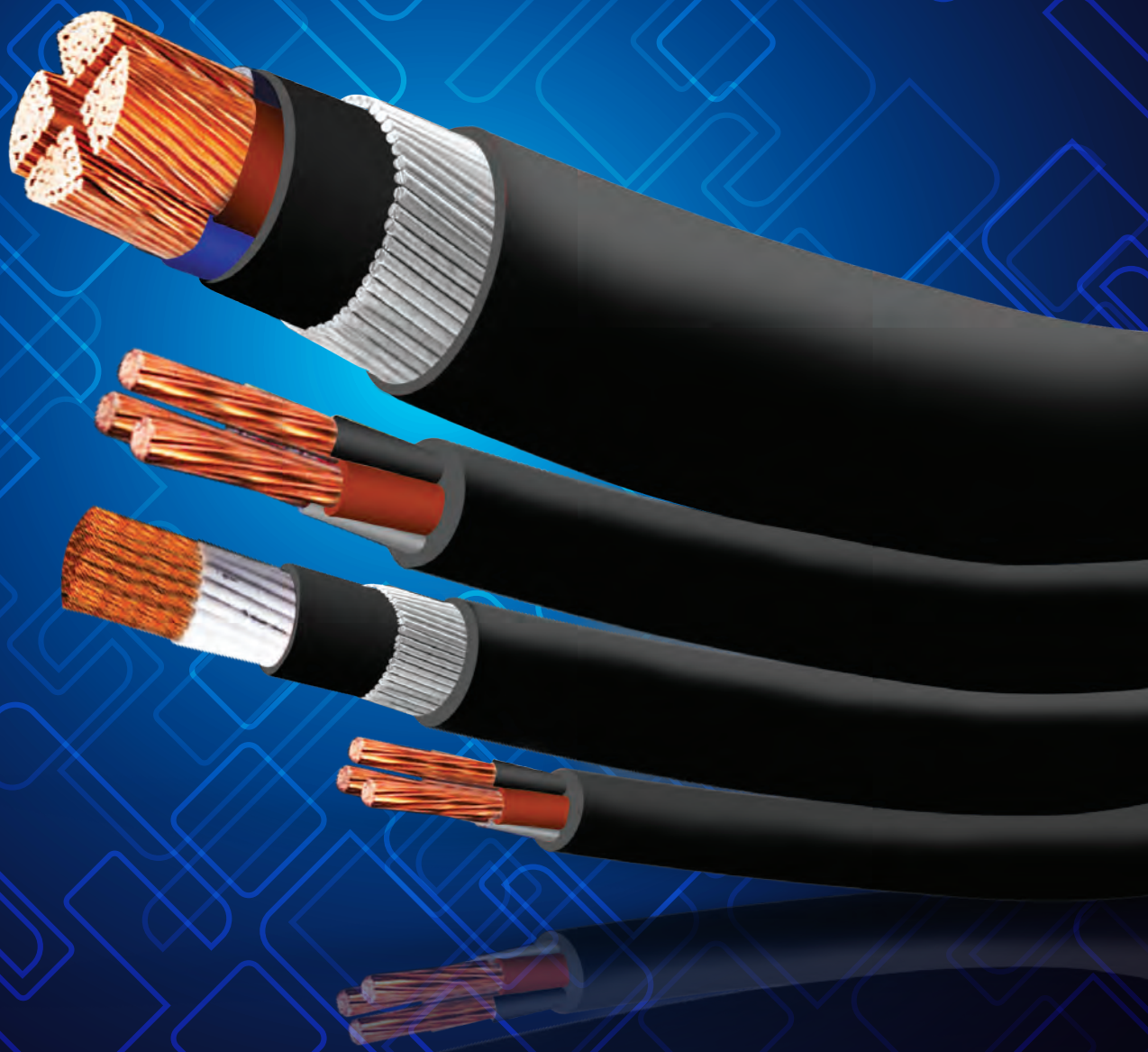
sierra cables

ISO 9001, ISO 14001 & OHSAS 18001 CERTIFIED COMPANY
SLS 733, SLS 750, SLS 1143, SLS 1186



Product Catalogue

1. Sierra Cables PLC 03

2. Domestic Cables 05

2.1 Single Core Insulated ,Non-Sheathed - Rigid Conductor 05
2.2 Single Core Insulated ,Non-Sheathed - Flexible Conductor 06
2.3 Single Core Insulated and Sheathed Cable 07
2.4 Multi Core Insulated and Sheathed - Flat Cable & Twisted Twin 08
2.5 Multi Core Insulated and Sheathed - Circular Cable 09
2.6 Multi Core Insulated and Sheathed - Flexible Conductor 10

