulation rated 85ºC and 90ºC (105ºC for reduced duration) can also be provided.

For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Solid)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable (Approx)	Maximum Conductor DC Resistance at 20ºC	Standard Packing Length
	Number of Wires in Conductor	Approx. Diameter of Conductor					
mm²		mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	1	1.38	0.7	2.8	20	12.1	100 Yards
1 x 2.5	1	1.78	0.8	3.4	32	7.41	100 Yards
1 x 4	1	2.25	0.8	3.9	47	4.61	100 Yards
1 x 6	1	2.76	0.8	4.4	65	3.08	100 Yards
1 x 10	1	3.57	1.0	5.6	110	1.83	100 Yards

Color: green/yellow blue black green red yellow brown grey orange white

Packing: 100 Yards in Coils or Spools
Based on specific requirement, wires can also be supplied in km lengths in wooden or steel drums.

C U/PVC WIRES 450/750 VOLTS *(ROUND STRANDED)*

Copper Conductor, PVC insulation, BS EN 50525-2-31 (BS 6004) and IEC 60227

H07V-R as per BS EN 50525-2-31 (BS 6004), Type IEC 01 as per IEC 60227
Conductor: Round Stranded (Class 2)
Insulation: PVC – Type TI 1 as per BS EN 50525-2-31 (BS 6004), Type C as per IEC 60227
Based on special request, PVC insulation rated 85ºC and 90ºC (105ºC for reduced duration) can also be provided.

For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Stranded)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable (Approx)	Maximum Conductor DC Resistance at 20ºC	Standard Packing Length
	Number of Wires in Conductor	Approx. Diameter of Conductor					
mm²		mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	7	1.56	0.7	3.0	21	12.1	100 Yards
1 x 2.5	7	1.98	0.8	3.6	33	7.41	100 Yards
1 x 4	7	2.52	0.8	4.1	48	4.61	100 Yards
1 x 6	7	3.12	0.8	4.7	68	3.08	100 Yards
1 x 10	7	4.01	1.0	6.0	113	1.83	100 Yards
1 x 16	7	5.03	1.0	7.0	170	1.15	100 Yards
1 x 25	7	6.30	1.2	8.7	265	0.727	100 Yards
1 x 35	7	7.44	1.2	9.8	361	0.524	100 Yards
1 x 50	19	8.10	1.4	10.9	470	0.387	3000 Drum
1 x 70	19	9.70	1.4	12.5	660	0.268	3000 Drum
1 x 95	19	11.40	1.6	14.6	920	0.193	3000 Drum
1 x 120	37	12.90	1.6	16.1	1140	0.153	2000 Drum
1 x 150	37	14.30	1.8	17.9	1410	0.124	2000 Drum
1 x 185	37	16.00	2.0	20.0	1770	0.0991	2000 Drum
1 x 240	61	18.40	2.2	22.8	2320	0.0754	1000 Drum
1 x 300	61	20.40	2.4	25.2	2900	0.0601	1000 Drum
1 x 400	61	23.20	2.6	28.4	3700	0.0470	500 Drum
1 x 500	61	26.70	2.8	32.3	4730	0.0366	500 Drum
1 x 630	61	30.40	2.8	36.0	6050	0.0283	500 Drum

Color: green/yellow blue black green red yellow brown grey orange white

Based on specific requirement, wires can also be supplied in km lengths in wooden or steel drums.

CU/PVC WIRES 450/750 VOLTS *(ROUND FLEXIBLE)*

Copper Conductor PVC insulation, BS EN 50525-2-31 (BS 6004) and IEC 60227

H07V–K as per BS EN 50525-2-31 (BS 6004) Type IEC 02 as per IEC 60227
Conductor: Flexible (Class 5)
Insulation: PVC – Type TI 1 as per BS EN 50525-2-31 (BS 6004), Type C as per IEC 60227
Based on special request, PVC insulation rated 85ºC and 90ºC (105ºC for reduced duration) can also be provided.

For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Round Flexible)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20ºC	Standard Packing Length
	Numbers of Wires in Conductor	Diameter of Conductor Approx.					
mm²	No x mm	mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	27 x 0.25	1.55	0.7	3.0	20	13.3	100 C
1 x 2.5	45 x 0.25	2.00	0.8	3.6	30	7.98	100 C
1 x 4	50 x 0.30	2.51	0.8	4.2	45	4.95	100 C
1 x 6	76 x 0.30	3.09	0.8	4.7	65	3.30	100 C
1 x 10	74 x 0.40	4.07	1.0	6.1	110	1.91	100 C
1 x16	118 x 0.40	5.08	1.0	7.1	165	1.21	100 C
1 x 25	182 x 0.40	6.35	1.2	9.0	255	0.780	100 C
1 x35	257 x 0.40	7.50	1.2	10.0	345	0.554	100 C
1 x 50	371 x 0.40	8.95	1.4	12.0	495	0.386	1000 D
1 x 70	336 x 0.50	10.70	1.4	14.0	690	0.272	1000 D
1 x 95	444 x 0.50	12.30	1.6	16.0	910	0.206	1000 D
1 x 120	568 x 0.50	14.00	1.6	17.2	1150	0.161	1000 D
1 x 150	708 x 0.50	15.60	1.8	19.2	1435	0.129	1000 D
1 x 185	864 x 0.50	17.20	2.0	21.2	1745	0.106	1000 D
1 x 240	1134 x 0.50	20.00	2.2	24.4	2265	0.0801	1000 D
1 x 300	1414 x 0.50	22.00	2.4	27.0	2815	0.0641	1000 D

Color: green/yellow blue black green red yellow brown grey orange white

C U/PVC WIRES 600/1000 VOLTS

Copper Conductor PVC insulation, BS 6231, Type CK

Conductor: Flexible Stranded (Class 5)
Insulation: PVC – Type TI 3 rated for 90ºC (105ºC for reduced duration) as per BS 6231 and Type E as per IEC 60227.

These wires are high temperature heat resistant wires, intended for use in the wiring of switch control, metering, relay and instrument panels of power switchgears and for internal connections in rectifier equipment and its motor starters and controllers. They are intended for use at alternating voltages not exceeding 600V to earth and direct voltage not exceeding 1000V to earth.

Nominal Cross Section	Conductor (Flexible)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20ºC	Standard Packing Length
	Numbers of Wires in Conductor	Diameter of Conductor Approx.					
mm²	No x mm	mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	27 x 0.25	1.55	0.8	3.0	20	13.3	100 C
1 x 2.5	45 x 0.25	2.0	0.8	3.6	30	7.98	100 C
1 x 4	50 x 0.30	2.5	0.8	4.11	45	4.95	100 C
1 x 6	76 x 0.30	3.09	0.8	4.7	65	3.30	100 C
1 x 10	74 x 0.40	4.07	1.0	6.1	110	1.91	100 C
1 x16	118 x 0.40	5.08	1.0	8.0	165	1.21	100 C
1 x 25	182 x 0.40	6.4	1.2	9.0	255	0.780	100 C
1 x35	257 x 0.40	7.5	1.2	10.0	345	0.554	100 C
1 x 50	371 x 0.40	8.95	1.4	12.0	495	0.386	1000 D
1 x 70	336 x 0.50	10.7	1.4	13.5	690	0.272	1000 D
1 x 95	444 x 0.50	12.3	1.6	15.5	910	0.206	1000 D
1 x 120	568 x 0.50	14.0	1.6	17.2	1150	0.161	1000 D
1 x 150	708 x 0.50	15.6	1.8	19.2	1435	0.129	1000 D
1 x 185	864 x 0.50	17.2	2.0	21.2	1745	0.106	1000 D
1 x 240	1134 x 0.50	20.0	2.2	24.4	2265	0.0801	1000 D

Color: green/yellow blue black green red yellow brown grey orange white

FREETOX WIRES

Fire is a complex and emotive subject, the consequences of fire can be catastrophic. The nature of organic material used in the manufacturer of cables and possible installation conditions in areas of the fire risk can lead to a situation where cables may contribute to the spread of fire, emission of smoke and release of combustion products injurious to equipment and human health.

In power stations, hospitals, theatres, hotels and other large public buildings, the loss of visibility caused by smoke evolved from burning cable materials can cause panic and create serious problems when evacuating personnel. Location of the fire source and fire fighting are also greatly hampered by smoke. Additionally the presence of corrosive gases in the smoke result in damage and failure of sensitive electrical equipment and may initiate long term deterioration of structures, as well as being injurious to the health of personnel even after short exposure.
Awareness of this situation has lead to the development of new cable technologies and introduction by major cable users of cable types with low emission of smoke, corrosive and toxic fumes and reduced flame propagation properties.
In considering cable systems with improved fire performance characteristics it is useful to first consider the various aspects of the effect of fire on a cable.

- Propagation of fire along cable runs
- Evolution of smoke leading to obstruction of exits
- Evolution of acid gas leading to corrosion of equipment
- Evolution of toxic fumes leading to personal injury

LSZH wires and cables use special formulation based on non-halogenated polymers in order to restrict the generation of smoke as much as possible. Materials are carefully selected and the compounds carefully designed in order to ensure the best performance of the external sheaths, which are directly exposed to fire.
LSZH wires and cables manufactured by NCI have been designed to offer improved performance in areas where smoke and fume emission in the event of a fire would cause particular problems. Compound used in LSZH cables do not contain halogen hence, do not emit halogenated acids when burnt which help in minimizing the total cost of the damage caused by fire and generate little smoke when burned. Furthermore, the rate at which this low level of smoke is released, is very much slower than that of PVC or similar halogenated polymers.
LSZH wires and cables manufactured by NCI have controlled limits of smoke evolution, when assessed by burning samples of cables in a 3 meter cube smoke chamber as per IEC 61034. Generally these combine the properties of low corrosive gas emission and low toxic gas emission as they are essentially halogen free when assessed by IEC 60754-1 and IEC 60754-2.

LSZH wire and cables are designed and manufactured to pass the following tests as per relevant IEC/BS Standard.

- Vertical flame propagation tests
- Smoke density tests
- Acidity, pH and conductivity test

CU/LSZH WIRES 450/750 VOLTS *(ROUND SOLID)*

Copper Conductor LSZH Insulation BS EN 50525-3-41 (BS 7211)

H07Z-U as per BS EN 50525-3-41 (BS 7211)
Conductor: Round Solid (Class 1)
Insulation: Low Smoke Thermosetting Insulation Type EI5 as per BS EN 50525-3-41 (BS 7211)

For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 DC earth.

Nominal Cross Section	Conductor (Solid)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable (Approx)	Maximum Conductor DC Resistance at 20ºC	Standard Packing Length
	Number of Wires in Conductor	Approx. Diameter of Conductor					
mm²		mm	mm	mm	Kg / Km	Ohm / Km	
1 x 1.5	1	1.38	0.7	3.0	20	12.1	100 Yards
1 x 2.5	1	1.78	0.8	3.5	32	7.41	100 Yards
1 x 4	1	2.25	0.8	4.0	47	4.61	100 Yards
1 x 6	1	2.76	0.8	5.0	65	3.08	100 Yards
1 x 10	1	3.57	1.0	6.0	110	1.83	100 Yards

Color: green/yellow blue black green red yellow brown grey orange white

CU/LSZH WIRES 450/750 VOLTS *(ROUND STRANDED)*

Copper Conductor LSZH Insulation BS EN 50525-3-41 (BS 7211)

H07Z–R as per BS EN 50525-3-41 (BS 7211)
Conductor: Round Solid (Class 2)
Insulation: Low Smoke Thermosetting Insulation Type EI5 as per BS EN 50525-3-41 (BS 7211)

For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

Nominal Cross Section	Conductor (Round Stranded)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
	Numbers of Wires in Conductor	Approx. Diameter of Conductor.					
mm²	No	mm	mm	mm	Kg / Km	Ohm / Km	Yards
1 x 1.5	7	1.56	0.7	3.0	21	12.1	100 C
1 x 2.5	7	1.98	0.8	3.6	33	7.41	100 C
1 x 4	7	2.52	0.8	4.1	48	4.61	100 C
1 x 6	7	3.12	0.8	4.7	68	3.08	100 C
1 x 10	7	4.01	1.0	6.0	113	1.83	100 C
1 x16	7	5.03	1.0	7.0	170	1.15	100 C
1 x 25	7	6.30	1.2	8.7	265	0.727	100 C
1 x35	7	7.44	1.2	9.8	360	0.524	100 C
1 x 50	19	8.10	1.4	10.9	470	0.387	3000 D
1 x 70	19	9.70	1.4	12.5	663	0.268	3000 D
1 x 95	19	11.40	1.6	14.6	920	0.193	3000 D
1 x 120	37	12.90	1.6	16.1	1140	0.153	2000 D
1 x 150	37	14.30	1.8	17.9	1410	0.124	2000 D
1 x 185	37	16.00	2.0	20.0	1770	0.0991	2000 D
1 x 240	61	18.40	2.2	22.8	2320	0.0754	1000 D
1 x 300	61	20.40	2.4	25.2	2900	0.0601	1000 D
1 x 400	61	23.20	2.6	28.4	3700	0.0470	500 D
1 x 500	61	26.70	2.8	32.3	4730	0.0366	500 D
1 x 630	61	30.40	2.8	36.0	6050	0.0283	500 D

Color: green/yellow blue black green red yellow brown grey orange white

CU/LSZH WIRES 450/750 VOLTS (ROUND FLEXIBLE)

Copper Conductor LSZH Insulation BS EN 50525-3-41 (BS 7211)

H07Z–K as per BS EN 50525-3-41 (BS 7211)
Conductor: Round Flexible (Class5)
Insulation: Low Smoke Thermosetting Insulation Type EI5 as per BS EN 50525-3-41 (BS 7211)

For internal wiring of equipment rated voltage up to 1000 V AC and up to 750 V DC to earth.

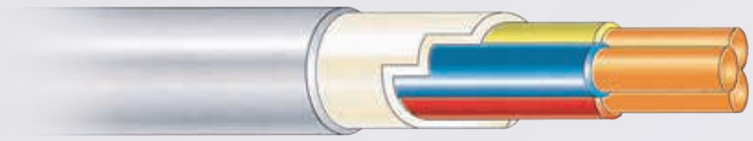
Nominal Cross Section	Conductor (Round Flexible)		Nominal Thickness of Insulation	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
	Numbers of Wires in Conductor	Approx. Diameter of Conductor					
mm²	No x mm	mm	mm	mm	Kg / Km	Ohm / Km	M ± 5%
1 x 1.5	27 x 0.25	1.55	0.7	3.0	20	13.3	100 C
1 x 2.5	45 x 0.25	2.00	0.8	3.6	30	7.98	100 C
1 x 4	50 x 0.30	2.51	0.8	4.1	45	4.95	100 C
1 x 6	76 x 0.30	3.09	0.8	4.7	65	3.30	100 C
1 x 10	74 x 0.40	4.07	1.0	6.1	110	1.91	100 C
1 x16	118 x 0.40	5.08	1.0	7.1	165	1.21	100 C
1 x 25	182 x 0.40	6.35	1.2	9.0	255	0.780	100 C
1 x35	257 x 0.40	7.50	1.2	10.0	345	0.554	100 C
1 x 50	371 x 0.40	8.95	1.4	12.0	495	0.386	1000 D
1 x 70	336 x 0.50	10.70	1.4	14.0	690	0.272	1000 D
1 x 95	444 x 0.50	12.30	1.6	16.0	910	0.206	1000 D
1 x 120	568 x 0.50	14.00	1.6	17.2	1150	0.161	1000 D
1 x 150	708 x 0.50	15.60	1.8	19.2	1435	0.129	1000 D
1 x 185	864 x 0.50	17.20	2.0	21.2	1745	0.106	1000 D
1 x 240	1134 x 0.50	20.0	2.2	24.4	2265	0.0801	1000 D
1 x 300	1414 x 0.50	22.0	2.4	27.0	2815	0.0641	1000 D

Color: green / yellow blue black green red yellow brown grey orange white

CU/PVC/PVC CABLES 300/500 VOLTS (ROUND SOLID)

Copper Conductor PVC insulated and PVC Sheathed - IEC 60227

H05VV–U, IEC 60227
TYPE 60227 IEC 10



Nominal Cross Section	Numbers of Wires in Conductor	Approx. Diameter of Conductor	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20ºC	Standard Packing Length
mm²		mm	mm	mm	mm	Kg / Km	Ohm / Km	M ± 5%
2 x 1.5	1	1.38	0.7	1.2	8.0	94	12.1	100 C
2 x 2.5	1	1.78	0.8	1.2	9.2	133	7.41	100 C
2 x 4	1	2.25	0.8	1.2	10.1	176	4.61	100 C
2 x 6	1	2.76	0.8	1.2	11.1	227	3.08	100 C
2 x 10	1	3.57	1.0	1.4	13.9	367	1.83	1000/2000
3 x 1.5	1	1.38	0.7	1.2	8.4	113	12.1	100 C
3 x 2.5	1	1.78	0.8	1.2	10.0	163	7.41	100 C
3 x 4	1	2.25	0.8	1.2	10.7	219	4.61	100 C
3 x 6	1	2.76	0.8	1.4	12.2	298	3.08	100 C
3 x 10	1	3.57	1.0	1.4	15.0	467	1.83	1000/2000
4 x 1.5	1	1.38	0.7	1.2	9.1	138	12.1	100 C
4 x 2.5	1	1.78	0.8	1.2	10.6	201	7.41	100 C
4 x 4	1	2.25	0.8	1.4	12.1	284	4.61	100 C
4 x 6	1	2.76	0.8	1.4	13.3	372	3.08	1000/2000
4 x 10	1	3.57	1.0	1.4	16.3	594	1.83	1000/2000
5 x 1.5	1	1.38	0.7	1.2	10.0	165	12.1	100 C
5 x 2.5	1	1.78	0.8	1.2	11.5	242	7.41	100 C
5 x 4	1	2.25	0.8	1.4	13.2	343	4.61	100 C
5 x 6	1	2.76	0.8	1.4	15.0	452	3.08	1000/2000
5 x 10	1	3.57	1.0	1.4	17.8	734	1.83	1000/2000

Colour of Insulation:
2 cores: Red, Black
3 cores: Red, Yellow and Blue
4 cores: Red, Yellow, Blue and Black
5 cores: Red, Yellow, Blue, Black and Green

Colour of Outer sheath – Grey.

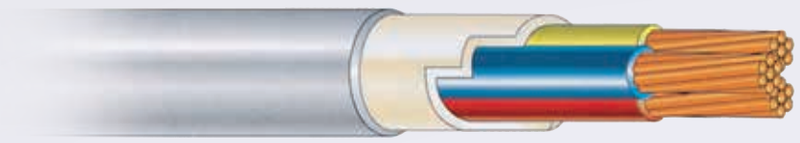
Note: Colour code as per BS Standards shall only be provided based on specific request which is as follows:

2 cores: brown and blue
3 cores: green/yellow, blue, brown
4 cores: green/yellow, blue, brown, black
5 cores: green/yellow, blue, brown, black and grey

CU/PVC/PVC CABLES 300/500 VOLTS *(ROUND STRANDED)*

Copper Conductor PVC insulated and PVC Sheathed and IEC 60227

H05VV–R, IEC 60227
TYPE 60227 IEC 10



Cross Section	Numbers of Wires in Conductor	Approx. Diameter of Conductor	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20ºC	Standard Packing Length
mm²		mm	mm	mm	mm	Kg / Km	Ohm / Km	M ± 5%
2 x 1.5	7	1.56	0.7	1.2	8.3	100	12.1	100 C
2 x 2.5	7	1.98	0.8	1.2	9.6	140	7.41	100 C
2 x 4	7	2.52	0.8	1.2	10.7	190	4.61	100 C
2 x 6	7	3.12	0.8	1.2	11.8	246	3.08	100 C
2 x 10	7	4.01	1.0	1.4	14.8	396	1.83	1000/2000
2 x 16	7	5.03	1.0	1.4	16.9	555	1.15	1000/2000
2 x 25	7	6.30	1.2	1.4	20.0	830	0.727	1000
2 x 35	7	7.44	1.2	1.6	23.0	1210	0.524	1000
3 x 1.5	7	1.56	0.7	1.2	8.8	121	12.1	100 C
3 x 2.5	7	1.98	0.8	1.2	10.2	170	7.41	100 C
3 x 4	7	2.52	0.8	1.2	11.4	235	4.61	100 C
3 x 6	7	3.12	0.8	1.4	13.0	320	3.08	100 C
3 x 10	7	4.01	1.0	1.4	16.0	500	1.83	1000/2000
3 x 16	7	5.03	1.0	1.4	18.0	714	1.15	1000/2000
3 x 25	7	6.30	1.2	1.6	22.0	1100	0.727	1000
3 x 35	7	7.44	1.2	1.6	24.0	1440	0.524	1000
4 x 1.5	7	1.56	0.7	1.2	9.6	148	12.1	100 C
4 x 2.5	7	1.98	0.8	1.2	11.1	215	7.41	100 C
4 x 4	7	2.52	0.8	1.4	12.8	304	4.61	100 C
4 x 6	7	3.12	0.8	1.4	14.2	399	3.08	1000/2000
4 x 10	7	4.01	1.0	1.4	17.3	635	1.83	1000/2000
4 x 16	7	5.03	1.0	1.4	19.8	912	1.15	1000/2000
4 x 25	7	6.30	1.2	1.6	24.0	1400	0.727	1000
4 x 35	7	7.44	1.2	1.6	27.0	1980	0.524	1000
5 x 1.5	7	1.56	0.7	1.2	10.4	176	12.1	100 C
5 x 2.5	7	1.98	0.8	1.2	12.2	250	7.41	100 C
5 x 4	7	2.52	0.8	1.4	14.0	360	4.61	100 C
5 x 6	7	3.12	0.8	1.4	15.5	484	3.08	1000/2000
5 x 10	7	4.01	1.0	1.4	19.0	786	1.83	1000/2000
5 x 16	7	5.03	1.0	1.6	22.2	1153	1.15	1000/2000
5 x 25	7	6.30	1.2	1.6	27.0	1740	0.727	1000
5 x 35	7	7.44	1.2	1.6	30.0	2310	0.524	1000

Colour of Insulation:
2 cores: Red, Black
3 cores: Red, Yellow and Blue
4 cores: Red, Yellow, Blue and Black
5 cores: Red, Yellow, Blue, Black and Green

Colour of Outer sheath – Grey.

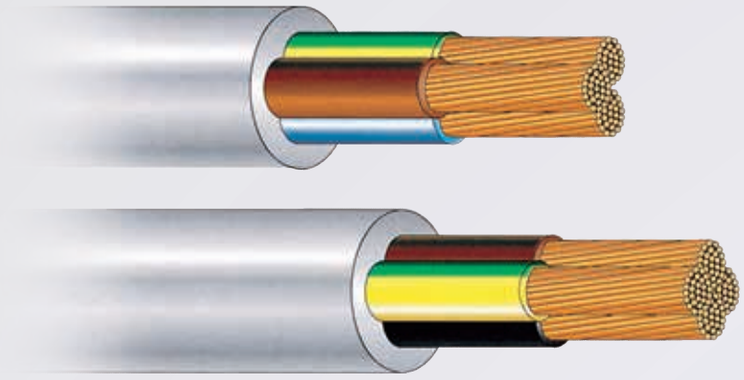
Note: Colour code as per BS Standards shall only be provided based on specific request which is as follows:

2 cores: brown and blue
3 cores: green/yellow, blue, brown
4 cores: green/yellow, blue, brown, black
5 cores: green/yellow, blue, brown, black and grey

CU/PVC/PVC CABLES 300/500 VOLTS

Flexible Copper Conductor PVC insulated and Sheathed, BS EN 50525-2-11 (BS 6500) and IEC 60227

H05VV-F, IEC 60227 & BS EN 50525-2-11 (BS 6500)
TYPE 60227 IEC 53
H05V2V2-F Heat Resistant Cables can be made on special request.



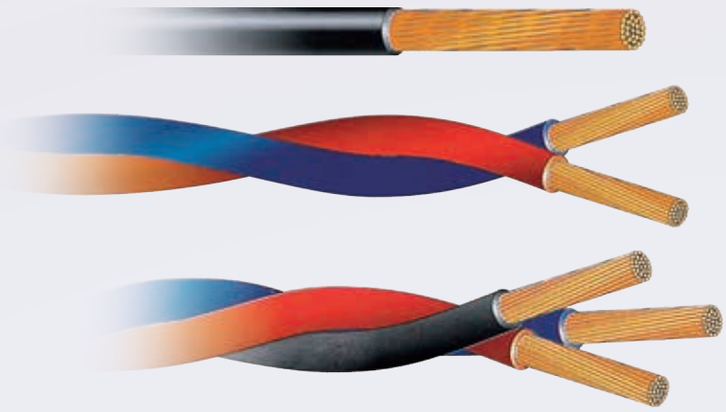
Nominal Cross Section	Numbers & diameter of Wires in Conductor	Approx. Diameter of Conductor	Nominal Thickness of Insulation	Nominal Thickness of Sheath	Approx. Overall Diameter	Weight of Finished Cable Approx.	Maximum Conductor DC Resistance at 20°C	Standard Packing Length
mm²	no x mm	mm	mm	mm	mm	Kg / Km	Ohm / Km	M ± 5%
2 x 0.75	22 x 0.20	1.20	0.6	0.8	6.4	56	26.0	100
2 x 1	29 x 0.20	1.30	0.6	0.8	6.6	63	19.5	100
2 x 1.5	27 x 0.25	1.55	0.7	0.8	7.5	83	13.3	100
2 x 2.5	45 x 0.25	2.00	0.8	1.0	9.2	128	7.98	100
2 x 4	50 x 0.3	2.51	0.8	1.1	10.4	175	4.95	100
3 x 0.75	22 x 0.20	1.20	0.6	0.8	6.78	67	26.0	100
3 x 1	29 x 0.20	1.30	0.6	0.8	7.0	75	19.5	100
3 x 1.5	27 x 0.25	1.55	0.7	0.9	8.2	105	13.3	100
3 x 2.5	45 x 0.25	2.00	0.8	1.1	9.8	160	7.98	100
3 x 4	50 x 0.3	2.51	0.8	1.2	11.3	225	4.95	100
4 x 0.75	22 x 0.20	1.20	0.6	0.8	7.4	81	26.0	100
4 x 1	29 x 0.20	1.30	0.6	0.9	7.8	95	19.5	100
4 x 1.5	27 x 0.25	1.55	0.7	1.0	9.1	132	13.3	100
4 x 2.5	45 x 0.25	2.00	0.8	1.1	11.0	197	7.98	100
4 x 4	50 x 0.3	2.51	0.8	1.2	12.4	275	4.95	100
5 x 0.75	22 x 0.20	1.20	0.6	0.9	8.3	101	26.0	100
5 x 1	29 x 0.20	1.30	0.6	0.9	8.5	114	19.5	100
5 x 1.5	27 x 0.25	1.55	0.7	1.1	10.2	163	13.3	100
5 x 2.5	45 x 0.25	2.00	0.8	1.2	12.1	243	7.98	100
5 x 4	50 x 0.3	2.51	0.8	1.4	13.9	345	4.95	100

Colour of Insulation:
2 cores: blue, brown.
3 cores: green/yellow, blue, brown.
4 cores: green/yellow, blue, brown black.
5 cores: green/yellow, blue, brown, black, grey.

Colour of Outer sheath – White.

PVC INSULATION, NON-SHEATHED CORDS FOR INTERNAL WIRING
Single Core and Twisted Twin

COPPER CONDUCTOR: BS EN 50525-2-11 (BS 6500) and IEC 60227, 300 / 500 VOLTS H05V-K, TYPE 60227 IEC 06



CONDUCTOR		Radial Thickness of insulation	Mean overall diameter (upper limit) single	Maximum Conductor DC Resistance at 20°C	Approximate Weight	
Nom. cross sectional area	Nom. diameter of strand				Single	Twin
mm²	mm	mm	mm	Ω / Km	Kg / Km	Kg / Km
0.5	0.20	0.6	2.4	39.0	9	19
0.75	0.20	0.6	2.6	26.0	12	24
1.0	0.20	0.6	2.8	19.5	15	29

Construction:

- Annealed Copper conductor as per BS EN 60228 (BS 6360) or IEC 60228, Class 5 (Class 1 and Class 2 conductors can be provided based on special request)
- PVC Insulation Type TI 1

380 V NYFAF – PVC INSULATION, NON-SHEATHED FLEXIBLE CORDS FOR INTERNAL WIRING
Single, Three and Four

Nominal Cross Section	CONDUCTOR		Nominal Thickness of Insulation	Overall Dimension max	Maximum Conductor DC Resistance at 20°C	Approx. Weight of Finished Cable
	Max. Diameter of Wire in Conductor	Approx. Diameter of Conductor				
mm²	mm	mm	mm	mm	Ω / Km	Kg / Km
1 x 0.50	0.21	0.9	0.6	2.4	37.1	9
1 x 0.75	0.21	1.1	0.6	2.6	24.7	12
3 x 0.50	0.21	0.9	0.6	5.2	39.0	27
3 x 0.75	0.21	1.1	0.6	5.6	26.0	36
4 x 0.50	0.21	0.9	0.6	5.8	39.0	36
4 x 0.75	0.21	1.1	0.6	6.2	26.0	48

Construction:
Annealed copper conductor
PVC Insulation.

