



Low Voltage Cables

Product Catalogue



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INTRODUCTION



Since our incorporation in 1980 as Tai Sin Electric Cables Manufacturer Pte Ltd, we have expanded and diversified over the past three decades to establish ourselves as the present Tai Sin Electric Limited. To cater for the robust growth in the regional market, Tai Sin now operates three cable manufacturing plants located in Singapore, Malaysia and Vietnam, all of which are fully equipped with the latest manufacturing facilitates and technologies to meet increasing demands.

Tai Sin stocks the widest range of the Power, Control, Instrumentation and Safety Cables for use in all areas of electrical and instrumentation installation for commercial, residential, industrial and infrastructure projects. Our cables and wires are

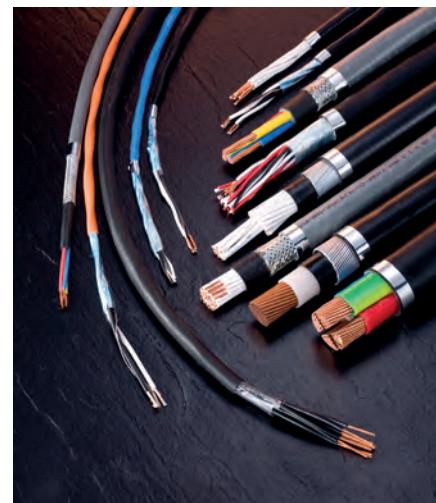
manufactured under strict quality control and designed to perform within fixed parameters of electrical, mechanical and environmental tolerances and we assure you that our products will not present a safety hazard if used with care.

For 30 years, we have grown steadily based on a sound business philosophy of providing quality products using leading edge technology, backed by unfailing excellence in customer service and faster turnaround time to maintain customer loyalty. These are the beliefs and values that give us the strength and confidence to continue to grow, excel and succeed in the exciting years ahead.

This catalogue illustrates the construction of our standard range of PVC & XLPE Cables & Wires, our Eco-Friendly, Non-Toxic range of Low Smoke Zero Halogen Flame Retardant Cables and our range of Low Smoke Zero Halogen Flame Retardant Fire Resistant Cables comply to various local and international standards.

Every possible effort has been made to ensure that the information contained in this publication is correct and current at the time of printing. Tai Sin reserves the right to change the information and/or specifications at any time without notice in light of technical improvement and continued development.

Reference to or extracts from the Singapore Standards (SS), British Standards (BS), International Electrotechnical Commission Standards (IEC), Singapore Productivity & Standard Board CP5:1998 manual, current IEE Wiring Regulations or other regulatory bodies are made with the belief that they are true and accurate. Users are recommended to verify such claims with the respective organisations independently.



Tables and data in Appendices A, B & C in this catalogue have been extracted with thanks from the IEE Wiring Regulations, 17th Edition and BS 7671: 2008.

We hope that this catalogue will be useful to engineers and end-users to serve as their full reference guidelines.



HOW TO READ THIS CATALOGUE



This catalogue consists of three types of Low Voltage Cables and they are categorized into three different sections, 1) PVC & XLPE Insulated Cables, 2) Low Smoke Zero Halogen Flame Retardant Cables and 3) Low Smoke Zero Halogen Flame Retardant Fire Resistant Cables. In each section, the cables are further categorized by its electrical component and conductor sizes, which ranges from 0.5mm² to 1000mm², armoured and non-armoured and with or without copper-taped screened.

In this catalogue we have given each cable a name accompanied with the various short and long descriptions based on its material used.

For example:

FR-XSH

CU / MGT / XLPE / LSZH / SWA / LSZH **(2 CORES - 5 CORES)** *This is the short description*

Mica Taped, XLPE Insulated, LSZH Bedded, Galvanised Steel Wire Armoured, **LSZH Sheathed Cable, 0.6 / 1kV, BS7846** *Full description on the third line*

To better understand the contents of the cable, we have included a 3-dimentional image plus a cross-sectional image of the cable for easy reference of its structure and components. The technical specifications and figures are provided by our quality team to ensure the accurate use of our products. Technical properties such as Current Rating Factor and Voltage drop, and other essential technical details are provided in the Appendices at the last section of this catalogue. The latest Cable Installation Methods as well as the new harmonized wiring colour codes (as per IEE Wiring Regulations, 17th Edition) are also provided in our Appendices for your easy reference.

For all other enquiries, please feel free to contact our friendly customer service hotline for further assistance.

APPLICABLE STANDARDS

Below are the applicable standards that are used as reference in the construction of our low voltage cables.

ASTM D 2863

Measuring the minimum oxygen concentration to support candle-like combustion of plastic (oxygen index).

BS2004

PVC insulated cables and flexible cords for electric power and lighting.

BS6004

Electric cables, PVC insulated, non-armoured cables for voltages up to and including 450 / 750V, for electric power, lighting and internal wiring.

BS6231

Electric cables, single-core PVC insulated flexible cables of rated voltage 600 / 1000V for switchgear and control-gear wiring.

BS6346

(withdrawn with no replacement) Electric cables, PVC insulated, armoured cables for voltages of 600 / 1000V and 1900 / 3300V.

BS6360

(withdrawn and replaced by BS EN 60228:2005) Specification for conductors in insulated cables and cords.

BS6387 / SS299

Performance requirements for cables required to maintain circuit integrity under fire conditions.

BS6724

600 / 1000V armoured electric cables having thermosetting insulation and low emission of smoke and corrosive gases when affected by fire.

BS7211

Thermosetting insulated cables (non-armoured) for electric power and lighting with low emission of smoke and corrosive gases when affected by fire.

APPLICABLE STANDARDS

Below are the applicable standards that are used as reference in the construction of our low voltage cables.



BS7629-1

300 / 500V fire-resistant screened cables having low emission of smoke and corrosive gases when affected by fire.
Part 1: Multicore and Multi-pair Cables.

BS7846

600 / 1000V armoured fire-resistant electric cables having low emission of smoke and corrosive gases when affected by fire.

BS EN50288-7

Multi-element metallic cables used in analogue and digital communication and control.
Part 7: Sectional specification for instrumentation and control cables.

BS EN60228

Conductors of insulated cables.

IEC60227-3

Polyvinyl Chloride insulated cables of rated voltages up to and including 450 / 750V Part 3: Non-sheathed cables for fixed wiring.

IEC60228

Conductors of insulated cables.

IEC60331

Fire-resistant characteristics of electric cables.

IEC60332-1 / BS EN60332-1

Tests in electric cables under fire conditions.
Part 1: Method of test on a single vertical insulated wire or cable.

IEC60332-3-22 / BS EN60332-3-22

Tests on electric and optical fibre cables under fire conditions.
Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables (Category A).

IEC60332-3-24 / BS EN60332-3-24

Tests on electric and optical fibre cables under fire conditions.
Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables (Category C).

IEC60502-1

Power cables with extruded insulation and their accessories for rated voltages from 1kV up to 30kV.
Part 1: Cables for Rated Voltages of 1kV and 3kV.

IEC60754-1 / BS EN50267-2-1

Tests on gases evolved during the combustion of materials from cables.
Part 1: Methods of determination of amount of halogen acid gas evolved during combustion of polymeric materials taken from cables.

IEC60754-2 / BS EN50267-2-2

Tests on gases evolved during combustion of materials from cables.
Part 2: Determination of degree of acidity (corrosive) of gases by measuring pH and conductivity.

IEC61034-2 / BS EN61034-2

Measurement of smoke density of electric cables burning under defined conditions.
Part 2: Test procedure and requirements.