3. Industrial Cables - Copper Conductor 11

3.1.1 Single Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor 11
3.1.2 Single Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor 12
3.2.1 Two & Three Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor 13
3.2.2 Two & Three Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor 14
3.3.1 Four Core PVC Insulated and PVC Sheathed Unarmoured - Circular & Shaped Conductor 15
3.3.2 Four Core XLPE Insulated and PVC Sheathed Unarmoured - Circular & Shaped Conductor 16
3.4.1 Five Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor 17
3.4.2 Five Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor 18
3.5.1 Multi Core PVC Insulated and PVC Sheathed Unarmoured - Circular Auxiliary Cable 19
3.5.2 Multi Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Auxiliary Cable 20
3.6.1 Single Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor 21
3.6.2 Single Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor 22
3.7.1 Two & Three Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor 23
3.7.2 Two & Three Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor 24
3.8.1 Four Core PVC Insulated and PVC Sheathed Armoured - Circular & Shaped Conductor 25
3.8.2 Four Core XLPE Insulated and PVC Sheathed Armoured - Circular & Shaped Conductor 26
3.9.1 Five Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor 27
3.9.2. Five Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor 28
3.10.1 Multi Core PVC Insulated and PVC Sheathed Armoured - Circular Auxiliary Cable 29
3.10.2 Multi Core XLPE Insulated and PVC Sheathed Armoured - Circular Auxiliary Cable 30

4. Industrial Cables - Aluminium Conductor 31

4.1.1 Single Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor 31
4.1.2 Single Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor 32
4.2.1 Two & Three Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor 33
4.2.2 Two & Three Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor 34
4.3.1 Four Core PVC Insulated and PVC Sheathed Unarmoured - Circular & Shaped Conductor 35
4.3.2 Four Core XLPE Insulated and PVC Sheathed Unarmoured - Circular & Shaped Conductor 36
4.4.1 Single Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor 37
4.4.2 Single Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor 38
4.5.1 Two & Three Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor 39
4.5.2 Two & Three Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor 40
4.6.1 Four Core PVC Insulated and PVC Sheathed Armoured - Circular & Shaped Conductor 41
4.6.2 Four Core XLPE Insulated and PVC Sheathed Armoured - Circular & Shaped Conductor 42

5. Miscellaneous Range of Cables 43

5.1 Auto Cable 43
5.2 Welding Cable 44
5.3 Coaxial Cable 45
5.4 PVC Insulated, Self - Supporting One Pair Drop Wire 46
5.5 PVC Insulated, Aluminium Service Main Wire 300/500V Single Core, Twin and Flat Twin 46
5.6 Telecommunication Distribution Cable 47
5.7 Switchgear and Controlgear Cables 48
5.8 Screen Cables 49

6. Aerial Bundle Conductors 51

7. Overhead Conductors 63

7.1 All Aluminium Conductors (AAC) 63
7.2 All Aluminium Alloy Conductors (AAAC) 64
7.3 Aluminium Conductors Steel Reinforced (ACSR) 65

8. Technical Data for Cable Selection 69

8.1 Technical Data for Cable Selection (For Copper Cables) 69
8.2 Technical Data for Cable Selection (For Aluminium Cables) 85
8.3 Technical Data for Cable Installation 101
8.4 Selection of Protective Conductor 117

9. Maximum Resistance of Armour Wire 120

10. Drum Details 121

10.1 Drum Specification 121
10.2 Capacity Chart for Timber Drums 122

11. Handling Instructions 123

12. Laying Instructions 124

13. Cable Core Colours 125

1. Sierra Cables PLC

With the experience and knowledge of many years in the industry, Sierra Cables has grown to become a leading manufacturer in Sri Lanka today. Sierra cables PLC comprises a highly skilled & competent work force and the cables are manufactured using modern machinery & state of the art technology.

