

3. Fire Resistant Cables

Fire Resistant Cables

The Resistance-to-fire is the term used to describe how long a cable continues to operate in a fire. This may be of primary concern, for instance, in life safety of fire fighting installations.

The best safety and rescue equipment cannot work without secured power supply. If the power supply is adversely affected, the systems themselves will have no power to provide their own critical functions. Fire resistant cables are designed to maintain circuit integrity of those vital safety and rescue equipment during the fire. In addition to maintaining circuit integrity under fire conditions, fire resistant cables have limited evolution of smoke and corrosive gases when affected by fire, thus safeguarding human life and protecting equipment.

Fire resistant cables are intended for applications requiring circuit integrity during a fire, such as;

1. Booster pump systems
2. Sprinkler systems
3. Emergency lighting - speakers
4. Fire and smoke detector systems
5. Rescue elevators
6. Alarm horns
7. Smoke exhaust system for aeration and ventilation.

Fire Resistant Cable Testing

In addition to the tests described for LSHF cables following tests are intended to evaluate the circuit integrity of the cable.

Fire Resistance Test: (IEC 60331, BS 6387)

The test establishes whether a cable can maintain electrical circuit integrity for a time up to 3 hours at temperatures ranging from 650 °C up to in excess of 950 °C.

These categories can be summarized as follows:

Resistance to Fire Alone

IEC 60331-21: Cables are subjected to fire at 750 °C for 90 minutes followed by a 15 min cooling period.

BS 6387 (Category A): Cables are subjected to fire at 650 °C for 180 minutes.

BS 6387 (Category B): Cables are subjected to fire at 750 °C for 180 minutes.

BS 6387 (Category C): Cables are subjected to fire at 950 °C for 180 minutes.

BS 6387 (Category S): Cables are subjected to fire at 950 °C for 20 minutes (short duration).

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Resistance to Fire with Water

BS 6387 (Category W): Cables are subjected to fire at 650 °C for 15 minutes, then at 650°C with water spray for further 15 minutes.

Resistance to Fire with Mechanical Shock

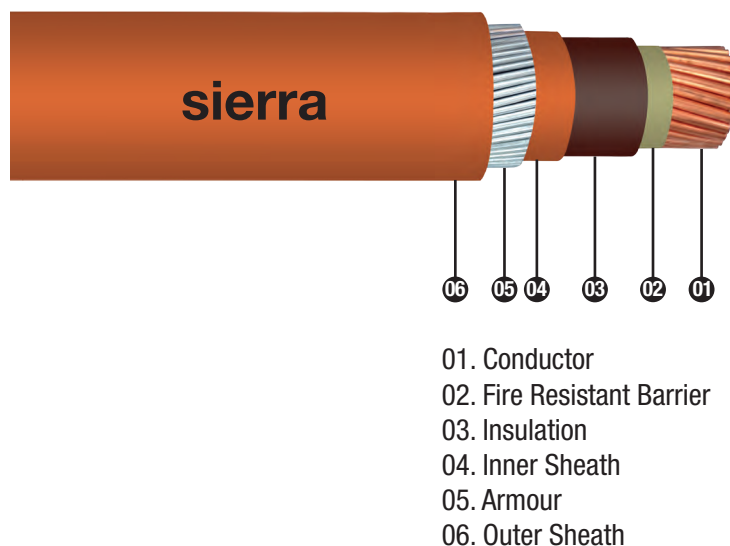
IEC 60331-31: Cables are subjected to fire at least 830 °C with mechanical shock for 120 minutes.

BS 6387 (Category X): Cables are subjected to fire at 650 °C with mechanical shock for 15 minutes.

BS 6387 (Category Y): Cables are subjected to fire at 750 °C with mechanical shock for 15 minutes.

BS 6387 (Category Z): Cables are subjected to fire at 950 °C with mechanical shock for 15 minutes.

Basic Construction Pattern of Fire Resistant Cables (Armoured Cable)