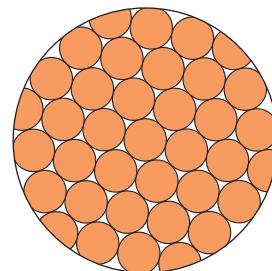
SS358-3

Polyvinyl Chloride insulated cables of rated voltages up to and including 450 / 750V.
Part 3: Non-sheathed cables for fixed wiring.

Bare Annealed Copper

STRANDED PLAIN ANNEALED COPPER CONDUCTOR (SINGLE CORE)

IEC60228, BS EN 60228



CONSTRUCTION

Conductor: Plain Annealed Copper, Class 2 Stranded Circular or Compacted

Minimum Bending Radius: 3D for D < 10mm
4D for 10mm ≤ D < 25mm
6D for D ≥ 25mm

REFERENCE STANDARDS

Conductor: IEC60228, BS EN60228

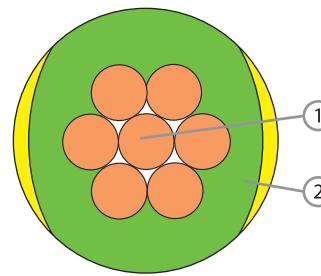
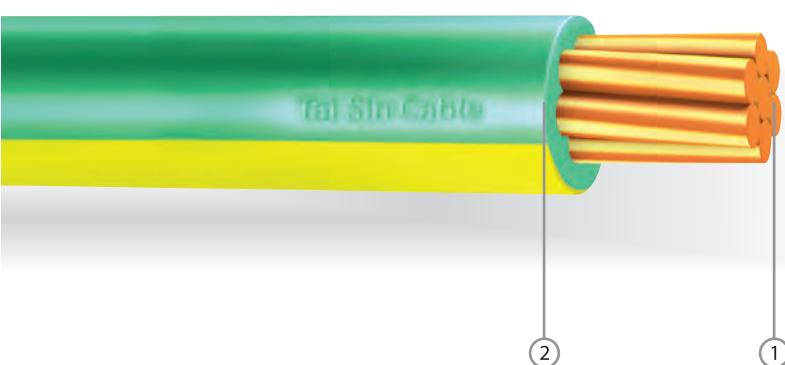
Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Nominal Diameter of Conductor (mm)	Maximum Conductor Resistance at 20°C (Ω/km)	Nominal Weight per km of Conductor (kg/km)
1.0	7 / 0.43	1.29	18.1	9.2
1.5	7 / 0.53	1.59	12.1	14.0
2.5	7 / 0.67	2.01	7.41	22.4
4	7 / 0.85	2.55	4.61	36.1
6	7 / 1.04	3.12	3.08	54.0
10	7 / 1.35	4.05	1.83	90.8
16	7 / 1.70	5.10	1.15	145.0
25	7 / 2.14	6.42	0.727	229.0
35	7 / 2.52	7.56	0.524	317.0
50	19 / 1.78	8.90	0.387	429.0
70	19 / 2.14	10.70	0.268	620.0
95	19 / 2.52	12.60	0.193	860.0
120	37 / 2.03	14.21	0.153	1086.0
150	37 / 2.25	15.75	0.124	1334.0
185	37 / 2.52	17.64	0.0991	1673.0
240	61 / 2.25	20.25	0.0754	2199.0
300	61 / 2.52	22.68	0.0601	2759.0
400	61 / 2.85	25.65	0.0470	3528.0
500	61 / 3.20	28.80	0.0366	4448.0
630	127 / 2.52	32.76	0.0283	5744.0
800	127 / 2.85	37.05	0.0221	7346.0
1000	127 / 3.20	41.60	0.0176	9260.0

Table 1

PVC

CU / PVC (SINGLE CORE)

PVC Insulated, Non-Sheathed Cable, 450 / 750V, SS358, BS6004, IEC60227



Component
1. Plain Annealed Copper Wire
2. PV Compound

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular or Compacted
Insulation:	Polyvinyl Chloride (PVC) Compound Type C
Insulation Colour:	Black, Green/Yellow, Red, Yellow, Blue, White, Brown, Grey or Others

REFERENCE STANDARDS

Design Specification:	SS358, BS6004, IEC60227
Conductor:	IEC60228, BS EN60228
Flame Retardancy:	IEC60332-1, BS EN60332-1

ELECTRICAL CHARACTERISTICS

Operating Voltage, Uo/U:	450/750V
Operating Temperature:	-15°C to 70°C
Final Short Circuit Temperature:	160°C for cable ≤ 300mm ² 140°C for cable >300mm ²
Test Voltage:	2.5kV for 5 minutes

INSTALLATION REFERENCE

Min. Bending Radius (mm):	6 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

SINGLE CORE

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Mean Overall Diameter (Upper Limit) (mm)	Approximate Weight (kg/km)
1 x 1.5	7 / 0.53	0.7	3.4	22.7
1 x 2.5	7 / 0.67	0.8	4.2	34.0
1 x 4	7 / 0.85	0.8	4.8	50.0
1 x 6	7 / 1.04	0.8	5.4	70.9
1 x 10	7 / 1.35	1.0	6.8	117.5
1 x 16	7 / 1.70	1.0	8.0	177.4
1 x 25	7 / 2.14	1.2	9.8	282.0
1 x 35	7 / 2.52	1.2	11.0	380.3
1 x 50	19 / 1.78	1.4	13.0	515.8
1 x 70	19 / 2.14	1.4	15.0	726.4
1 x 95	19 / 2.52	1.6	17.0	1002.9
1 x 120	37 / 2.03	1.6	19.0	1251.0
1 x 150	37 / 2.25	1.8	21.0	1538.7
1 x 185	37 / 2.52	2.0	23.5	1927.9
1 x 240	61 / 2.25	2.2	26.5	2522.6
1 x 300	61 / 2.52	2.4	29.5	3155.2
1 x 400	61 / 2.85	2.6	33.5	4018.0
1 x 500	61 / 3.20	2.8	37.0	5044.9
1 x 630	127 / 2.52	2.8	41.0	6443.4

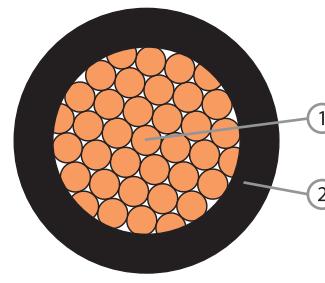
For current rating and voltage drop, please refer to Table B1.1 and B2.1 on Page 66.

Table 2

PVC

CU / PVC (SWITCHBOARD WIRES SINGLE CORE)

PVC Insulated, Non-Sheathed Cable, 0.6 / 1kV, BS6231



Component
1. Plain Annealed Copper Wire
2. PVC Compound

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 5 Stranded Circular or Compacted
Insulation:	Polyvinyl Chloride (PVC) Compound Type T11
Insulation Colour:	Black, Green/Yellow, Red, Yellow, Blue, White, Brown, Grey or Others

REFERENCE STANDARDS

Design Specification:	BS6231
Conductor:	IEC60228, BS EN60228
Flame Retardancy:	IEC60332-1, BS EN60332-1

ELECTRICAL CHARACTERISTICS

Operating Voltage, Uo/U:	0.6/1kV
Operating Temperature:	-15°C to 70°C
Final Short Circuit Temperature:	160°C
Test Voltage:	3.5kV for 5 minutes