Sierra offers an expansive range of products mainly of Domestic cables, Industrial cables (Armoured and Unarmoured), Aerial Bundled Conductors(ABC), Overhead conductors, Telecommunication cables and Low Smoke Halogen Free (LSHF) cables. Sierra has the manufacturing capacity upto 1000mm^2 for single core cables and upto 400mm^2 for four core cables.

Being a quality conscious company, we utilize superior raw materials to enhance our final product quality. With the aim of producing electric cables of highest quality and providing best customer service Island wide, we manufacture the cables to the most stringent industry standards and our products are awarded with SLS 733, SLS 1143, SLS 750 and SLS 1186 product certification marks.

Sierra has built-up expertise in cable technology and implemented a quality management system complying with the requirements of ISO 9001:2008 standard and ensure that only the highest quality products are allowed in to the market.

Being OHSAS 18001 certified company we ensure the health and well-being of employees, sub-contractors and the visitors to our factory while increasing employee motivation through the provision of a safe workplace. Also, as a ISO14001 certified company we manage our activities with minimum negative impact to the environment.

Certifications

Page 1 of 2

BUREAU VERITAS

INDUSTRY & FACILITIES

PRODUCT CONFORMITY CERTIFICATE

N° PCC-SRL.C.8.16.051

Name and address of the factory	Sierra Cables PLC 39/1A, Galwarusawa Rd, Korathota, Kaduwela, Sri Lanka.
Type(s) of product and component manufactured	• PVC insulated non sheathed general purpose cable, 450/750V, single core-Rigid/Flexible copper conductor • PVC insulated, non-sheathed cable for internal wiring, 300/500V, single core and twisted twin • PVC insulated, PVC sheathed 300/500V, circular twin, 3-core, 4-core and 5-core • PVC insulated , PVC sheathed cable, 300/500V, Single core, flat twin and flat 3 core • PVC insulated, PVC sheathed cable with or without circuit protective conductor,300/500V, single core and flat twin • XLPE insulated Armoured Cables 600/1000V • Light Duty PVC insulated and sheathed flexible cord, parallel twin, circular twin, 3-core and 4-core, 300/300V • Ordinary Duty PVC insulated and sheathed flexible cord, parallel twin, circular twin, 3-core, 4-core and 5-core 300/500V • PVC insulated Armoured Cables 600/1000V
Certified according to	BS 6004:2012 BS EN 50525-2-31:2011 BS 5467:1997+A3:2008 BS EN 50525-2-11:2011 BS 6346:1997
Reference Documents	FR-SRL.C.8.16.051 FAC-SRL.C.8.16.051 TR-SRL.C.8.16.051 TC-SRL.C.8.16.051
Expiry Date	[redacted]

Certificate of Conformity

MGMT. SYS. RvA C 155

SLAB ACCREDITED ISO/IEC: 17021 QMS-001-01

The Sri Lanka Standards Institution
certifies that the Quality Management System of

SIERRA CABLES PLC
NO. 39/1 A, GALWARUSA ROAD, KORATHOTA, KADUWELA
SRI LANKA

has been assessed and approved in accordance with
the requirements of ISO 9001: 2008/ SLS ISO 9001: 2008

Certificate No: **QSC 02004**
This certificate issued on [redacted] is valid up to [redacted]
Date of first certification [redacted]

SCOPE OF CERTIFICATION

MANUFACTURE OF ELECTRIC CABLES, CONDUCTORS, AERIAL BUNDLE CONDUCTORS, ELECTRIC WINDING WIRES, TELECOMMUNICATION CABLES FOR INTERIOR USE, DROP WIRE AND RF CABLES AS PER PRE-DETERMINED SPECIFICATIONS.

This approval is subject to the continued satisfactory operation of the organization's Quality Management System.