PVC INSULATION, NON-SHEATHED FLEXIBLE CORDS FOR INTERNAL WIRING – PARALLEL TWIN COPPER CONDUCTOR
H03VH-H 300/300 VOLTS - IEC 60227

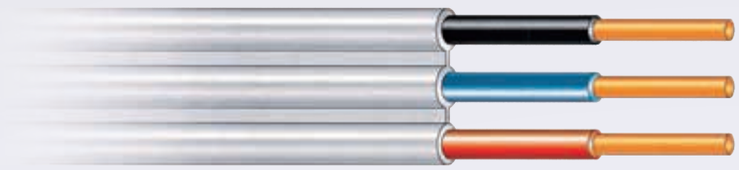
CONDUCTOR		Radial Thickness of Insulation	Mean overall dimensions		Maximum Conductor DC Resistance at 20ºC	Approx. Weight of Finished Cable
Nom. Cross Sectional area	Maximum diameter of Wire		Lower Limit	Upper Limit		
mm²	mm	mm	mm	mm	Ω / Km	Kg / Km
2 x 0.50	0.16	0.8	2.4 x 4.9	3.0 x 5.9	39.0	22
2 x 0.75	0.16	0.8	2.6 x 5.2	3.1 x 6.3	26.0	28

Construction:

- Annealed Copper conductor as per BS EN 60228 (BS 6360) or IEC 60228 Class 6.
- The conductors shall be laid parallel and covered with PVC insulation.
- The insulation shall be provided with a groove on each side between the conductors to facilitate separation of the cores.

380 V NYIFY PVC INSULATION, PVC SHEATHED

Cables, Flat Twin, Three – Core: Four core and Five core

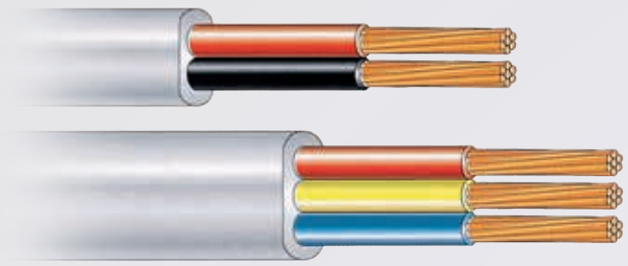


Nominal Cross Section	CONDUCTOR		Nominal Thickness of Insulation	Approx. Thickness of Sheath	Overall Dimension max	Maximum Conductor DC Resistance at 20°C	Approx. Weight of Finished Cable.
	Number of Wires in Conductor	Approx. Diameter of Conductor					
mm²	mm	mm	mm	mm	mm	Ω / Km	Kg / Km
2 x 1.5	1	1.38	0.4	0.8	4.4 x 12.0	11.9	60
2 x 2.5	1	1.78	0.5	0.9	5.2 x 13.5	7.14	92
2 x 4	1	2.25	0.6	0.9	6.0 x 15.5	4.47	130
3 x 1.5	1	1.38	0.4	0.8	4.4 x 19.0	11.90	90
3 x 2.5	1	1.78	0.5	0.9	5.2 x 21.5	7.14	145
3 x 4	1	2.25	0.6	0.9	6.0 x 25.0	4.47	200
4 x 1.5	1	1.38	0.4	0.8	4.4 x 26.0	11.9	130
4 x 2.5	1	1.78	0.5	0.9	5.2 x 29.5	7.14	195
5 x 1.5	1	1.38	0.4	0.8	4.4 x 33.0	11.9	165
5 x 2.5	1	1.78	0.5	0.9	5.2 x 37.0	7.14	240

Construction:
Plain annealed copper conductor, PVC Insulated.
The insulated conductor shall be laid in parallel and covered with PVC sheath. The sheath shall be closely fitting but shall not adhere to the cores. The sheath shall be provided with a groove on each side between the cores to facilitate separation of the cores.

PVC INSULATED, PVC SHEATHED CABLES SINGLE CORE, FLAT TWIN AND FLAT THREE CORES WITHOUT EARTH CONTINUITY CONDUCTOR

COPPER CONDUCTOR – STANDARD: BS EN 50525-2-31 (BS 6004) – 300 / 500 VOLTS



No. & Cross Sectional area of conductor	Number of Wires in Conductor	Radial Thickness of insulation	Radial Thickness of Sheath	Mean overall dimensions		Maximum Conductor DC Resistance at 20°C	Approx. Weight of Finished Cable
				Lower Limit	Upper Limit		
mm²	mm	mm	mm	mm	mm	Ω / Km	Kg / Km
1 x 1.0	1	0.6	0.8	3.8	4.5	18.1	27
1 x 1.5	1	0.7	0.8	4.2	4.9	12.1	34
1 x 2.5	1	0.8	0.8	4.8	5.8	7.41	48
1 x 4	7	0.8	0.9	5.4	6.8	4.61	70
1 x 6	7	0.8	0.9	6.0	7.4	3.08	91
1 x 10	7	1.0	0.9	7.2	8.8	1.83	142
1 x 16	7	1.0	1.0	8.4	10.5	1.15	209
1 x 25	7	1.2	1.1	10.0	12.5	0.727	318
1 x 35	7	1.2	1.1	11.0	13.5	0.524	418
2 x 1.0	1	0.6	0.9	4.0 x 6.2	4.7 x 7.4	18.1	50
2 x 1.5	1	0.7	0.9	4.4 x 7.0	5.4 x 8.4	12.1	67
2 x 2.5	1	0.8	1.0	5.2 x 8.4	6.2 x 9.8	7.41	101
2 x 4	7	0.8	1.0	5.6 x 9.6	7.2 x 11.5	4.61	142
2 x 6	7	0.8	1.1	6.4 x 10.5	8.0 x 13.0	3.08	190
2 x 10	7	1.0	1.2	7.8 x 13.0	9.6 x 16.0	1.83	304
2 x 16	7	1.0	1.3	9.0 x 15.5	11.0 x 18.5	1.15	437
3 x 1.0	1	0.6	0.9	4.0 x 8.4	4.7 x 9.8	18.1	72
3 x 1.5	1	0.7	0.9	4.4 x 9.8	5.4 x 11.5	12.1	101
3 x 2.5	1	0.8	1.0	5.2 x 11.5	6.2 x 13.5	7.41	152
3 x 4	7	0.8	1.1	5.8 x 13.5	7.4 x 16.5	4.61	218
3 x 6	7	0.8	1.1	6.4 x 15.0	8.0 x 18.0	3.08	285
3 x 10	7	1.0	1.2	7.8 x 19.0	9.6 x 22.5	1.83	451
3 x 16	7	1.0	1.3	9.0 x 22.0	11.0 x 26.5	1.15	655

Construction:
Plain annealed copper conductor Class 1 or Class 2 as per BS EN 60228 (BS 6360).

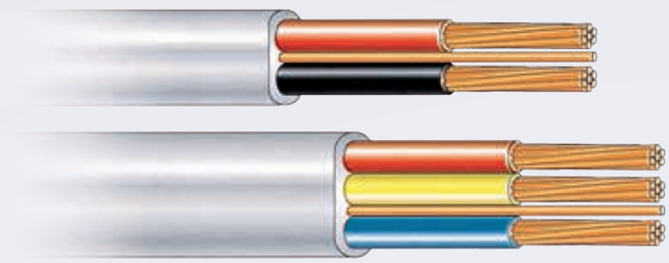
- PVC Insulation Type TI 1
- PVC Sheath Type 6
- The sheath shall be closely fitting but shall not adhere to the cores and in the case of twin and three-core, the cores shall be laid parallel.

Colour of Insulation as per BS EN 50525-2-31 (BS 6004):
Single : Brown or Blue
Twin : Brown and Blue
Three-core: Brown, Black (center), Grey

Colour of Insulation General
Single : Black
Twin : Red, Black
Three-core: Red, Yellow, Blue

Color of Sheath: Grey

PVC INSULATION, PVC SHEATHED CABLES,
With Earth Continuity Conductor, Flat Twin and Flat Three Cores



No. & Cross Sectional area of conductor	Number of Wires in Conductor	Radial Thickness of insulation	Radial Thickness of Sheath	Mean overall dimensions		Earth continuity conductor cross section	Maximum Conductor DC Resistance at 20°C	Approx. Weight of Finished Cable
				Lower Limit	Upper Limit			
mm²	mm	mm	mm	mm	mm	mm²	Ω / Km	Kg / Km
2 x 1.0	1	0.6	0.9	4.0 x 7.2	4.7 x 8.6	1.0	18.1	65
2 x 1.5	1	0.7	0.9	4.4 x 8.2	5.4 x 9.6	1.0	12.1	83
2 x 2.5	1	0.8	1.0	5.2 x 9.8	6.2 x 11.5	1.5	7.41	128
2 x 4	7	0.8	1.0	5.6 x 10.5	7.2 x 13.0	1.5	4.61	161
2 x 6	7	0.8	1.1	6.4 x 12.5	8.0 x 15.0	2.5	3.08	228
2 x 10	7	1.0	1.2	7.8 x 15.5	9.6 x 19.0	4	1.83	361
2 x 16	7	1.0	1.3	9.0 x 18.0	11.0 x 22.5	6	1.15	522
3 x 1.0	1	0.6	0.9	4.0 x 9.6	4.7 x 11.0	1.0	18.1	85
3 x 1.5	1	0.7	0.9	4.4 x 10.5	5.4 x 12.5	1.0	12.1	114
3 x 2.5	1	0.8	1.0	5.2 x 12.5	6.2 x 14.5	1.0	7.41	171
3 x 4	7	0.8	1.1	5.8 x 14.5	7.4 x 18.0	1.5	4.61	237
3 x 6	7	0.8	1.1	6.4 x 16.5	8.0 x 20.0	2.5	3.08	313
3 x 10	7	1.0	1.2	7.8 x 21.0	9.6 x 25.5	4	1.83	513
3 x 16	7	1.0	1.3	9.0 x 24.5	11.0 x 29.5	6	1.15	731

Construction:
Plain annealed copper conductor Class 1 or Class 2 as per BS EN 60228 (BS 6360).

- PVC Insulation Type TI 1
- PVC Sheath Type 6
- The sheath shall be closely fitting but shall not adhere to the cores which shall be laid parallel with un-insulated earth continuity conductor.

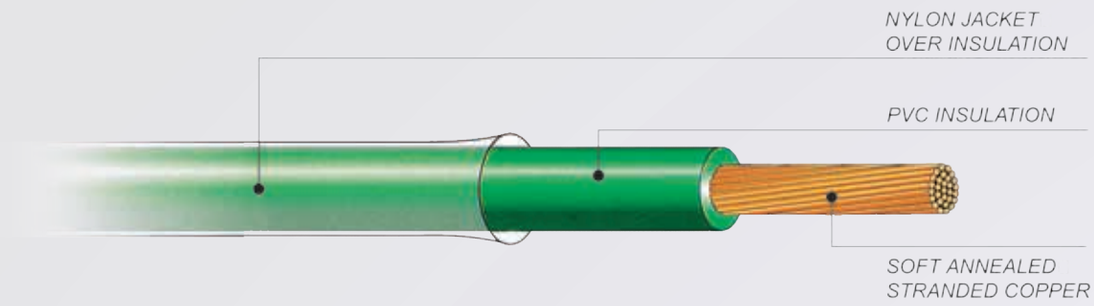
Colour of Insulation as per BS EN 50525-2-31 (BS 6004):
Single : Brown or Blue
Twin : Brown and Blue
Three-core: Brown, Black (center), Grey

Colour of Insulation General
Single : Black
Twin : Red, Black
Three-core: Red, Yellow, Blue

Color of Sheath: Grey

THHN, THWN, TFFN, WIRES

UL 83, UL 158



Construction:

Conductor - Soft drawn annealed copper conductors as per UL 83. Available in solid or stranded type for sizes 14, 12 and 10 AWG. Sizes 8 AWG and larger available in stranded only.

Insulation - Extruded Polyvinyl Chloride (PVC) compound rated 75 and 90°C.

Jacket - Tough, smooth, heat and light stabilized, low moisture absorption nylon conforming to UL requirements for type THHN or THWN. This jacket offers a great degree of protection to the PVC insulation from abrasion and cut through which may be encountered in pulling wire through conduits. Nylon has long been recognized as one of the toughest jacketing material used in wire and cable manufacturing.

Feature:

1. Meet UL ‘’VW – 1’ Flame Test requirements.
2. Wet or dry locations – Rated 90C dry, and 75°C wet.
3. Resistant to gas and oil exposure – Rated gasoline and oil resistant II per UL.
4. Versatile – Can be used as follows:
   a) THHN - 90°C dry building wire
   b) THWN - 75°C wet and dry building wire
   c) MTW - 90°C machine tool wire
5. Pulls easier – tough, smooth nylon jacket over PVC insulation.
6. Small diameter – more conductors per conduit.

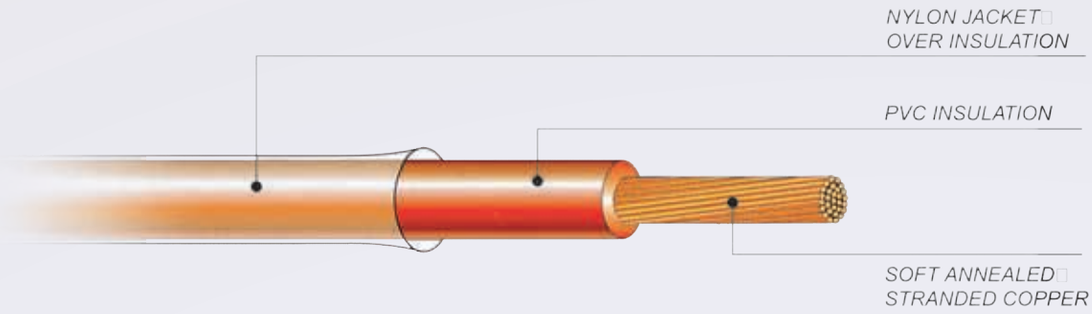
Applications:

Type THHN – THWN building wires are intended for general purpose applications and may be installed in conduit, duct or other recognized raceways in wet or dry locations. Type THHN – THWN wires are designed to operate at conductor temperatures of 75°C for 600 volts service in wet and dry location. Applicable for both new work and rewiring installations where the smaller wire diameter permits additional circuits or larger conductors to be installed in the conduit without exceeding fill limitations.

Type THHN – THWN wires are also recommended for industrial installation where exceptional resistance to heat and corrosive atmospheres are needed, such as chemical paints, oil refineries, paper mills, etc.

THHN, THWN, TFFN, WIRES

UL 83, UL 158



Markings:

The wire is surface marked as follows:

National Cables Industry, Year of manufacture, Typed THHN or THWN or TFFN Gasoline and Oil Resistant II, 600 Volts, VW – 1

Standards:
UL 83 - Underwriters Laboratories, Thermoplastic Insulated wires and Cables.
UL 1063 - Underwriters Laboratories, Machine Tool Wires and Cables.
UL 1581 - Underwriters Laboratories, Reference standard for Electrical wires, Cables and Flexible Cords.

600 Volts
Copper Conductor PVC Insulated Nylon Jacketed THHN/THWN Wires UL 83, 1581

AWG	Equivalent	CONDUCTORS		Nominal Thickness of Insulation	Approx. Thickness of Nylon Jacket	Approx. Overall Diameter	Approx. Weight of Conductor	Standard DC Resistance at 20°C	Standard Packing Length
		No. of Stranding Wire	Approx. Diameter of Conductor						
	mm²	No. x mm	mm	mm	mm	mm	Kg/Km	ohm/Km	M ± 5%
18*	0.82	16 x 0.254	1.19	0.38	0.10	2.3	12	18.23	152 C
16*	1.31	19 x 0.296	1.48	0.38	0.10	2.5	17	13.42	152 C
14	2.08	19 x 0.373	1.86	0.38	0.10	2.9	25	8.62	152 C
12	3.31	19 x 0.47	2.35	0.38	0.10	3.4	37	5.43	152 C
10	5.26	19 x 0.594	2.97	0.51	0.10	4.3	59	3.409	152 C
8	8.37	19 x 0.749	3.75	0.76	0.13	5.6	96	2.144	152 C
6	13.30	19 x 0.945	4.72	0.76	0.13	6.6	146	1.348	152 C
4	21.15	19 x 1.19	5.95	1.02	0.15	8.4	233	0.8481	1000C
2	33.63	19 x 1.50	7.50	1.02	0.15	9.9	356	0.5335	1000C
1/0	53.48	37 x 1.36	9.52	1.27	0.18	12.5	567	0.3354	1000C
2/0	67.43	37 x 1.52	10.64	1.27	0.18	13.6	697	0.266	1000C

*Listed as TFFN
Colour : Black, White, Red, Blue, Green, Yellow, Orange, Brown, etc.
Cutting Length: 152 M (500FT) in Coils 1000 M (3280 FT) in Drum

THHN, THWN, TFFN, WIRES

UL 83, UL 158

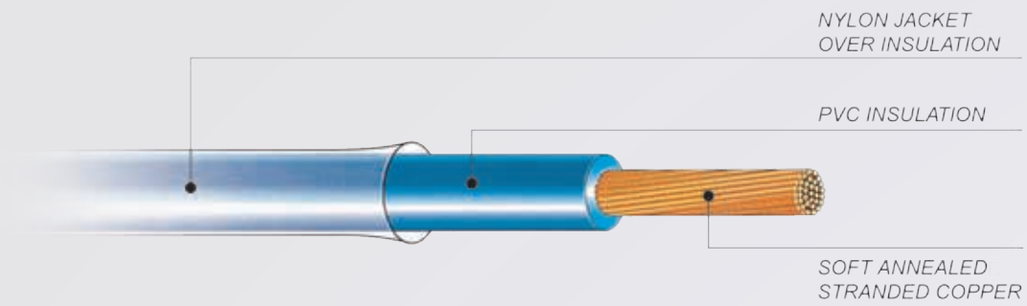


TABLE FOR THHN WIRE
TABLE 5

Size	THWN	THHN
AWG	AMPS	AMPS
18		14
16		18
14	20	25
12	25	30
10	35	40
8	50	55
6	65	75
4	85	95
2	115	130
1/0	150	170
2/0	175	195

Current carrying capacities of THWN and THHN insulated Copper Conductors rated 600 V not more than three conductors in raceway or cable or earth (Direct Buried) base on ambient tempt. of 30º C.

TABLE 6

SIZE	THWN	THHN
AWG	AMPS	AMPS
18		18
16		24
14	30	35
12	35	40
10	50	55
8	70	80
6	95	105
4	125	140
2	170	190
1/0	230	260
2/0	265	300

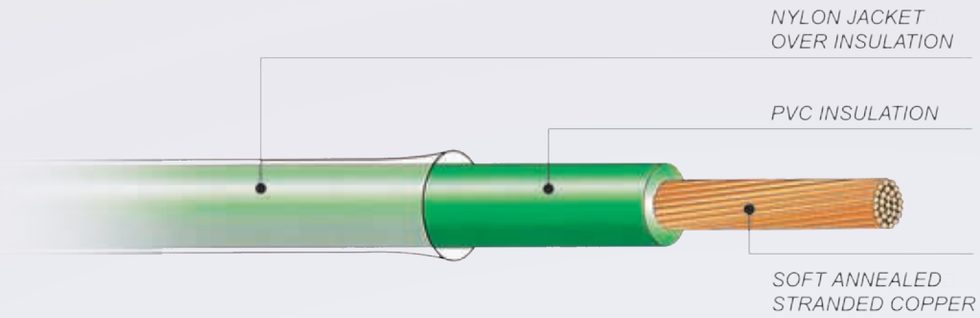
Current carrying capacities of THWN and THHN single insulated Copper Conductors rated 600 V in free air based on ambient air temperature of 30°C.

TABLE 7 –CORRECTION FACTORS

Ambient Temp. °C	THWN (75°C)	THHN (90°C)
21 - 25	1.05	1.04
26 - 30	1.00	1.00
31 - 35	0.94	0.96
36 - 40	0.88	0.91
41 - 45	0.82	0.87
46 - 50	0.75	0.82
51 -55	0.67	0.76
56 - 60	0.58	0.71
61 - 70	0.33	0.58
71 - 80		0.41

For ambient temperature other than 30°C multiply the ampacities given in table 5 & 6 by the appropriate factor given in Table 7.

THHN, THWN, TFFN, WIRES
UL 83, UL 158



THHN/ THWN BUILDING WIRE 90°C 600 VOLTS
TABLE 8 – Conduit Fill

Size AWG	Conduit Trade Size (inches)											
	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	5	6
18*	19	34	55	97	132	216	-	-	-	-	-	-
16*	15	26	43	76	104	169	-	-	-	-	-	-
14	13	24	39	69	94	154	-	-	-	-	-	-
12	10	18	29	51	70	114	164	-	-	-	-	-
10	6	11	18	32	44	73	104	160	-	-	-	-
8	3	5	9	16	22	36	51	79	106	136	-	-
6	1	4	6	11	15	26	37	57	76	98	154	-
4	1	2	4	7	9	16	22	35	47	60	94	137
3	1	1	3	6	8	13	19	29	39	51	80	116
2	1	1	3	5	7	11	16	25	33	43	67	97
1	-	1	1	3	5	8	12	18	25	32	50	72
1/0	-	1	1	3	4	7	10	15	21	27	42	61
2/0	-	1	1	2	3	6	8	13	17	22	35	51

Maximum number of THHN/THWN Conductors in conduit or tubing as per 1990 NEC

*Listed as TFFN

For groups or combinations of conductors, the conduit or tubing shall be of such size that the sum of the cross sectional areas of the individual conductors will not be more than percentage of the internal cross sectional area of the conduit or tubing as shown below.

TABLE 9 – Combination of Conductors

No. of Conductors	1	2	3	4	over 4
Percentage	53	31	40	40	40

Current Rating of CU/PVC Wires

TABLE 1

Current carrying capacity and associated voltage drop for single core PVC insulated cables, non-armoured, with or without sheath
CU/PVC 450 / 750 V Wires - BS EN 50525-2-31 (BS 6004) & BS 6231

Conductor operating temperature: 70ºC Ambient temperature: 30ºC

Conductor	Reference Method A (enclosed in conduit in the thermally insulating wall etc.)				Reference Method B (enclosed in conduit on a wall or in trunking etc.)				Reference method C (clipped direct)				Reference Method F(in free air or on a perforated cable tray horizontal or vertical									
													Touching						Space by one diameter			
	2 cables, single-phase a.c. or d.c.		3 or 4 cables three-phase a.c.		2 cables, single-phase a.c. or d.c.		3 or 4 cables three-phase a.c.		2 cables, single-phase a.c. or d.c flat and touching		3 or 4 cables three-phase a.c. flat and touching or trefoil		2 cables, single-phase a.c. or d.c. flat		3 cables, three phase a.c. flat		3 cables, three phase a.c. trefoil		2 cables, single phase a.c. or d.c. or 3 cables three phase a.c. flat			
																			Horiz	Vert	Single phase	Three phase
C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Current carrying capacity	Voltage drop	Voltage drop
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
mm²	A	A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	A	mV/ A/m	mV/A/m
1.0	11	44	10.5	38	13.5	44	12	38	15.5	44	14	38	-	44	-	38	-	38	-	-	44	38
1.5	14.5	29	13.5	25	17.5	29	15.5	25	20	29	18	25	-	29	-	25	-	25	-	-	29	25
2.5	20	18	18	15	24	18	21	15	27	18	25	15	-	18	-	15	-	15	-	-	18	15
4	26	11	24	9.5	32	11	28	9.5	37	11	33	9.5	-	11	-	9.5	-	9.5	-	-	11	9.5
6	34	7.3	31	6.4	41	7.3	36	6.4	47	7.3	43	6.4	-	7.3	-	6.4	-	6.4	-	-	7.3	6.4
10	46	4.4	42	3.8	57	4.4	50	3.8	65	4.4	59	3.8	-	4.4	-	3.8	-	3.8	-	-	4.4	3.8
16	61	2.8	56	2.4	76	2.8	68	2.4	87	2.8	79	2.4	-	2.8	-	2.4	-	2.4	-	-	2.8	2.4
25	80	1.80a	73	1.55	101	1.80	89	1.55	114	1.75	104	1.55	131	1.80	114	1.55	110	1.50	146	130	1.80	1.55
35	99	1.30a	89	1.10	125	1.30	110	1.10	141	1.25	129	1.10	162	1.30	143	1.10	137	1.10	181	162	1.30	1.15
50	119	1.00a	108	0.85	151	1.00	134	0.85	182	0.95	167	0.84	196	1.00	174	0.84	167	0.82	219	197	0.97	0.86
70	151	0.72a	136	0.61	192	0.72	171	0.61	234	0.66	214	0.60	251	0.72	225	0.60	216	0.57	281	254	0.69	0.63
95	182	0.56 a	164	0.48	232	0.56	207	0.48	284	0.50	261	0.47	304	0.56	275	0.47	264	0.43	341	311	0.54	0.51
120	210	0.47a	188	0.41	269	0.47	239	0.41	330	0.41	303	0.40	352	0.47	321	0.40	308	0.36	396	362	0.45	0.44
150	240	0.41a	216	0.36	300	0.41	262	0.36	381	0.34	349	0.34	406	0.41	372	0.34	356	0.30	456	419	0.39	0.40
185	273	0.37a	245	0.32	341	0.37	296	0.32	436	0.29	400	0.31	463	0.37	427	0.31	409	0.26	521	480	0.35	0.36
240	321	0.33a	286	0.29	400	0.33	346	0.29	515	0.25	472	0.27	546	0.33	507	0.27	485	0.22	615	569	0.31	0.34
300	367	0.31a	328	0.27	458	0.31	394	0.27	594	0.22	545	0.25	629	0.31	587	0.25	561	0.190	709	659	0.29	0.32
400	-	0.29a	-	0.25	546	0.29	467	0.25	694	0.20	634	0.24	754	0.29	689	0.24	656	0.175	852	795	0.27	0.31
500	-	0.28a	-	0.25	626	0.28	533	0.25	792	0.185	723	0.23	868	0.28	789	0.23	749	0.160	982	920	0.26	0.30
630	-	0.27a	-	0.24	720	0.27	611	0.24	904	0.175	826	0.22	1005	0.27	905	0.22	855	0.150	1138	1070	0.25	0.29
800	-	-	-	-	-	-	-	-	1030	0.165	943	0.22	1086	-	1020	0.22	971	0.145	1265	1188	0.25	0.29
1000	-	-	-	-	-	-	-	-	1154	0.160	1058	0.21	1216	-	1149	0.21	1079	0.140	1420	1337	0.24	0.28/

Where more precise calculation requires the use of resistive and reactive components of cable impedance, reference should be made to Table 4D1A and 4D1B of BS 7671.

Notes:

1. The current carrying capacities in columns 2 & 4 are also applicable to flexible cables to BS EN 50525-2-31 (BS 6004) (HO7V-K) where the cables are used in fixed installations.
2. Spacing larger than one cable diameter will result in a larger voltage drop.
3. Cables to BS 6231 when installed in conduit or trunking are rated for 70 ºC

Correction Factors
For Ambient Temperature

Ambient Temperature	25ºC	30ºC	35ºC	40ºC	45ºC	50ºC	55ºC	60ºC
Correction Factor	1.03	1.0	0.94	0.87	0.79	0.71	0.61	0.50

Current Rating of CU/LSZH Wires

TABLE 2
Current carrying capacity and associated voltage drop for single core XLPE insulated cables, non-armoured, with or without sheath CU/LSZH 450 / 750 V Wires - BS EN 50525-3-41 (BS 7211)

Conductor operating temperature: 90ºC Ambient temperature: 30ºC

Conductor	Reference Method A (enclosed in conduit in thermally insulating wall etc.)				Reference Method B (enclosed in conduit on a wall or in trunking etc.)				Reference Method C (clipped direct)				Reference Method F(in free air or on a perforated cable tray horizontal or vertical						Reference Method G (in free air)			
													Touching						Space by one diameter			
	2 cables, single-phase a.c. or d.c.		3 or 4 cables three-phase a.c.		2 cables, single-phase a.c. or d.c.		3 or 4 cables three-phase a.c.		2 cables, single-phase a.c. or d.c flat and touching		3 or 4 cables three-phase a.c. flat and touching or trefoil		2 cables, single-phase a.c. or d.c. flat		3 cables, three phase a.c. flat		3 cables, three phase a.c. trefoil		2 cables, single phase a.c. or d.c. or 3 cables three phase a.c. flat			
																			Horiz	Vert	Single phase	Three phase
C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Current carrying capacity	Voltage drop	Voltage drop
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
mm²	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	mV/A/m	A	A	mV/A/m	mV/A/m
1.0	14	46	13	40	17	46	15	40	19	46	17.5	40	-	46	-	40	-	40	-	-	46	40
1.5	19	31	17	27	23	31	20	27	25	31	23	27	-	31	-	27	-	27	-	-	31	27
2.5	26	19	23	16	31	19	28	16	34	19	31	16	-	19	-	16	-	16	-	-	19	16
4	35	12	31	10	42	12	37	10	46	12	41	10	-	12	-	10	-	10	-	-	12	10
6	45	7.9	40	6.8	54	7.9	48	6.8	59	7.9	54	6.8	-	7.9	-	6.8	-	6.8	-	-	7.9	6.8
10	61	4.7	54	4.0	75	4.7	66	4.0	81	4.7	74	4.0	-	4.7	-	4.0	-	4.0	-	-	4.7	4.0
16	81	2.9	73	2.5	100	2.9	88	2.5	109	2.9	99	2.5	-	2.9	-	2.5	-	2.5	-	-	2.9	2.5
25	106	1.90	95	1.65	133	1.90	117	1.65	143	1.85	130	1.60	135	1.85	141	1.60	135	1.60	182	161	1.85	1.65
35	131	1.35	117	1.15	164	1.35	144	1.15	176	1.35	161	1.15	169	1.35	176	1.15	169	1.15	226	201	1.35	1.20
50	158	1.05	141	0.90	198	1.05	175	0.90	228	1.00	209	0.87	207	1.00	216	0.87	207	0.87	275	246	1.00	0.89
70	200	0.75	179	0.65	253	0.75	222	0.65	293	0.71	268	0.61	246	0.71	279	0.62	268	0.61	353	318	0.73	0.65
95	241	0.58	216	0.50	306	0.58	269	0.50	355	0.52	326	0.45	328	0.52	342	0.46	328	0.45	430	389	0.56	0.49
120	278	0.48	249	0.42	354	0.48	312	0.42	413	0.43	379	0.37	383	0.43	400	0.38	383	0.37	500	454	0.47	0.42
150	318	0.43	285	0.37	393	0.43	342	0.37	476	0.36	436	0.31	444	0.36	464	0.32	444	0.31	577	527	0.41	0.37
185	362	0.37	324	0.32	449	0.37	384	0.32	545	0.30	500	0.26	510	0.30	533	0.28	510	0.26	661	605	0.36	0.33
240	424	0.33	380	0.29	528	0.33	450	0.29	644	0.25	590	0.22	607	0.25	634	0.24	607	0.22	781	719	0.31	0.29
300	486	0.31	435	0.27	603	0.31	514	0.27	743	0.22	681	0.195	703	0.22	736	0.21	703	0.195	902	833	0.29	0.27
400	-	0.29	-	0.25	683	0.29	584	0.25	868	0.20	793	0.175	823	0.20	868	0.195	823	0.175	1085	1008	0.27	0.26
500	-	0.28	-	0.24	783	0.28	666	0.24	990	0.185	904	0.160	946	0.185	998	0.180	946	0.160	1253	1169	0.26	0.25
630	-	0.27	-	0.23	900	0.27	764	0.23	1130	0.175	1033	0.150	1088	0.175	1151	0.170	1088	0.150	1454	1362	0.25	0.24
800	-	-	-	-	-	-	-	-	1288	0.170	1179	0.145	1214	0.170	1275	0.165	1214	0.145	1581	1485	0.25	0.24
1000	-	-	-	-	-	-	-	-	1443	0.165	1323	0.140	1349	0.165	1436	0.165	1349	0.140	1775	1671	0.24	0.24

Where more precise calculation requires the use of resistive and reactive components of cable impedance, reference should be made to Table 4E1A and 4EIB of BS 7671.
Notes:

1. Where the conductor is to be protected by a semi-enclosed fuse to BS 3036, see item 5.1 of the preface to Appendix 4 of BS 7671
2. Spacing larger than those specified in Method C (Table 4A) will result in a larger voltage drop.