3. Fire Resistant Cables

3.1

Single Core XLPE Insulated and LSHF Sheathed Unarmoured - Circular Conductor

Specifications

Type		: Cu/FR Barrier/XLPE/LSHF
Standard		: IEC 60502-1
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - ST ₈
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	No. & Dia. Of Wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20°C	Approx. Weight
mm ²	x/mm	mm	mm	mm	Ω/km	kg/km
1.5	7/0.53	0.7	1.4	6.2	12.10	59
2.5	7/0.67	0.7	1.4	6.6	7.41	72
4	7/0.85	0.7	1.4	7.2	4.61	92
6	7/1.04	0.7	1.4	7.7	3.08	116
10	7/1.35	0.7	1.4	8.7	1.83	164
16	7/1.70	0.7	1.4	9.7	1.15	229
25	7/2.14	0.9	1.4	11.4	0.727	337
35	19/1.53	0.9	1.4	12.7	0.524	441
50	19/1.78	1	1.4	14.1	0.387	573
70	19/2.14	1.1	1.4	16.1	0.268	793
95	19/2.52	1.1	1.5	18.2	0.193	1068
120	37/2.03	1.2	1.5	20.0	0.153	1324
150	37/2.25	1.4	1.6	22.2	0.124	1620
185	37/2.52	1.6	1.6	24.4	0.0991	2005
240	61/2.25	1.7	1.7	27.5	0.0754	2597
300	61/2.52	1.8	1.8	30.3	0.0601	3224
400	61/2.85	2.0	1.9	33.9	0.0470	4089
500	61/3.20	2.2	2	37.6	0.0366	5114
630	91/2.98	2.4	2.2	42.4	0.0283	6577

3. Fire Resistant Cables

3.2

Multi Core LSHF Insulated and LSHF Sheathed Cable- Circular Conductor

Specifications

Type		: Cu/FR Barrier/LSHF/LSHF
Standard		: BS 7629
Nominal Voltage		: 300/500V
Conductor		: Class 1 or Class 2 Annealed Copper Wires
Insulation	Material	: LSHF material - EI 5
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 3
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	No. & Dia. Of Wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	x/mm	mm	mm	mm	Ω/km	kg/km
Two Core Cable						
2x1.0	1/1.13	0.6	0.9	8.0	18.1	88
2x1.5	7/0.53	0.7	0.9	8.5	12.1	120
2x2.5	7/0.67	0.8	1.0	10.5	7.41	160
2x4.0	7/0.85	0.8	1.1	12.5	4.61	210
Three Core Cable						
3x1.0	1/1.13	0.6	0.9	8.0	18.1	109
3x1.5	7/0.53	0.7	0.9	9.5	12.1	156
3x2.5	7/0.67	0.8	1.0	12.0	7.41	210
3x4.0	7/0.85	0.8	1.1	13.5	4.61	278
Four Core Cable						
4x1.0	1/1.13	0.6	1.0	9.0	18.1	136
4x1.5	7/0.53	0.7	1.0	10.5	12.1	189
4x2.5	7/0.67	0.8	1.1	13.0	7.41	258
4x4.0	7/0.85	0.8	1.2	15.0	4.61	352
Seven Core Cable						
7x1.0	1/1.13	0.6	1.0	11.0	18.1	195
7x1.5	7/0.53	0.7	1.1	12.5	12.1	277
7x2.5	7/0.67	0.8	1.2	15.0	7.41	385
Twelve Core Cable						
12x1.5	7/0.53	0.7	1.2	16.0	12.1	429
12x2.5	7/0.67	0.8	1.4	20.0	7.41	616
Nineteen Core Cable						
19x1.5	7/0.53	0.7	1.3	19.0	12.1	642
19x2.5	7/0.67	0.8	1.5	24.0	7.41	912

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3.3

Two & Three Core XLPE Insulated and LSHF Sheathed Unarmoured - Circular Conductor

Specifications

Type		: Cu/FR Barrier/XLPE/LSHF
Standard		: BS 7846
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 1
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	mm	mm	mm	Ω/km	kg/km
Two Core					
2x1.5	0.6	1.3	9.3	12.10	99
2x2.5	0.7	1.4	10.7	7.41	135
2x4	0.7	1.4	11.8	4.61	175
2x6	0.7	1.4	12.9	3.08	224
2x10	0.7	1.5	15.0	1.83	327
2x16	0.7	1.5	17.1	1.15	460
2x25	0.9	1.6	20.7	0.727	688
2x35	0.9	1.7	23.4	0.524	910
Three Core					
3x1.5	0.6	1.3	9.8	12.10	125
3x2.5	0.7	1.4	11.3	7.41	173
3x4	0.7	1.4	12.5	4.61	229
3x6	0.7	1.4	13.7	3.08	299
3x10	0.7	1.5	15.9	1.83	445
3x16	0.7	1.6	18.4	1.15	646
3x25	0.9	1.7	22.3	0.727	974
3x35	0.9	1.8	25.2	0.524	1296

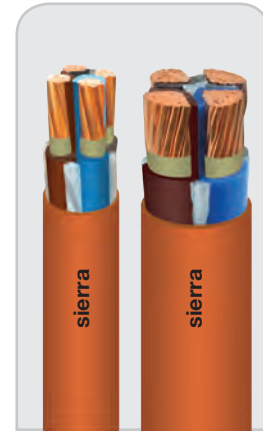
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3.4