INSTALLATION REFERENCE

Min. Bending Radius (mm):	6 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Mean Overall Diameter (Upper Limit) (mm)	Approximate Weight (kg/km)	Minimum Insulation Resistance at 70°C (MΩ • km)
1 x 0.5	16 / 0.2	0.8	2.6	11.3	0.0161
1 x 0.75	24 / 0.2	0.8	2.8	14.5	0.0141
1 x 1.0	32 / 0.2	0.8	3.0	17.5	0.0128
1 x 1.5	30 / 0.25	0.8	3.3	23.0	0.0111
1 x 2.5	50 / 0.25	0.8	3.7	34.0	0.0094
1 x 4	56 / 0.3	0.8	4.3	50.2	0.0077
1 x 6	84 / 0.3	0.8	4.9	71.0	0.0059
1 x 10	80 / 0.4	1.0	6.3	119.3	0.0058
1 x 16	128 / 0.4	1.0	7.4	181.3	0.0048
1 x 25	200 / 0.4	1.2	9.1	280.9	0.0047
1 x 35	280 / 0.4	1.2	10.3	382.3	0.0040
1 x 50	400 / 0.4	1.4	12.2	544.1	0.0039
1 x 70	356 / 0.5	1.4	13.8	739.9	0.0033
1 x 95	485 / 0.5	1.6	16.1	1005.2	0.0032
1 x 120	614 / 0.5	1.6	17.6	1255.7	0.0029
1 x 150	765 / 0.5	1.8	19.7	1565.6	0.0029
1 x 185	994 / 0.5	2.0	22.3	2028.7	0.0029
1 x 240	1125 / 0.5	2.2	23.9	2304.1	0.0028

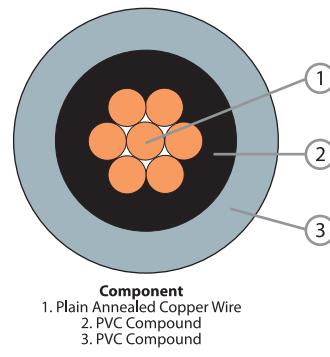
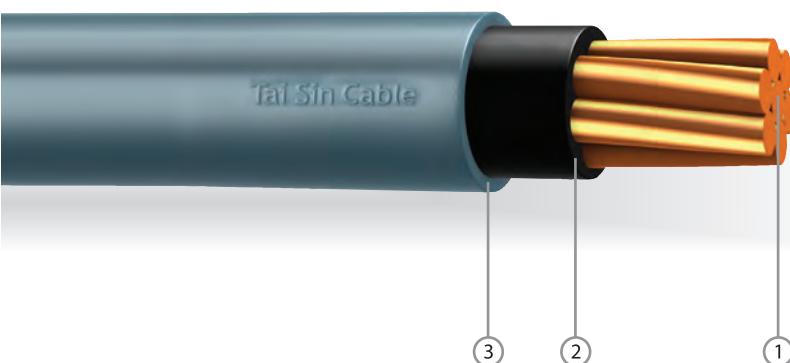
For current rating and voltage drop, please refer to Table B1.1 and B2.1 on Page 66.

Table 3

PPS

CU / PVC / PVC (SINGLE CORE)

PVC Insulated, PVC Sheathed Cable, 0.6/1kV, IEC60502



CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular or Compacted
Insulation:	Polyvinyl Chloride (PVC) Compound Type A
Insulation Colour:	Red or Black
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST 1
Outer Sheath Colour:	Grey

REFERENCE STANDARDS

Design Specification:	IEC60502-1
Conductor:	IEC60228, BS EN60228
Flame Retardancy:	IEC60332-1, BS EN60332-1

INSTALLATION REFERENCE

Min. Bending Radius (mm):	6 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

ELECTRICAL CHARACTERISTICS

Operating Voltage, Uo/U:	0.6/1KV
Operating Temperature:	-15°C to 70°C
Final Short Circuit Temperature:	160°C for cable ≤ 300mm ² 140°C for cable >300mm ²
Test Voltage:	3.5kV for 5 minutes

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
1 x 1.5	7 / 0.53	0.8	6.3	68
1 x 2.5	7 / 0.67	0.8	6.7	80
1 x 4	7 / 0.85	1.0	7.7	108
1 x 6	7 / 1.04	1.0	8.2	133
1 x 10	7 / 1.35	1.0	9.2	180
1 x 16	7 / 1.70	1.0	10.2	245
1 x 25	7 / 2.14	1.2	11.9	357
1 x 35	7 / 2.52	1.2	13.1	460
1 x 50	19 / 1.78	1.4	14.8	604
1 x 70	19 / 2.14	1.4	16.6	818
1 x 95	19 / 2.52	1.6	19.1	1113
1 x 120	37 / 2.03	1.6	20.7	1363
1 x 150	37 / 2.25	1.8	22.9	1668
1 x 185	37 / 2.52	2.0	25.3	2077
1 x 240	61 / 2.25	2.2	28.6	2692
1 x 300	61 / 2.52	2.4	31.6	3345
1 x 400	61 / 2.85	2.6	35.2	4228
1 x 500	61 / 3.20	2.8	38.9	5275
1 x 630	127 / 2.52	2.8	43.1	6682
1 x 800	127 / 2.85	2.8	47.6	8407
1 x 1000	127 / 3.20	3.0	52.9	10535

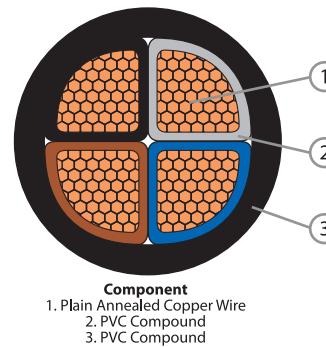
For current rating and voltage drop, please refer to Table B1.1 and B2.1 on Page 66.

Table 4

PPM

CU / PVC / PVC (2 CORES - 5 CORES)

PVC Insulated, PVC Sheathed Cable, 0.6/1kV, IEC60502



CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular, Compacted or Sectored
Insulation:	Polyvinyl Chloride (PVC) Compound Type A
Insulation Colour:	2 Cores: Brown, Blue or Red, Black 3 Cores: Brown, Black, Grey or Red, Yellow, Blue 4 Cores: Brown, Black, Grey, Blue or Red, Yellow, Blue, Black 5 Cores: Brown, Black, Grey, Blue, Green/Yellow or Red, Yellow, Blue, Black, Green/Yellow or White with Black numbering or Others
Assembly:	Cores cabled together with filler and covered with Polyester (PET) Tape
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST 1
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage, Uo/U:	0.6/1KV
Operating Temperature:	-15°C to 70°C
Final Short Circuit Temperature:	160°C for cable ≤ 300mm ² 140°C for cable >300mm ²
Test Voltage:	3.5kV for 5 minutes

REFERENCE STANDARDS

Design Specification:	IEC60502-1
Conductor:	IEC60228, BS EN60228
Flame Retardancy:	IEC60332-1, BS EN60332-1

INSTALLATION REFERENCE

Min. Bending Radius (mm):	8 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

2 CORES

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
2 x 1.5	7 / 0.53	0.8	10.4	153
2 x 2.5	7 / 0.67	0.8	11.2	183
2 x 4	7 / 0.85	1.0	13.3	250
2 x 6	7 / 1.04	1.0	14.4	304
2 x 10	7 / 1.35	1.0	16.3	409
2 x 16	7 / 1.70	1.0	18.4	552
2 x 25	7 / 2.14	1.2	21.8	789
2 x 35	7 / 2.52	1.2	24.1	1007
2 x 50 (S)	19 / 1.78	1.4	24.1	1278
2 x 70 (S)	19 / 2.14	1.4	26.8	1731
2 x 95 (S)	19 / 2.52	1.6	30.6	2323
2 x 120 (S)	37 / 2.03	1.6	33.1	2851
2 x 150 (S)	37 / 2.25	1.8	36.7	3467
2 x 185 (S)	37 / 2.52	2.0	40.6	4302
2 x 240 (S)	61 / 2.25	2.2	45.3	5536
2 x 300 (S)	61 / 2.52	2.4	50.1	6868

Note: (S) - Sectoral Stranded Conductors.