Correction Factors
For Ambient Temperature

Ambient Temperature	25ºC	30ºC	35ºC	40ºC	45ºC	50ºC	55ºC	60ºC	65ºC	70ºC	75ºC	80ºC
Correction Factor	1.03	1.0	0.94	0.87	0.79	0.71	0.61	0.50	0.65	0.58	0.50	0.41

Current Rating of CU/PVC/PVC 300/500 V Cables

TABLE 3
Current carrying capacity for Multicore PVC insulated, PVC sheathed, non-armoured cables as per BS EN 50525-2-31 (BS 6004)

Conductor operating temperature: 70ºC Ambient temperature: 30ºC For Installation required to comply with BS 7671

Conductor	Reference Method A (enclosed in conduit in the thermally insulating wall etc.)				Reference Method B (enclosed in conduit on a wall or in trunking etc.)				Reference method C (clipped direct)				Reference method F (in free air or on a perforated cable tray etc, horizontal or vertical)			
	1 two-core cable, single-phase a.c. or d.c.		1 three-core or 1 four-core cable, three-phase a.c.		1 two-core cable, single-phase a.c. or d.c.		1 three-core or 1 four-core cable, three-phase a.c.		1 two-core cable, single-phase a.c. or d.c.		1 three-core cable or 1 four-core cable, three-phase a.c.		1 two-core cable, single-phase a.c. or d.c.		1 three-core cable or 1 four-core cable, three phase a.c.	
C.S.A.	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop	Current carrying capacity	Voltage drop
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
mm²	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m	A	mV/ A/m
1.0	11	44	10	38	13	44	11.5	38	15	44	13.5	38	17	44	14.5	38
1.5	14	29	13	25	16.5	29	15	25	19.5	29	17.5	25	22	29	18.5	25
2.5	18.5	18	17.5	15	23	18	20.	15	27	18	24	15	30	18	25	15
4	25	11	23	9.5	30	11	27	9.5	36	11	32	9.5	40	11	34	9.5
6	32	7.3	29	6.4	38	7.3	34	6.4	46	7.3	41	6.4	51	7.3	43	6.4
10	43	4.4	39	3.8	52	4.4	46	3.8	63	4.4	57	3.8	70	4.4	60	3.8
16	57	2.8	52	2.4	69	2.8	62	2.4	85	2.8	76	2.4	94	2.8	80	2.4
25	75	1.75	68	1.50	90	1.75	80	1.50	112	1.75	96	1.50	119	1.75	101	1.50
35	92	1.25	83	1.10	111	1.25	99	1.10	138	1.25	119	1.10	148	1.25	126	1.10
50	110	0.94	99	0.81	133	0.94	118	0.81	168	0.94	144	0.81	180	0.94	153	0.81
70	139	0.65	125	0.57	168	0.65	149	0.57	213	0.65	184	0.57	232	0.65	196	0.57
95	167	0.50	150	0.43	201	0.50	179	0.43	258	0.50	223	0.43	282	0.50	238	0.43
120	192	0.41	172	0.35	232	0.41	206	0.35	299	0.41	259	0.35	328	0.41	276	0.35
150	219	0.34	196	0.29	258	0.34	225	0.29	344	0.34	299	0.29	379	0.34	319	0.29
185	248	0.29	223	0.25	294	0.29	255	0.25	392	0.29	341	0.25	434	0.29	364	0.25
240	291	0.24	261	0.21	344	0.24	297	0.21	461	0.24	403	0.21	514	0.24	430	0.21
300	334	0.21	298	0.185	394	0.21	339	0.185	530	0.21	464	0.185	593	0.21	497	0.185
400	-	0.185	-	0.160	470	0.185	402	0.160	634	0.185	557	0.160	715	0.185	597	0.160

Where more precise calculation requires the use of resistive and reactive components of cable impedance, reference should be made to Table 4D2A and 4D2B of BS 7671.

Correction Factors
For Ambient Temperature

Ambient Temperature	25ºC	30ºC	35ºC	40ºC	45ºC	50ºC	55ºC	60ºC
Correction Factor	1.03	1.0	0.94	0.87	0.79	0.71	0.61	0.50

For grouping refer to Table 4C1 of BS 7671

Current Rating for Flat Cables

TABLE 4
Current carrying capacity and associated voltage
drop for thermoplastic (PVC) insulated and
Sheathed flat cable with protective earth continuity conductor
for CU/PVC/PVC Cables

BS EN 50525-2-31 (BS 6004)
Conductor operating temperature: 70ºC Ambient temperature: 30ºC
For installation required to comply with BS 7671

Conductor	Reference method 100 (above a plasterboard ceiling covered by thermal insulation not exceeding 100mm in thickness)	Reference method 101 (above a plasterboard ceiling covered by thermal insulation not exceeding 100mm in thickness)	Reference method 102 (in a stud wall with thermal insulation with cable touching the inner surface wall)	Reference method 103 (in a stud wall with thermal insulation with cable not touching the inner surface wall)	Reference method C (slipped direct)	Reference method A (enclosed in conduit in an insulated wall)	Voltage drop
1	2	3	4	5	6	7	8
mm²	A	A	A	A	A	A	mV/A/m
1	13	10.5	13	8	16	11.5	44
1.5	16	13	16	10	20	14.5	29
2.5	21	17	21	13.5	27	20	18
4	27	22	27	17.5	37	26	11
6	34	27	35	23.5	47	32	7.3
10	45	36	47	32	64	44	4.4
16	57	46	63	42.5	85	57	2.8

Notes:
Wherever practicable a cable is to be fixed in a position such that it will not be covered with thermal insulation, reference should be made to Table 4D5 of BS 7671

Correction Factors
For Alternative Ambient Temperatures

Ambient Temperature	25ºC	30ºC	35ºC	40ºC	45ºC	50ºC	55ºC	60ºC
Correction Factor	1.03	1.0	0.94	0.87	0.79	0.71	0.61	0.50

Current Rating Guidelines

Reference Methods as per BS 7671

The Reference Methods are those methods of installation for which the current-carrying capacity has been determined by test or calculation.

Reference Method A, for example, Installation Methods 1 and 2 (non-sheathed cables and multicore cables in conduit in a thermally insulated wall).

The wall consists of an outer weatherproof skin, thermal insulation and an inner skin of wood or wood-like material having a thermal conductance of at least 10 W/m².K. The conduit is fixed such that it is close to, but not necessarily touching, the inner skin. Heat from the cables is assumed to escape through the inner skin only. The conduit can be metal or plastic.

Reference Method B, for example, Installation Method 4 of Table 2 (non-sheathed cables in conduit mounted on a wooden or masonry wall) and installation Method 5 (multicore cable in conduit on a wooden or masonry wall).

The conduit is mounted on a wooden wall such that the gap between the conduit and the surface is less than 0.3 times the conduit diameter. The conduit can be metal or plastic. Where the conduit is fixed to a masonry wall the current-carrying capacity of the non-sheathed or sheathed cable may be higher.

Reference Method C (clipped direct), for example, Installation Method 20 (single-core or multicore cable on a wooden or masonry wall)
Cable mounted on a wooden wall so that the gap between the cable and surface is less than 0.3 times the cable diameter. Where the cable is fixed to or embedded in a masonry wall the current-carrying capacity may be higher.

NOTE: The term “masonry” is taken to included brickwork, concrete, plaster and similar (but excluding thermally insulating materials)

Installation methods specifically for flat twin with earth continuity conductor cables in thermal insulation

Method 100 – Installation methods for flat twin and earth cable clipped direct to a wooden joist above a plasterboard ceiling with a minimum U value of 0.1 W/m²K and with thermal insulation no exceeding 100mm in thickness.

Method 101 - Installation methods for flat twin and earth cable clipped direct to a wooden joist above a plasterboard ceiling with a minimum U value of 0.1 W/m²K and with thermal insulation exceeding 100mm in thickness.

Method 102 - Installation methods for flat twin and earth cable in a stud wall with thermal insulation with a minimum U value of 0.1 W/m²K with the cable touching the inner wall surface.

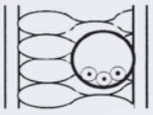
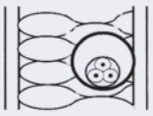
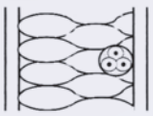
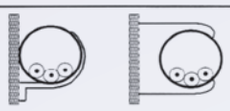
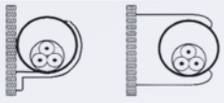
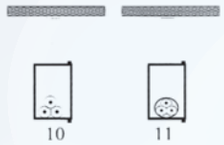
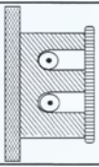
Method 103 - Installation methods for flat twin and earth cable in a stud wall with thermal insulation with a minimum U value of 0.1 W/m²K with the cable not touching the inner wall surface.

Wherever practicable, a cable is to be fixed in a position such that it will not be covered with thermal insulation.
Regulation 523.7, BS 5803-5: Appendix C: Avoidance of overheating of electric cables, Building Regulations Approved document B and Thermal insulation: avoiding risk. BR 262, BRE, 2001 refer.

Table 4A2 – Schedule of Installation Methods of cables (including Reference Methods) for determining current-carrying capacity

NOTE 1: The illustrations are not intended to depict actual product or installation practices but are indicative of the method described.

NOTE 2: The installation and reference methods stated are in line with IEC. However, not all methods have a corresponding rating for all cable types..

Installation Method			Reference Method to be used to determine current-carrying capacity
Number	Examples	Description	
1		Non-sheathed cables in conduit in a thermally insulated wall with an inner skin having a thermal conductance of not less than 10 W/m^{2}K	A
2		Multicore cable in conduit in a thermally insulated wall with an inner skin having a thermal conductance of not less than 10 W/m^{2}K	A
3		Multicore cable direct in a thermally insulated wall with an inner skin having a thermal conductance of not less than 10 W/m^{2}K	A
4		Non-sheathed cables in conduit on a wooden or masonry wall or spaced less than 0.3 × conduit diameter from it [c]	B
5		Multicore cable in conduit on a wooden or masonry wall or spaced less than 0.3 × conduit diameter from it [c]	B
6 7		Non-sheathed cables in cable trunking on a wooden or masonry wall 6 - run horizontally [b] 7 - run vertically [b, c]	B
8 9		Multicore cable in cable trunking on a wooden or masonry wall 8 - run horizontally [b] 9 - run vertically [b, c]	B*
10		Non-sheathed cables in suspended cable trunking [b]	B
11		Multicore cable in suspended cable trunking [b]	B
12		Non-sheathed cables run in mouldings [c,e]	A

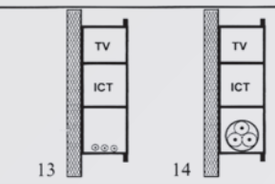
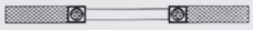
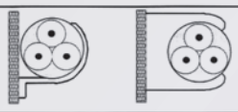
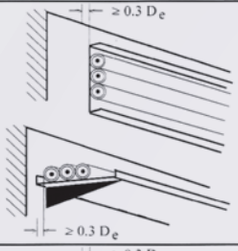
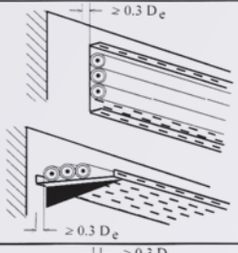
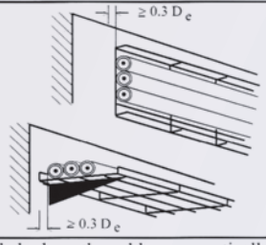
b Values given for Installation Method B in Appendix 4 are for a single circuit. Where there is more than one circuit in the trunking the group rating factor given in Table 4C1 is applicable, irrespective of the presence of an internal barrier or partition.

c Care is needed where the cable runs vertically and ventilation is restricted. The ambient temperature at the top of the vertical section can be much higher.

e The thermal resistivity of the enclosure is assumed to be poor because of the material of construction and possible air spaces. Where the construction is thermally equivalent to Installation Methods 6 or 7, Reference Method B may be used.

* Still under consideration in IEC.

Table 4A2 *(continued)*

Installation Method			Reference Method to be used to determine current-carrying capacity
Number	**Examples**	**Description**	
13		Non-sheathed cables in skirting trunking	**B**
14		Multicore cable in skirting trunking	**B**
15		Non-sheathed cables in conduit or single-core or multicore cable in architrave [c, f]	**A**
16		Non-sheathed cables in conduit or single-core or multicore cable in window frames [c, f]	**A**
20		Single-core or multicore cables: - fixed on (clipped direct), or spaced less than 0.3 × cable diameter from a wooden or masonry wall [c]	**C**
21		Single-core or multicore cables: - fixed directly under a wooden or masonry ceiling	**B** (Higher than standard ambient temperatures may occur with this installation method)
22		Single-core or multicore cables: - spaced from a ceiling	**E, F or G*** (Higher than standard ambient temperatures may occur with this installation method)
23		*Not used.*	
30		Single-core or multicore cables: - on unperforated tray run horizontally or vertically [c, h]	**C** with item 2 of Table 4C1
31		Single-core or multicore cables: - on perforated tray run horizontally or vertically [c, h]	**E or F**
32		Single-core or multicore cables: - on brackets or on a wire mesh tray run horizontally or vertically [c, h]	**E or F**

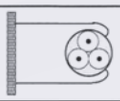
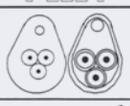
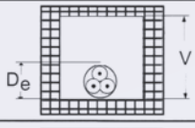
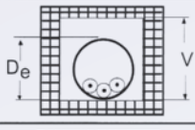
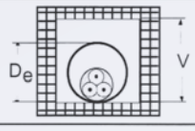
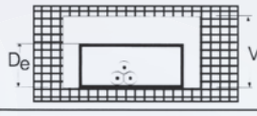
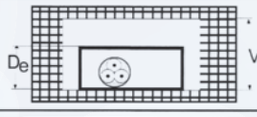
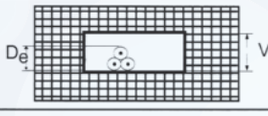
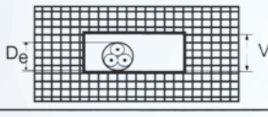
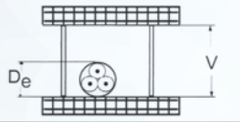
c Care is needed where the cable runs vertically and ventilation is restricted. The ambient temperature at the top of the vertical section can be much higher.

f The thermal resistivity of the enclosure is assumed to be poor because of the material of construction and possible air spaces. Where the construction is thermally equivalent to Installation Methods 6, 7, 8, or 9, Reference Method B may be used.

h D_e = the external diameter of a multicore cable:
- 2.2 x the cable diameter when three single-core cables are bound in trefoil, or
- 3 x the cable diameter when three single-core cables are laid in flat formation.

* Still under consideration in IEC.

Table 4A2 *(continued)*

Installation Method			Reference Method to be used to determine current-carrying capacity
Number	**Examples**	**Description**	
33		Single-core or multicore cables: - spaced more than 0.3 times the cable diameter from a wall	**E, F or G** [g]
34		Single-core or multicore cables: - on a ladder [c]	**E or F**
35		Single-core or multicore cable suspended from or incorporating a support wire or harness	**E or F**
36		Bare or non-sheathed cables on insulators	**G**
40		Single-core or multicore cable in a building void [c, h, i]	Where 1.5 De ≤ V < 20 De use **B**.
41		Non-sheathed cables in conduit in a building void in masonry having a thermal resistivity not greater than 2 K.m/W [c, i, j]	Where 1.5 De ≤ V use **B**.
42		Single-core or multicore cable in conduit in a building void in masonry having a thermal resistivity not greater than 2 K.m/W [c, j]	Where 1.5 De ≤ V use **B**.
43		Non-sheathed cables in cable ducting in a building void in masonry having a thermal resistivity not greater than 2 K.m/W [c, i, j]	Where 1.5 De ≤ V use **B**.
44		Single-core or multicore cable in cable ducting in a building void in masonry having a thermal resistivity not greater than 2 K.m/W [c, i, j]	Where 1.5 De ≤ V use **B**.
45		Non-sheathed cables in cable ducting in masonry having a thermal resistivity not greater than 2 K.m/W [c, h, i]	Where 1.5 De ≤ V < 50 De use **B**.
46		Single-core or multicore cable in cable ducting in masonry having a thermal resistivity not greater than 2 K.m/W [c, h, i]	Where 1.5 De ≤ V < 50 De use **B**.
47		Single-core or multicore cable: - in a ceiling void - in a suspended floor [h, i]	Where 1.5 De ≤ V < 50 De use **B**.

c Care is needed where the cable runs vertically and ventilation is restricted. The ambient temperature at the top of the vertical section can be much higher.

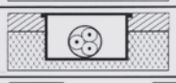
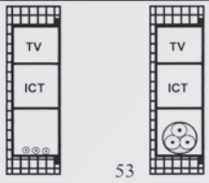
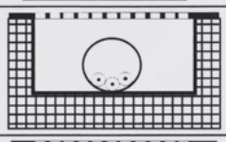
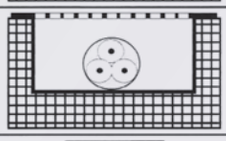
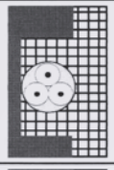
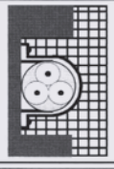
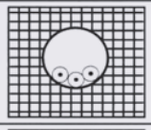
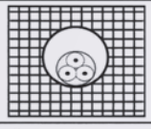
g The factors in Table 4C1 may also be used.

h De = the external diameter of a multicore cable:
- 2.2 x the cable diameter when three single-core cables are bound in trefoil, or
- 3 x the cable diameter when three single-core cables are laid in flat formation.

i V = the smaller dimension or diameter of a masonry duct or void, or the vertical depth of a rectangular duct, floor or ceiling void or channel.

j De = external diameter of conduit or vertical depth of cable ducting.

Table 4A2 *(continued)*

Installation Method			Reference Method to be used to determine current-carrying capacity
Number	Examples	Description	
50		Non-sheathed cables in flush cable trunking in the floor	**B**
51		Multicore cable in flush cable trunking in the floor	**B**
52		Non-sheathed cables in flush trunking [c]	**B**
53		Multicore cable in flush trunking [c]	**B**
54		Non-sheathed cables or single-core cables in conduit in an unventilated cable channel run horizontally or vertically [c, i, k, m]	Where 1.5 De ≤ V use **B**.
55		Non-sheathed cables in conduit in an open or ventilated cable channel in the floor [l, m]	**B**
56		Sheathed single-core or multicore cable in an open or ventilated cable channel run horizontally or vertically [m]	**B**
57		Single-core or multicore cable direct in masonry having a thermal resistivity not greater than 2 K.m/W - without added mechanical protection [n, o]	**C**
58		Single-core or multicore cable direct in masonry having a thermal resistivity not greater than 2 K.m/W - with added mechanical protection [n, o] (e.g. capping)	**C**
59		Non-sheathed cables or single-core cables in conduit in masonry having a thermal resistivity not greater than 2 K.m/W [o]	**B**
60		Multicore cables in conduit in masonry having a thermal resistivity not greater than 2 K.m/W [o]	**B**

c Care is needed where the cable runs vertically and ventilation is restricted. The ambient temperature at the top of the vertical section can be much higher.

k *De* = external diameter of conduit

i V = the smaller dimension or diameter of a masonry duct or void, or the vertical depth of a rectangular duct, floor or ceiling void or channel. The depth of the channel is more important than the width.

l For multicore cable installed as Method 55, use current-carrying capacity for Reference Method B.

m It is recommended that these Installation Methods are used only in areas where access is restricted to authorized persons so that the reduction in current-carrying capacity and the fire hazard due to the accumulation of debris can be prevented.

n For cables having conductors not greater than 16 mm^2, the current-carrying capacity may be higher.

o Thermal resistivity of masonry is not greater than 2 K.m/W. The term masonry is taken to include brickwork, concrete, plaster and the like (excludes thermally insulating materials).

NATIONAL CABLES INDUSTRY

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0.6/1 kV LOW VOLTAGE CONTROL CABLES

PVC OR XLPE INSULATED, PVC SHEATHED AS PER IEC 60502-1

Conductors

Conductors shall be Circular Stranded, Class 2 as per IEC 60228, BS EN 60228. Upon request, Solid Circular Conductor, Class 1 as per IEC 60228, BS EN 60228 can be supplied.

Insulation

XLPE material and thickness shall be as per IEC 60502-1 rated 90ºC for continuous operation or

PVC Insulation Type A as per IEC 60502-1 or TI1 as per BS 7655 rated 70 ºC for continuous operation.

Assembly

The Insulated Conductors are laid-up together with non-hygroscopic fillers wherever necessary, the assembly is bedded with an extruded layer of PVC. In case of non-armoured cables, this layer may be omitted provided the outer shape of the cable remains practically circular.

Standard Colour Code

Single core	: Red or Black
Two cores	: Red, Black
Three cores	: Red, Yellow, Blue
Four cores	: Red, Yellow, Blue, Black
Five cores	: Red, Yellow, Blue, Black, Green
Six cores & above	: White numerals printed on black core insulation.

Armour (Optional)

- Galvanized Steel Wires applied helically over the bedding as per IEC 60502-1 (or BS 5467, BS 6346 as per customer requirements).
- Double Steel Tapes applied helically over the bedding as per IEC 60502-1.

Screening (Optional)

- Copper Tape(s) of nominal thickness 0.05mm applied helically with suitable overlap or as per customer requirement.
- Copper Wire Screen (upon request) as per customer requirement.

Outer Sheath

PVC Type ST2 as per IEC 60502-1 and Type 9 as per BS 7655 coloured Black.

Application

Underground direct or indirect on cable tray.

PVC INSULATION

STANDARD : BS 7655, IEC 60502-1 **600/1000 VOLTS**

PARTICULARS & GUARANTEES RELATING TO PVC INSULATING COMPOUND (TYPE TI1)

SL. NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	**Tensile Strength and Elongation at break:** Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 125
2	**Low temperature bend test:** Temperature at which specimen shall not crack	ºC	-15 ± 2
3	**Low temperature elongation test:** Test temperature Min. Elongation	 ºC %	 -15 ± 2 30
4	**Low temperature impact test:** Temperature at which specimen Shall not crack	ºC	-15 ± 2
5	Accelerated ageing for specified Period at specified temperature Followed by loss of mass test: Max. loss of mass, after ageing for 7 days at 80 ± 2 ºC	Mg/cm²	2.0
6	Accelerated ageing for specified period at specified temperature followed by tensile strength & elongation at break Number of days ageing Ageing temperature **Tensile Strength after ageing:** Min. value Max. variation **Elongation at break after ageing:** Min. value Max. variation from unaged value	 Days ºC N/mm² % % %	 7 80 ± 2 12.5 20 125 20
7	**Pressure test at high temperature:** Test temperature Max. indention	 ºC %	 80 ± 2 50
8	**Resistance to cracking:** Temperature at which specimen Shall not crack	ºC	150 ± 2
9	**Insulation resistance constant:** Min. K. value at 70ºC	M.Ω.km	0.037

PARTICULARS & GUARANTEES RELATING TO PVC INSULATING COMPOUND (TYPE A)

SL NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	**Tensile Strength and Elongation at break**: Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 150
2	**Low temperature bend test:** Temperature at which specimen shall not track	ºC	-15 ± 2
3	**Low temperature elongation test:** Test temperature Min. Elongation	 ºC %	 -15 ± 2 20
4	**Low temperature impact test:** Test temperature Min. Elongation	ºC	-
5	Accelerated ageing for specified Period at specified temperature Followed by loss of mass test: Max. loss of mass, after ageing for 7 days at 80 ± 2 ºC	Mg/cm²	-
6	Accelerated ageing for specified period at specified temperature Followed by tensile strength & Elongation at break Number of days ageing Ageing temperature **Tensile Strength after ageing:** Min. value Max. variation **Elongation at break after ageing:** Min. value Max. variation from unaged value	 Days ºC N/mm² % % %	 7 100 ± 2 12.5 25 150 25
7	**Pressure test at high temperature:** Test temperature Max. indention	 ºC %	 80 ± 2 50
8	**Resistance to cracking:** Temperature at which specimen Shall not crack	ºC	150 ± 2
9	**Insulation resistance constant:** Min. K. value at 70ºC	M.Ω.km	-

PVC OUTER SHEATH, XLPE INSULATION

STANDARD : IEC 60502-1 **600/1000 VOLTS**

PARTICULARS & GUARANTEES RELATING TO PVC OUTER SHEATH TYPE ST2 (IEC 60502), TYPE 9 (BS 7655)

SL. NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongation at break: Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 150
2	Low temperature bend test: Temperature at which specimen shall not crack	ºC	-15±2
3	Low temperature elongation test: Test temperature Min. Elongation	 ºC %	 -15±2 20
4	Low temperature impact test: Temperature at which specimen shall not crack	ºC	-15±2
5	Loss of mass after ageing for 7 days: At 100±2 ºC Max. loss of mass	 mg/cm²	 1.5
6	Accelerated ageing for specified period at specified temperature followed by tensile strength and elongation at break Number of days ageing Ageing temperature Tensile Strength after ageing: Min. Value Max. variation Elongation at break after ageing: Min. Value Max. variation from un-aged value	 ºC N/mm² % % %	 7 100±2 12.5 25 150 25
7	Pressure test at high temperature: Test temperature Max. indention	 ºC %	 90±2 50
8	Heat Shock Test: Temperature at which specimen shall not crack	 ºC	 150±2
9	Insulation resistance constant: Min. K. value at 20ºC	 M.Ω.km	 0.0035
10	Flame Retardancy test (if required)	As per IEC 60332-1 (upon request)	

PARTICULARS & GUARANTEES RELATING TO XLPE INSULATION

SL. NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongaton at break: Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 200
2	Accelerated ageing for specified period at specified temperature followed by Tensile Strength & Elongation at break No. of days ageing Ageing temperature Max. variation of tensile strength from un-aged specimen Max. variation of elongation from un-aged specimen	 Days ºC % %	 7 135±3 ±25 ±25
3	Hot Set Test: Treatment: - Temperature - Time under load - Mechanical stress Max. elongation under load Max. permanent elongation after cooling	 ºC Minutes N/cm² % %	 200±3 15 20 175 15
4	Water Absorption: Treatment: - Temperature - Duration Max. variation of mass	 ºC Days mg/cm²	 85±2 14 1.0
5	Maximum permissible shrinkage: Treatment: - Temperature - Duration Max. variation of shrinkage	 ºC Hours %	 130±3 1 4
6	Insulation Resistance constant(Ki) at maximum rated temperature (90 ºC)	M.Ω.km	3.67
7	Volume Resistivity at maximum rated temperature (90 ºC)	Ω.cm	10^{12}

CONTROL CABLES TO IEC 60502-1

COPPER CONDUCTORS, PVC INSULATED, PVC SHEATHED 600/1000 VOLTS

Cross sectional area of conductor : 1.5 mm^2 (Round Stranded)
Thickness of insulation : 0.8 mm
Conductor DC Resistance at 20ºC : 12.1 Ohm/Km
Thickness of copper tape screen : 0.05 mm (Applicable only for CU/PVC/CUT/PVC)

No. of Cores	CU/PVC/PVC				CU/PVC/SWA/PVC					CU/PVC/STA/PVC					CU/PVC/CUT/PVC			
	UNARMOURED				STEEL WIRE ARMOURED					STEEL TAPE ARMOURED					COPPER TAPE SCREEN			
	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing	Nom. Steel Wire Dia.	Nom. Sheath Thickness	Approx.Overall Dia.	Approx Weight	Packing	Steel Tape Thickness	Nom. Sheath Thickness	Approx. Overall Dia.	Approx. Weight	Packing	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing
No.	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/km	meters	mm	mm	Kg/Km	meters
2	1.8	12	200	1000	0.8	1.8	14	350	1000	0.2	1.8	13	260	1000	1.8	12	210	1000
3	1.8	12	220	1000	0.8	1.8	15	380	1000	0.2	1.8	13	290	1000	1.8	13	240	1000
4	1.8	13	250	1000	0.8	1.8	15	430	1000	0.2	1.8	14	330	1000	1.8	13	275	1000
5	1.8	14	300	1000	0.8	1.8	16	490	1000	0.2	1.8	15	375	1000	1.8	14	320	1000
7	1.8	15	350	1000	0.8	1.8	17	550	1000	0.2	1.8	16	430	1000	1.8	15	370	1000
10	1.8	18	450	1000	1.25	1.8	21	850	1000	0.2	1.8	19	550	1000	1.8	18	475	1000
12	1.8	19	500	1000	1.25	1.8	21	900	1000	0.2	1.8	20	620	1000	1.8	19	535	1000
14	1.8	20	560	1000	1.25	1.8	22	990	1000	0.2	1.8	20	675	1000	1.8	20	600	1000
16	1.8	20	625	1000	1.25	1.8	23	1070	1000	0.2	1.8	21	750	1000	1.8	21	660	1000
19	1.8	21	700	1000	1.6	1.8	25	1300	1000	0.2	1.8	22	825	1000	1.8	22	735	1000
24	1.8	25	875	1000	1.6	1.8	28	1575	1000	0.2	1.8	25	1020	1000	1.8	25	915	1000
27	1.8	25	950	1000	1.6	1.8	28	1675	1000	0.2	1.8	26	1100	1000	1.8	25	990	1000
30	1.8	26	1020	1000	1.6	1.8	29	1755	1000	0.2	1.8	27	1175	1000	1.8	26	1060	1000
37	1.8	28	1200	1000	1.6	1.9	31	2010	500	0.2	1.8	29	1370	1000	1.8	28	1250	1000
44	1.9	31	1390	500	1.6	2.0	34	2300	500	0.2	1.9	32	1570	500	1.9	31	1440	500
48	1.9	32	1490	500	2.0	2.0	36	2650	500	0.2	1.9	32	1675	500	1.9	32	1535	500
52	1.9	33	1620	500	2.0	2.1	37	2850	500	0.2	1.9	34	1820	500	1.9	33	1675	500
61	2.0	35	1900	500	2.0	2.1	39	3175	500	0.2	2.0	36	2120	500	2.0	35	1960	500

Core Identification:

2 Cores : Red, Black
3 Cores : Red, Yellow, Blue
4 Cores : Red, Yellow, Blue, Black
5 Cores : Red, Yellow, Blue, Black, Green
6 Cores and above : Black core insulation with White printed numerals.