Four Core XLPE Insulated and LSHF Sheathed Unarmoured - Circular & Shaped Conductor

Specifications

Type		: Cu/FR Barrier/XLPE/LSHF
Standard		: BS 7846
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 1
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	mm	mm	mm	Ω/km	kg/km
Circular stranded conductor					
4x1.5	0.6	1.3	10.6	12.10	153
4x2.5	0.7	1.4	12.3	7.41	214
4x4	0.7	1.4	13.6	4.61	287
4x6	0.7	1.5	15.2	3.08	386
4x10	0.7	1.5	17.5	1.83	568
4x16	0.7	1.6	20.2	1.15	829
4x25	0.9	1.7	24.6	0.727	1258
4x35	0.9	1.8	27.7	0.524	1678
Shaped stranded conductor					
4x35	0.9	1.8	23.4	0.524	1636
4x50	1.0	1.9	27.2	0.387	2150
4x70	1.1	2.1	31.5	0.268	3062
4x95	1.1	2.2	35.5	0.193	4126
4x120	1.2	2.3	39.4	0.153	5261
4x150	1.4	2.4	43.7	0.124	6228
4x185	1.6	2.6	48.5	0.0991	7870
4x240	1.7	2.7	54.3	0.0754	10062
4x300	1.8	2.9	60.1	0.0601	12672
4x400	2.0	3.2	68.7	0.0470	15700

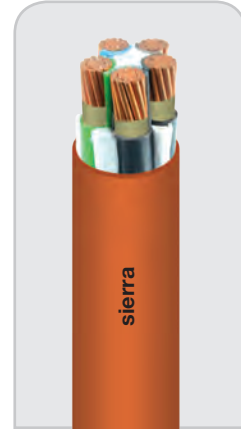
3. Fire Resistant Cables

3.5

Five Core XLPE Insulated and LSHF Sheathed Unarmoured - Circular Conductor

Specifications

Type		: Cu/FR Barrier/XLPE/LSHF
Standard		: BS 7846
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 1
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	mm	mm	mm	Ω/km	kg/km
5x1.5	0.6	1.4	11.7	12.10	187
5x2.5	0.7	1.4	13.4	7.41	255
5x4	0.7	1.5	15.0	4.61	353
5x6	0.7	1.5	16.6	3.08	467
5x10	0.7	1.6	19.3	1.83	701
5x16	0.7	1.7	22.3	1.15	1025
5x25	0.9	1.8	27.2	0.727	1557
5x35	0.9	1.9	30.7	0.524	2078
5x50	1.0	2.0	34.8	0.387	2744
5x70	1.1	2.2	40.6	0.268	3869

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Multi Core XLPE Insulated and LSHF Sheathed Unarmoured - Circular Auxiliary Cable

Specifications

Type		: Cu/FR Barrier/XLPE/LSHF
Standard		: BS 7846
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 1
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	No.& Dia. Of Wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	x/mm	mm	mm	mm	Ω/km	kg/km
7 x 1.5	7/0.53	0.6	1.4	12.7	12.1	238
12 x 1.5	7/0.53		1.5	16.6	12.1	385
19 x 1.5	7/0.53		1.6	19.5	12.1	572
27 x 1.5	7/0.53		1.7	23.3	12.1	792
37 x 1.5	7/0.53		1.7	26.0	12.1	1038
48 x 1.5	7/0.53		1.8	29.9	12.1	1330
7 x 2.5	7/0.67	0.7	1.4	14.5	7.41	330
12 x 2.5	7/0.67		1.6	19.3	7.41	549
19 x 2.5	7/0.67		1.7	22.8	7.41	820
27 x 2.5	7/0.67		1.8	27.3	7.41	1140
37 x 2.5	7/0.67		1.8	30.6	7.41	1503
48 x 2.5	7/0.67		2.0	35.4	7.41	1948
7 x 4	7/0.85	0.7	1.5	16.4	4.61	461
12 x 4	7/0.85		1.6	21.6	4.61	758
19 x 4	7/0.85		1.7	25.5	4.61	1147
27 x 4	7/0.85		1.9	30.9	4.61	1617
37 x 4	7/0.85		2.0	34.8	4.61	2164
48 x 4	7/0.85		2.1	40.0	4.61	2778

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Single Core XLPE Insulated and LSHF Sheathed Armoured - Circular Conductor