For current rating and voltage drop, please refer to Table B1.2 and B2.2 on Page 67.

Table 5

PPM

CU / PVC / PVC (2 CORES - 5 CORES)

PVC Insulated, PVC Sheathed Cable, 0.6/1kV, IEC60502



3 CORES

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
3 x 1.5	7 / 0.53	0.8	10.9	182
3 x 2.5	7 / 0.67	0.8	11.8	223
3 x 4	7 / 0.85	1.0	14.1	311
3 x 6	7 / 1.04	1.0	15.3	388
3 x 10	7 / 1.35	1.0	17.3	535
3 x 16	7 / 1.70	1.0	19.6	737
3 x 25	7 / 2.14	1.2	23.3	1075
3 x 35	7 / 2.52	1.2	25.7	1389
3 x 50 (S)	19 / 1.78	1.4	28.3	1825
3 x 70 (S)	19 / 2.14	1.4	31.7	2491
3 x 95 (S)	19 / 2.52	1.6	36.4	3378
3 x 120 (S)	37 / 2.03	1.6	39.5	4158
3 x 150 (S)	37 / 2.25	1.8	43.8	5064
3 x 185 (S)	37 / 2.52	2.0	48.5	6292
3 x 240 (S)	61 / 2.25	2.2	54.5	8144
3 x 300 (S)	61 / 2.52	2.4	60.1	10086
3 x 400 (S)	61 / 2.85	2.6	68.2	12800

4 CORES

4 x 1.5	7 / 0.53	0.8	11.8	216
4 x 2.5	7 / 0.67	0.8	12.8	267
4 x 4	7 / 0.85	1.0	15.3	379
4 x 6	7 / 1.04	1.0	16.7	477
4 x 10	7 / 1.35	1.0	18.9	669
4 x 16	7 / 1.70	1.0	21.5	932
4 x 25	7 / 2.14	1.2	25.6	1372
4 x 35	7 / 2.52	1.2	28.4	1785
4 x 50 (S)	19 / 1.78	1.4	32.7	2388
4 x 70 (S)	19 / 2.14	1.4	36.7	3269
4 x 95 (S)	19 / 2.52	1.6	42.2	4437
4 x 120 (S)	37 / 2.03	1.6	45.9	5469
4 x 150 (S)	37 / 2.25	1.8	51.1	6690
4 x 185 (S)	37 / 2.52	2.0	56.3	8287
4 x 240 (S)	61 / 2.25	2.2	63.3	10766
4 x 300 (S)	61 / 2.52	2.4	70.2	13373
4 x 400 (S)	61 / 2.85	2.6	79.7	16968
4 x 500 (S)	61 / 3.20	2.8	88.0	21161

5 CORES

5 x 1.5	7 / 0.53	0.8	12.7	250
5 x 2.5	7 / 0.67	0.8	13.8	313
5 x 4	7 / 0.85	1.0	16.6	448
5 x 6	7 / 1.04	1.0	18.2	569
5 x 10	7 / 1.35	1.0	20.7	804
5 x 16	7 / 1.70	1.0	23.5	1129
5 x 25	7 / 2.14	1.2	28.2	1672
5 x 35	7 / 2.52	1.2	31.4	2198
5 x 50	19 / 1.78	1.4	36.5	2946
5 x 70	19 / 2.14	1.4	41.8	4068
5 x 95	19 / 2.52	1.6	48.2	5506
5 x 120	37 / 2.03	1.6	52.9	6820
5 x 150	37 / 2.25	1.8	58.4	8306
5 x 185	37 / 2.52	2.0	65.0	10331
5 x 240	61 / 2.25	2.2	73.7	13425
5 x 300	61 / 2.52	2.4	81.7	16683

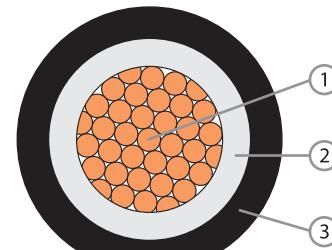
Note: (S) - Sectoral Stranded Conductors.
For current rating and voltage drop, please refer to Table B1.2 and B2.2 on Page 67.

Table 6

XP

CU / XLPE / PVC (SINGLE CORE)

XLPE Insulated, PVC Sheathed Cable, 0.6 / 1kV, IEC60502



Component
1. Plain Annealed Copper Wire
2. Cross-linked Polyethylene Compound
3. PVC Compound

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular or Compacted
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Colour:	Natural
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2
Outer Sheath Colour:	Black

REFERENCE STANDARDS

Design Specification:	IEC60502-1
Conductor:	IEC60228, BS EN60228
Flame Retardancy:	IEC60332-1, BS EN60332-1

INSTALLATION REFERENCE

Min. Bending Radius (mm):	8 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

ELECTRICAL CHARACTERISTICS

Operating Voltage, Uo/U:	0.6/1KV
Operating Temperature:	-15°C to 90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5kV for 5 minutes

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
1 x 16	7 / 1.70	0.7	9.6	225
1 x 25	7 / 2.14	0.9	11.3	338
1 x 35	7 / 2.52	0.9	12.5	443
1 x 50	19 / 1.78	1.0	14.1	582
1 x 70	19 / 2.14	1.1	16.1	814
1 x 95	19 / 2.52	1.1	18.2	1097
1 x 120	37 / 2.03	1.2	20.0	1365
1 x 150	37 / 2.25	1.4	22.2	1676
1 x 185	37 / 2.52	1.6	24.4	2081
1 x 240	61 / 2.25	1.7	27.5	2700
1 x 300	61 / 2.52	1.8	30.3	3355
1 x 400	61 / 2.85	2.0	33.9	4262
1 x 500	61 / 3.20	2.2	37.6	5338
1 x 630	127 / 2.52	2.4	42.4	6857
1 x 800	127 / 2.85	2.6	47.3	8701
1 x 1000	127 / 3.20	2.8	52.4	10891

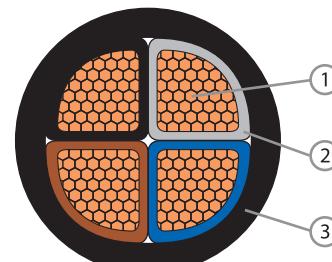
For current rating and voltage drop, please refer to Table B1.5 and B2.5 on Page 70.

Table 15

XP

CU / XLPE / PVC (2 CORES - 5 CORES)

XLPE Insulated, PVC Sheathed Cable, 0.6 / 1kV, IEC60502



Component
1. Plain Annealed Copper Wire
2. Cross-linked Polyethylene Compound
3. PVC Compound

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular, Compacted or Sectored
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Colour:	2 Cores: Brown, Blue or Red, Black 3 Cores: Brown, Black, Grey or Red, Yellow, Blue 4 Cores: Brown, Black, Grey, Blue or Red, Yellow, Blue, Black 5 Cores: Brown, Black, Grey, Blue, Green/Yellow or Red, Yellow, Blue, Black, Green/Yellow or White with Black numbering or Others
Assembly:	Cores cabled together with filler and covered with Polyester (PET) Tape
Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage, Uo/U:	0.6/1kV
Operating Temperature:	-15°C to 90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5kV for 5 minutes

REFERENCE STANDARDS

Design Specification:	IEC60502-1
Conductor:	IEC60228, BS EN60228
Flame Retardancy:	IEC60332-1, BS EN60332-1

INSTALLATION REFERENCE

Min. Bending Radius (mm):	8 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

2 CORES

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
2 x 1.5	7 / 0.53	0.7	10.0	123
2 x 2.5	7 / 0.67	0.7	10.8	153
2 x 4	7 / 0.85	0.7	11.9	197
2 x 6	7 / 1.04	0.7	13.0	252
2 x 10	7 / 1.35	0.7	14.9	358
2 x 16	7 / 1.70	0.7	17.0	505
2 x 25	7 / 2.14	0.9	20.4	754
2 x 35	7 / 2.52	0.9	22.7	984
2 x 50 (S)	19 / 1.78	1.0	22.4	1237
2 x 70 (S)	19 / 2.14	1.1	25.4	1711
2 x 95 (S)	19 / 2.52	1.1	28.2	2287
2 x 120 (S)	37 / 2.03	1.2	31.2	2856
2 x 150 (S)	37 / 2.25	1.4	34.9	3523
2 x 185 (S)	37 / 2.52	1.6	38.1	4387
2 x 240 (S)	61 / 2.25	1.7	43.2	5678
2 x 300 (S)	61 / 2.52	1.8	47.4	7028

Note: (S) - Sectoral Stranded Conductors.
For current rating and voltage drop, please refer to Table B1.6 and B2.6 on Page 71.