Tolerance:

Overall diameter: ± 5%
Packing: ± 5%

Also available upon request:

a) Solid (re) Conductors
b) Control Cables with Copper Wire Screen
c) Control Cables with one core Green/Yellow

Note:

1) Based on special request for 6 cores and above, white cores with black printed numerals can also be provided.
2) Cable with one core Green/Yellow can also be provided based on special request.

CONTROL CABLES TO IEC 60502-1

COPPER CONDUCTORS, PVC INSULATED, PVC SHEATHED 600/1000 VOLTS

Cross sectional area of conductor : 2.5 mm^2 (Round Stranded)
Thickness of insulation : 0.8 mm
Conductor DC Resistance at 20ºC : 7.41 Ohm/Km
Thickness of copper tape screen : 0.05 mm (Applicable only for CU/PVC/CUT/PVC)

No. of Cores	CU/PVC/PVC				CU/PVC/SWA/PVC					CU/PVC/STA/PVC					CU/PVC/CUT/PVC			
	UNARMOURED				STEEL WIRE ARMOURED					STEEL TAPE ARMOURED					COPPER TAPE SCREEN			
	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing	Nom. Steel Wire Dia.	Nom. Sheath Thickness	Approx. Overall Dia.	Approx. Weight	Packing	Steel Tape Thickness	Nom. Sheath Thickness	Approx. Overall Dia.	Approx. Weight	Packing	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing
No.	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/km	meters	mm	mm	Kg/Km	meters
2	1.8	13	240	1000	0.8	1.8	15	400	1000	0.2	1.8	14	300	1000	1.8	13	255	1000
3	1.8	13	275	1000	0.8	1.8	16	450	1000	0.2	1.8	14	350	1000	1.8	14	300	1000
4	1.8	14	325	1000	0.8	1.8	16	515	1000	0.2	1.8	15	400	1000	1.8	15	350	1000
5	1.8	15	380	1000	0.8	1.8	17	590	1000	0.2	1.8	16	470	1000	1.8	16	400	1000
7	1.8	16	450	1000	1.25	1.8	19	800	1000	0.2	1.8	17	550	1000	1.8	17	475	1000
10	1.8	20	590	1000	1.25	1.8	23	1025	1000	0.2	1.8	21	700	1000	1.8	20	625	1000
12	1.8	21	665	1000	1.25	1.8	23	1110	1000	0.2	1.8	21	790	1000	1.8	21	700	1000
14	1.8	22	750	1000	1.6	1.8	25	1350	1000	0.2	1.8	22	875	1000	1.8	22	785	1000
16	1.8	23	840	1000	1.6	1.8	26	1475	1000	0.2	1.8	23	975	1000	1.8	23	875	1000
19	1.8	24	950	1000	1.6	1.8	27	1620	1000	0.2	1.8	24	1090	1000	1.8	24	990	1000
24	1.8	27	1200	1000	1.6	1.9	31	1990	1000	0.2	1.8	28	1350	1000	1.8	28	1235	1000
27	1.8	28	1300	1000	1.6	1.9	31	2120	500	0.2	1.8	29	1470	1000	1.8	28	1350	1000
30	1.8	29	1400	1000	1.6	1.9	32	2235	500	0.2	1.8	30	1575	1000	1.8	29	1450	1000
37	1.9	31	1675	500	1.6	2.0	34	2590	500	0.2	1.9	32	1870	500	1.9	31	1730	500
44	2.0	35	1975	500	2.0	2.1	39	3275	500	0.2	2.0	36	2190	500	2.0	35	2040	500
48	2.0	36	2120	500	2.0	2.1	40	3450	500	0.2	2.0	37	2340	500	2.0	36	2180	500
52	2.0	37	2210	500	2.0	2.2	41	3650	500	0.2	2.1	38	2515	500	2.0	37	2355	500
61	2.1	39	2675	500	2.0	2.2	43	4110	500	0.5	2.2	41	3300	500	2.1	39	2740	500

Core Identification:

2 Cores : Red, Black
3 Cores : Red, Yellow, Blue
4 Cores : Red, Yellow, Blue, Black
5 Cores : Red, Yellow, Blue, Black, Green
6 Cores and above : Black core insulation with White printed numerals.

Tolerance:

Overall diameter: ± 5%
Packing: ± 5%

Also available upon request:

a) Solid (re) Conductors
b) Control Cables with Copper Wire Screen
c) Control Cables with one core Green/Yellow

Note:

1) Based on special request for 6 cores and above, white cores with black printed numerals can also be provided.
2) Cable with one core Green/Yellow can also be provided based on special request.

CONTROL CABLES TO IEC 60502-1

COPPER CONDUCTORS, PVC INSULATED, PVC SHEATHED 600/1000 VOLTS

Cross sectional area of conductor : 4 mm^2 (Round Stranded)
Thickness of insulation : 1.0 mm
Conductor DC Resistance at 20°C : 4.61 Ohm/Km
Thickness of copper tape screen : 0.05 mm (Applicable only for CU/PVC/CUT/PVC)

No. of Cores	CU/PVC/PVC				CU/PVC/SWA/PVC					CU/PVC/STA/PVC					CU/PVC/CUT/PVC			
	UNARMOURED				STEEL WIRE ARMOURED					STEEL TAPE ARMOURED					COPPER TAPE SCREEN			
	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing	Nom. Steel Wire Dia.	Nom. Sheath Thickness	Approx.Overall Dia.	Approx Weight	Packing	Steel Tape Thickness	Nom. Sheath Thickness	Approx. Overall Dia.	Approx. Weight	Packing	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing
No.	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/km	meters	mm	mm	Kg/Km	meters
2	1.8	15	320	1000	0.8	1.8	17	515	1000	0.2	1.8	16	400	1000	1.8	15	350	1000
3	1.8	15	375	1000	1.25	1.8	18	700	1000	0.2	1.8	16	465	1000	1.8	16	400	1000
4	1.8	17	450	1000	1.25	1.8	19	800	1000	0.2	1.8	17	550	1000	1.8	17	475	1000
5	1.8	18	540	1000	1.25	1.8	20	925	1000	0.2	1.8	19	640	1000	1.8	18	570	1000
7	1.8	19	640	1000	1.25	1.8	22	1050	1000	0.2	1.8	20	750	1000	1.8	19	675	1000
10	1.8	24	850	1000	1.6	1.8	27	1535	1000	0.2	1.8	25	990	1000	1.8	24	890	1000
12	1.8	25	970	1000	1.6	1.8	28	1675	1000	0.2	1.8	25	1120	1000	1.8	25	1010	1000
14	1.8	26	1100	1000	1.6	1.8	29	1835	1000	0.2	1.8	26	1250	1000	1.8	26	1140	1000
16	1.8	27	1235	1000	1.6	1.8	30	2000	1000	0.2	1.8	28	1400	1000	1.8	27	1275	1000
19	1.8	28	1400	1000	1.6	1.9	32	2240	500	0.2	1.8	29	1575	1000	1.8	29	1450	1000
24	1.9	34	1820	500	2.0	2.1	38	3075	500	0.2	2.0	35	2035	500	1.9	34	1875	500
27	2.0	34	2000	500	2.0	2.1	39	3275	500	0.2	2.0	35	2220	500	2.0	35	2065	500
30	2.0	36	2160	500	2.0	2.1	40	3460	500	0.2	2.0	36	2375	500	2.0	36	2225	500
37	2.1	38	2600	500	2.0	2.2	43	4010	500	0.5	2.2	41	3215	500	2.1	39	2665	500
44	2.2	43	3000	500	2.5	2.4	49	5050	500	0.5	2.3	45	3700	500	2.2	43	3075	500
48	2.3	44	3290	500	2.5	2.4	50	5350	500	0.5	2.3	46	3990	500	2.3	45	3370	500
52	2.3	46	3525	500	2.5	2.5	51	5650	250	0.5	2.4	48	4265	500	2.3	46	3600	500
61	2.4	49	4160	500	2.5	2.6	54	6415	250	0.5	2.5	51	4940	250	2.4	49	4250	500

Core Identification:

2 Cores : Red, Black
3 Cores : Red, Yellow, Blue
4 Cores : Red, Yellow, Blue, Black
5 Cores : Red, Yellow, Blue, Black, Green
6 Cores and above : Black core insulation with White printed numerals.

Tolerance:

Overall diameter: ± 5%
Packing: ± 5%

Also available upon request:

a) Solid (re) Conductors
b) Control Cables with Copper Wire Screen
c) Control Cables with one core Green/Yellow

Note:

1) Based on special request for 6 cores and above, white cores with black printed numerals can also be provided.
2) Cable with one core Green/Yellow can also be provided based on special request.

CONTROL CABLES TO IEC 60502-1

COPPER CONDUCTORS, XLPE INSULATED, PVC SHEATHED 600/1000 VOLTS

Cross sectional area of conductor : 1.5 mm^2 (Round Stranded)
Thickness of insulation : 0.7 mm
Conductor DC Resistance at 20°C : 12.1 Ohm/Km
Thickness of copper tape screen : 0.05 mm (Applicable only for CU/XLPE/CUT/PVC)

No. of Cores	CU/XLPE/PVC				CU/XLPE/SWA/PVC					CU/XLPE/STA/PVC					CU/XLPE/CUT/PVC			
	UNARMOURED				STEEL WIRE ARMOURED					STEEL TAPE ARMOURED					COPPER TAPE SCREEN			
	Nom. Sheath Thickness	Approx.Overall Dia.	Approx. Weight	Packing	Nom. Steel Wire Dia.	Nom. Sheath Thickness	Approx.Overall Dia.	Approx. Weight	Packing	Steel Tape Thickness	Nom. Sheath Thickness	Approx. Overall Dia.	Approx. Weight	Packing	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing
No.	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/km	meters	mm	mm	Kg/Km	meters
2	1.8	12	175	1000	0.8	1.8	14	325	1000	0.2	1.8	12	240	1000	1.8	12	200	1000
3	1.8	12	200	1000	0.8	1.8	14	350	1000	0.2	1.8	13	260	1000	1.8	12	220	1000
4	1.8	13	230	1000	0.8	1.8	15	400	1000	0.2	1.8	14	300	1000	1.8	13	250	1000
5	1.8	14	265	1000	0.8	1.8	16	450	1000	0.2	1.8	14	340	1000	1.8	14	290	1000
7	1.8	14	300	1000	0.8	1.8	17	500	1000	0.2	1.8	15	390	1000	1.8	15	325	1000
10	1.8	17	400	1000	1.25	1.8	20	765	1000	0.2	1.8	18	500	1000	1.8	18	425	1000
12	1.8	18	440	1000	1.25	1.8	20	820	1000	0.2	1.8	19	540	1000	1.8	18	465	1000
14	1.8	19	485	1000	1.25	1.8	21	890	1000	0.2	1.8	19	600	1000	1.8	19	515	1000
16	1.8	20	540	1000	1.25	1.8	22	965	1000	0.2	1.8	20	650	1000	1.8	20	575	1000
19	1.8	20	600	1000	1.25	1.8	23	1050	1000	0.2	1.8	21	725	1000	1.8	21	635	1000
24	1.8	23	750	1000	1.6	1.8	27	1420	1000	0.2	1.8	24	885	1000	1.8	24	785	1000
27	1.8	24	810	1000	1.6	1.8	27	1500	1000	0.2	1.8	25	950	1000	1.8	24	850	1000
30	1.8	25	865	1000	1.6	1.8	28	1570	1000	0.2	1.8	25	1010	1000	1.8	25	900	1000
37	1.8	26	1015	1000	1.6	1.8	30	1770	500	0.2	1.8	27	1175	1000	1.8	27	1060	1000
44	1.8	29	1150	1000	1.6	1.9	33	2010	500	0.2	1.8	30	1335	500	1.8	29	1200	500
48	1.8	30	1235	500	1.6	1.9	33	2100	500	0.2	1.9	31	1430	500	1.8	30	1285	500
52	1.9	31	1330	500	1.6	2.0	34	2225	500	0.2	1.9	31	1520	500	1.9	31	1385	500
61	1.9	33	1585	500	2.0	2.0	37	2800	500	0.2	1.9	34	1785	500	1.9	33	1640	500

Core Identification:

2 Cores : Red, Black
3 Cores : Red, Yellow, Blue
4 Cores : Red, Yellow, Blue, Black
5 Cores : Red, Yellow, Blue, Black, Green
6 Cores and above : Black core insulation with White printed numerals.

Tolerance:

Overall diameter: ± 5%
Packing: ± 5%

Also available upon request:

a) Solid (re) Conductors
b) Control Cables with Copper Wire Screen
c) Control Cables with one core Green/Yellow

Note:

1) Based on special request for 6 cores and above, white cores with black printed numerals can also be provided.
2) Cable with one core Green/Yellow can also be provided based on special request.

CONTROL CABLES TO IEC 60502-1

COPPER CONDUCTORS, XLPE INSULATED, PVC SHEATHED 600/1000 VOLTS

Cross sectional area of conductor : 2.5 mm^2 (Round Stranded)
Thickness of insulation : 0.7 mm
Conductor DC Resistance at 20ºC : 7.41 Ohm/Km
Thickness of copper tape screen : 0.05 mm (Applicable only for CU/XLPE/CUT/PVC)

No. of Cores	CU/XLPE/PVC				CU/ XLPE /SWA/PVC					CU/ XLPE /STA/PVC					CU/ XLPE /CUT/PVC			
	UNARMOURED				STEEL WIRE ARMOURED					STEEL TAPE ARMOURED					COPPER TAPE SCREEN			
	Nom. Sheath Thickness	Approx.Overall Dia.	Approx. Weight	Packing	Nom. Steel Wire Dia.	Nom. Sheath Thickness	Approx.Overall Dia.	Approx Weight	Packing	Steel Tape Thickness	Nom. Sheath Thick ness	Approx. Overall Dia.	Approx. Weight	Packing	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing
No.	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/km	meters	mm	mm	Kg/Km	meters
2	1.8	12	220	1000	0.8	1.8	15	375	1000	0.2	1.8	13	285	1000	1.8	13	235	1000
3	1.8	13	250	1000	0.8	1.8	15	420	1000	0.2	1.8	14	320	1000	1.8	13	270	1000
4	1.8	14	290	1000	0.8	1.8	16	475	1000	0.2	1.8	15	370	1000	1.8	14	315	1000
5	1.8	15	350	1000	0.8	1.8	17	535	1000	0.2	1.8	16	425	1000	1.8	15	365	1000
7	1.8	16	400	1000	1.25	1.8	18	730	1000	0.2	1.8	17	490	1000	1.8	16	425	1000
10	1.8	19	525	1000	1.25	1.8	22	940	1000	0.2	1.8	20	635	1000	1.8	19	550	1000
12	1.8	20	590	1000	1.25	1.8	22	1015	1000	0.2	1.8	21	700	1000	1.8	20	625	1000
14	1.8	21	660	1000	1.25	1.8	23	1100	1000	0.2	1.8	21	780	1000	1.8	21	700	1000
16	1.8	22	740	1000	1.6	1.8	25	1350	1000	0.2	1.8	22	865	1000	1.8	22	775	1000
19	1.8	23	830	1000	1.6	1.8	26	1470	1000	0.2	1.8	23	965	1000	1.8	23	875	1000
24	1.8	26	1040	1000	1.6	1.8	29	1885	1000	0.2	1.8	27	1200	1000	1.8	26	1080	1000
27	1.8	27	1130	1000	1.6	1.8	30	1875	500	0.2	1.8	27	1300	1000	1.8	27	1175	1000
30	1.8	27	1220	1000	1.6	1.9	31	2020	500	0.2	1.8	28	1380	1000	1.8	28	1265	1000
37	1.8	30	1450	1000	1.6	1.9	33	2315	500	0.2	1.8	30	1625	500	1.8	30	1500	500
44	1.9	33	1700	500	2.0	2.1	38	2965	500	0.2	2.0	34	1925	500	1.9	34	1760	500
48	1.9	34	1825	500	2.0	2.1	38	3110	500	0.2	2.0	35	2050	500	1.9	34	1875	500
52	2.0	35	1965	500	2.0	2.1	39	3265	500	0.2	2.0	36	2180	500	2.0	35	2025	500
61	2.0	37	2300	500	2.0	2.2	41	3700	500	0.2	2.1	38	2540	500	2.0	37	2360	500

Core Identification:

2 Cores : Red, Black
3 Cores : Red, Yellow, Blue
4 Cores : Red, Yellow, Blue, Black
5 Cores : Red, Yellow, Blue, Black, Green
6 Cores and above : Black core insulation with White printed numerals.

Tolerance:

Overall diameter: ± 5%
Packing: ± 5%

Also available upon request:

a) Solid (re) Conductors
b) Control Cables with Copper Wire Screen
c) Control Cables with one core Green/Yellow

Note:

1) Based on special request for 6 cores and above, white cores with black printed numerals can also be provided.
2) Cable with one core Green/Yellow can also be provided based on special request.

CONTROL CABLES TO IEC 60502-1

COPPER CONDUCTORS, XLPE INSULATED, PVC SHEATHED 600/1000 VOLTS

Cross sectional area of conductor : 4 mm^2 (Round Stranded)
Thickness of insulation : 0.7 mm
Conductor DC Resistance at 20ºC : 4.61 Ohm/Km
Thickness of copper tape screen : 0.05 mm (Applicable only for CU/XLPE/CUT/PVC)

No. of Cores	CU/XLPE/PVC UNARMOURED				CU/XLPE/SWA/PVC STEEL WIRE ARMOURED					CU/XLPE/STA/PVC STEEL TAPE ARMOURED					CU/XLPE/CUT/PVC COPPER TAPE SCREEN			
	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing	Nom. Steel Wire Dia.	Nom. Sheath Thickness	Approx.Overall Dia.	Approx. Weight	Packing	Steel Tape Thickness	Nom. Sheath Thickness	Approx. Overall Dia.	Approx. Weight	Packing	Nom. Sheath Thickness	Approx.Overall Dia.	Approx.Weight	Packing
No.	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/Km	meters	mm	mm	mm	Kg/km	meters	mm	mm	Kg/Km	meters
2	1.8	14	270	1000	0.8	1.8	16	450	1000	0.2	1.8	14	345	1000	1.8	14	290	1000
3	1.8	14	315	1000	0.8	1.8	16	500	1000	0.2	1.8	15	400	1000	1.8	14	335	1000
4	1.8	15	375	1000	0.8	1.8	17	580	1000	0.2	1.8	16	460	1000	1.8	15	400	1000
5	1.8	16	450	1000	1.25	1.8	19	790	1000	0.2	1.8	17	540	1000	1.8	16	475	1000
7	1.8	17	530	1000	1.25	1.8	20	900	1000	0.2	1.8	18	635	1000	1.8	18	560	1000
10	1.8	21	700	1000	1.6	1.8	25	1300	1000	0.2	1.8	22	825	1000	1.8	22	735	1000
12	1.8	22	800	1000	1.6	1.8	25	1420	1000	0.2	1.8	23	930	1000	1.8	22	835	1000
14	1.8	23	900	1000	1.6	1.8	26	1560	1000	0.2	1.8	24	1040	1000	1.8	23	940	1000
16	1.8	24	1015	1000	1.6	1.8	27	1700	1000	0.2	1.8	25	1150	1000	1.8	24	1050	1000
19	1.8	25	1150	1000	1.6	1.8	29	1875	1000	0.2	1.8	26	1300	1000	1.8	26	1200	1000
24	1.8	29	1450	1000	1.6	1.9	33	2300	500	0.2	1.8	30	1625	500	1.8	30	1500	1000
27	1.8	30	1585	1000	1.6	1.9	33	2450	500	0.2	1.9	31	1780	500	1.8	30	1635	500
30	1.9	31	1725	500	1.6	2.0	35	2635	500	0.2	1.9	32	1915	500	1.9	31	1775	500
37	1.9	34	2100	500	2.0	2.1	38	3350	500	0.2	2.0	35	2315	500	1.9	34	2150	500
44	2.1	38	2440	500	2.0	2.2	42	3850	500	0.5	2.1	40	3035	500	2.1	38	2500	500
48	2.1	39	2625	500	2.0	2.2	43	4050	500	0.5	2.2	41	3250	500	2.1	39	2690	500
52	2.1	40	2810	500	2.0	2.3	44	4300	500	0.5	2.2	42	3450	500	2.1	40	2880	500
61	2.2	42	3310	500	2.0	2.3	47	4850	500	0.5	2.3	45	4000	500	2.2	43	3385	500

Core Identification:

2 Cores : Red, Black
3 Cores : Red, Yellow, Blue
4 Cores : Red, Yellow, Blue, Black
5 Cores : Red, Yellow, Blue, Black, Green
6 Cores and above : Black core insulation with White printed numerals.

Tolerance:

Overall diameter: ± 5%
Packing: ± 5%

Also available upon request:

a) Solid (re) Conductors
b) Control Cables with Copper Wire Screen
c) Control Cables with one core Green/Yellow

Note:

1) Based on special request for 6 cores and above, white cores with black printed numerals can also be provided.
2) Cable with one core Green/Yellow can also be provided based on special request.

CONTROL CABLES TO BS-5467

COPPER CONDUCTORS, XLPE INSULATED, STEEL WIRE ARMOURED, PVC SHEATHED

Size	Nominal Thickness of XLPE insulation	Nominal Thickness of PVCbedding	Nominal steel wire diameter.	Nominal Thickness of outer sheath	Approx. overall diameter.	Approx. weight	Standard packing
mm²	mm	mm	mm	mm	mm	Kg/Km	meters
2x1.5	0.6	0.8	0.9	1.3	12.1	300	1000
3x1.5	0.6	0.8	0.9	1.3	12.6	310	1000
4x1.5	0.6	0.8	0.9	1.3	13.3	340	1000
5x1.5	0.6	0.8	0.9	1.4	14.3	390	1000
7x1.5	06	0.8	0.9	1.4	15.2	450	1000
12x1.5	06	0.8	1.25	1.5	19.4	755	1000
19x1.5	0.6	0.8	1.25	1.6	22.4	965	1000
27x1.5	0.6	1.0	1.6	1.7	26.7	1430	1000
37x1.5	0.6	1.0	1.6	1.7	29.0	1690	500
48x1.5	0.6	1.0	1.6	1.8	32.7	2060	500

Size	Nominal Thickness of XLPE insulation	Nominal Thickness of PVCbedding	Nominal steel wire diameter.	Nominal Thickness of outer sheath	Approx. overall diameter.	Approx. weight	Standard packing
mm²	mm	mm	mm	mm	mm	Kg/Km	meters
2x2.5	0.7	0.8	0.9	1.4	13.6	370	1000
3x2.5	0.7	0.8	0.9	1.4	14.1	380	1000
4x2.5	0.7	0.8	0.9	1.4	15.0	435	1000
5x2.5	0.7	0.8	0.9	1.4	16.1	490	1000
7x2.5	0.7	0.8	0.9	1.4	17.1	570	1000
12x2.5	0.7	0.8	1.25	1.6	22.4	975	1000
19x2.5	0.7	1.0	1.6	1.7	26.6	1465	1000
27x2.5	0.7	1.0	1.6	1.8	30.7	1900	1000
37x2.5	0.7	1.0	1.6	1.8	33.8	2290	500
48x2.5	0.7	1.2	2.0	2.0	39.3	3140	500

Size	Nominal Thickness of XLPE insulation	Nominal Thickness of PVCbedding	Nominal steel wire diameter.	Nominal Thickness of outer sheath	Approx. overall diameter.	Approx. weight	Standard packing
mm²	mm	mm	mm	mm	mm	Kg/Km	meters
2x4	0.7	0.8	0.9	1.4	14.7	435	1000
3x4	0.7	0.8	0.9	1.4	15.3	460	1000
4x4	0.7	0.8	0.9	1.4	16.4	535	1000
5x4	0.7	0.8	0.9	1.5	17.8	620	1000
7x4	0.7	0.8	1.25	1.5	19.7	840	1000
12x4	0.7	1.0	1.6	1.6	25.7	1415	1000
19x4	0.7	1.0	1.6	1.7	29.3	1870	1000
27x4	0.7	1.0	1.6	1.9	34.4	2485	1000
37x4	0.7	1.2	2.0	2.0	39.2	3365	500
48x4	0.7	1.2	2.0	2.1	44.1	4115	500

Core identification:

2cores : Red, Black
3cores : Red, yellow, blue
4cores : Red, yellow, blue, black
5cores : Red, yellow, blue, black, green
6cores & above : black core insulation with white numerals

Tolerance:

Overall diameter: ± 5%
Packing :± 5%

Note: 1) Based on special request solid (re)conductors can also be provided

2) Based on special request for 6cores and above, white cores with black printed numerals can also be provided

3) Cable with one core Green/Yellow can also be provided based on special request:

CONTROL CABLES TO BS-6346

COPPER CONDUCTORS, PVC INSULATED, STEEL WIRE ARMOURED, PVC SHEATHED

Size	Nominal Thickness of PVC insulation	Nominal Thickness of PVC bedding	Nominal steel wire diameter.	Nominal Thickness of outer sheath	Approx. overall diameter.	Approx. weight	Standard packing
mm²	mm	mm	mm	mm	mm	Kg/Km	meters
2x1.5	0.6	0.8	0.9	1.4	12.3	300	1000
3x1.5	0.6	0.8	0.9	1.4	12.8	320	1000
4x1.5	0.6	0.8	0.9	1.4	13.5	360	1000
5x1.5	0.6	0.8	0.9	1.4	14.3	400	1000
7x1.5	0.6	0.8	0.9	1.4	15.2	460	1000
12x1.5	0.6	0.8	1.25	1.5	19.4	785	1000
19x1.5	0.6	0.8	1.25	1.6	22.2	1010	1000
27x1.5	0.6	1.0	1.6	1.7	26.7	1495	1000
37x1.5	0.6	1.0	1.6	1.8	29.2	1800	500
48x1.5	0.6	1.0	1.6	1.9	32.9	2195	500

Size	Nominal Thickness of PVC insulation	Nominal Thickness of PVCbedding	Nominal steel wire diameter.	Nominal Thickness of outer sheath	Approx. overall diameter.	Approx. weight	Standard packing
mm²	mm	mm	mm	mm	mm	Kg/Km	meters
2x2.5	0.7	0.8	0.9	1.4	13.6	370	1000
3x2.5	0.7	0.8	0.9	1.4	14.1	390	1000
4x2.5	0.7	0.8	0.9	1.4	15.0	450	1000
5x2.5	0.7	0.8	0.9	1.5	16.3	575	1000
7x2.5	0.7	0.8	1.25	1.5	18	710	1000
12x2.5	0.7	0.8	1.25	1.6	22.4	1020	1000
19x2.5	0.7	1.0	1.6	1.7	26.6	1535	1000
27x2.5	0.7	1.0	1.6	1.8	30.7	2000	1000
37x2.5	0.7	1.0	1.6	1.9	34.0	2445	500
48x2.5	0.7	1.2	2.0	2.1	39.5	3330	500

Size	Nominal Thickness of PVC insulation	Nominal Thickness of PVCbedding	Nominal steel wire diameter.	Nominal Thickness of outer sheath	Approx. overall diameter.	Approx. weight	Standard packing
mm²	mm	mm	mm	mm	mm	Kg/Km	meters
2x4	0.8	0.8	0.9	1.4	15.1	460	1000
3x4	0.8	0.8	0.9	1.4	15.8	490	1000
4x4	0.8	0.8	1.25	1.5	17.8	680	1000
5x4	0.8	0.8	1.25	1.5	19.0	775	1000
7x4	0.8	0.8	1.25	1.6	20.5	925	1000
12x4	0.8	1.0	1.6	1.7	26.8	1555	1000
19x4	0.8	1.0	1.6	1.8	30.5	2060	1000
27x4	0.8	1.2	2.0	2.0	37.1	3030	1000
37x4	0.8	1.2	2.0	2.1	40.8	3700	500
48x4	0.8	1.2	2.0	2.2	46.0	4535	500

Core identification:

2cores : Red, Black
3cores : Red, yellow, blue
4cores : Red, yellow, blue, black
5cores : Red, yellow, blue, black, green
6cores & above : black core insulation with white numerals

Tolerance:

Overall diameter : ± 5%
Packing : ± 5%

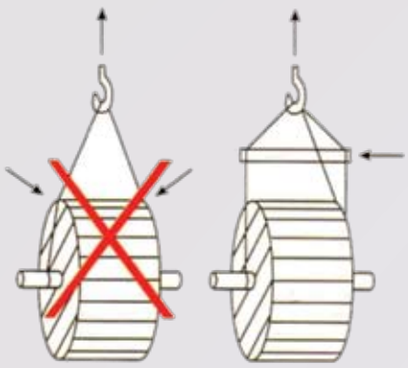
Note: 1) Based on special request solid (re)conductors can also be provided

2) Based on special request for 6cores and above, white cores with black printed numerals can also be provided

3) Cable with one core Green/Yellow can also be provided based on special request

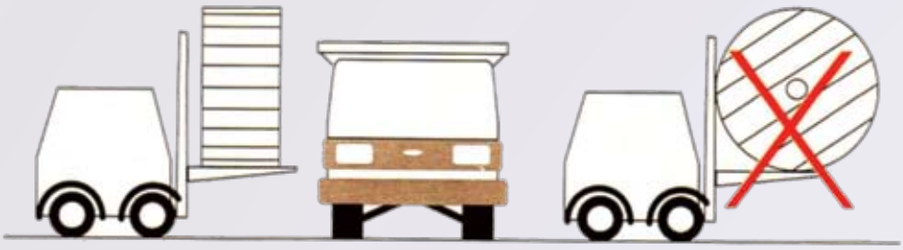
Drum Handling Instructions

National Cables Industry Cables and Conductors should be installed by trained personnel in accordance with good engineering practices, recognized codes of practice, statutory local requirements, IEE wiring regulations and where relevant, in accordance with any specific instructions issued by the company. Cables are often supplied in heavy cable reels and handing these reels can constitute a safety hazard. In particular, dangers may arise during the removal of steel binding straps and during the removal of retaining battens and timbers which may expose projecting nails.