Specifications

Type		: Cu/FR Barrier/XLPE/AWA/LSHF
Standard		: IEC 60502-1
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - ST ₈
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	No. & Dia. Of Wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Steel Armour Wire Diameter	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	x/mm	mm	mm	mm	mm	mm	Ω/km	kg/km
Circular stranded conductor								
1.5	7/0.53	0.7	1	0.9	1.4	10.0	12.10	146
2.5	7/0.67	0.7	1	0.9	1.4	10.4	7.41	164
4	7/0.85	0.7	1	0.9	1.4	11.0	4.61	189
6	7/1.04	0.7	1	0.9	1.4	11.5	3.08	220
10	7/1.35	0.7	1	0.9	1.4	12.5	1.83	278
16	7/1.70	0.7	1	0.9	1.4	13.5	1.15	355
25	7/2.14	0.9	1	1.25	1.4	17.0	0.727	537
35	19/1.53	0.9	1	1.25	1.4	17.2	0.524	635
50	19/1.78	1	1	1.25	1.4	18.6	0.387	787
70	19/2.14	1.1	1	1.25	1.5	20.8	0.268	1044
95	19/2.52	1.1	1	1.6	1.6	23.6	0.193	1398
120	37/2.03	1.2	1	1.6	1.6	25.4	0.153	1683
150	37/2.25	1.4	1	1.6	1.7	27.6	0.124	2013
185	37/2.52	1.6	1	1.6	1.7	29.8	0.0991	2434
240	61/2.25	1.7	1	1.6	1.8	32.9	0.0754	3074
300	61/2.52	1.8	1	2.0	1.9	36.5	0.0601	3837
400	61/2.85	2	1.2	2.0	2.0	40.5	0.0470	4810
500	61/3.20	2.2	1.2	2.0	2.1	44.2	0.0366	5909
630	91/2.98	2.4	1.2	2.0	2.3	49.0	0.0283	7463

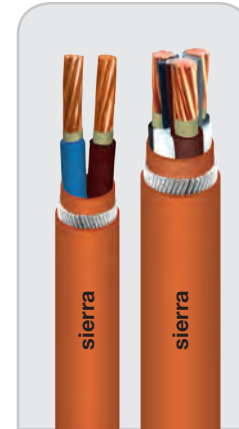
3. Fire Resistant Cables

3.8

Two & Three Core XLPE Insulated and LSHF Sheathed Armoured - Circular Conductor

Specifications

Type		: Cu/FR Barrier/XLPE/SWA/LSHF
Standard		: BS 7846
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 1
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Steel Armour Wire Diameter	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	mm	mm	mm	mm	mm	Ω/km	kg/km
Two Core							
2x1.5	0.6	0.8	0.9	1.3	13.1	12.1	306
2x2.5	0.7	0.8	0.9	1.4	14.6	7.41	370
2x4	0.7	0.8	0.9	1.4	15.7	4.61	432
2x6	0.7	0.8	0.9	1.4	16.9	3.08	505
2x10	0.7	0.8	0.9	1.5	19.0	1.83	649
2x16	0.7	0.8	1.25	1.5	21.4	1.15	946
2x25	0.9	0.8	1.25	1.6	25.1	0.727	1270
2x35	0.9	1.0	1.6	1.7	28.7	0.524	1764
Three Core							
3x1.5	0.6	0.8	0.9	1.3	13.7	12.10	343
3x2.5	0.7	0.8	0.9	1.4	15.2	7.41	421
3x4	0.7	0.8	0.9	1.4	16.4	4.61	501
3x6	0.7	0.8	0.9	1.4	17.7	3.08	597
3x10	0.7	0.8	1.25	1.5	20.6	1.83	900
3x16	0.7	0.8	1.25	1.6	22.7	1.15	1164
3x25	0.9	1.0	1.6	1.7	27.8	0.727	1791
3x35	0.9	1.0	1.6	1.8	30.5	0.524	2207

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3.9

Four Core XLPE Insulated and LSHF Sheathed Armoured - Circular & Shaped Conductor