Table 16

XP

CU / XLPE / PVC (2 CORES - 5 CORES)

XLPE Insulated, PVC Sheathed Cable, 0.6 / 1kV, IEC60502



3 CORES

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
3 x 1.5	7 / 0.53	0.7	10.5	150
3 x 2.5	7 / 0.67	0.7	11.4	190
3 x 4	7 / 0.85	0.7	12.5	252
3 x 6	7 / 1.04	0.7	13.8	328
3 x 10	7 / 1.35	0.7	15.8	477
3 x 16	7 / 1.70	0.7	18.1	684
3 x 25	7 / 2.14	0.9	21.8	1035
3 x 35	7 / 2.52	0.9	24.2	1364
3 x 50 (S)	19 / 1.78	1.0	25.0	1766
3 x 70 (S)	19 / 2.14	1.1	28.9	2480
3 x 95 (S)	19 / 2.52	1.1	32.6	3338
3 x 120 (S)	37 / 2.03	1.2	35.8	4166
3 x 150 (S)	37 / 2.25	1.4	40.4	5147
3 x 185 (S)	37 / 2.52	1.6	45.0	6424
3 x 240 (S)	61 / 2.25	1.7	50.5	8335
3 x 300 (S)	61 / 2.52	1.8	54.6	10297
3 x 400 (S)	61 / 2.85	2.0	63.7	13234

4 CORES

4 x 1.5	7 / 0.53	0.7	11.3	182
4 x 2.5	7 / 0.67	0.7	12.3	233
4 x 4	7 / 0.85	0.7	13.6	312
4 x 6	7 / 1.04	0.7	15.0	411
4 x 10	7 / 1.35	0.7	17.2	605
4 x 16	7 / 1.70	0.7	19.8	876
4 x 25	7 / 2.14	0.9	23.9	1334
4 x 35	7 / 2.52	0.9	26.7	1766
4 x 50 (S)	19 / 1.78	1.0	27.0	2284
4 x 70 (S)	19 / 2.14	1.1	31.4	3231
4 x 95 (S)	19 / 2.52	1.1	35.3	4354
4 x 120 (S)	37 / 2.03	1.2	39.1	5463
4 x 150 (S)	37 / 2.25	1.4	44.8	6755
4 x 185 (S)	37 / 2.52	1.6	49.8	8446
4 x 240 (S)	61 / 2.25	1.7	57.1	11016
4 x 300 (S)	61 / 2.52	1.8	63.4	13717
4 x 400 (S)	61 / 2.85	2.0	72.8	17558
4 x 500 (S)	61 / 3.20	2.2	80.8	21991

5 CORES

5 x 1.5	7 / 0.53	0.7	12.1	214
5 x 2.5	7 / 0.67	0.7	13.3	278
5 x 4	7 / 0.85	0.7	14.7	375
5 x 6	7 / 1.04	0.7	16.6	496
5 x 10	7 / 1.35	0.7	18.8	737
5 x 16	7 / 1.70	0.7	21.6	1072
5 x 25	7 / 2.14	0.9	26.3	1640
5 x 35	7 / 2.52	0.9	29.3	2176
5 x 50	19 / 1.78	1.0	34.2	2849
5 x 70	19 / 2.14	1.1	40.0	4170
5 x 95	19 / 2.52	1.1	45.3	5617
5 x 120	37 / 2.03	1.2	50.6	7056
5 x 150	37 / 2.25	1.4	56.2	8680
5 x 185	37 / 2.52	1.6	62.8	10860
5 x 240	61 / 2.25	1.7	70.8	14093
5 x 300	61 / 2.52	1.8	78.3	17520

Note: (S) - Sectoral Stranded Conductors.

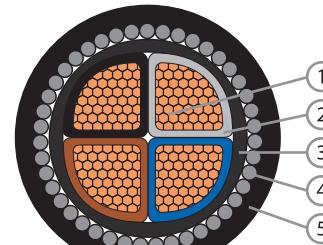
For current rating and voltage drop, please refer to Table B1.6 and B2.6 on Page 71.

Table 17

XSP

CU / XLPE / PVC / SWA / PVC (2 CORES - 5 CORES)

XLPE Insulated, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable,
0.6 / 1kV, IEC60502



Component
 1. Plain Annealed Copper Wire
 2. Cross-linked Polyethylene Compound
 3. PVC Compound
 4. Galvanised Steel Wire Armoured
 5. PVC Compound

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular, Compacted or Sectored
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Colour:	2 Cores: Brown, Blue or Red, Black 3 Cores: Brown, Black, Grey or Red, Yellow, Blue 4 Cores: Brown, Black, Grey, Blue or Red, Yellow, Blue, Black 5 Cores: Brown, Black, Grey, Blue, Green/Yellow or Red, Yellow, Blue, Black, Green/Yellow or White with Black numbering or Others
Assembly:	Cores cabled together with filler and covered with Polyester (PET) Tape
Bedding:	Polyvinyl Chloride (PVC) Compound Type ST2 or ST2 PVC Tape
Bedding Colour:	Black
Armour:	Galvanized Steel Wire Armoured (SWA)

Outer Sheath:	Polyvinyl Chloride (PVC) Compound Type ST2
Outer Sheath Colour:	Black

ELECTRICAL CHARACTERISTICS

Operating Voltage, Uo/U:	0.6/1kV
Operating Temperature:	-15°C to 90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5kV for 5 minutes

REFERENCE STANDARDS

Design Specification:	IEC60502-1
Conductor:	IEC60228, BS EN60228
Flame Retardancy:	IEC60332-1, BS EN60332-1

INSTALLATION REFERENCE

Min. Bending Radius (mm):	8 x cable overall diameter
Max. Pulling Tension (N/mm ²):	70

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Diameter Under Armour (mm)	Armour Wire Diameter (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
2 x 1.5	7 / 0.53	0.7	8.3	0.9	13.9	445
2 x 2.5	7 / 0.67	0.7	9.1	0.9	14.7	498
2 x 4	7 / 0.85	0.7	10.2	0.9	15.8	573
2 x 6	7 / 1.04	0.7	11.3	0.9	16.9	658
2 x 10	7 / 1.35	0.7	13.2	1.25	19.5	913
2 x 16	7 / 1.70	0.7	15.3	1.25	21.6	1122
2 x 25	7 / 2.14	0.9	18.7	1.6	25.7	1603
2 x 35	7 / 2.52	0.9	21.0	1.6	28.0	1921
2 x 50 (S)	19 / 1.78	1.0	21.2	1.6	28.3	2132
2 x 70 (S)	19 / 2.14	1.1	24.2	2.0	31.7	2736
2 x 95 (S)	19 / 2.52	1.1	26.8	2.0	35.3	3626
2 x 120 (S)	37 / 2.03	1.2	29.6	2.0	38.3	4295
2 x 150 (S)	37 / 2.25	1.4	32.9	2.0	41.8	5065
2 x 185 (S)	37 / 2.52	1.6	36.5	2.5	46.8	6434
2 x 240 (S)	61 / 2.25	1.7	42.2	2.5	52.9	8259
2 x 300 (S)	61 / 2.52	1.8	46.2	2.5	57.1	9793

2 CORES

Note: (S) - Sectoral Stranded Conductors.
 # For current rating and voltage drop, please refer to Table B1.8 and B2.8 on Page 73.