DIRECTOR GENERAL

SRI LANKA STANDARDS INSTITUTION
No. 17, Victoria Place, Elvitigala Mawatha, Colombo 08, Sri Lanka
www.slsi.lk

Certificate of Conformity

MGMT. SYS. RvA C 155

SLAB ACCREDITED ISO/IEC: 17021 EMS-001-01

The Sri Lanka Standards Institution
certifies that the Environmental Management System of

SIERRA CABLES PLC
GALWARUSA ROAD
KORATHOTA, KADUWELA
SRI LANKA

has been assessed and approved in accordance with
the requirements of ISO 14001 : 2004 / SLS ISO 14001 : 2004

Certificate No. SC/EMS/00804
This certificate issued on [redacted] is valid up to [redacted]
Date of First Certification [redacted]

SCOPE OF CERTIFICATION

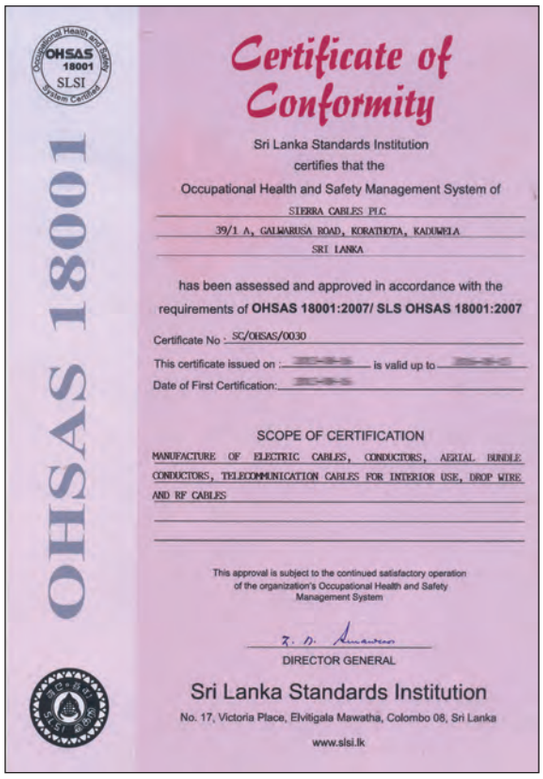
MANUFACTURING OF SIERRA BRAND ELECTRIC CABLES, CONDUCTORS AND ELECTRIC WINDING WIRE, TELECOMMUNICATION CABLES FOR INTERIOR USE, DROP WIRE, RF CABLES AND ABC

This approval is subject to the continued satisfactory operation of the organization's Environmental Management System.

DIRECTOR GENERAL

Sri Lanka Standards Institution
No. 17, Victoria Place, Elvitigala Mawatha, Colombo 08, Sri Lanka
www.slsi.lk

ISO 14001



OHSAS 18001 SLSI

OHSAS 18001

Certificate of Conformity

Sri Lanka Standards Institution
certifies that the
Occupational Health and Safety Management System of

SIERRA CABLES PLC
39/1 A, GALWARUSA ROAD, KORATHOTA, KADUWELA
SRI LANKA

has been assessed and approved in accordance with the
requirements of **OHSAS 18001:2007/ SLS OHSAS 18001:2007**

Certificate No : SC/OHSAS/0030
This certificate issued on : [redacted] is valid up to [redacted]
Date of First Certification: [redacted]

SCOPE OF CERTIFICATION

MANUFACTURE OF ELECTRIC CABLES, CONDUCTORS, AERIAL BUNDLE CONDUCTORS, TELECOMMUNICATION CABLES FOR INTERIOR USE, DROP WIRE AND RF CABLES

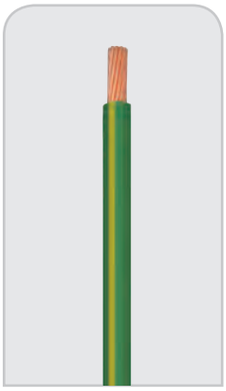
This approval is subject to the continued satisfactory operation of the organization's Occupational Health and Safety Management System

DIRECTOR GENERAL

Sri Lanka Standards Institution
No. 17, Victoria Place, Elvitigala Mawatha, Colombo 08, Sri Lanka
www.slsi.lk

2.1
Single Core Insulated, Non-Sheathed - Rigid Conductor

Application: PVC insulated cables intended for electrical power, lighting and internal wiring.