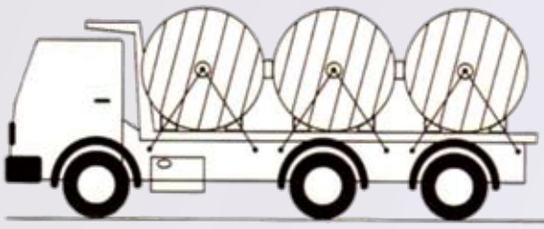


Lifting cable drums using crane.

Do not lay drums flat on their sides, use proper stops to prevent drums rolling.



Lift drums on and from Trucks correctly.



Secure drums adequately before transportation.

Roll in the direction shown by the arrow.

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NATIONAL CABLES INDUSTRY

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LOW VOLTAGE CABLES

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INNOVATIVE

PROCESSES AND

TECHNOLOGY STRATEGIES

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INTRODUCTION

This catalog contains information on National Cables Industry low voltage cables with PVC and XLPE insulation, Copper/ Aluminium Conductors, Armoured and Un-armoured designs, single and multicore constructions along with a different range of sheathing options. Cables are categorized by insulation and armouring. Each section contains appropriate technical details and constructional data.

PRODUCT SPECIFICATION

All cable designs outlined in this catalog use constructions covered by IEC 60502, BS 6346, BS 5467 and BS 6724. National Cable Industry can also supply a range of alternative designs to meet more specialized customer needs including enhanced fire performance and added environmental protection. Cables can also be supplied with alternative sheathing materials and colors, or can be made to individual customer specifications or other recognized standards both National & International.

CABLE SELECTION

It is essential that the type of cable ordered is suitable for its intended use. Cable choice will be based on a whole range of factors including installation specifications, relevant local regulations and the performance of appropriate cable types. It is therefore impossible to provide a conclusive guide to cable selection and we would advice on suitable designs to meet your specific cable needs.

CONDUCTORS

Conductors shall be of Copper or Aluminium, circular stranded (Non-compacted or Compacted) or Shaped, Class 2 to IEC 60228, BS EN 60228. The number of wires for each conductor size mentioned in the tables is for standard construction. However, the minimum number of wires mentioned in IEC 60228/ BS EN 60228 shall hold precedence during manufacture. For smaller sizes, a solid circular conductor, Class 1 as per IEC 60228, BS EN 60228 can also be supplied upon request.

INSULATION

XLPE material and thickness shall be as per IEC 60502/BS 5467/BS 6724 rated for 90ºC continues operation.
PVC material and thickness shall be as per IEC 60502 or BS 6346. PVC insulation Material shall be Type A as per IEC 60502 or TI1 as per BS 7655.

ASSEMBLY

For multicore cables, two, three of four insulated conductors are laid-up together with non-hygroscopic fillers compatible with the insulation material and the assembly is bedded with an extruded layer of PVC. In case of non-armoured cables, this layer may be omitted if the outer shape of the cable remains practically circular.
Standard COLOR CODE

Single Core	:	Red or Black
Two Cores	:	Red, Black
Three Cores	:	Red, Yellow, Blue
Four Cores	:	Red, Yellow, Blue, Black
Five Cores	:	Red, Yellow, Blue, Black, Green/ Yellow
Above Five Cores:		White numerals printed on black core insulation.

Cables with special colour code are also available based on special request.

Single Core	:	Brown or Blue
Two Cores	:	Brown, Blue
Three Cores	:	Green/Yellow, Blue, Brown
Four Cores	:	Blue, Brown, Black, Grey
Five Cores	:	Green/Yellow, Blue, Brown, Black, Grey
Above Five Cores:		Black Numerals printed on White core insulation.

INTRODUCTION

ARMOUR

Galvanized Steel Wires applied helically over bedding as per IEC 60502, BS 5467, BS 6346, BS 6724. (Single core cables shall be with Aluminium wire armour). Cables with Double steel tapes applied helically over the bedding of multi-core cables as per IEC 60502 are also available on request.

OUTER SHEATH

PVC type ST2 as per IEC 60502, Type 9 as per BS 7655 or LSZH Type ST8/LTS1 coloured Black. Low voltage cables can also be supplied with polyethylene outer sheath based on special request. Polyethylene offers the advantage of much greater impermeability to moisture compared to PVC and can also offer much greater abrasion resistance. These can be important factors when selecting cables for use in hostile environments.

All sheaths are designed with easy strip characteristics to reduce the time and cost of cable preparation during installation. In addition, finished cable are marked on the outer sheath to aid cable identification at site.

FIRE PERFORMANCE OF CABLE SHEATHS

Cables with special flame retardant PVC outer sheath to comply with the flame test requirements of IEC 60332-3-22, IEC 60332-3-23, IEC 60332-3-24 can also be supplied based on special request. Cables as per BS 6724 shall meet the requirements of low corrosive and low toxic gas emission as per BS 6724.

QUALITY

Effective Quality Management System is maintained at **NCI** as a key to long term operational reliability. Stringent quality control measures are implemented during procurement, during all stages of production and during final testing. Under professional control, NCI has demonstrated competence by obtaining Quality Management System **ISO-9001:2008** from **BASEC**, Product Certification Requirements from **BASEC** for “Enhanced Quality Management System for Product Related Functions”, Occupational Health and Safety Management System **OHSAS 18001:2007** from **SGS,** Emirates Mark of Conformity from **Emirates Authority for Standardization and Metrology (ESMA).**

BASEC is a government-nominated independent non-profit making organization and a leader in product certification for more than 30 years and seeks to ensure National, European and International Manufacturers and their products in cable industry reach relevant standard.

SERVICES

National Cables Industry offers technical support for cable installation projects. Please contact our Customer Service Department for details.

PVC INSULATION

STANDARD: BS 7655, IEC 60502-1

PARTICULARS & GUARANTEES RELATING TO PVC INSULATING COMPOUND (TYPE TI1)

SL NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongation at break: Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 125
2	Low temperature bend test: Temperature at which specimen shall not track	ºC	-15 ± 2
3	Low temperature elongation test: Test temperature Min. Elongation	ºC %	-15 ± 2 30
4	Low temperature impact test: Temperature at which specimen Shall not crack	ºC	-15 ± 2
5	Accelerated ageing for specified Period at specified temperature Followed by loss of mass test: Max. loss of mass, after ageing for 7 days at 80 ± 2 ºC	Mg/cm²	2.0
6	Accelerated ageing for specified period at specified temperature Followed by tensile strength & Elongation at break Number of days ageing Ageing temperature Tensile Strength after ageing: Min. value Max. variation Elongation at break after ageing: Min. value Max. variation from unaged value	 Days ºC N/mm² % % %	 7 80 ± 2 12.5 20 125 20
7	Pressure test at high temperature: Test temperature Max. indention	 ºC %	 80 ± 2 50
8	Resistance to cracking: Temperature at which specimen Shall not crack	ºC	150 ± 2
9	Insulation resistance constant: Min. K. value at 70ºC	M.Ω.km	0.037

PARTICULARS & GUARANTEES RELATING TO PVC INSULATING COMPOUND (TYPE A)

SL NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongation at break: Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 150
2	Low temperature bend test: Temperature at which specimen shall not track	ºC	-15 ± 2
3	Low temperature elongation test: Test temperature Min. Elongation	ºC %	-15 ± 2 20
4	Low temperature impact test: Test temperature Min. Elongation	ºC	-
5	Accelerated ageing for specified Period at specified temperature Followed by loss of mass test: Max. loss of mass, after ageing for 7 days at 80 ± 2 ºC	Mg/cm²	-
6	Accelerated ageing for specified period at specified temperature Followed by tensile strength & Elongation at break Number of days ageing Ageing temperature Tensile Strength after ageing: Min. value Max. variation Elongation at break after ageing: Min. value Max. variation from unaged value	 Days ºC N/mm² % % %	 7 100 ± 2 12.5 25 150 25
7	Pressure test at high temperature: Test temperature Max. indention	 ºC %	 80 ± 2 50
8	Resistance to cracking: Temperature at which specimen Shall not crack	ºC	150 ± 2
9	Water Absorption Temperature Duration Max. variation of mass	 ºC Days mg/cm²	 70 ± 2 10 1

PVC INSULATION

STANDARD: BS 7655, IEC 60502-1

PARTICULARS & GUARANTEES RELATING TO PVC INSULATING COMPOUND (TYPE 5)

SL NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongation at break: Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 125
2	Low temperature bend test: Temperature at which specimen shall not track	ºC	-15 ± 2
3	Low temperature elongation test: Test temperature Min. Elongation	ºC %	-15 ± 2 20
4	Accelerated ageing for specified at specified temperature followed by loss of mass test: Max. loss of mass, after ageing 10 days at 115 ± 2 ºC	Mg/cm²	1.5
5	Accelerated ageing for specified period at specified temperature Followed by tensile strength & Elongation at break Number of days ageing Ageing temperature Tensile Strength after ageing: Min. value Max. variation Elongation at break after ageing: Min. value Max. variation from unaged value	 Days ºC N/mm² % % %	 10 135 ± 2 12.5 25 125 25
6	Pressure test at high temperature: Test temperature Max. indentation	ºC %	95 ± 2 50
7	Resistance to cracking: Temperature at which specimen Shall not crack	ºC	150 ± 2
8	Insulation resistance constant: Min. K. value at 70ºC	M.Ω.km	180

PARTICULARS & GUARANTEES RELATING TO XLPE INSULATION

SL NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongation at break: Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 200
2	Accelerated ageing for specified period at specified temperature Followed by tensile strength & Elongation at break Number of days ageing Ageing temperature Max. variation of textile strength From unaged specimen Max. variation of elongation from unaged specimen	 Days ºC % %	 7 135 ± 2 ± 25 ± 25
3	Hot Set Test: Treatment: -Temperature -Time under load -Mechanical stress Max. elongation under load Max permanent elongation after Cooling	 ºC Minutes N/mm² % %	 200 ± 3 15 20 175 15
4	Water Absorption: Treatment: -Temperature -Duration Max. variation of mass	 ºC Days mg/cm²	 85 ± 2 14 1.0
5	Maximum permissible shrinkage: Treatment: -Temperature -Duration Maximum permissible shrinkage	 ºC Hours %	 130 ± 2 1 4
6	Insulation Resistance constant (Ki) at maximum rated temperature (90 ºC)	M.Ω.km	3.67
7	Volume Resistivity at maximum rated temperature (90 ºC)	Ω.cm	10^{12}

PARTICULARS & GUARANTEES RELATING TO PVC OUTER SHEATH TYPE ST2 (IEC 60502), TYPE 9 (BS 7655)

SL NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongation at break: Min. tensile strength Min. elongation at break	 N/mm² %	 12.5 150
2	Low temperature bend test: Temperature at which specimen shall not track	ºC	-15 ± 2
3	Low temperature elongation test: Test temperature Min. Elongation	 ºC %	 -15 ± 2 20
4	Low temperature impact test: Temperature at which specimen Shall not crack	ºC	-15 ± 2
5	Loss of mass: After ageing for 7 days at 100 ± 2 ºC Max. loss of mass	mg/cm²	1.5
6	Accelerated ageing for specified period at specified temperature Followed by tensile strength & Elongation at break test Number of days ageing Ageing temperature Tensile Strength after ageing: Min. value Max. variation Elongation at break after ageing: Min. value Max. variation from unaged value	 Days ºC N/mm² % % %	 7 100 ± 2 12.5 25 150 25
7	Pressure test at high temperature: Test temperature Max. indention	 ºC %	 90 ± 2 50
8	Heat Shock Test: Temperature at which specimen shall not crack	ºC	150 ± 2
9	Insulation resistance constant: Min. K. value at 20ºC	M.Ohm.km	0.0035
10	Flame Retardancy test (if required)	As per IEC 60332-1 (upon request)	

PARTICULARS & GUARANTEES RELATING TO LSZH OUTER SHEATH TYPE ST8 (IEC 60502-1)

SL NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongation at break: Minimum Tensile Strength Minimum Elongation at break	 N/mm² %	 9 125
2	Properties after ageing for specified period at specified temperature followed by tensile strength and elongation at break test. Number of days ageing Ageing temperature Tensile Strength after ageing: Minimum value Maximum variation Elongation at break after ageing: Minimum value Maximum variation from un-aged value	 Days ºC N/mm² % % %	 7 100 ± 2 9 40 100 40
3	Low temperature bend test: Test temperature at which specimen shall not crack	ºC	-15 ± 2
4	Low temperature elongation test: Test temperature Minimum Elongation	 ºC %	 -15 ± 2 20
5	Low temperature impact test: Temperature at which specimen shall not crack	ºC	-15 ± 2
6	Pressure test at high temperature: Test temperature Maximum indentation	 ºC %	 80 ± 2 50
7	Water Absorption: Ageing: Number of hours Ageing temperature Maximum increase in Mass	 hours ºC mg/cm²	 24 70 ± 2 10
8	Acidic emission and corrosive gases evolved Level of HCl Fluorine Content pH Minimum Conductivity	 % % µS/mm	 <0.5 <0.1 4.3 10

PARTICULARS & GUARANTEES RELATING TO LSZH OUTER SHEATH TYPE LTS1 (BS 7655)

SL NO.	DESCRIPTION	UNIT	GUARANTEED PARTICULARS
1	Tensile Strength and Elongation at break: Minimum Tensile Strength Minimum Elongation at break	 N/mm² %	 10 100
2	Properties after ageing for specified period at specified temperature followed by tensile strength and elongation at break test. Number of days ageing Ageing temperature Tensile Strength after ageing: Minimum value Maximum variation Elongation at break after ageing: Minimum value Maximum variation from un-aged value	 Days ºC N/mm² % % %	 7 100 ± 2 10 40 100 40
3	Low temperature bend test: Test temperature at which specimen shall not crack	ºC	-15 ± 2
4	Low temperature elongation test: Test temperature Minimum Elongation	 ºC %	 -15 ± 2 30
5	Low temperature impact test: Temperature at which specimen shall not crack	ºC	-15 ± 2
6	Pressure test at high temperature: Test temperature Maximum indentation	 ºC %	 80 ± 2 50
7	Tear Resistance Test as per BS 6469 (Sec. 99.1) Minimum value	N/mm	5
8	Water Immersion Test as per BS 6469 (Sec. 99.1) Ageing: Number of days Ageing temperature Maximum variation in tensile strength Maximum variation in elongation at break	 Days ºC % %	 7 70 ± 2 30 30
9	Acidic emission and corrosive gases evolved Level of HCL	%	<0.5

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD: BS 6346 0.6/1 kV

ALUMINIUM WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Alum/Steel Wire Dia.	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	mm	Kg/Km	meters
1x50 rmc	19	8.1	1.4	1.25	1.5	19	750	1000
1x70 rmc	19	9.7	1.4	1.25	1.6	21	1000	1000
1x95 rmc	19	11.4	1.6	1.25	1.6	23	1300	1000
1x120 rmc	37	12.9	1.6	1.6	1.7	26	1660	1000
1x150 rmc	37	14.3	1.8	1.6	1.7	28	1970	1000
1x185 rmc	37	16.0	2.0	1.6	1.8	30	2400	500
1x240 rmc	61	18.4	2.2	1.6	1.9	34	3025	500
1x300 rmc	61	20.4	2.4	1.6	1.9	37	3650	500
1x400 rmc	61	23.2	2.6	2.0	2.1	42	4675	500
1x500 rmc	61	26.7	2.8	2.0	2.1	46	5825	500
1x630 rmc	91	30.4	2.8	2.0	2.2	49	7275	500
1x800 rmc	91	33.7	2.8	2.5	2.4	56	9275	500
1x1000 rm	91	41.0	3.0	2.5	2.5	61	11800	250

STEEL WIRE ARMOURED CABLES

2x1.5 rm	7	1.56	0.6	0.9	1.4	12.5	325	1000
2x2.5 rm	7	2.01	0.7	0.9	1.4	14	400	1000
2x4 rm	7	2.55	0.8	0.9	1.4	15	450	1000
2x6 rm	7	3.1	0.8	0.9	1.5	17	540	1000
2x10 rm	7	4.0	1.0	1.25	1.6	20	850	1000
2x16 rm	7	5.0	1.0	1.25	1.6	22	1070	1000
2x25 sm	7	-	1.2	1.6	1.7	23	1345	1000
2x35 sm	7	-	1.2	1.6	1.8	25	1615	1000
2X50 sm	19	-	1.4	1.6	1.9	28	2010	500
2x70 sm	19	-	1.4	1.6	1.9	30	2510	500
2x95 sm	19	-	1.6	2.0	2.1	35.5	3490	500
2x120 sm	37	-	1.6	2.0	2.2	38	4100	500
2x150 sm	37	-	1.8	2.0	2.3	41	4840	500
2x185 sm	37	-	2.0	2.5	2.4	46	6230	250
2x240 sm	61	-	2.2	2.5	2.5	51	7660	250
2x300 sm	61	-	2.4	2.5	2.7	56	9250	250

rm : Round Stranded
rmc : Round Stranded Compacted
sm : Sectoral Stranded

Standard Colour Code:
1 Core : Black (Red on request)
2 Cores : Red, Black

Color Code based on special request.
1 Core : Brown or Blue
2 Cores : Brown, Blue

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD: BS 6346 0.6 /1 kV

STEEL WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Steel Wire Dia.	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	mm	Kg/Km	meters
3x1.5 rm	7	1.56	0.6	0.9	1.4	13	320	1000
3x2.5 rm	7	2.01	0.7	0.9	1.4	14	400	1000
3x4 rm	7	2.55	0.8	0.9	1.4	16	500	1000
3x6 rm	7	3.12	0.8	1.25	1.5	18	720	1000
3x10 rm	7	4.01	1.0	1.25	1.6	21	960	1000
3x16 rm	7	5.03	1.0	1.25	1.6	23	1220	1000
3x25 sm	7	-	1.2	1.6	1.7	25	1720	1000
3x35 sm	7	-	1.2	1.6	1.8	27	2100	1000
3x50 sm	19	-	1.4	1.6	1.9	31	2665	1000
3x70 sm	19	-	1.4	2.0	2.0	35	3690	500
3X95 sm	19	-	1.6	2.0	2.1	39	4710	500
3x120 sm	37	-	1.6	2.0	2.2	42	5570	500
3x150 sm	37	-	1.8	2.5	2.4	48	7135	500
3x185 sm	37	-	2.0	2.5	2.5	52	8500	250
3x240 sm	61	-	2.2	2.5	2.6	58	10610	250
3x300 sm	61	-	2.4	2.5	2.8	64	12810	250
3x400 sm	61	-	2.6	2.5	3.0	70	15790	250

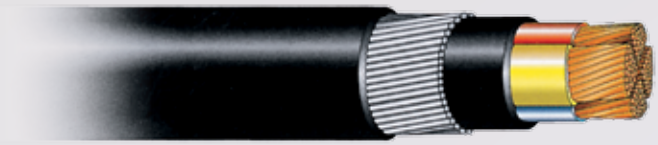
rm : Round Stranded
sm : Sectoral Stranded

Standard Colour Code:
3 core: Red, Yellow, Blue

Color Code based on special request.
3 Cores: Green / Yellow, Blue, Brown

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:BS 6346 0.6/1 kV



STEEL WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	mm	Kg/Km	meters
4x1.5 rm	7	1.56	0.6	0.9	1.4	13	360	1000
4x2.5 rm	7	2.01	0.7	0.9	1.4	14	460	1000
4x4 rm	7	2.55	0.8	1.25	1.5	17	700	1000
4x6 rm	7	3.12	0.8	1.25	1.5	19	830	1000
4x10 rm	7	4.01	1.0	1.25	1.6	22	1120	1000
4x16 rm	7	5.03	1.0	1.6	1.7	26	1700	1000
4x25 sm	7	-	1.2	1.6	1.8	28	2110	1000
4x35 sm	7	-	1.2	1.6	1.9	31	2590	1000
4x50 sm	19	-	1.4	2.0	2.0	36	3600	500
4x70 sm	19	-	1.4	2.0	2.1	40	4560	500
4X95 sm	19	-	1.6	2.0	2.2	44	5900	500
4x120sm	37	-	1.6	2.5	2.4	49	7500	500
4x150 sm	37	-	1.8	2.5	2.5	54	8900	250
4x185 sm	37	-	2.0	2.5	2.6	59	10770	250
4x240 sm	61	-	2.2	2.5	2.8	65	13490	250
4x300 sm	61	-	2.4	2.5	3.0	71	16320	250
4x400 sm	61	-	2.6	3.15	3.3	82	21250	250

STEEL WIRE ARMOURED CABLES

5x1.5 rm	7	1.56	0.9	0.9	1.4	14	400	1000
5x2.5 rm	7	2.01	0.7	0.9	1.5	16	540	1000
5x4 rm	7	2.55	0.8	1.25	1.5	18	800	1000
5x6 rm	7	3.12	0.8	1.25	1.6	20	970	1000
5x10 rm	7	4.01	1.0	1.6	1.7	25	1510	1000
5x16 rm	7	5.03	1.0	1.6	1.7	28	1940	1000
5x25 rm	7	6.3	1.2	1.6	1.9	33	2690	500
5x35 rm	7	7.44	1.2	1.6	1.9	36	3320	500
5x50 rmc	19	8.10	1.4	2.0	2.1	41	4400	500
5x70 rmc	19	9.70	1.4	2.0	2.2	45	5670	500

rm : Round Stranded
rmc : Round Stranded Compacted
sm : Sectoral Stranded

Standard Colour Code:
4 cores: Red, Yellow, Blue, Black
5 cores: Red, Yellow, Blue, Black, Green/Yellow

Color Code based on special request
4 cores: Blue, Brown, Black, Grey
5 cores: Green/Yellow, Blue, Brown, Black, Grey

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:BS 5467 0.6 /1 kV

ALUMINIUM WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Alum/Steel Wire Dia.	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	mm	Kg/Km	meters
1x50 rmc	19	8.1	1.0	0.9	1.5	17	700	1000
1x70 rmc	19	9.7	1.1	1.25	1.5	20	925	1000
1x95 rmc	19	11.4	1.1	1.25	1.6	22	1200	1000
1x120 rmc	37	12.9	1.2	1.25	1.6	24	1450	1000
1x150 rmc	37	14.3	1.4	1.6	1.7	27	1850	1000
1x185 rmc	37	16.0	1.6	1.6	1.8	30	2250	1000
1x240 rmc	61	18.4	1.7.	1.6	1.8	32	2850	500
1x300rmc	61	20.4	1.8	1.6	1.9	35	3475	500
1x400rmc	61	23.2	2.0	2.0	2.0	40	4470	500
1x500 rmc	61	26.7	2.2	2.0	2.1	44	5575	500
1x630 rmc	61	30.4	2.4	2.0	2.2	49	7050	500
1x800rmc	61	33.7	2.6	2.5	2.4	55	9050	500
1x1000 rm	91	41.0	2.8	2.5	2.5	60	11500	250

STEEL WIRE ARMOURED CABLES

2x1.5 rm	7	1.56	0.6	0.9	1.3	12	280	1000
2x2.5 rm	7	2.01	0.7	0.9	1.4	14	350	1000
2x4 rm	7	2.55	0.7	0.9	1.4	15	425	1000
2x6 rm	7	3.12	0.7	0.9	1.4	16	500	1000
2x10 rm	7	4.01	0.7	0.9	1.5	18	655	1000
2x16 rm	7	5.03	0.7	1.25	1.5	20	970	1000
2x25 sm	7	-	0.9	1.25	1.6	24	1350	1000
2x35 sm	7	-	0.9	1.6	1.7	27	1850	1000

rm : Round Stranded
rmc : Round Stranded Compacted
sm : Sectoral Stranded

Standard Colour Code:
1 Core : Black (Red on request)
2 Cores : Red, Black

Color Code based on special request
1 Core : Brown or Blue
2 Cores : Brown, Blue

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:BS 5467 0.6/1 kV

STEEL WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Steel Wire Dia.	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	Mm	mm	mm	Kg/Km	meters
3x1.5 rm	7	1.56	0.6	0.9	1.3	13	300	1000
3x2.5 rm	7	2.01	0.7	0.9	1.4	14	390	1000
3x4 rm	7	2.55	0.7	0.9	1.4	15	475	1000
3x6 rm	7	3.12	0.7	0.9	1.4	17	575	1000
3x10 rm	7	4.01	0.7	1.25	1.5	20	850	1000
3x16 rm	7	5.03	0.7	1.25	1.6	22	1110	1000
3x25 sm	7	-	0.9	1.6	1.7	24	1590	1000
3x35 sm	7	-	0.9	1.6	1.8	26	1965	1000
3x50 sm	19	-	1.0	1.6	1.8	29	2440	500
3x70 sm	19	-	1.1	1.6	1.9	32	3200	500
3X95 sm	19	-	1.1	2.0	2.1	37	4390	500
3x120 sm	37	-	1.2	2.0	2.2	41	5250	500
3x150 sm	37	-	1.4	2.5	2.3	46	6740	250
3x185 sm	37	-	1.6	2.5	2.4	50	8050	250
3x240 sm	61	-	1.7	2.5	2.6	55	9990	250
3x300 sm	61	-	1.8	2.5	2.7	60	12100	250
3x400 sm	61	-	2.0	2.5	2.9	67	14970	250

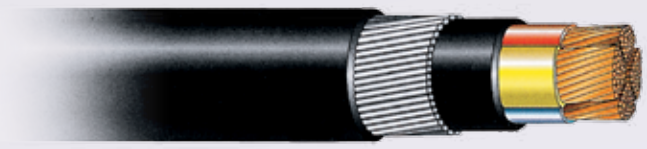
rm : Round Stranded
sm : Sectoral Stranded

Standard Colour Code:
3 cores : Red, Yellow, Blue

Color Code based on special request
3 cores : Green / Yellow, Blue, Brown

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD: BS 5467 0.6/1 kV



STEEL WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	mm	Kg/Km	meters
4x1.5 rm	7	1.56	0.6	0.9	1.3	13	350	1000
4x2.5 rm	7	2.01	0.7	0.9	1.4	15	450	1000
4x4 rm	7	2.55	0.7	0.9	1.4	16	550	1000
4x6 rm	7	3.12	0.7	1.25	1.5	19	775	1000
4x10 rm	7	4.01	0.7	1.25	1.5	21	1000	1000
4x16 rm	7	5.03	0.7	1.25	1.6	23	1325	1000
4x25 sm	7	-	0.9	1.6	1.7	26	1925	1000
4x35 sm	7	-	0.9	1.6	1.8	29	2390	1000
4x50 sm	19	-	1.0	1.6	1.9	32	3015	500
4x70 sm	19	-	1.1	2.0	2.1	38	4300	500
4X95 sm	19	-	1.1	2.0	2.2	42	5500	500
4x120sm	37	-	1.2	2.5	2.3	47	7035	500
4x150 sm	37	-	1.4	2.5	2.4	52	8410	500
4x185 sm	37	-	1.6	2.5	2.6	57	10150	250
4x240 sm	61	-	1.7	2.5	2.7	63	12750	250
4x300 sm	61	-	1.8	2.5	2.9	69	15440	250
4x400 sm	61	-	2.0	3.15	3.2	78	20210	250