Specifications

Type		: Cu/FR Barrier/XLPE/SWA/LSHF
Standard		: BS 7846
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 1
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Steel Armour Wire Diameter	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	mm	mm	mm	mm	mm	Ω/km	kg/km
Circular stranded conductor							
4x1.5	0.6	0.8	0.9	1.3	14.5	12.1	321
4x2.5	0.7	0.8	0.9	1.4	16.2	7.41	382
4x4	0.7	0.8	0.9	1.4	17.6	4.61	435
4x6	0.7	0.8	1.25	1.5	19.9	3.08	612
4x10	0.7	0.8	1.25	1.5	22.3	1.83	732
4x16	0.7	0.8	1.25	1.6	24.6	1.15	892
4x25	0.9	1.0	1.6	1.7	30.1	0.727	1362
4x35	0.9	1.0	1.6	1.8	33.1	0.524	1605
Shaped stranded conductor							
4x35	0.9	1.0	1.6	1.8	29.8	0.524	1050
4x50	1.0	1.0	1.6	1.9	33.2	0.387	1263
4x70	1.1	1.2	2.0	2.1	38.9	0.268	1797
4x95	1.1	1.2	2.0	2.2	42.9	0.193	2167
4x120	1.2	1.4	2.5	2.3	48.3	0.153	2861
4x150	1.4	1.4	2.5	2.4	52.6	0.124	3260
4x185	1.6	1.4	2.5	2.6	57.8	0.0991	3848
4x240	1.7	1.6	2.5	2.7	64.2	0.0754	4644
4x300	1.8	1.6	2.5	2.9	70.0	0.0601	5503
4x400	2.0	1.8	3.15	3.2	79.3	0.0470	7193

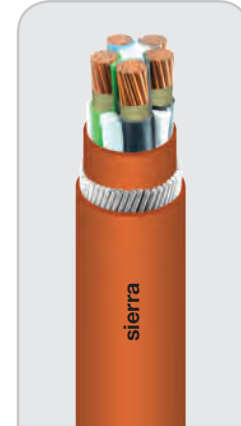
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3.10

Five Core XLPE Insulated and LSHF Sheathed Armoured - Circular Conductor

Specifications

Type		: Cu/FR Barrier/XLPE/SWA/LSHF
Standard		: BS 7846
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 1
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Steel Armour Wire Diameter	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	mm	mm	mm	mm	mm	Ω/km	kg/km
Circular stranded conductor							
5x1.5	0.6	0.8	0.9	1.4	15.6	12.1	442
5x2.5	0.7	0.8	0.9	1.4	17.4	7.41	545
5x4	0.7	0.8	0.9	1.5	19.1	4.61	675
5x6	0.7	0.8	1.25	1.5	21.3	3.08	939
5x10	0.7	0.8	1.25	1.6	24.2	1.83	1244
5x16	0.7	1.0	1.60	1.7	27.9	1.15	1842
5x25	0.9	1.0	1.6	1.8	32.8	0.727	2538
5x35	0.9	1.0	1.6	1.9	36.1	0.524	3177
5x50	1.0	1.2	2.0	2.0	41.7	0.387	4313
5x70	1.1	1.2	2.0	2.2	47.6	0.268	5678

3. Fire Resistant Cables

3.11

Multi Core XLPE Insulated and LSHF Sheathed Armoured - Circular Auxiliary Cable

Specifications

Type		: Cu/FR Barrier/XLPE/SWA/LSHF
Standard		: BS 7846
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer the last page - "CABLE CORE COLOURS"
Sheathing	Material	: LSHF material - LTS 1
	Colour	: Orange, Black or any other colour



Nominal Cross Sectional Area	No.& Dia. Of Wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Steel Armour Wire Diameter	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm ²	x/mm	mm	mm	mm	mm	mm	Ω/km	kg/km
7 x 1.5	7/0.53	0.6	0.8	0.9	1.4	16.7	12.1	514
12 x 1.5	7/0.53		0.8	1.25	1.5	21.5	12.1	857
19 x 1.5	7/0.53		0.8	1.25	1.6	24.7	12.1	1118
27 x 1.5	7/0.53		1.0	1.60	1.7	29.8	12.1	1643
37 x 1.5	7/0.53		1.0	1.60	1.7	32.5	12.1	1983
48 x 1.5	7/0.53		1.0	1.60	1.8	36.8	12.1	2406
7 x 2.5	7/0.67	0.7	0.8	0.9	1.4	18.6	7.41	644
12 x 2.5	7/0.67		0.8	1.25	1.6	24.5	7.41	1093
19 x 2.5	7/0.67		1.0	1.6	1.7	29.1	7.41	1652
27 x 2.5	7/0.67		1.0	1.6	1.8	33.8	7.41	2126
37 x 2.5	7/0.67		1.0	1.6	1.8	36.3	7.41	2602
48 x 2.5	7/0.67		1.2	2.0	2.0	43.4	7.41	3540
7 x 4	7/0.85	0.7	0.8	1.25	1.5	21.2	4.61	927
12 x 4	7/0.85		1.0	1.6	1.6	27.8	4.61	1554
19 x 4	7/0.85		1.0	1.6	1.7	31.8	4.61	2072
27 x 4	7/0.85		1.0	1.6	1.9	37.5	4.61	2721
37 x 4	7/0.85		1.2	2.0	2.0	42.7	4.61	3730
48 x 4	7/0.85		1.2	2.0	2.1	48.2	4.61	4564