Specifications

Type	: Cu/PVC
Standard	: SLS 733, BS 6004
Nominal Voltage	: 450/750V
No. of Cores	: Single
Conductor	: Class 1 or Class 2 Copper
Insulation Material	: PVC TI 1
Insulation Colour	: Green/Yellow, Blue or other Colours

Nominal Cross Sectional Area	No. & Dia. of Wires	Nominal Insulation Thickness	Mean Overall Diameter		Minimum Insulation Resistance at 70 °C	Max. d.c. Resistance at 20 °C	Approx. Weight
			Lower Limit	Upper Limit			
mm^2	x/mm	mm	mm		MΩ.km	Ω/km	kg/km
Copper Solid Conductors							
1.5	1/1.38	0.7	2.6	3.2	0.011	12.1	20
2.5	1/1.78	0.8	3.2	3.9	0.010	7.41	32
Copper Stranded Conductors							
1.5	7/0.53	0.7	2.7	3.3	0.010	12.1	22
2.5	7/0.67	0.8	3.3	4.0	0.0099	7.41	34
4	7/0.85	0.8	3.8	4.6	0.0082	4.61	50
6	7/1.04	0.8	4.3	5.2	0.0070	3.08	70
10	7/1.35	1.0	5.6	6.7	0.0067	1.83	117
16	7/1.70	1.0	6.4	7.8	0.0056	1.15	177
25	7/2.14	1.2	8.1	9.7	0.0053	0.727	278
35	19/1.53	1.2	9.0	10.9	0.0046	0.524	376
50	19/1.78	1.4	10.6	12.8	0.0046	0.387	509
70	19/2.14	1.4	12.1	14.6	0.0040	0.268	717
95	19/2.52	1.6	14.1	17.1	0.0039	0.193	990
120	37/2.03	1.6	15.6	18.8	0.0035	0.153	1226
150	37/2.25	1.8	17.3	20.9	0.0035	0.124	1509
185	37/2.52	2.0	19.3	23.3	0.0035	0.0991	1891
240	61/2.25	2.2	22.0	26.6	0.0034	0.0754	2465
300	61/2.52	2.4	24.5	29.6	0.0033	0.0601	3084
400	61/2.85	2.6	27.5	33.2	0.0031	0.0470	3928
500	61/3.20	2.8	30.5	36.9	0.0030	0.0366	4932
630	91/2.98	2.8	34.0	41.1	0.0027	0.0283	6311

2. Domestic Cables

2.2
Single Core Insulated, Non-Sheathed - Flexible Conductor

Application: PVC insulated cables intended for electrical power, lighting and internal wiring

Specifications

Type	: Cu/PVC
Standard	: SLS 733, BS 6004
Nominal Voltage	: 450/750V
No. of Cores	: Single
Conductor	: Class 5 Annealed Copper
Insulation Material	: PVC TI 1
Insulation Colour	: Green/Yellow, Blue or other Colours

Nominal Cross Sectional Area	No. & Dia. of Wires	Nominal Insulation Thickness	Mean Overall Diameter		Minimum Insulation Resistance at 70 °C	Max. d.c. Resistance at 20 °C	Approx. Weight
			Lower Limit	Upper Limit			
mm^2	x/mm	mm	mm		MΩ.km	Ω/km	kg/km
1.5	30/0.25	0.7	2.8	3.4	0.010	13.3	21
2.5	50/0.25	0.8	3.4	4.1	0.0095	7.98	34
4	56/0.30	0.8	3.9	4.8	0.0078	4.95	50
6	84/0.30	0.8	4.4	5.3	0.0068	3.30	70
10	80/0.40	1.0	5.7	6.8	0.0065	1.91	117
16	126/0.40	1.0	6.7	8.1	0.0053	1.21	174
25	196/0.40	1.2	8.4	10.2	0.0050	0.78	269
35	276/0.40	1.2	9.7	11.7	0.0043	0.554	367
50	396/0.40	1.4	11.5	13.9	0.0042	0.386	524
70	360/0.50	1.4	13.2	16.0	0.0036	0.272	726
95	475/0.50	1.6	15.1	18.2	0.0036	0.206	957
120	608/0.50	1.6	16.7	20.2	0.0032	0.161	1206
150	756/0.50	1.8	18.6	22.5	0.0032	0.129	1501
185	925/0.50	2.0	20.6	24.9	0.0032	0.106	1837
240	1221/0.50	2.2	23.5	28.4	0.0031	0.0801	2413