STEEL WIRE ARMOURED CABLES

5x1.5 rm	7	1.56	0.6	0.9	1.4	14	400	1000
5x2.5 rm	7	2.01	0.7	0.9	1.4	16	515	1000
5x4 rm	7	2.55	0.7	0.9	1.5	18	650	1000
5x6 rm	7	3.12	0.7	1.25	1.5	20	900	1000
5x10 rm	7	4.01	0.7	1.25	1.6	23	1190	1000
5x16 rm	7	5.03	0.7	1.6	1.7	27	1775	1000
5x25 rm	7	6.3	0.9	1.6	1.8	31	2450	1000
5x35 rm	7	7.44	0.9	1.6	1.9	35	3075	500
5x50 rmc	19	8.1	1.0	2.0	2.0	40	4040	500
5x70 rmc	19	9.7	1.1	2.0	2.2	46	5355	500

rm: **Round Stranded**
rmc: **Round Stranded Compacted**
sm: **Sectoral Stranded**

Standard Colour Code:
4 cores: Red, Yellow, Blue, Black
5 cores: Red, Yellow, Blue, Black, Green/Yellow

Color Code based on special request
4 Cores: Blue, Brown, Black, Grey
5 Cores: Green/Yellow, Blue, Brown, Black, Grey

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

CABLE CORE(S) UNARMOURED

Nominal Area	No. of wires	Approx. conductor diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Aprrox. Weight	Standard Packing
mm²	No.	mm	mm	mm	no.	Kg/Km	meter
1 x 1.5 re	1	1.38	0.8	1.4	6	55	1000
1 x 1.5 rm	7	1.56	0.8	1.4	6	55	1000
1 x 2.5 re	1	1.78	0.8	1.4	7	65	1000
1 x 2.5 rm	7	2.01	0.8	1.4	7	70	1000
1 x 4 re	1	2.25	1.0	1.4	7	90	1000
1 x 4 rm	7	2.55	1.0	1.4	8	95	1000
1 x 6 re	1	2.76	1.0	1.4	8	110	1000
1 x 6 rm	7	3.12	1.0	1.4	8	120	1000
1 x 10 re	7	3.57	1.0	1.4	9	155	1000
1 x 10 rm	7	4.01	1.0	1.4	9	165	1000
1 x 16 rm	7	5.03	1.0	1.4	10	230	1000
1 x 25 rm	7	6.3	1.2	1.4	12	335	1000
1 x 35 rm	7	7.44	1.2	1.4	13	440	1000
1 x 50 rmc	19	8.1	1.4	1.4	14	550	1000
1 x 70 rmc	19	9.7	1.4	1.4	15	760	1000
1 x 95 rmc	19	11.4	1.6	1.5	18	1040	1000
1 x 120 rmc	37	12.9	1.6	1.5	19	1275	1000
1 x 150 rmc	37	14.3	1.8	1.6	21	1565	1000
1 x 185 rmc	37	16.0	2.0	1.7	24	1950	1000
1 x 240 rmc	61	18.4	2.2	1.7	27	2540	1000
1 x 300 rmc	61	20.4	2.4	1.8	29	3160	1000
1 x 400 rmc	61	23.2	2.6	1.9	33	4000	500
1 x 500 rmc	61	26.7	2.8	2.1	37	5070	500
1 x 630 rmc	61	30.4	2.8	2.2	40	6470	500
1 x 800 rmc	61	33.7	2.8	2.3	44	8150	250
1 x 1000 rm	91	41.0	3.0	2.5	52	10530	250

CABLE CORE(S) UNARMOURED

2 x 1.5 re	1	1.38	0.8	1.8	12	200	1000
2 x 1.5 rm	7	1.56	0.8	1.8	12	200	1000
2 x 2.5 re	1	1.78	0.8	1.8	13	225	1000
2 x 2.5 rm	7	2.01	0.8	1.8	13	250	1000
2 x 4 re	1	2.25	1.0	1.8	15	325	1000
2 x 4 rm	7	2.55	1.0	1.8	15	325	1000
2 x 6 re	1	2.76	1.0	1.8	16	375	1000
2 x 6 rm	7	3.12	1.0	1.8	16	400	1000
2 x 10 re	1	3.57	1.0	1.8	18	500	1000
2 x 10 rm	7	4.01	1.0	1.8	18	525	1000
2 x 16 rm	7	5.03	1.0	1.8	20	700	1000
2 x 25 sm	7	-	1.2	1.8	21	790	1000
2 x 35 sm	7	-	1.2	1.8	22	1000	1000
2 x 50 sm	19	-	1.4	1.8	25	1300	1000
2 x 70 sm	19	-	1.4	1.9	28	1735	1000
2 x 95 sm	19	-	1.6	2.0	32	2350	500
2 x 120 sm	37	-	1.6	2.1	34	2855	500
2 x 150 sm	37	-	1.8	2.2	38	3480	500
2 x 185 sm	37	-	2.0	2.4	41	4360	500
2 x 240 sm	61	-	2.2	2.6	46	5600	250
2 x 300 sm	61	-	2.4	2.7	57	6960	250

re : **Round Solid**
rm : **Round Stranded**
sm : **Sectoral Stranded**
rmc : Round Stranded Compacted

Colour Code:
1 Core: Black (red on request)
2 Cores: Red, Black

Tolerance range:
Overall diameter ± 5%
Packing ± 5%

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

ALUMINIUM WIRE ARMOURED

Nominal Alum./ Steel Wire diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.8	1.8	11	150	-
-	-	-	-	-
0.8	1.8	12	175	-
-	-	-	-	-
0.8	1.8	13	200	-
-	-	-	-	-
0.8	1.8	13	250	-
-	-	-	-	-
0.8	1.8	14	300	1000
0.8	1.8	15	375	1000
0.8	1.8	17	500	1000
0.8	1.8	18	625	1000
1.25	1.8	20	800	1000
1.25	1.8	21	1025	1000
1.25	1.8	24	1325	1000
1.6	1.8	26	1650	1000
1.6	1.8	28	1950	1000
1.6	1.8	30	2375	500
1.6	1.9	33	3000	500
2.0	2.0	36	3750	500
2.0	2.1	40	4700	500
2.0	2.2	43	5850	500
2.0	2.4	48	7325	500
2.5	2.5	53	9300	250
2.5	2.7	61	11875	250

ALUMINIUM TAPE ARMOURED

Aluminium / Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0.5	1.8	14	300	1000
0.5	1.8	15	380	1000
0.5	1.8	17	500	1000
0.5	1.8	18	625	1000
0.5	1.8	19	775	1000
0.5	1.8	20	980	1000
0.5	1.8	22	1275	1000
0.5	1.8	23	1530	1000
0.5	1.8	26	1830	1000
0.5	1.8	28	2230	1000
0.5	1.9	30	2850	500
0.5	1.9	33	3480	500
0.5	2.1	37	4410	500
0.5	2.2	41	5550	500
0.5	2.3	45	6980	500
-	-	-	-	-
-	-	-	-	-

STEEL WIRE ARMOURED

-	-	-	-	-
-	1.8	14	350	1000
-	-	-	-	-
0.8	1.8	15	400	1000
0.8	1.8	17	515	1000
0.8	1.8	17	525	1000
0.8	1.8	19	730	1000
1.25	1.8	19	750	1000
1.25	1.8	20	825	1000
1.25	1.8	21	900	1000
1.25	1.8	23	1120	1000
1.6	1.8	24	1360	1000
1.6	1.8	26	1620	1000
1.6	1.9	28	2010	500
2.0	2.0	32	2740	500
2.0	2.2	36	3510	500
2.0	2.3	38	4120	500
2.5	2.4	43	5230	500
2.5	2.6	47	6280	250
2.5	2.8	52	7740	250
2.5	2.9	56	9310	250

STEEL TAPE ARMOURED

-	-	-	-	-
0.2	1.8	13	270	1000
-	-	-	-	-
0.2	1.8	14	320	1000
0.2	1.8	15	400	1000
0.2	1.8	16	420	1000
0.2	1.8	17	460	1000
0.2	1.8	17	500	1000
0.2	1.8	18	600	1000
0.2	1.8	19	640	1000
0.2	1.8	21	830	1000
0.2	1.8	22	910	1000
0.2	1.8	23	1130	1000
0.2	1.8	26	1440	1000
0.2	1.9	28	1900	1000
0.2	2.0	32	2540	500
0.5	2.2	36	3400	500
0.5	2.3	40	4080	500
0.5	2.4	43	4990	500
0.5	2.6	49	6310	250
0.5	2.8	53	7770	250

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

CABLE CORE(S)

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness
mm²	No.	mm	mm
3 x 1.5 re	1	1.38	0.8
3 x 1.5 rm	7	1.56	0.8
3 x 2.5 re	1	1.78	0.8
3 x 2.5 rm	7	2.01	0.8
3 x 4 re	1	2.25	1.0
3 x 4 rm	7	2.55	1.0
3 x 6 re	1	2.76	1.0
3 x 6 rm	7	3.12	1.0
3 x 10 re	1	3.57	1.0
3 x 10 rm	7	4.01	1.0
3 x 16 rm	7	5.03	1.0
3 x 25 sm	7	-	1.2
3 x 35 sm	7	-	1.2
3 x 50 sm	19	-	1.4
3 x 70 sm	19	-	1.4
3 x 95 sm	19	-	1.6
3 x 120 sm	37	-	1.6
3 x 150 sm	37	-	1.8
3 x 185 sm	37	-	2.0
3 x 240 sm	61	-	2.2
3 x 300 sm	61	-	2.4
3 x 400 sm	61	-	2.6
3 x 500 sm	61	-	2.8

UNARMOURED

Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm	mm	Kg/Km	meters
1.8	13	225	1000
1.8	13	240	1000
1.8	14	275	1000
1.8	14	300	1000
1.8	16	375	1000
1.8	16	400	1000
1.8	17	450	1000
1.8	17	485	1000
1.8	19	600	1000
1.8	19	590	1000
1.8	22	800	1000
1.8	23	1010	1000
1.8	25	1400	1000
1.8	28	1850	1000
2.0	32	2550	1000
2.1	36	3400	500
2.2	39	4160	500
2.3	43	5120	500
2.5	46	6340	500
2.7	53	8220	250
2.9	59	10170	250
3.1	67	12890	250
3.4	73	16290	250

re : **Round Solid**
rm : **Round Stranded**
sm : **Sectoral Stranded**

Colour Code:
3 cores: Red, Yellow, Blue

Tolerance range:
Overall diameter ±5%
Packing ±5%

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

STEEL WIRE ARMOURED

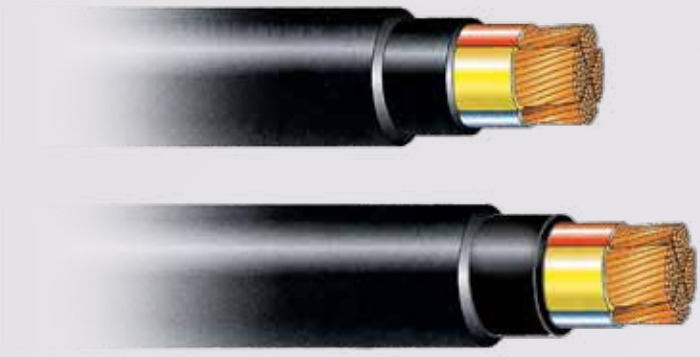
Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg / Km	Meters
-	-	-	-	-
0.8	1.8	14	400	1000
-	-	-	-	-
0.8	1.8	15	470	1000
1.25	1.8	18	685	1000
1.25	1.8	18	740	1000
1.25	1.8	19	800	1000
1.25	1.8	19	850	1000
1.25	1.8	21	1000	1000
1.25	1.8	22	1000	1000
1.25	1.8	24	1270	1000
1.6	1.8	26	1740	1000
1.6	1.8	28	2110	1000
1.6	2.0	32	2680	500
2.0	2.1	38	3710	500
2.0	2.2	40	4730	500
2.0	2.3	43	5590	500
2.5	2.5	47	7160	500
2.5	2.7	53	8560	250
2.5	2.9	59	10700	250
2.5	3.1	65	12900	250
3.15	3.4	74	16820	250
3.15	3.6	80	20600	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg / Km	meters
-	-	-	-	-
0.2	1.8	14	300	1000
-	-	-	-	-
0.2	1.8	15	360	1000
0.2	1.8	17	450	1000
0.2	1.8	17	480	1000
0.2	1.8	18	500	1000
0.2	1.8	18	580	1000
0.2	1.8	19	700	1000
0.2	1.8	20	770	1000
0.2	1.8	22	930	1000
0.2	1.8	24	1230	1000
0.2	1.8	26	1550	1000
0.2	1.9	29	2030	1000
0.2	2.0	33	2740	500
0.5	2.2	38	3980	500
0.5	2.3	41	4780	500
0.5	2.4	46	5810	500
0.5	2.6	50	7010	500
0.5	2.8	56	9080	500
0.5	2.9	61	11080	500
0.5	3.2	69	13960	500
0.5	3.4	75	17420	500

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV



CABLE CORE (S)

UNARMOURED

Nominal Area	No. of Wires	Approx. Conductor diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	Kg/Km	meters
4 x 1.5 re	1	1.38	0.8	1.8	14	250	1000
4 x 1.5 rm	7	1.56	0.8	1.8	14	275	1000
4 x 2.5 re	1	1.78	0.8	1.8	15	325	1000
4 x 2.5 rm	7	2.01	0.8	1.8	15	335	1000
4 x 4 re	1	2.25	1.0	1.8	17	450	1000
4 x 4 rm	7	2.55	1.0	1.8	17	460	1000
4 x 6 re	1	2.76	1.0	1.8	18	550	1000
4 x 6 rm	7	3.12	1.0	1.8	18	575	1000
4 x 10 re	1	3.57	1.0	1.8	20	750	1000
4 x 10 rm	7	4.01	1.0	1.8	21	730	1000
4 x 16 rm	7	5.03	1.0	1.8	24	1010	1000
4 x 25 sm	7	-	1.2	1.8	25	1390	1000
4 x 35 sm	7	-	1.2	1.8	28	1800	1000
4 x 50 sm	19	-	1.4	1.9	32	2410	1000
4 x 70 sm	19	-	1.4	2.1	36	3300	500
4 x 95 sm	19	-	1.6	2.2	41	4425	500
4 x 120 sm	37	-	1.6	2.4	45	5440	500
4 x 150 sm	37	-	1.8	2.5	49	6700	500
4 x 185 sm	37	-	2.0	2.7	55	8350	250
4 x 240 sm	61	-	2.2	2.9	61	10765	250
4 x 300 sm	61	-	2.4	3.1	67	13360	250
4 x 400 sm	61	-	2.6	3.4	76	17000	250
4 x 500 sm	61	-	2.8	3.7	83	21460	250

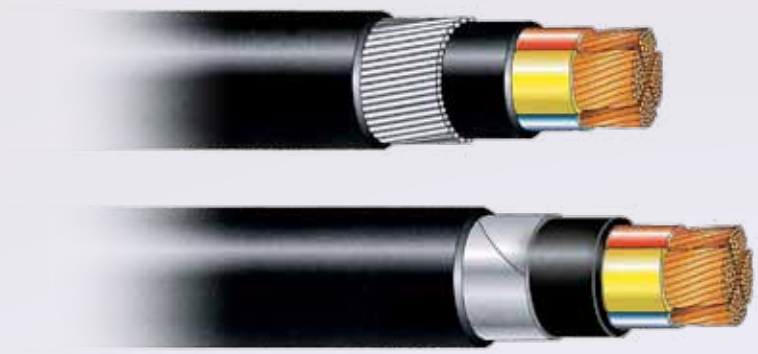
re: Round Solid
rm: Round Stranded
sm : Sectoral Stranded

Colour Code :
4 Cores : Red, Yellow, Blue, Black

Tolerance range:
Overall diameter ±5%
Packing ±5%

PVC INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV



STEEL WIRE ARMOURED

Steel Wire dia.	Nominal Sheath thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.8	1.8	15	450	1000
-	-	-	-	-
0.8	1.8	16	500	-
1.25	1.8	19	790	1000
1.25	1.8	20	825	1000
1.25	1.8	21	950	1000
1.25	1.8	21	975	1000
1.25	1.8	23	1175	1000
1.25	1.8	24	1175	1000
1.6	1.8	27	1675	1000
1.6	1.8	29	2110	1000
1.6	1.9	31	2590	1000
2.0	2.1	37	3615	500
2.0	2.2	40	4580	500
2.5	2.4	46	6340	500
2.5	2.5	50	7525	500
2.5	2.7	55	8950	500
2.5	2.9	60	10850	500
2.5	3.1	66	13580	250
3.15	3.3	73	17250	250
3.15	3.6	83	21375	250
3.15	3.9	90	26330	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.2	1.8	14	330	1000
-	-	-	-	-
0.2	1.8	15	390	1000
0.2	1.8	18	525	1000
0.2	1.8	18	550	1000
0.2	1.8	19	640	1000
0.2	1.8	19	675	1000
0.2	1.8	21	850	1000
0.2	1.8	22	850	1000
0.2	1.8	24	1150	1000
0.2	1.8	26	1540	1000
0.2	1.8	29	1950	1000
0.2	2.0	33	2625	500
0.5	2.1	38	3850	500
0.5	2.3	43	5075	500
0.5	2.4	47	6150	500
0.5	2.6	52	7475	500
0.5	2.7	57	9200	500
0.5	3.0	63	11740	250
0.5	3.2	69	14425	250
0.5	3.5	78	18200	250
0.8	3.8	87	23590	250

PVC INSULATED, PVC SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

CABLE CORE(S) — UNARMOURED

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	no.	mm	mm	mm	mm	Kg/Km	meters
1 x 16 rm	7	5.2	1.0	1.4	10	140	1000
1 x 25 rm	7	6.0	1.2	1.4	12	180	1000
1 x 35 rm	7	7.41	1.2	1.4	13	230	1000
1 x 50 rmc	7	8.30	1.4	1.4	14	275	1000
1 x 70 rmc	19	9.70	1.4	1.4	16	350	1000
1 x 95 rmc	19	11.55	1.6	1.5	18	475	1000
1 x 120 rmc	19	12.95	1.6	1.5	20	550	1000
1 x 150 rmc	19	14.30	1.8	1.6	22	675	1000
1 x 185 rmc	37	15.9	2.0	1.7	24	825	1000
1 x 240 rmc	37	18.4	2.2	1.8	27	1060	1000
1 x 300 rmc	37	20.5	2.4	1.9	30	1300	1000
1 x 400 rmc	61	24.0	2.6	2.0	33	1650	500
1 x 500 rmc	61	27.0	2.8	2.1	37	2050	500
1 x 630 rmc	61	30.4	2.8	2.2	41	2540	500

CABLE CORE(S) — UNARMOURED

2 x 16 rm	7	5.2	1.0	1.8	20	540	1000
2 x 25 rm	7	6.30	1.2	1.8	23	725	1000
2 x 35 rm	7	7.41	1.2	1.8	26	875	1000

CABLE CORE(S) — UNARMOURED

3 x 16 rm	7	5.2	1.0	1.8	22	530	1000
3 x 25 rm	7	6.30	1.2	1.8	25	720	1000
3 x 35 rm	7	7.41	1.2	1.8	28	875	1000
3 x 50 rmc	7	8.30	1.4	1.8	30	1025	1000
3 x 70 rmc	19	9.7	1.4	2.0	34	1350	500
3 x 95 rmc	19	11.5	1.6	2.1	39	1775	500
3 x 120 rmc	19	12.95	1.6	2.2	43	2090	500
3 x 150 rmc	19	14.30	1.8	2.3	47	2550	500
3 x 185 rmc	37	15.9	2.0	2.5	51	3110	500
3 x 240 rmc	37	18.4	2.2	2.7	59	4050	250
3 x 300 rmc	37	20.5	2.4	2.9	65	4900	250
3 x 400 rmc	61	24.0	2.6	3.1	74	6250	250
3 x 500 rmc	61	27.0	2.8	3.4	82	7775	250

rm: Round Stranded
rmc: Round Stranded Compacted

Colour Code:
1 Core: Black (Red on request)
2 Cores: Red, Black
3 Cores: Red, Yellow, Blue

Tolerance range:
Overall diameter ± 5%
Packing ± 5%

PVC INSULATED, PVC SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

ALUMINIUM WIRE ARMOURED

Nominal Alum / Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg / Km	meters
0.8	1.8	15	300	1000
0.8	1.8	16	350	1000
0.8	1.8	17	410	1000
1.25	1.8	20	525	1000
1.25	1.8	21	625	1000
1.25	1.8	23	775	1000
1.6	1.8	25	925	1000
1.6	1.8	27	1060	1000
1.6	1.8	29	1240	1000
1.6	1.9	32	1530	500
2.0	2.0	36	1900	500
2.0	2.1	40	2375	500
2.0	2.2	44	2850	500
2.0	2.4	48	3425	500

ALUMINIUM TAPE ARMOURED

Aluminium / Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
0.5	1.8	15	285	1000
0.5	1.8	17	360	1000
0.5	1.8	18	425	1000
0.5	1.8	20	480	1000
0.5	1.8	21	570	1000
0.5	1.8	24	710	1000
0.5	1.8	25	800	1000
0.5	1.8	27	950	1000
0.5	1.8	29	1100	1000
0.5	1.9	32	1380	500
0.5	1.9	35	1620	500
0.5	2.1	39	2070	500
0.5	2.2	43	2530	500
0.5	2.3	45	3050	500

STEEL WIRE ARMOURED

1.25	1.8	24	980	1000
1.6	1.8	27	1400	1000
1.6	1.8	29	1610	1000

STEEL TAPE ARMOURED

0.2	1.8	21	650	1000
0.2	1.8	24	860	1000
0.2	1.8	26	1030	1000

STEEL WIRE ARMOURED

1.25	1.8	25	1000	1000
1.6	1.8	28	1420	1000
1.6	1.8	31	1650	1000
1.6	2.0	34	1930	500
2.0	2.1	39	2590	500
2.0	2.2	44	3200	500
2.0	2.3	47	3625	500
2.5	2.5	52	4725	500
2.5	2.7	57	5500	250
2.5	2.9	64	6775	250
2.5	3.1	70	7875	250
3.15	3.4	81	10600	250
3.15	3.6	88	12550	250

STEEL TAPE ARMOURED

0.2	1.8	23	660	1000
0.2	1.8	26	860	1000
0.2	1.8	28	1025	1000
0.2	1.9	32	1225	1000
0.2	2..0	35	1550	500
0.5	2.2	41	2400	500
0.5	2.3	45	2770	500
0.5	2.4	49	3300	500
0.5	2.6	54	3940	500
0.5	2.8	61	4980	500
0.5	3.0	66	5900	500
0.5	3.2	76	7450	250
0.5	3.4	83	9050	250

PVC INSULATED, PVC SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD: IEC 60502-1 0.6 /1 kV

CABLE CORE(S)

Nominal Area	No. of Wires	Approx. Conductor diameter	Nominal Insulation Thickness
mm²	No.	mm	mm
4 x 16 rm	7	5.2	1.0
4 x 25 rm	7	6.30	1.2
4 x 35 sm	7	-	1.2
4 x 50 sm	7	-	1.4
4 x 70 sm	19	-	1.4
4 x 95 sm	19	-	1.6
4 x 120 sm	19	-	1.6
4 x 150 sm	37	-	1.8
4 x 185 sm	37	-	2.0
4 x 240 sm	61	-	2.2
4 x 300 sm	61	-	2.4
4 x 400 sm	61	-	2.6
4 x 500 sm	61	-	2.8

UNARMOURED

Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	Kg/Km	meters
1.8	24	640	1000
1.8	27	875	1000
1.8	28	950	1000
1.9	32	1260	500
2.1	36	1630	500
2.2	41	2110	500
2.3	45	2525	500
2.5	49	3075	500
2.7	55	3800	500
2.9	61	4825	250
3.1	67	5890	250
3.4	76	7475	250
3.7	83	9250	250

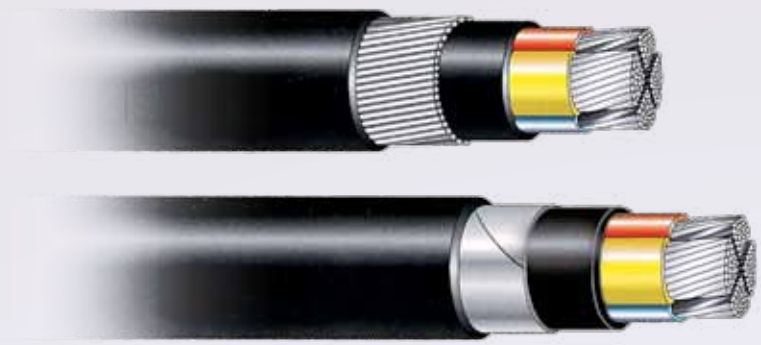
rm: Round Stranded
sm: Sectoral Stranded

Colour Code :
3½ Cores : Red, Yellow, Blue, Black
4 Cores: Red, Yellow, Blue, Black

Tolerance Range:
Overall diameter ±5%
Packing ±5%

PVC INSULATED, PVC SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD:IE 60502-1 0.6/1 kV



STEEL WIRE ARMOURED

Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg / Km	meters
1.6	1.8	27	1310	1000
1.6	1.8	31	1640	1000
1.6	1.9	31	1750	500
2.0	2.1	37	2470	500
2.0	2.2	40	2930	500
2.5	2.4	46	4025	500
2.5	2.5	50	4600	500
2.5	2.7	55	5325	500
2.5	2.9	60	6320	250
2.5	3.1	66	7650	250
3.15	3.3	73	9790	250
3.15	3.6	83	11850	250
3.15	3.9	90	14100	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
0.2	1.8	25	775	1000
0.2	1.8	28	1030	1000
0.2	1.8	29	1110	1000
0.2	2.0	33	1475	500
0.5	2.1	38	2175	500
0.5	2.3	43	2760	500
0.5	2.4	47	3230	500
0.5	2.6	51	3850	500
0.5	2.7	57	4650	500
0.5	3.0	63	5800	250
0.5	3.2	69	6950	250
0.5	3.5	78	8675	250
0.8	3.8	87	11380	250

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTORS STANDARD: IEC 60502-1 0.6/1 kV

CABLE CORE(S) UNARMOURED

Nominal Area	No. of wires	Approx. conductor diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Aprrox. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	Kg/Km	meters
1 x 1.5 re	1	1.38	0.7	1.4	6	45	1000
1 x 1.5 rm	7	1.56	0.7	1.4	6	50	1000
1 x 2.5 re	1	1.78	0.7	1.4	6	60	1000
1 x 2.5 rm	7	2.01	0.7	1.4	7	60	1000
1 x 4 re	1	2.25	0.7	1.4	7	75	1000
1 x 4 rm	7	2.55	0.7	1.4	7	80	1000
1 x 6 re	1	2.76	0.7	1.4	7	95	1000
1 x 6 rm	7	3.12	0.7	1.4	8	100	1000
1 x 10 rm	7	4.01	0.7	1.4	9	145	1000
1 x 16 rm	7	5.03	0.7	1.4	10	200	1000
1 x 25 rm	7	6.3	0.9	1.4	11	300	1000
1 x 35 rm	7	7.44	0.9	1.4	12	400	1000
1 x 50 rmc	19	8.1	1.0	1.4	13	515	1000
1 x 70 rmc	19	9.7	1.1	1.4	15	720	1000
1 x 95 rmc	19	11.4	1.1	1.5	17	975	1000
1 x 120 rmc	37	12.9	1.2	1.5	19	1210	1000
1 x 150 rmc	37	14.3	1.4	1.6	21	1490	1000
1 x 185 rmc	37	16.0	1.6	1.6	23	1850	1000
1 x 240 rmc	61	18.4	1.7	1.7	25	2400	1000
1 x 300 rm	61	20.4	1.8	1.8	28	3000	1000
1 x 400 rmc	61	23.2	2.0	1.9	31	3800	500
1 x 500 rmc	61	26.7	2.2	2.0	35	4850	500
1 x 630 rmc	61	30.4	2.4	2.2	40	6250	500
1 x 800 rmc	61	33.7	2.6	2.3	44	7950	500
1 x 1000 rm	91	41.0	2.8	2.4	51	10180	250

CABLE CORE(S) UNARMOURED

2 x 1.5 re	1	1.38	0.7	1.8	12	175	1000
2 x 1.5 rm	7	1.56	0.7	1.8	12	200	1000
2 x 2.5 re	1	1.78	0.7	1.8	13	225	1000
2 x 2.5 rm	7	2.01	0.7	1.8	13	225	1000
2 x 4 re	1	2.25	0.7	1.8	14	275	1000
2 x 4 rm	7	2.55	0.7	1.8	14	270	1000
2 x 6 re	1	2.76	0.7	1.8	15	325	1000
2 x 6 rm	7	3.12	0.7	1.8	15	340	1000
2 x 10 rm	7	4.01	0.7	1.8	17	455	1000
2 x 16 rm	7	5.03	0.7	1.8	19	620	1000
2 x 25 sm	7	-	0.9	1.8	19	715	1000
2 x 35 sm	7	-	0.9	1.8	21	915	1000

re: Round Solid
rm: Round Stranded
rmc: Round Stranded Compacted

Colour Code:
1 Core: Black (red on request)
2 Cores: Red, Black

Tolerance range:
Overall diameter ± 5%
Packing ± 5%

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

ALUMINIUM WIRE ARMOURED

Nominal Alum./ Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.8	1.8	10	150	-
-	-	-	-	-
0.8	1.8	11	150	-
-	-	-	-	-
0.8	1.8	11	175	-
-	-	-	-	-
0.8	1.8	12	225	-
0.8	1.8	13	275	-
0.8	1.8	16	435	-
0.8	1.8	17	570	1000
0.8	1.8	18	680	1000
1.25	1.8	19	820	1000
1.25	1.8	21	1055	1000
1.25	1.8	22	1330	1000
1.6	1.8	24	1600	1000
1.6	1.8	26	1900	1000
1.6	1.8	28	2300	1000
1.6	1.9	31	2900	500
1.6	2.0	33	3540	500
2.0	2.1	38	3540	500
2.0	2.2	42	5635	500
2.0	2.3	46	7100	500
2.5	2.5	52	9120	250
2.5	2.7	60	11290	250