Table 21

XSP

CU / XLPE / PVC / SWA / PVC (2 CORES - 5 CORES)

XLPE Insulated, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable,
0.6 / 1kV, IEC60502



Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Diameter Under Armour (mm)	Armour Wire Diameter (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)	
3 CORES	3 x 1.5	7 / 0.53	0.7	8.8	0.9	14.4	487
	3 x 2.5	7 / 0.67	0.7	9.7	0.9	15.3	551
	3 x 4	7 / 0.85	0.7	10.8	0.9	16.4	643
	3 x 6	7 / 1.04	0.7	12.1	0.9	17.7	755
	3 x 10	7 / 1.35	0.7	14.1	1.25	20.4	1057
	3 x 16	7 / 1.70	0.7	16.4	1.25	22.7	1337
	3 x 25	7 / 2.14	0.9	20.1	1.6	27.1	1937
	3 x 35	7 / 2.52	0.9	22.5	1.6	29.5	2353
	3 x 50 (S)	19 / 1.78	1.0	23.8	1.6	31.1	2759
	3 x 70 (S)	19 / 2.14	1.1	27.5	2.0	35.8	3827
	3 x 95 (S)	19 / 2.52	1.1	31.0	2.0	39.7	4825
	3 x 120 (S)	37 / 2.03	1.2	34.0	2.0	42.9	5771
	3 x 150 (S)	37 / 2.25	1.4	38.2	2.5	48.5	7301
	3 x 185 (S)	37 / 2.52	1.6	42.6	2.5	53.1	8741
	3 x 240 (S)	61 / 2.25	1.7	49.3	2.5	60.2	11198
4 CORES	3 x 300 (S)	61 / 2.52	1.8	53.2	2.5	64.5	13357
	3 x 400 (S)	61 / 2.85	2.0	61.7	2.5	73.4	16606
	4 x 1.5	7 / 0.53	0.7	9.6	0.9	15.2	541
	4 x 2.5	7 / 0.67	0.7	10.6	0.9	16.2	617
	4 x 4	7 / 0.85	0.7	11.9	0.9	17.5	733
	4 x 6	7 / 1.04	0.7	13.3	1.25	19.6	966
	4 x 10	7 / 1.35	0.7	15.5	1.25	21.8	1234
	4 x 16	7 / 1.70	0.7	18.1	1.6	25.1	1706
	4 x 25	7 / 2.14	0.9	22.2	1.6	29.2	2306
	4 x 35	7 / 2.52	0.9	25.0	1.6	32.2	2855
	4 x 50 (S)	19 / 1.78	1.0	25.8	1.6	33.3	3359
	4 x 70 (S)	19 / 2.14	1.1	29.8	2.0	38.5	4671
	4 x 95 (S)	19 / 2.52	1.1	33.5	2.0	42.4	5935
	4 x 120 (S)	37 / 2.03	1.2	36.9	2.5	47.2	7546
	4 x 150 (S)	37 / 2.25	1.4	44.0	2.5	54.5	9404
5 CORES	4 x 185 (S)	37 / 2.52	1.6	48.6	2.5	59.5	11315
	4 x 240 (S)	61 / 2.25	1.7	55.5	2.5	66.8	14144
	4 x 300 (S)	61 / 2.52	1.8	61.4	2.5	73.1	17092
	4 x 400 (S)	61 / 2.85	2.0	70.2	3.15	83.8	22157
	5 x 1.5	7 / 0.53	0.7	10.4	0.9	16.0	597
	5 x 2.5	7 / 0.67	0.7	11.6	0.9	17.2	690
	5 x 4	7 / 0.85	0.7	13.0	1.25	19.3	918
	5 x 6	7 / 1.04	0.7	14.6	1.25	20.9	1089
	5 x 10	7 / 1.35	0.7	17.1	1.25	23.4	1403
	5 x 16	7 / 1.70	0.7	19.9	1.6	26.9	1973
	5 x 25	7 / 2.14	0.9	24.6	1.6	31.6	2695
	5 x 35	7 / 2.52	0.9	27.6	1.6	34.8	3345
	5 x 50	19 / 1.78	1.0	32.8	2.0	41.3	4502
	5 x 70	19 / 2.14	1.1	38.2	2.0	47.1	5901
	5 x 95	19 / 2.52	1.1	43.3	2.5	53.4	7632
	5 x 120	37 / 2.03	1.2	48.2	2.5	58.7	9585
	5 x 150	37 / 2.25	1.4	55.0	2.5	65.9	11807
	5 x 185	37 / 2.52	1.6	61.2	2.5	72.5	14193
	5 x 240	61 / 2.25	1.7	68.6	2.5	80.5	17700

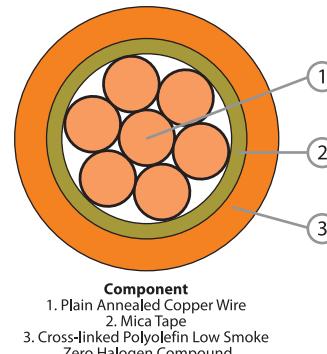
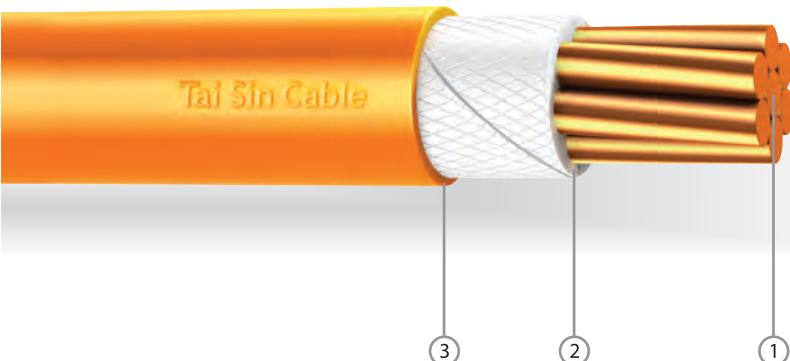
Note: (S) - Sectoral Stranded Conductors.
For current rating and voltage drop, please refer to Table B1.8 and B2.8 on Page 73.