2.3
Single Core Insulated and Sheathed

Application: PVC insulated cables intended for electrical power, lighting and internal wiring.

Specifications

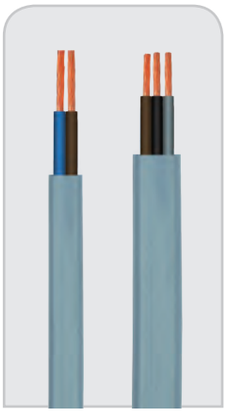
Type		: Cu/PVC/PVC
Standard		: SLS 733, BS 6004
Nominal Voltage		: 300/500V
Conductor		: Class 1 or Class 2 Annealed Copper
Insulation	Material	: PVC TI 1
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 6
	Colour	: Grey (or other colours by agreement with customer)

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Mean Overall Diameter		Minimum Insulation Resistance at 70 °C	Max. d.c. Resistance at 20 °C	Approx. Weight
				Lower Limit	Upper Limit			
mm^2	x/mm	mm	mm	mm		MΩ.km	Ω/km	kg/km
1	1/1.13	0.6	0.8	3.8	4.5	0.011	18.1	26
1.5	1/1.38	0.7	0.8	4.2	4.9	0.011	12.1	34
2.5	1/1.78	0.8	0.8	4.8	5.8	0.010	7.41	48
4	7/0.85	0.8	0.9	5.4	6.8	0.0077	4.61	71
6	7/1.04	0.8	0.9	6.0	7.4	0.0065	3.08	94
10	7/1.35	1.0	0.9	7.2	8.8	0.0065	1.83	147
16	7/1.70	1.0	1.0	8.4	10.5	0.0052	1.15	215
25	7/2.14	1.2	1.1	10.0	12.5	0.0050	0.727	329
35	19/1.53	1.2	1.1	11.0	13.5	0.0044	0.524	433

2.4
Multi Core Insulated and Sheathed - Flat Cable & Twisted Twin

Application: PVC insulated cables intended for electrical power, lighting and internal wiring.

Specifications



Type		: Cu/PVC/PVC
Standard		: SLS 733, BS 6004
Nominal Voltage		: 300/500V
Conductor		: Class 1, Class 2 or Class 5 Annealed Copper
Insulation	Material	: PVC TI 1
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 6
	Colour	: Grey (or other colours by agreement with customer)