ALUMINIUM TAPE ARMOURED

Aluminium/ Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0.5	1.8	16	460	1000
0.5	1.8	17	570	1000
0.5	1.8	18	700	1000
0.5	1.8	20	930	1000
0.5	1.8	21	1220	1000
0.5	1.8	23	1460	1000
0.5	1.8	25	1750	1000
0.5	1.8	27	2130	1000
0.5	1.8	29	2700	500
0.5	1.9	32	3320	500
0.5	2.0	36	4210	500
0.5	2.1	40	5310	500
0.5	2.3	44	6760	500
-	-	-	-	-
-	-	-	-	-

STEEL WIRE ARMOURED

-	-	-	-	-
0.8	1.8	14	325	1000
-	-	-	-	-
0.8	1.8	15	380	1000
0.8	1.8	15	450	1000
0.8	1.8	16	450	1000
0.8	1.8	16	525	1000
0.8	1.8	17	530	1000
1.25	1.8	19	810	1000
1.25	1.8	21	1020	1000
1.6	1.8	25	1525	1000
1.6	1.8	28	1850	1000

STEEL TAPE ARMOURED

-	-	-	-	-
0.2	1.8	13	250	1000
-	-	-	-	-
0.2	1.8	13	300	1000
0.2	1.8	15	350	1000
0.2	1.8	15	350	1000
0.2	1.8	16	400	1000
0.2	1.8	16	440	1000
0.2	1.8	18	570	1000
0.2	1.8	20	750	1000
0.2	1.8	20	830	1000
0.2	1.8	22	1040	1000

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

CABLE CORE(S)

Nominal Area	No. of Wires	Approx. Conductor diameter	Nominal Insulation Thickness
mm²	No.	mm	mm
3 x 1.5 re	1	1.38	0.7
3 x 1.5 rm	7	1.56	0.7
3 x 2.5 re	1	1.78	0.7
3 x 2.5 rm	7	2.01	0.7
3 x 4 re	1	2.25	0.7
3 x 4 rm	7	2.55	0.7
3 x 6 re	1	2.76	0.7
3 x 6 rm	7	3.12	0.7
3 x 10 rm	7	4.01	0.7
3 x 16 rm	7	5.03	0.7
3 x 25 sm	7	-	0.9
3 x 35 sm	7	-	0.9
3 x 50 sm	19	-	1.0
3 x 70 sm	19	-	1.1
3 x 95 sm	19	-	1.1
3 x 120 sm	37	-	1.2
3 x 150 sm	37	-	1.4
3 x 185 sm	37	-	1.6
3 x 240 sm	61	-	1.7
3 x 300 sm	61	-	1.8
3 x 400 sm	61	-	2.0
3 x 500 sm	61	-	2.2

UNARMOURED

Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Stranded Packing
mm	mm	Kg/Km	meters
1.8	13	200	1000
1.8	12	210	1000
1.8	13	250	1000
1.8	13	260	1000
1.8	14	325	1000
1.8	15	335	1000
1.8	15	400	1000
1.8	16	410	1000
1.8	18	525	1000
1.8	20	725	1000
1.8	21	1000	1000
1.8	23	1300	1000
1.8	26	1690	1000
1.9	30	2370	500
2.0	34	3140	500
2.1	37	3900	500
2.3	42	4830	500
2.4	46	5970	500
2.6	51	7750	250
2.8	56	9580	250
3.1	64	12150	250
3.3	70	15470	250

re: Round Solid
rm: Round Stranded
sm: Sectoral Stranded

Colour Code :
3 Cores : Red, Yellow, Blue

Tolerance Range:
Overall diameter ±5%
Packing ±5%

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

STEEL WIRE ARMOURED

Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.8	1.8	14	370	1000
-	-	-	-	-
0.8	1.8	15	440	1000
-	-	-	-	-
0.8	1.8	16	530	1000
0.8	1.8	17	575	1000
0.8	1.8	17	630	1000
1.25	1.8	20	900	1000
1.25	1.8	23	1160	1000
1.6	1.8	25	1600	1000
1.6	1.8	27	1970	1000
1.6	1.9	30	2460	1000
2.0	2.0	35	3480	500
2.0	2.2	41	4600	500
2.0	2.3	41	5270	500
2.5	2.5	47	6790	500
2.5	2.6	51	8100	250
2.5	2.8	57	10130	250
2.5	3.0	62	12190	250
2.5	3.2	69	15070	250
3.15	3.5	77	19580	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.2	1.8	13	275	1000
-	-	-	-	-
0.2	1.8	14	310	1000
-	-	-	-	-
0.2	1.8	15	390	1000
0.2	1.8	16	475	1000
0.2	1.8	17	470	1000
0.2	1.8	19	630	1000
0.2	1.8	21	850	1000
0.2	1.8	22	1130	1000
0.2	1.8	24	1430	1000
0.2	1.8	27	1845	1000
0.2	1.9	31	2550	500
0.2	2.1	35	3360	500
0.5	2.2	40	4490	500
0.5	2.4	44	5490	500
0.5	2.5	48	6700	500
0.5	2.7	53	8560	250
0.5	2.9	58	10480	250
0.5	3.1	65	13130	250
0.5	3.3	73	16560	250

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

CABLE CORE(S)

Nominal Area	No. of Wires	Approx. Conductor diameter	Nominal Insulation Thickness
mm²	No.	mm	mm
4 x 1.5 re	1	1.38	0.7
4 x 1.5 rm	7	1.56	0.7
4 x 2.5 re	1	1.78	0.7
4 x 2.5 rm	7	2.01	0.7
4 x 4 re	1	2.25	0.7
4 x 4 rm	7	2.55	0.7
4 x 6 re	1	2.76	0.7
4 x 6 rm	7	3.12	0.7
4 x 10 re	1	3.57	0.7
4 x 10 rm	7	4.01	0.7
4 x 16 rm	7	5.03	0.7
4 x 25 sm	7	-	0.9
4 x 35 sm	7	-	0.9
4 x 50 sm	19	-	1.0
4 x 70 sm	19	-	1.1
4 x 95 sm	19	-	1.1
4 x 120 sm	37	-	1.2
4 x 150 sm	37	-	1.4
4 x 185 sm	37	-	1.6
4 x 240 sm	61	-	1.7
4 x 300 sm	61	-	1.8
4 x 400 sm	61	-	2.0
4 x 500 sm	61	-	2.2

UNARMOURED

Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	Kg/Km	meters
1.8	14	250	1000
1.8	13	250	1000
1.8	15	300	1000
1.8	14	300	1000
1.8	16	400	1000
1.8	16	390	1000
1.8	18	500	1000
1.8	17	490	1000
1.8	20	650	1000
1.8	19	650	1000
1.8	22	900	1000
1.8	26	1350	1000
1.8	26	1650	1000
1.9	30	2180	1000
2.0	34	3050	500
2.1	38	4100	500
2.3	42	5125	500
2.4	47	6290	500
2.6	52	7815	500
2.8	58	10150	250
3.0	64	12590	250
3.3	73	16090	250
3.5	80	20380	250

re: Round Solid
rm: Round Stranded
sm : Sectoral Stranded

Colour Code :
4 Cores : Red, Yellow, Blue, Black

Tolerance range:
Overall diameter ±5%
Packing ±5%

XLPE INSULATED, PVC SHEATHED CABLES

COPPER CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

STEEL WIRE ARMOURED

Steel Wire dia.	Nominal Sheath thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
0.8	1.8	15	410	1000
0.8	1.8	15	400	1000
0.8	1.8	16	490	1000
0.8	1.8	16	475	1000
0.8	1.8	17	550	1000
0.8	1.8	17	600	1000
1.25	1.8	19	775	1000
1.25	1.8	20	825	1000
1.25	1.8	22	1010	1000
1.25	1.8	22	1060	1000
1.6	1.8	25	1525	1000
1.6	1.8	29	2075	1000
1.6	1.9	29	2400	1000
1.6	2.0	33	3030	1000
2.0	2.2	38	4320	500
2.0	2.3	42	5500	500
2.5	2.5	48	7080	500
2.5	2.6	52	8460	500
2.5	2.8	57	10200	250
2.5	3.0	63	12850	250
2.5	3.2	69	15540	250
3.15	3.5	79	20325	250
3.15	3.8	87	25075	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.2	1.8	14	300	1000
-	-	-	-	-
0.2	1.8	15	360	1000
0.2	1.8	16	455	1000
0.2	1.8	16	450	1000
0.2	1.8	17	560	1000
0.2	1.8	18	555	1000
0.2	1.8	19	750	1000
0.2	1.8	20	760	1000
0.2	1.8	23	1030	1000
0.2	1.8	24	1400	1000
0.2	1.8	27	1800	1000
0.2	1.9	31	2360	500
0.2	2.0	35	3280	500
0.5	2.2	40	4700	500
0.5	2.4	45	5800	500
0.5	2.5	49	7040	500
0.5	2.7	54	8650	500
0.5	2.9	60	11080	500
0.5	3.1	66	13620	500
0.5	3.4	75	17250	500
0.8	3.7	84	22450	250

XLPE INSULATED, PVC SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

CABLE CORE(S) — UNARMOURED

Nominal Area	No. of wires	Approx. conductor diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	Kg/Km	meters
1 x 16 rm	7	5.20	0.7	1.4	10	110	1000
1 x 25 rm	7	6.30	0.9	1.4	11	150	1000
1 x 35 rm	7	7.41	0.9	1.4	12	200	1000
1 x 50 rmc	7	8.30	1.0	1.4	13	230	1000
1 x 70 rmc	19	9.70	1.1	1.4	15	300	1000
1 x 95 rmc	19	11.55	1.1	1.5	18	400	1000
1 x 120 rmc	37	12.95	1.2	1.5	19	490	1000
1 x 150 rmc	37	14.3	1.4	1.6	20	590	1000
1 x 185 rmc	37	15.9	1.6	1.6	23	720	1000
1 x 240 rmc	61	18.4	1.7	1.7	25	930	1000
1 x 300 rmc	61	20.5	1.8	1.8	28	1130	1000
1 x 400 rmc	61	24.0	2.0	1.9	32	1500	500
1 x 500 rmc	61	27.0	2.2	2.0	35	1820	500
1 x 630 rmc	61	30.4	2.4	2.2	40	2320	500

CABLE CORE(S) — UNARMOURED

2 x 16 rm	7	5.20	0.7	1.8	19	460	1000
2 x 25 rm	7	6.30	0.9	1.8	22	630	1000
2 x 35 rm	7	7.41	0.9	1.8	24	770	1000

CABLE CORE(S) — UNARMOURED

3 x 16 rm	7	5.10	0.7	1.8	21	450	1000
3 x 25 rm	7	6.30	0.9	1.8	24	600	1000
3 x 35 rm	7	7.41	0.9	1.8	26	750	1000
3 x 50 rmc	19	8.30	1.0	1.8	29	880	1000
3 x 70 rmc	19	9.7	1.1	1.9	34	1180	500
3 x 95 rmc	19	11.55	1.1	2.0	37	1530	500
3 x 120 rmc	37	12.95	1.2	2.1	40	1840	500
3 x 150 rmc	37	14.3	1.4	2.3	45	2290	500
3 x 185 rmc	37	15.9	1.6	2.4	49	2780	250
3 x 240 rmc	61	18.4	1.7	2.6	56	3600	250
3 x 300 rmc	61	20.5	1.8	2.8	61	4350	250
3 x 400 rmc	61	24.0	2.0	3.1	70	5570	250
3 x 500 rmc	61	27.0	2.2	3.3	79	7010	250

re: Round Solid
rm: Round Stranded
rmc: Round Stranded Compacted

Colour Code:
1 Core: Black (Red on request)
2 Cores: Red, Black
3 Cores: Red, Yellow, Blue

Tolerance range:
Overall diameter ± 5%
Packing ± 5%

XLPE INSULATED, PVC SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

ALUMINIUM WIRE ARMOURED

Nominal Alum / Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
0.8	1.8	14	255	1000
0.8	1.8	16	320	1000
0.8	1.8	17	370	1000
1.25	1.8	19	470	1000
1.25	1.8	20	570	1000
1.25	1.8	22	690	1000
1.6	1.8	24	840	1000
1.6	1.8	26	980	1000
1.6	1.8	28	1130	1000
1.6	1.9	30	1400	500
1.6	1.9	33	1620	500
2.0	2.1	39	2170	500
2.0	2.2	42	2610	250
2.0	2.3	46	3170	250

ALUMINIUM TAPE ARMOURED

Aluminium / Steel tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0.5	1.8	17	420	500
0.5	1.8	19	520	500
0.5	1.8	20	630	500
0.5	1.8	22	730	500
0.5	1.8	24	850	500
0.5	1.8	26	1000	500
0.5	1.8	28	1240	500
0.5	1.9	31	1470	500
0.5	2.0	35	1870	500
0.5	2.1	40	2650	250
0.5	2.3	44	3240	250

STEEL WIRE ARMOURED

1.25	1.8	22	880	1000
1.6	1.8	25	1270	1000
1.6	1.8	28	1470	1000

STEEL TAPE ARMOURED

0.2	1.8	20	570	1000
0.2	1.8	23	750	1000
0.2	1.8	25	900	500

STEEL WIRE ARMOURED

1.25	1.8	23	880	1000
1.6	1.8	27	1275	1000
1.6	1.8	29	1480	1000
1.6	1.9	32	1720	500
2.0	2.0	37	2370	500
2.0	2.2	41	2900	500
2.0	2.3	45	3350	500
2.5	2.5	50	4370	500
2.5	2.6	55	5080	250
2.5	2.8	62	6200	250
2.5	3.0	67	7200	250
2.5	3.2	76	8770	250
3.15	3.5	85	11580	250

STEEL TAPE ARMOURED

0.2	1.8	21	570	1000
0.2	1.8	25	750	1000
0.2	1.8	27	900	500
0.2	1.8	30	1050	500
0.2	1.9	33	1380	500
0.5	2.1	38	1770	500
0.5	2.2	43	2490	500
0.5	2.4	47	3000	250
0.5	2.5	52	3570	250
0.5	2.7	58	4500	250
0.5	2.9	64	5330	250
0.5	3.1	72	6660	250
0.5	3.3	81	8240	250

XLPE INSULATED, PVC SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

CABLE CORE(S)

Nominal Area	No. of Wires	Approx. Conductor diameter	Nominal Insulation Thickness
mm²	No.	mm	mm
4 x 16 rm	7	5.2	0.7
4 x 25 rm	7	6.30	0.9
4 x 35 sm	7	-	0.9
4 x 50 sm	19	-	1.0
4 x 70 sm	19	-	1.1
4 x 95 sm	19	-	1.1
4 x 120 sm	37	-	1.2
4 x 150 sm	37	-	1.4
4 x 185 sm	37	-	1.6
4 x 240 sm	37	-	1.7
4 x 300 sm	61	-	1.8
4 x 400 sm	61	-	2.0
4 x 500 sm	61	-	2.2

UNARMOURED

Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	Kg/Km	meters
1.8	22	540	1000
1.8	26	740	1000
1.8	26	800	1000
1.9	30	1025	1000
2.0	34	1400	500
2.1	38	1780	500
2.3	42	2200	500
2.4	47	2670	500
2.6	52	3275	250
2.8	58	4225	250
3.0	64	5130	250
3.3	72	6550	250
3.5	80	8150	250

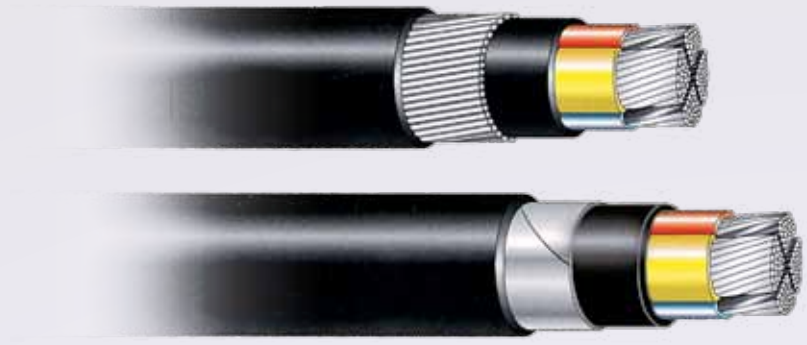
rm: Round Stranded
sm: Sectoral Stranded

Colour Code :
4 Cores: Red, Yellow, Blue, Black

Tolerance Range:
Overall diameter ±5%
Packing ±5%

XLPE INSULATED, PVC SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV



STEEL WIRE ARMOURED

Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
1.6	1.8	26	1160	1000
1.6	1.8	29	1475	1000
1.6	1.9	30	1550	500
1.6	2.0	33	1890	500
2.0	2.2	39	2670	500
2.0	2.3	43	3190	500
2.5	2.5	48	4170	500
2.5	2.6	52	4840	500
2.5	2.8	57	5670	250
2.5	3.0	63	6900	250
2.5	3.2	69	8070	250
3.15	3.5	79	10800	250
3.15	3.8	87	12840	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
0.2	1.8	23	670	1000
0.2	1.8	27	890	1000
0.2	1.8	27	960	500
0.2	1.9	31	1200	500
0.2	2.0	35	1600	500
0.5	2.2	40	2390	500
0.5	2.4	45	2890	250
0.5	2.5	49	3420	250
0.5	2.7	54	4100	250
0.5	2.9	60	5150	250
0.5	3.1	66	6150	250
0.5	3.4	75	7725	250
0.8	3.7	84	10240	250

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

CABLE CORE(S) UNARMOURED

Nominal Area	No. of wires	Approx. conductor diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Aprrox. Weight	Standard Packing
mm²	No.	mm	mm	mm	no.	Kg/Km	meters
1 x 1.5 re	1	1.38	0.7	1.4	6	45	1000
1 x 1.5 rm	7	1.56	0.7	1.4	6	50	1000
1 x 2.5 re	1	1.8	0.7	1.4	6	60	1000
1 x 2.5 rm	7	1.98	0.7	1.4	7	60	1000
1 x 4 re	1	2.25	0.7	1.4	7	75	1000
1 x 4 rm	7	2.52	0.7	1.4	7	80	1000
1 x 6 re	1	2.76	0.7	1.4	7	95	1000
1 x 6 rm	7	3.12	0.7	1.4	8	100	1000
1 x 10 rm	7	4.01	0.7	1.4	9	145	1000
1 x 16 rm	7	5.03	0.7	1.4	10	200	1000
1 x 25 rm	7	6.3	0.9	1.4	11	300	1000
1 x 35 rm	7	7.44	0.9	1.4	12	400	1000
1 x 50 rmc	19	8.1	1.0	1.4	13	520	1000
1 x 70 rmc	19	9.7	1.1	1.4	15	720	1000
1 x 95 rmc	19	11.4	1.1	1.5	17	990	1000
1 x 120 rmc	37	12.9	1.2	1.5	18	1210	1000
1 x 150 rmc	37	14.3	1.4	1.6	20	1490	1000
1 x 185 rmc	37	16.0	1.6	1.6	22	1860	1000
1 x 240 rmc	61	18.4	1.7	1.7	25	2420	1000
1 x 300 rmc	61	20.4	1.8	1.8	27	3020	1000
1 x 400 rmc	61	23.2	2.0	1.9	31	3850	1000
1 x 500 rmc	61	26.7	2.2	2.0	35	4900	500
1 x 630 rmc	61	30.4	2.4	2.2	40	6250	500

CABLE CORE(S) UNARMOURED

2 x 1.5 re	1	1.38	0.7	1.8	12	175	1000
2 x 1.5 rm	7	1.56	0.7	1.8	12	190	1000
2 x 2.5 re	1	1.78	0.7	1.8	13	225	1000
2 x 2.5 rm	7	1.98	0.7	1.8	13	225	1000
2 x 4 re	1	2.25	0.7	1.8	14	275	1000
2 x 4 rm	7	2.52	0.7	1.8	14	275	1000
2 x 6 re	1	2.76	0.7	1.8	15	325	1000
2 x 6 rm	7	3.12	0.7	1.8	15	350	1000
2 x 10 re	1	4.01	0.7	1.8	17	470	1000
2 x 16 rm	7	5.03	0.7	1.8	19	640	1000
2 x 25 rm	7	6.3	0.9	1.8	22	925	1000
2 x 35 rm	7	7.44	0.9	1.8	24	1185	1000

re: Round Solid
rm: Round Stranded

Colour Code:
1 Core: Black (red on request)
2 Cores: Red, Black

Tolerance range:
Overall diameter ± 5%
Packing ± 5%

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

ALUMINIUM WIRE ARMOURED

Nominal Alum./ Steel Wire diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.8	1.8	11	150	1000
-	-	-	-	-
0.8	1.8	11	150	1000
-	-	-	-	-
0.8	1.8	12	200	1000
-	-	-	-	-
0.8	1.8	12	210	1000
0.8	1.8	13	275	1000
0.8	1.8	14	340	1000
0.8	1.8	16	460	1000
0.8	1.8	17	575	1000
1.25	1.8	18	740	1000
1.25	1.8	20	980	1000
1.25	1.8	21	1260	1000
1.6	1.8	24	1560	1000
1.6	1.8	26	1880	1000
1.6	1.8	27	2270	1000
1.6	1.9	30	2870	500
1.6	1.9	33	3500	500
2.0	2.1	38	4550	500
2.0	2.2	42	5680	500
2.0	2.3	47	7075	500

ALUMINIUM TAPE ARMOURED

Aluminium/ Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0.5	1.8	16	475	1000
0.5	1.8	17	580	1000
0.5	1.8	18	700	1000
0.5	1.8	19	930	1000
0.5	1.8	21	1210	1000
0.5	1.8	22	1460	1000
0.5	1.8	24	1760	1000
0.5	1.8	26	2130	1000
0.5	1.8	29	2710	500
0.5	1.9	31	3340	500
0.5	2.0	36	4250	500
0.5	2.1	40	5350	500
0.5	2.3	43	6950	500

STEEL WIRE ARMOURED

0.8	1.8	14	-	
-	-	-	-	-
0.8	1.8	15	-	-
-	-	-	-	-
0.8	1.8	15	450	1000
0.8	1.8	16	460	1000
0.8	1.8	16	525	1000
0.8	1.8	17	550	1000
1.25	1.8	19	835	1000
1.25	1.8	21	1050	1000
1.6	1.8	25	1560	1000
1.6	1.8	28	1890	1000

STEEL TAPE ARMOURED

-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0.2	1.8	15	350	1000
0.2	1.8	15	360	1000
0.2	1.8	16	400	1000
0.2	1.8	16	430	1000
0.2	1.8	18	570	1000
0.2	1.8	20	750	1000
0.2	1.8	24	1050	1000
0.2	1.8	26	1330	1000

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

CABLE CORE(S)

UNARMOURED

Nominal Area	No. of Wires	Approx. Conductor diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	Kg/Km	meters
3 x 1.5 re	1	1.38	0.7	1.8	13	200	1000
3 x 1.5 rm	7	1.56	0.7	1.8	12	200	1000
3 x 2.5 re	1	1.78	0.7	1.8	13	250	1000
3 x 2.5 rm	7	2.01	0.7	1.8	13	250	1000
3 x 4 re	1	2.25	0.7	1.8	14	325	1000
3 x 4 rm	7	2.55	0.7	1.8	14	325	1000
3 x 6 re	1	2.76	0.7	1.8	15	400	1000
3 x 6 rm	7	3.12	0.7	1.8	15	400	1000
3 x 10 rm	7	4.01	0.7	1.8	18	525	1000
3 x 16 rm	7	5.03	0.7	1.8	20	725	1000
3 x 25 sm	7	-	0.9	1.8	24	1050	1000
3 x 35 sm	7	-	0.9	1.8	26	1375	1000
3 x 50 sm	19	-	1.0	1.8	28	1725	1000
3 x 70 sm	19	-	1.1	1.9	32	2425	500
3 x 95 sm	19	-	1.1	2.0	36	3250	500
3 x 120 sm	37	-	1.2	2.1	40	4025	500
3 x 150 sm	37	-	1.4	2.3	45	5000	500
3 x 185 sm	37	-	1.6	2.4	50	6150	500
3 x 240 sm	61	-	1.7	2.6	56	8025	500
3 x 300 sm	61	-	1.8	2.8	61	9925	500
3 x 400 sm	61	-	2.0	3.1	69	12600	250
3 x 500 sm	61	-	2.2	3.3	78	16100	250

re: Round Solid
rm: Round Stranded
sm: Sectoral Stranded

Colour Code :
3 Cores : Red, Yellow, Blue

Tolerance Range:
Overall diameter ±5%
Packing ±5%

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD: IEC 60502-1 0.6/1 kV

STEEL WIRE ARMOURED

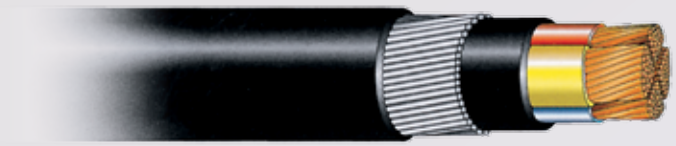
Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.8	1.8	14	350	-
-	-	-	-	-
0.8	1.8	15	400	-
-	-	-	-	-
0.8	1.8	16	490	1000
0.8	1.8	17	575	1000
0.8	1.8	17	590	1000
1.25	1.8	20	900	1000
1.25	1.8	22	1150	1000
1.6	1.8	25	1600	1000
1.6	1.8	27	1960	1000
1.6	1.9	30	2450	1000
2.0	2.0	35	3470	500
2.0	2.2	38	4400	500
2.0	2.3	41	5260	500
2.5	2.5	47	6770	500
2.5	2.6	51	8090	500
2.5	2.8	56	10120	500
2.5	3.0	62	12170	250
2.5	3.2	74	15725	250
3.15	3.5	85	20650	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.2	1.8	13	260	-
-	-	-	-	-
0.2	1.8	14	325	-
-	-	-	-	-
0.2	1.8	15	380	1000
0.2	1.8	16	475	1000
0.2	1.8	17	470	1000
0.2	1.8	19	625	1000
0.2	1.8	21	840	1000
0.2	1.8	25	1200	1000
0.2	1.8	24	1430	1000
0.2	1.8	27	1850	1000
0.2	2.0	31	2550	500
0.2	2.1	35	3360	500
0.5	2.2	39	4480	500
0.5	2.4	44	5480	500
0.5	2.5	49	6690	500
0.5	2.7	53	8550	500
0.5	2.9	56	10460	250
0.5	3.1	66	13120	250
0.5	3.3	73	16540	250

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV



CABLE CORES

Nominal Area	No. of Wires	Approx. Conductor diameter	Nominal Insulation Thickness
mm²	No.	mm	mm
4 x 1.5 re	1	1.38	0.7
4 x 1.5 rm	7	1.56	0.7
4 x 2.5 re	1	1.78	0.7
4 x 2.5 rm	7	1.98	0.7
4 x 4 re	1	2.25	0.7
4 x 4 rm	7	2.52	0.7
4 x 6 re	1	2.76	0.7
4 x 6 rm	7	3.12	0.7
4 x 10 rm	7	4.01	0.7
4 x 16 rm	7	5.03	0.7
4 x 25 sm	7	-	0.9
4 x 35 sm	7	-	0.9
4 x 50 sm	19	-	1.0
4 x 70 sm	19	-	1.1
4 x 95 sm	19	-	1.1
4 x 120 sm	37	-	1.2
4 x 150 sm	37	-	1.4
4 x 185 sm	37	-	1.6
4 x 240 sm	37	-	1.7
4 x 300 sm	61	-	1.8
4 x 400 sm	61	-	2.0
4 x 500 sm	61	-	2.2

UNARMOURED

Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	Kg/Km	meters
1.8	13	225	1000
1.8	13	225	1000
1.8	14	300	1000
1.8	14	280	1000
1.8	15	375	1000
1.8	15	360	1000
1.8	17	475	1000
1.8	17	450	1000
1.8	19	640	1000
1.8	22	900	1000
1.8	24	1260	1000
1.8	26	1650	1000
1.9	30	2175	1000
2.0	34	3070	500
2.1	38	4090	500
2.3	43	5120	500
2.4	47	6280	500
2.6	52	7810	500
2.8	58	10140	250
3.0	64	12590	250
3.3	73	16060	250
3.5	80	20340	250

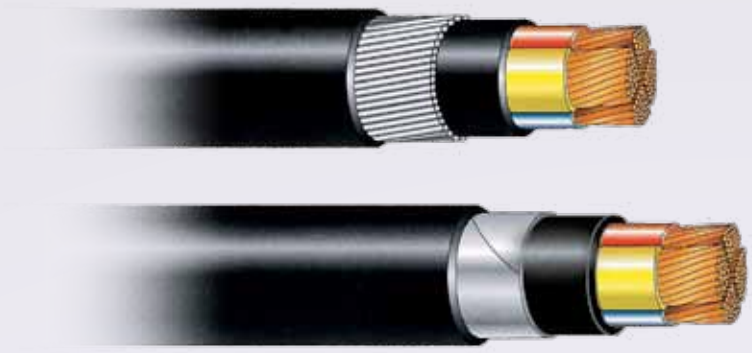
re: Round Solid
rm: Round Stranded
sm : Sectoral Stranded