Table 22

FR-H 110

CU / MGT / LSZH (SINGLE CORE)

Mica Taped, Cross-linked Polyolefin LSZH Insulated, Non-Sheathed Cable, 450 / 750V (0.6 / 1kV*),
BS7211



CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular or Compacted
Fire Barrier:	Mica Tape (MGT)
Insulation:	Cross-linked Polyolefin (LSZH) Low Smoke Zero Halogen Compound
Insulation Colour:	Orange or Others

REFERENCE STANDARDS

Design Specification:	BS7211
Conductor:	IEC60228, BS EN60228
Fire Resistance:	BS6387 (C,W,Z), SS299 (C), IEC60331
Flame Retardancy:	IEC60332-3-22, BS EN60332-3-22
Low Smoke Zero Halogen:	IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2

ELECTRICAL CHARACTERISTICS

Operating Voltage:	450 / 750V (0.6/1kV*)
Operating Temperature:	-15°C to 90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5kV for 5 minutes

INSTALLATION REFERENCE

Min. Bending Radius (mm):	8 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

SINGLE CORE

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
1 x 1.5	7 / 0.53	0.7	4.1	32
1 x 2.5	7 / 0.67	0.8	4.8	46
1 x 4	7 / 0.85	0.8	5.3	62
1 x 6	7 / 1.04	0.8	5.9	84
1 x 10	7 / 1.35	1.0	7.3	135
1 x 16	7 / 1.70	1.0	8.3	195
1 x 25	7 / 2.14	1.2	10.1	299
1 x 35	7 / 2.52	1.2	11.2	397
1 x 50	19 / 1.78	1.4	12.9	533
1 x 70	19 / 2.14	1.4	14.7	740
1 x 95	19 / 2.52	1.6	17.0	1015
1 x 120	37 / 2.03	1.6	18.7	1257
1 x 150	37 / 2.25	1.8	20.6	1524
1 x 185	37 / 2.52	2.0	22.9	1926
1 x 240	61 / 2.25	2.2	25.9	2510
1 x 300	61 / 2.52	2.4	28.7	3131
1 x 400	61 / 2.85	2.6	32.1	3975
1 x 500	61 / 3.20	2.8	35.6	4978
1 x 630	127 / 2.52	2.8	39.6	6333

Note: For FR-H cables, Cross-linked LSZH Compound will be used as the insulation material.

For current rating and voltage drop, please refer to Table B1.5 and B2.5 on Page 70.

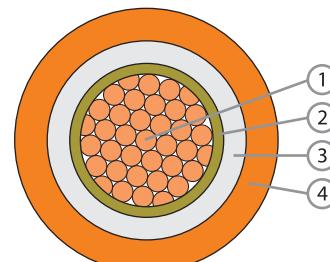
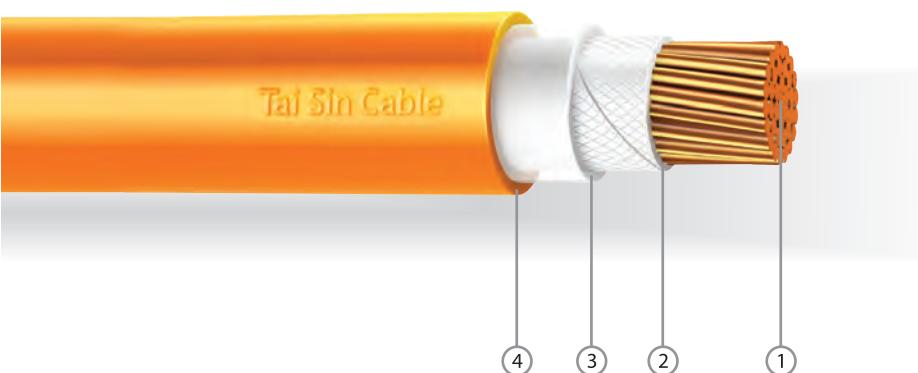
* Condition apply.

Table 45

FR-XH

CU / MGT / XLPE / LSZH (SINGLE CORE)

Mica Taped, XLPE Insulated, LSZH Sheathed Cable, 0.6 / 1kV, IEC60502



Component
 1. Plain Annealed Copper Wire
 2. Mica Tape
 3. Cross-linked Polyethylene Compound
 4. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular or Compacted
Fire Barrier:	Mica Tape (MGT)
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Colour:	Natural
Outer Sheath:	Low Smoke Zero Halogen (LSZH) Compound
Outer Sheath Colour:	Orange or Others

REFERENCE STANDARDS

Design Specification:	IEC60502-1
Conductor:	IEC60228, BS EN60228
Fire Resistance:	BS6387 (C,W,Z), SS299 (C), IEC60331
Flame Retardancy:	IEC60332-3-22, BS EN60332-3-22
Low Smoke Zero Halogen:	IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2

INSTALLATION REFERENCE

Min. Bending Radius (mm):	8 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

ELECTRICAL CHARACTERISTICS

Operating Voltage:	0.6/1kV
Operating Temperature:	-15°C to 90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5kV for 5 minutes

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
1 x 1.5	7 / 0.53	0.7	6.1	78
1 x 2.5	7 / 0.67	0.7	6.5	92
1 x 4	7 / 0.85	0.7	7.1	114
1 x 6	7 / 1.04	0.7	7.6	141
1 x 10	7 / 1.35	0.7	8.6	192
1 x 16	7 / 1.70	0.7	9.6	261
1 x 25	7 / 2.14	0.9	11.3	376
1 x 35	7 / 2.52	0.9	12.5	482
1 x 50	19 / 1.78	1.0	14.1	624
1 x 70	19 / 2.14	1.1	16.1	851
1 x 95	19 / 2.52	1.1	18.2	1131
1 x 120	37 / 2.03	1.2	20.0	1393
1 x 150	37 / 2.25	1.4	22.2	1695
1 x 185	37 / 2.52	1.6	24.4	2088
1 x 240	61 / 2.25	1.7	27.5	2687
1 x 300	61 / 2.52	1.8	30.3	3319
1 x 400	61 / 2.85	2.0	33.9	4190
1 x 500	61 / 3.20	2.2	37.6	5222
1 x 630	127 / 2.52	2.4	42.4	6675
1 x 800	127 / 2.85	2.6	47.3	8436
1 x 1000	127 / 3.20	2.8	52.4	10525

SINGLE CORE

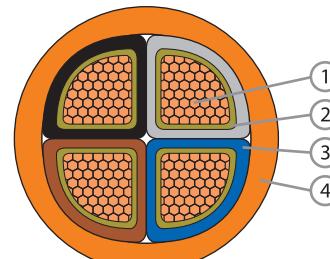
For current rating and voltage drop, please refer to Table B1.5 and B2.5 on Page 70.

Table 46

FR-XH

CU / MGT / XLPE / LSZH (2 CORES - 5 CORES)

Mica Taped, XLPE Insulated, LSZH Sheathed Cable, 0.6 / 1kV, IEC60502



Component
 1. Plain Annealed Copper Wire
 2. Mica Tape
 3. Cross-linked Polyethylene Compound
 4. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular, Compacted or Sectored
Fire Barrier:	Mica Tape (MGT)
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Colour:	2 Cores: Brown, Blue or Red, Black 3 Cores: Brown, Black, Grey or Red, Yellow, Blue 4 Cores: Brown, Black, Grey, Blue or Red, Yellow, Blue, Black 5 Cores: Brown, Black, Grey, Blue, Green/Yellow or Red, Yellow, Blue, Black, Green/Yellow or White with Black numbering or Others
Assembly:	Cores cabled together with filler and covered with Polyester (PET) Tape
Outer Sheath:	Low Smoke Zero Halogen (LSZH) Compound
Outer Sheath Colour:	Orange or Others

ELECTRICAL CHARACTERISTICS

Operating Voltage:	0.6/1kV
Operating Temperature:	-15°C to 90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	3.5kV for 5 minutes
Design Specification:	IEC60502-1
Conductor:	IEC60228, BS EN60228
Fire Resistance:	BS6387 (C,W,Z), SS299 (C,W,Z), IEC60331
Flame Retardancy:	IEC60332-3-22, BS EN60332-3-22
Low Smoke Zero Halogen:	IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2

INSTALLATION REFERENCE

Min. Bending Radius (mm):	8 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
2 x 1.5	7 / 0.53	0.7	12.1	186
2 x 2.5	7 / 0.67	0.7	12.9	223
2 x 4	7 / 0.85	0.7	14.0	277
2 x 6	7 / 1.04	0.7	15.1	343
2 x 10	7 / 1.35	0.7	17.0	409
2 x 16	7 / 1.70	0.7	19.1	639
2 x 25	7 / 2.14	0.9	22.5	933
2 x 35	7 / 2.52	0.9	24.8	1196
2 x 50 (S)	19 / 1.78	1.0	23.4	1292
2 x 70 (S)	19 / 2.14	1.1	26.4	1750
2 x 95 (S)	19 / 2.52	1.1	29.2	2308
2 x 120 (S)	37 / 2.03	1.2	32.2	2852
2 x 150 (S)	37 / 2.25	1.4	36.0	3484
2 x 185 (S)	37 / 2.52	1.6	39.8	4302
2 x 240 (S)	61 / 2.25	1.7	44.2	5528
2 x 300 (S)	61 / 2.52	1.8	48.4	6806

Note: (S) - Sectoral Stranded Conductors.