Colour Code :
4 Cores : Red, Yellow, Blue, Black

Tolerance range:
Overall diameter ±5%
Packing ±5%

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV



STEEL WIRE ARMOURED

Steel Wire dia.	Nominal Sheath thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg / Km	meters
-	-	-	-	-
0.8	1.8	15	400	1000
-	-	-	-	-
0.8	1.8	16	460	1000
-	-	-	-	-
0.8	1.8	17	560	1000
1.25	1.8	19	800	1000
1.25	1.8	19	810	1000
1.25	1.8	22	1050	1000
1.6	1.8	25	1525	1000
1.6	1.8	27	1930	1000
1.6	1.9	30	2400	1000
1.6	2.0	33	3030	1000
2.0	2.2	38	4330	500
2.0	2.3	42	5490	500
2.5	2.5	48	7075	500
2.5	2.6	52	8450	500
2.5	2.8	57	10200	250
2.5	3.0	63	12825	250
2.5	3.2	69	15530	250
3.15	3.5	79	20300	250
3.15	3.8	87	25025	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
0.2	1.8	14	300	1000
-	-	-	-	-
0.2	1.8	15	360	1000
-	-	-	-	-
0.2	1.8	16	440	1000
0.2	1.8	17	550	1000
0.2	1.8	18	550	1000
0.2	1.8	20	750	1000
0.2	1.8	23	1025	1000
0.2	1.8	24	1400	1000
0.2	1.8	27	1800	1000
0.2	1.9	31	2360	1000
0.2	2.0	35	3270	500
0.5	2.2	40	4700	500
0.5	2.4	44	5790	500
0.5	2.5	49	7030	500
0.5	2.7	54	8040	500
0.5	2.9	60	11065	500
0.5	3.1	66	13600	250
0.5	3.4	75	17220	250
0.8	3.7	83	22420	250

XLPE INSULATED, LSZH SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

CABLE CORE(S) UNARMOURED

Nominal Area	No. of wires	Approx. conductor diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	Kg/Km	meter
1 x 16 rm	7	5.2	0.7	1.4	10	115	1000
1 x 25 rm	7	6.30	0.9	1.4	11	150	1000
1 x 35 rm	7	7.41	0.9	1.4	12	200	1000
1 x 50 rmc	7	8.30	1.0	1.4	13	225	1000
1 x 70 rmc	19	9.7	1.1	1.4	15	300	1000
1 x 95 rmc	19	11.5	1.1	1.5	17	400	1000
1 x 120 rmc	19	12.95	1.2	1.5	18	475	1000
1 x 150 rmc	19	14.3	1.4	1.6	20	590	1000
1 x 185 rmc	37	15.9	1.6	1.6	22	715	1000
1 x 240 rmc	37	18.4	1.7	1.7	25	925	500
1 x 300 rmc	37	20.5	1.8	1.8	28	1125	500
1 x 400 rmc	37	24.0	2.0	1.9	32	1450	500
1 x 500 rmc	37	27.0	2.2	2.0	35	1820	500
1 x 630 rmc	61	30.4	2.4	2.2	42	2310	500

CABLE CORE(S) UNARMOURED

2 x 16 rm	7	5.2	0.7	1.8	19	460	1000
2 x 25 rm	7	6.30	0.9	1.8	23	625	1000
2 x 35 rm	7	7.41	0.9	1.8	25	760	1000

CABLE CORE(S) UNARMOURED

3 x 16 rm	7	5.2	0.7	1.8	21	450	1000
3 x 25 rm	7	6.30	0.9	1.8	24	600	1000
3 x 35 rm	7	7.41	0.9	1.8	26	740	1000
3 x 50 rmc	7	8.30	1.0	1.8	28	875	500
3 x 70 rmc	19	9.7	1.1	1.9	32	1175	500
3 x 95 rmc	19	11.5	1.1	2.0	37	1525	500
3 x 120 rmc	19	12.95	1.2	2.1	40	1835	500
3 x 150 rmc	19	14.3	1.4	2.3	45	2275	500
3 x 185 rmc	37	15.9	1.6	2.4	49	2765	250
3 x 240 rmc	37	18.4	1.7	2.6	56	3585	250
3 x 300 rmc	37	20.5	1.8	2.8	61	4325	250
3 x 400 rmc	61	24.0	2.0	3.1	70	5550	250
3 x 500 rmc	61	27.0	2.2	3.3	79	6990	250

re: Round Solid
rm: Round Stranded
rmc: Round Stranded Compacted

Colour Code:
1 Core: Black (Red on request)
2 Cores: Red, Black
3 Cores: Red, Yellow, Blue

Tolerance range:
Overall diameter ± 5%
Packing ± 5%

XLPE INSULATED, LSZH SHEATHED CABLES

ALUMINUM CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

ALUMINIUM WIRE ARMOURED

Nominal Alum / Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
0.8	1.8	14	250	1000
0.8	1.8	16	315	1000
0.8	1.8	17	370	1000
1.25	1.8	19	475	1000
1.25	1.8	21	560	500
1.25	1.8	22	680	500
1.6	1.8	24	835	500
1.6	1.8	26	970	500
1.6	1.8	28	1130	500
1.6	1.9	31	1390	500
1.6	1.9	33	1615	500
2.0	2.1	39	2150	500
2.0	2.2	42	2600	500
2.0	2.3	46	3160	500

STEEL WIRE ARMOURED

1.25	1.8	22	870	1000
1.6	1.8	26	1260	1000
1.6	1.8	28	1470	1000

STEEL WIRE ARMOURED

1.25	1.8	23	880	1000
1.6	1.8	27	1275	1000
1.6	1.8	30	1475	500
1.6	1.9	-	1715	500
2.0	2.0	37	2360	500
2.0	2.2	-	3080	500
2.0	2.3	45	3340	500
2.5	2.5	50	4360	500
2.5	2.6	55	5060	250
2.5	2.8	61	6180	250
2.5	3.0	67	7180	250
2.5	3.2	76	8750	250
3.15	3.5	85	11550	250

ALUMINIUM TAPE ARMOURED

Aluminium / Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0.5	1.8	18	420	500
0.5	1.8	20	510	500
0.5	1.8	21	625	500
0.5	1.8	23	725	500
0.5	1.8	25	850	500
0.5	1.8	27	1000	500
0.5	1.8	29	1230	500
0.5	1.9	32	1460	500
0.5	2.0	37	1850	500
0.5	2.1	40	2270	500
0.5	2.3	44	2810	500

STEEL TAPE ARMOURED

0.2	1.8	20	570	1000
0.2	1.8	24	750	1000
0.2	1.8	26	910	500

STEEL TAPE ARMOURED

0.2	1.8	21	560	1000
0.2	1.8	25	745	1000
0.2	1.8	27	900	500
0.2	1.8	28	1050	500
0.2	1.9	33	1370	500
0.2	2.1	35	1625	500
0.5	2.3	43	2480	500
0.5	2.5	47	2995	500
0.5	2.6	51	3560	500
0.5	2.8	58	4490	250
0.5	3.0	64	5320	250
0.5	3.3	72	6650	250
0.5	3.5	80	8200	250

XLPE INSULATED, LSZH SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV

CABLE CORE(S)

UNARMOURED

Nominal Area	No. of Wires	Approx. Conductor diameter	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	Kg/Km	meters
4 x 16 rm	7	5.2	0.7	1.8	22	530	1000
4 x 25 rm	7	6.3	0.9	1.8	26	725	1000
4 x 35 sm	7	-	0.9	1.8	26	800	1000
4 x 50 sm	7	-	1.0	1.9	30	1025	1000
4 x 70 sm	19	-	1.1	2.0	34	1400	500
4 x 95 sm	19	-	1.1	2.1	38	1775	500
4 x 120 sm	37	-	1.2	2.3	42	2200	500
4 x 150 sm	37		1.4	2.4	47	2650	500
4 x 185 sm	37	-	1.6	2.6	52	3270	250
4 x 240 sm	61	-	1.7	2.8	58	4200	250
4 x 300 sm	61	-	1.8	3.0	63	5110	250
4 x 400 sm	61	-	2.0	3.3	72	6535	250
4 x 500 sm	61	-	2.2	3.5	80	8130	250

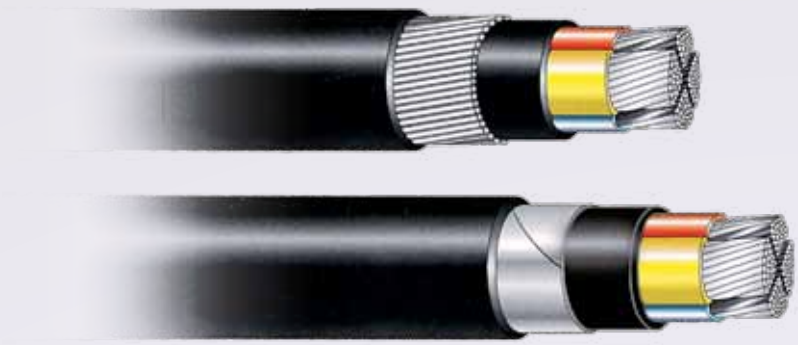
rm: Round Stranded
sm: Sectoral Stranded

Colour Code :
3½ Cores : Red, Yellow, Blue, Black
4 Cores: Red, Yellow, Blue, Black

Tolerance Range:
Overall diameter ±5%
Packing ±5%

XLPE INSULATED, LSZH SHEATHED CABLES

ALUMINIUM CONDUCTOR STANDARD:IEC 60502-1 0.6/1 kV



STEEL WIRE ARMOURED

Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
1.6	1.8	26	1150	1000
1.6	1.8	29	1475	500
1.6	1.9	30	1550	500
1.6	2.0	33	1875	500
2.0	2.2	38	2650	500
2.0	2.3	42	3175	500
2.5	2.5	48	4150	500
2.5	2.6	52	4825	500
2.5	2.8	57	5650	250
2.5	3.0	63	6890	250
2.5	3.2	69	8050	250
3.15	3.5	79	10775	250
3.15	3.8	87	12810	250

STEEL TAPE ARMOURED

Steel Tape Thickness	Nominal Sheath Thickness	Approx. Overall diameter	Approx. Weight	Standard Packing
mm	mm	mm	Kg/Km	meters
0.2	1.8	23	660	1000
0.2	1.8	27	880	500
0.2	1.8	27	960	500
0.2	1.9	30	1020	500
0.2	2.0	35	1600	500
0.5	2.2	40	2380	500
0.5	2.4	44	2880	250
0.5	2.5	49	3400	250
0.5	2.7	53	4100	250
0.5	2.9	60	5130	250
0.5	3.1	66	6130	250
0.5	3.4	75	7700	250
0.8	3.7	84	10210	250

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD:BS 6724 0.6/1 kV

ALUMINIUM WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Alum / Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	no.	mm	mm	mm	mm	mm	Kg/Km	mm
1 x 50 rmc	19	8.1	1.0	0.9	1.5	17	675	1000
1 x 70 rmc	19	9.7	1.1	1.25	1.5	20	925	1000
1 x 95 rmc	19	11.4	1.1	1.25	1.6	22	1200	1000
1 x 120 rmc	37	12.9	1.2	1.25	1.6	24	1450	1000
1 x 150 rmc	37	14.3	1.4	1.6	1.7	27	1850	1000
1 x 185 rmc	37	16.0	1.6	1.6	1.8	30	2250	1000
1 x 240 rmc	61	18.4	1.7	1.6	1.8	33	2850	1000
1 x 300 rmc	61	20.4	1.8	1.6	1.9	36	3475	500
1 x 400 rmc	61	23.2	2.0	2.0	2.0	41	4450	500
1 x 500 rmc	61	26.7	2.2	2.0	2.1	44	5575	500
1 x 630 rmc	61	30.4	2.4	2.0	2.2	49	7050	500
1 x 800 rmc	61	33.7	2.6	2.5	2.4	55	9050	500
1 x 1000 rm	91	41.0	2.8	2.5	2.5	61	11500	500

STEEL WIRE ARMOURED CABLES

2 x 1.5 rm	7	1.56	0.6	0.9	1.3	12	275	1000
2 x 2.5 rm	7	2.01	0.7	0.9	1.4	14	350	1000
2 x 4 rm	7	2.55	0.7	0.9	1.4	15	425	1000
2 x 6 rm	7	3.12	0.7	0.9	1.4	16	500	1000
2 x 10 rm	7	4.01	0.7	0.9	1.5	18	650	1000
2 x 16 rm	7	5.03	0.7	1.25	1.5	20	975	1000
2 x 25 sm	7	-	0.9	1.25	1.6	24	1350	1000
2 x 35 sm	7	-	0.9	1.6	1.7	27	1850	1000

rm: Round Stranded
rmc: Round Stranded Compacted
sm: Sectoral Stranded

Standard Colour Code:
1 Core : Black (Red on request)
2 Cores : Red, Black

Color code based on special request:
1 Core: Brown or Blue
2 Cores: Brown, Blue

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD:BS 6724 0.6/1 kV

STEEL WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Alum / Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	mm	Kg/Km	mm
3 x 1.5 rm	7	1.56	0.6	0.9	1.3	13	300	1000
3 x 2.5 rm	7	2.01	0.7	0.9	1.4	14	400	1000
3 x 4 rm	7	2.55	0.7	0.9	1.4	15	475	1000
3 x 6 rm	7	3.12	0.7	0.9	1.4	17	575	1000
3 x 10 rm	7	4.02	0.7	1.25	1.5	20	850	1000
3 x 16 rm	7	5.03	0.7	1.25	1.6	22	1100	1000
3 x 25 sm	7	-	0.9	1.6	1.7	24	1590	1000
3 x 35 sm	7	-	0.9	1.6	1.8	26	1965	1000
3 x 50 sm	19	-	1.0	1.6	1.8	29	2440	1000
3 x 70 sm	19	-	1.1	1.6	1.9	32	3200	500
3 x 95 sm	19	-	1.1	2.0	2.1	37	4390	500
3 x 120 sm	37	-	1.2	2.0	2.2	40	5250	500
3 x 150 sm	37	-	1.4	2.5	2.3	46	6740	500
3 x 185 sm	37	-	1.6	2.5	2.4	50	8050	250
3 x 240 sm	61	-	1.7	2.5	2.6	55	9990	250
3 x 300 sm	61	-	1.8	2.5	2.7	60	12100	250
3 x 400 sm	61	-	2.0	2.5	2.9	67	14970	250

rm: Round Stranded
sm: Sectoral Stranded

Standard Colour Code:
3 Core : Red, Yellow, Blue

Color code based on special request:
3 Cores: Brown, Black, Grey

XLPE INSULATED, LSZH SHEATHED CABLES

COPPER CONDUCTOR STANDARD:BS 6724 0.6/1 kV

STEEL WIRE ARMOURED CABLES

Nominal Area	No. of Wires	Approx. Conductor Diameter	Nominal Insulation Thickness	Nominal Steel Wire Diameter	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight	Standard Packing
mm²	No.	mm	mm	mm	mm	mm	Kg / Km	mm
4 x 1.5 rm	7	1.56	0.6	0.9	1.3	13	350	1000
4 x 2.5 rm	7	2.01	0.7	0.9	1.4	15	450	1000
4 x 4 rm	7	2.55	0.7	0.9	1.4	16	550	1000
4 x 6 rm	7	3.12	0.7	1.25	1.5	19	750	1000
4 x 10 rm	7	4.01	0.7	1.25	1.5	21	1000	1000
4 x 16 rm	7	5.03	0.7	1.25	1.6	23	1325	1000
4 x 25 sm	7	-	0.9	1.6	1.7	26	1925	1000
4 x 35 sm	7	-	0.9	1.6	1.8	29	2390	1000
4 x 50 sm	19	-	1.0	1.6	1.9	32	3015	1000
4 x 70 sm	19	-	1.1	2.0	2.1	38	4300	500
4 x 95 sm	19	-	1.1	2.0	2.2	42	5480	500
4 x 120 sm	37	-	1.2	2.5	2.3	47	7035	500
4 x 150 sm	37	-	1.4	2.5	2.4	52	8410	500
4 x 185 sm	37	-	1.6	2.5	2.6	57	10125	250
4 x 240 sm	37	-	1.7	2.5	2.7	63	12725	250
4 x 300 sm	61	-	1.8	2.5	2.9	69	15400	250
4 x 400 sm	61	-	2.0	3.15	3.2	78	20175	250

STEEL WIRE ARMOURED CABLES

5 x 1.5 rm	7	1.56	0.6	0.9	1.4	14	400	1000
5 x 2.5 rm	7	2.01	0.7	0.9	1.4	16	515	1000
5 x 4 rm	7	2.55	0.7	0.9	1.5	18	650	1000
5 x 6 rm	7	3.12	0.7	1.25	1.5	20	900	1000
5 x 10 rm	7	4.01	0.7	1.25	1.6	23	1190	1000
5 x 16 rm	7	5.03	0.7	1.6	1.7	27	1750	1000
5 x 25 rm	7	6.3	0.9	1.6	1.8	31	2450	1000
5 x 35 rm	7	7.44	0.9	1.6	1.9	34	3075	500
5 x 50 rmc	19	8.1	1.0	2.0	2.0	40	4040	500
5 x 70 rmc	19	9.7	1.1	2.0	2.2	46	5350	500

rm: Round Stranded
rmc: Round Stranded Compacted
sm: Sectoral Stranded

Standard Colour Code:
4 Cores: Red, Yellow, Blue, Black
5 Cores: Red, Yellow, Blue, Black, Green/Yellow

Color code based on special request:
4 Cores: Blue, Brown, Black, Grey
5 Cores: Green/Yellow, Blue, Brown, Black, Grey

Linear Resistance, Reactance and Voltage Drop of PVC Insulated (70°C) Copper Conductor at 50 Hertz

SIZE MM²	R (DC) 20°C	R (DC) 70°C	R (AC) 70°C	X	Z	VD
1.5	12.1	14.47	14.47	0.197	14.47	20.25
2.5	7.41	8.86	8.86	0.186	8.86	12.47
4	4.61	5.51	5.51	0.171	5.51	7.81
6	3.08	3.68	3.68	0.162	3.68	5.27
10	1.83	2.19	2.19	0.151	2.19	3.19
16	1.15	1.37	1.37	0.140	1.38	2.04
25	0.727	0.87	0.87	0.130	0.86	1.34
35	0.524	0.627	0.627	0.123	0.64	1.00
50	0.387	0.46	0.46	0.118	0.47	0.76
70	0.268	0.321	0.321	0.112	0.34	0.56
95	0.193	0.231	0.231	0.108	0.25	0.43
120	0.153	0.183	0.184	0.104	0.21	0.36
150	0.124	0.148	0.149	0.102	0.18	0.31
185	0.0991	0.118	0.12	0.100	0.16	0.27
240	0.0754	0.0902	0.092	0.096	0.13	0.23
300	0.0601	0.0719	0.0746	0.094	0.12	0.20
400	0.0470	0.056	0.059	0.092	0.11	0.18
500	0.0366	0.043	0.0483	0.090	0.10	0.16
630	0.0283	0.033	0.039	0.087	0.10	0.14

R (DC) 20°C : DIRECT CURRENT RESISTANCE AT 20°C, Ohm / Km

R (DC) 70°C : DIRECT CURRENT RESISTANCE AT 70°C, Ohm / Km

R (AC) 70°C : ALTERNATING CURRENT RESISTANCE AT 70°C, Ohm / Km

X : REACTANCE, Ohm / Km

Z : IMPEDANCE, Ohm / Km

VD : VOLTAGE DROP, V / Amp. Km (Phase to Phase)

Linear Resistance, Reactance and Voltage Drop of PVC Insulated (70°C) Copper Conductor at 50 Hertz

SIZE MM²	R (DC) 20°C	R (DC) 70°C	R (AC) 70°C	X	Z	VD
1.5	12.1	14.47	14.47	0.110	14.47	20.16
2.5	7.41	8.86	8.86	0.103	8.86	12.38
4	4.61	5.51	5.51	0.102	5.51	7.74
6	3.08	3.68	3.68	0.097	3.68	5.20
10	1.83	2.19	2.19	0.091	2.19	3.13
16	1.15	1.37	1.37	0.086	1.37	1.99
25	0.727	0.869	0.870	0.086	0.87	1.29
35	0.524	0.627	0.627	0.083	0.63	0.95
50	0.387	0.463	0.463	0.081	0.47	0.73
70	0.268	0.320	0.321	0.078	0.33	0.53
95	0.193	0.230	0.232	0.078	0.24	0.40
120	0.153	0.183	0.184	0.076	0.20	0.33
150	0.124	0.148	0.150	0.076	0.17	0.29
185	0.0991	0.118	0.121	0.076	0.14	0.25
240	0.0754	0.090	0.094	0.074	0.12	0.21
300	0.0601	0.071	0.076	0.074	0.11	0.18
400	0.047	0.056	0.062	0.074	0.10	0.16
500	0.0366	0.044	0.051	0.073	0.09	0.15
630	0.0283	0.033	0.042	0.072	0.08	0.13

R (DC) 20°C : DIRECT CURRENT RESISTANCE AT 20°C, Ohm / Km
R (DC) 70°C : DIRECT CURRENT RESISTANCE AT 70°C, Ohm / Km
R (AC) 70°C : ALTERNATING CURRENT RESISTANCE AT 70°C, Ohm / Km
X : REACTANCE, Ohm / Km
Z : IMPEDANCE, Ohm / Km
VD : VOLTAGE DROP, V / Amp. Km (Phase to Phase)

Linear Resistance, Reactance and Voltage Drop of XLPE Insulated (90°C) Copper Conductor at 50 Hertz

SIZE MM²	R (DC) 20°C	R (DC) 90°C	R (AC) 90°C	X	Z	VD
1.5	12.1	15.42	15.42	0.181	15.42	21.55
2.5	7.41	9.44	9.44	0.171	9.44	13.26
4	4.61	5.870	5.870	0.156	5.87	8.30
6	3.08	3.92	3.92	0.148	3.92	5.59
10	1.83	2.330	2.330	0.138	2.336	3.37
16	1.15	1.466	1.466	0.136	1.47	2.17
25	0.727	0.927	0.927	0.126	0.94	1.42
35	0.524	0.668	0.668	0.119	0.68	1.05
50	0.387	0.493	0.493	0.115	0.51	0.80
70	0.268	0.34	0.342	0.110	0.36	0.59
95	0.193	0.246	0.246	0.102	0.27	0.45
120	0.153	0.195	0.196	0.099	0.22	0.37
150	0.124	0.158	0.159	0.098	0.19	0.32
185	0.0991	0.126	0.128	0.095	0.16	0.28
240	0.0754	0.096	0.098	0.093	0.13	0.23
300	0.0601	0.076	0.079	0.090	0.12	0.20
400	0.047	0.060	0.063	0.091	0.11	0.18
500	0.0366	0.046	0.051	0.088	0.10	0.16
630	0.0283	0.036	0.042	0.086	0.10	0.15

R (DC) 20°C : DIRECT CURRENT RESISTANCE AT 20°C, Ohm / Km

R (DC) 90°C : DIRECT CURRENT RESISTANCE AT 90°C, Ohm / Km

R (AC) 90°C : ALTERNATING CURRENT RESISTANCE AT 90°C, Ohm / Km

X : REACTANCE, Ohm / Km

Z : IMPEDANCE, Ohm / Km

VD : VOLTAGE DROP, V / Amp. Km (Phase to Phase)

Linear Resistance, Reactance and Voltage Drop of XLPE Insulated (90°C) Copper Conductor at 50 Hertz

SIZE MM²	R (DC) 20°C	R (DC) 90°C	R (AC) 90°C	X	Z	VD
1.5	12.1	15.42	15.42	0.106	15.42	21.48
2.5	7.41	9.44	9.44	0.099	9.4	13.18
4	4.61	5.870	5.870	0.093	5.87	8.23
6	3.08	3.920	3.920	0.089	3.92	5.52
10	1.83	2.330	2.330	0.084	2.33	3.32
16	1.15	1.466	1.466	0.081	1.47	2.12
25	0.727	0.927	0.927	0.081	0.93	1.37
35	0.524	0.668	0.668	0.079	0.67	1.01
50	0.387	0.493	0.494	0.076	0.50	0.76
70	0.268	0.341	0.342	0.075	0.35	0.55
95	0.193	0.246	0.247	0.074	0.26	0.42
120	0.153	0.195	0.196	0.072	0.21	0.35
150	0.124	0.158	0.160	0.073	0.18	0.30
185	0.0991	0.126	0.13	0.073	0.15	0.25
240	0.0754	0.096	0.099	0.072	0.12	0.21
300	0.0601	0.076	0.081	0.071	0.11	0.19
400	0.047	0.060	0.065	0.071	0.10	0.16
500	0.0366	0.046	0.053	0.071	0.09	0.15
630	0.0283	0.036	0.044	0.070	0.08	0.13

R (DC) 20°C : DIRECT CURRENT RESISTANCE AT 20°C, Ohm / Km
R (DC) 90°C : DIRECT CURRENT RESISTANCE AT 90°C, Ohm / Km
R (AC) 90°C : ALTERNATING CURRENT RESISTANCE AT 90°C, Ohm / Km
X : REACTANCE, Ohm / Km
Z : IMPEDANCE, Ohm / Km
VD : VOLTAGE DROP, V / Amp. Km (Phase to Phase)

Linear Resistance, Reactance and Voltage Drop of XLPE Insulated (90°C) Aluminium Conductor at 50 Hertz

SIZE MM²	R (DC) 20°C	R (DC) 90°C	R (AC) 90°C	X	Z	VD
16	1.91	2.45	2.45	0.1048	2.45	3.48
25	1.20	1.539	1.539	0.0987	1.53	2.22
35	0.868	1.106	1.106	0.094	1.11	1.63
50	0.641	0.817	0.817	0.092	0.82	1.23
70	0.443	0.564	0.565	0.088	0.57	0.87
95	0.320	0.408	0.408	0.088	0.42	0.66
120	0.253	0.323	0.323	0.0842	0.33	0.54
150	0.206	0.262	0.263	0.0812	0.28	0.45
185	0.164	0.209	0.21	0.083	0.23	0.38
240	0.125	0.159	0.161	0.079	0.18	0.31
300	0.100	0.127	0.129	0.079	0.152	0.26
400	0.0778	0.0992	0.102	0.078	0.13	0.22
500	0.0605	0.0771	0.0809	0.076	0.11	0.19
630	0.0469	0.059	0.0643	0.077	0.10	0.17

Low Voltage Cable (Multi Core)
Linear Resistance, Reactance and Voltage Drop of XLPE Insulated (90°C) Aluminium Conductor at 50 Hertz

SIZE MM²	R (DC) 20°C	R (DC) 90°C	R (AC) 90°C	X	Z	VD
16	1.91	2.44	2.44	0.079	2.44	3.46
25	1.20	1.53	1.53	0.081	1.53	2.20
35	0.868	1.106	1.106	0.079	1.11	1.61
50	0.641	0.817	0.817	0.076	0.82	1.21
70	0.443	0.564	0.564	0.075	0.57	0.86
95	0.320	0.408	0.408	0.073	0.41	0.64
120	0.253	0.322	0.323	0.072	0.33	0.52
150	0.206	0.262	0.263	0.072	0.27	0.44
185	0.164	0.209	0.210	0.073	0.22	0.37
240	0.125	0.159	0.161	0.072	0.18	0.30
300	0.100	0.127	0.13	0.071	0.15	0.25
400	0.0778	0.099	0.102	0.070	0.12	0.21
500	0.0605	0.077	0.0816	0.071	0.11	0.19
630	0.0469	0.059	0.065	0.070	0.10	0.16

R (DC) 20: Direct Current Resistance at 20°C, Ohm / Km

R (DC) 90: Direct Current Resistance at 90°C, Ohm / Km

R (AC) 90: Alternating Current Resistance at 90°C, Ohm / Km

X : Reactance, Ohm / Km

Z : Impedance, Ohm / Km

VD : Voltage Drop (Phase to Phase),V /A / Km

The required sizes of cable shall be selected based on the following steps:

Ampacity: Based on the required ampacity and the installation condition, a suitable size of cable can be selected.

Voltage Drop: The suitability of the above selected size shall be cross checked with the voltage drop. If it is within the limit, the selection is ok. Otherwise, the higher size (whose voltage drop suits the requirement) shall be selected. Following is an example for the above:

Example:
150 meters of three core cable, XLPE insulated, PVC sheathed, copper cable installed under ground to carry 100 amperes load, supply voltage 380 V.three phase system 50Hz, Ground temperature 40ºC, soil thermal resistivity 2.5 k.m. / W and load factor 1.

Derating Factors:

*35mm^2 cable ampacity	=176 amps
*Soil thermal resistivity	= 0.71
*Ground temperature	= 0.85

Therefore derated current = 106 Amps (176 x 0.71 x 0.85)

Voltage drop(Vap) $= \frac{Vp \times 1000 \times V}{I \times L \times 100}$ V/A/KM

VP	=	maximum permissible voltage drop (say2.5%)
V	=	System voltage (Here 380V)
L	=	Length in meters (Here 150 meter)
Therefore, Vap	=	$\frac{2.5 \times 1000 \times 380}{100 \times 150 \times 100}$ V/A/KM
	=	0.633V/A/KM

From table on page 52 of this catalogue, the voltage drop of 35 mm^2 XLPE insulated multi core cable is 1.011 V/A/km, which is much higher than the requirement of 0.633 V/A/km. The voltage drop of 70 mm^2 cable is 0.556 V/A/km which is with in the limit. Therefore, the suitable size is 70 mm^2.

Note:
*** Please refer to the Low Voltage Electrical Guide N.C.I Brochure for finding the Ampacity, Soil Thermal Resistivity and Ground Temperature.**

Drum Handling Instruction

National Cable Industry Cables and Conductors should be installed by trained personnel in accordance with good engineering practices, recognized codes of practice, statutory local requirements, IEE wiring regulations and where relevant, in accordance with any specific instructions issued by the company. Cables are often supplied in heavy cable reels and handling these reels can constitute a safety hazard. In particular, dangers may arise during the removal of steel binding straps and during the removal of retaining battens and timbers which may expose projecting nails.