For current rating and voltage drop, please refer to Table B1.6 and B2.6 on Page 71.

Table 47

FR-XH

CU / MGT / XLPE / LSZH (2 CORES - 5 CORES)

Mica Taped, XLPE Insulated, LSZH Sheathed Cable, 0.6 / 1kV, IEC60502



3 CORES

Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
3 x 1.5	7 / 0.53	0.7	12.7	213
3 x 2.5	7 / 0.67	0.7	13.6	259
3 x 4	7 / 0.85	0.7	14.8	328
3 x 6	7 / 1.04	0.7	16.0	413
3 x 10	7 / 1.35	0.7	18.0	577
3 x 16	7 / 1.70	0.7	20.3	801
3 x 25	7 / 2.14	0.9	24.0	1183
3 x 35	7 / 2.52	0.9	26.5	1534
3 x 50 (S)	19 / 1.78	1.0	26.3	1826
3 x 70 (S)	19 / 2.14	1.1	29.9	2511
3 x 95 (S)	19 / 2.52	1.1	33.2	3331
3 x 120 (S)	37 / 2.03	1.2	36.4	4127
3 x 150 (S)	37 / 2.25	1.4	41.3	5056
3 x 185 (S)	37 / 2.52	1.6	45.6	6256
3 x 240 (S)	61 / 2.25	1.7	51.9	8082
3 x 300 (S)	61 / 2.52	1.8	55.8	9952
3 x 400 (S)	61 / 2.85	2.0	65.2	12671
3 x 500 (S)	61 / 3.20	2.2	71.4	15789

4 CORES

4 x 1.5	7 / 0.53	0.7	13.8	254
4 x 2.5	7 / 0.67	0.7	14.8	312
4 x 4	7 / 0.85	0.7	16.1	400
4 x 6	7 / 1.04	0.7	17.5	508
4 x 10	7 / 1.35	0.7	19.7	718
4 x 16	7 / 1.70	0.7	22.3	1006
4 x 25	7 / 2.14	0.9	26.5	1496
4 x 35	7 / 2.52	0.9	29.2	1949
4 x 50 (S)	19 / 1.78	1.0	29.7	2367
4 x 70 (S)	19 / 2.14	1.1	33.7	3280
4 x 95 (S)	19 / 2.52	1.1	37.5	4364
4 x 120 (S)	37 / 2.03	1.2	41.7	5430
4 x 150 (S)	37 / 2.25	1.4	46.7	6634
4 x 185 (S)	37 / 2.52	1.6	51.5	8239
4 x 240 (S)	61 / 2.25	1.7	58.6	10648
4 x 300 (S)	61 / 2.52	1.8	64.2	13177
4 x 400 (S)	61 / 2.85	2.0	74.1	16752
4 x 500 (S)	61 / 3.20	2.2	84.9	20967

5 CORES

5 x 1.5	7 / 0.53	0.7	15.0	301
5 x 2.5	7 / 0.67	0.7	16.1	372
5 x 4	7 / 0.85	0.7	17.5	480
5 x 6	7 / 1.04	0.7	19.1	613
5 x 10	7 / 1.35	0.7	21.6	872
5 x 16	7 / 1.70	0.7	24.4	1229
5 x 25	7 / 2.14	0.9	29.1	1835
5 x 35	7 / 2.52	0.9	32.2	2397
5 x 50	19 / 1.78	1.0	37.0	2979
5 x 70	19 / 2.14	1.1	42.8	4137
5 x 95	19 / 2.52	1.1	48.1	5505
5 x 120	37 / 2.03	1.2	53.4	6855

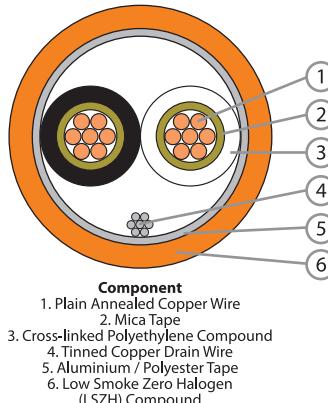
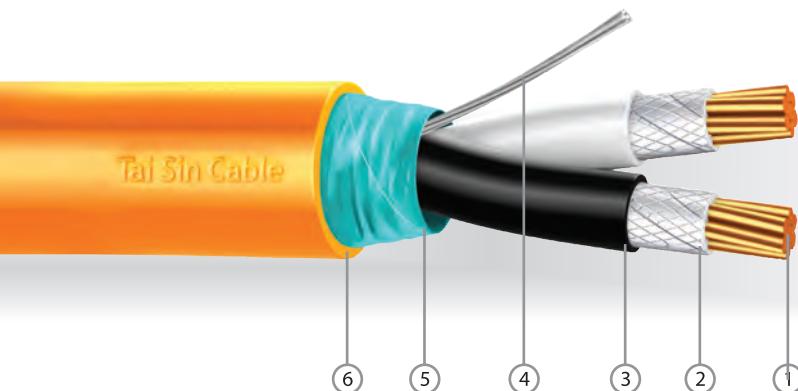
Note: (S) - Sectoral Stranded Conductors.
For current rating and voltage drop, please refer to Table B1.6 and B2.6 on Page 71.

Table 48

FR-XOL

CU / MGT / XLPE / OS / LSZH (SINGLE PAIR)

Mica Taped, XLPE Insulated, Overall Aluminium Foil Screened, LSZH Sheathed Cable,
300 / 500V, BS EN50288-7



CONSTRUCTION

Conductor:	Plain Annealed Copper, Class 2 Stranded Circular
Fire Barrier:	Mica Tape (MGT)
Insulation:	Cross-linked Polyethylene (XLPE) Compound
Insulation Colour:	Black, White or Others
Lay Up:	Pair - Cores twisted to pair
Wrap Film:	Polyester Binder Tape
Overall Screen:	Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS)
Outer Sheath:	Low Smoke Zero Halogen (LSZH) Compound
Outer Sheath Colour:	Orange or Others

ELECTRICAL CHARACTERISTICS

Operating Voltage, Uo/U:	300/500V
Operating Temperature:	-15°C to 90°C
Final Short Circuit Temperature:	250°C
Test Voltage:	2kV for 1 minute

REFERENCE STANDARDS

Design Specification:	BS EN50288-7
Conductor:	IEC60228, BS EN60228
Fire Resistance:	BS6387 (C, W, Z), SS299 (C, W, Z), IEC60331
Flame Retardancy:	IEC60332-3-22, BS EN60332-3-22
Low Smoke Zero Halogen:	IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2

INSTALLATION REFERENCE

Min. Bending Radius (mm):	8 x cable overall diameter
Max. Pulling Tension (N/mm ²):	50

No. of Pairs	Nominal Conductor Area (mm ²)	No. and Diameter of Wires (no./mm)	Radial Thickness of Insulation (mm)	Cable Overall Diameter (mm)	Approximate Weight (kg/km)
SINGLE PAIR	1P	1.0	7 / 0.43	0.6	10.0
	1P	1.5	7 / 0.53	0.6	10.6
	1P	2.5	7 / 0.67	0.7	12.0

Note: Class 5 conductors are available upon request.

Table 58