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Mean Overall Dimensions		Minimum Insulation Resistance at 70 °C	Max. d.c. Resistance at 20 °C	Approx. Weight
				Lower Limit	Upper Limit			
mm^2	x/mm	mm	mm	mm		MΩ.km	Ω/km	kg/km
Twisted Twin*								
0.5	16/0.20	0.6	-	2.1	2.5	0.013	39.0	18
0.75	24/0.20	0.6	-	2.2	2.7	0.011	26.0	24
Two Core Flat Cables (Flat Twin)								
1	1/1.13	0.6	0.9	4.0x6.2	4.7x7.4	0.011	18.1	49
1.5	1/1.38	0.7	0.9	4.4x7.0	5.4x8.4	0.011	12.1	66
1.5	7/0.53	0.7	0.9	4.5x7.2	5.6x8.8	0.011	12.1	70
2.5	1/1.78	0.8	1.0	5.2x8.4	6.2x9.8	0.010	7.41	99
2.5	7/0.67	0.8	1.0	5.2x8.6	6.6x10.5	0.010	7.41	102
4	7/0.85	0.8	1.0	5.6x9.6	7.2x11.5	0.0077	4.61	141
6	7/1.04	0.8	1.1	6.4x10.5	8.0x13.0	0.0065	3.08	192
10	7/1.35	1.0	1.2	7.8x13.0	9.6x16.0	0.0065	1.83	308
16	7/1.70	1.0	1.3	9.0x15.5	11.0x18.5	0.0052	1.15	447
Three core flat cables								
1	1/1.13	0.6	0.9	4.0x8.4	4.7x9.8	0.011	18.1	71
1.5	1/1.38	0.7	0.9	4.4x9.8	5.4x11.5	0.011	12.1	95
2.5	1/1.78	0.8	1.0	5.2x11.5	6.2x13.5	0.010	7.41	143
4	7/0.85	0.8	1.1	5.8x13.5	7.4x16.5	0.0077	4.61	213
6	7/1.04	0.8	1.1	6.4x15.0	8.0x18.0	0.0065	3.08	285
10	7/1.35	1.0	1.2	7.8x19.0	9.6 x 22.5	0.0065	1.83	457
16	7/1.70	1.0	1.3	9.0 x 22.0	11.0x26.5	0.0052	1.15	667

*Twisted twin comprises two insulated cables twisted together.

2.5
Multi Core Insulated and Sheathed - Circular Cable

Application: PVC insulated cables intended for electrical power, lighting and internal wiring

Specifications

Type		: Cu/PVC/PVC
Standard		: SLS 733, BS 6004
Nominal Voltage		: 300/500V
Conductor		: Class 2 Annealed Copper
Insulation	Material	: PVC TI 1
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Not Specified

Nominal Cross sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Sheathing Thickness	Mean Overall Diameter		Minimum Insulation Resistance at 70 °C	Max. d.c. Resistance at 20 °C	Approx. Weight
					Lower Limit	Upper Limit			
mm²	x/mm	mm	mm	mm	mm		MΩ.km	Ω/km	kg/km
Two Core Cables									
1.5	7/0.53	0.7	0.4	1.2	8.4	10.5	0.010	12.1	123
2.5	7/0.67	0.8	0.4	1.2	9.6	12.0	0.009	7.41	166
4	7/0.85	0.8	0.4	1.2	10.5	13.0	0.0077	4.61	216
6	7/1.04	0.8	0.4	1.2	11.5	14.0	0.0065	3.08	278
10	7/1.35	1.0	0.6	1.4	15.0	17.5	0.0065	1.83	456
16	7/1.70	1.0	0.6	1.4	16.5	20.0	0.0052	1.15	629
25	7/2.14	1.2	0.8	1.4	20.5	24.0	0.0050	0.727	950
35	19/1.53	1.2	1.0	1.6	23.0	27.5	0.0044	0.524	1276
Three Core Cables									
1.5	7/0.53	0.7	0.4	1.2	8.8	11.0	0.010	12.1	142
2.5	7/0.67	0.8	0.4	1.2	10.0	12.5	0.009	7.41	193
4	7/0.85	0.8	0.4	1.2	11.0	13.5	0.0077	4.61	257
6	7/1.04	0.8	0.4	1.4	12.5	15.5	0.0065	3.08	350
10	7/1.35	1.0	0.6	1.4	15.5	19.0	0.0065	1.83	554
16	7/1.70	1.0	0.8	1.4	18.0	21.5	0.0052	1.15	719
25	7/2.14	1.2	0.8	1.6	22.0	26.0	0.0050	0.727	1085
35	19/1.53	1.2	1.0	1.6	24.5	29.0	0.0044	0.524	1430
Four Core Cables									
1.5	7/0.53	0.7	0.4	1.2	9.6	12.0	0.010	12.1	170
2.5	7/0.67	0.8	0.4	1.2	11.0	13.5	0.009	7.41	235
4	7/0.85	0.8	0.4	1.4	12.5	15.0	0.0077	4.61	329
6	7/1.04	0.8	0.6	1.4	14.0	17.0	0.0065	3.08	446
10	7/1.35	1.0	0.6	1.4	17.0	20.5	0.0065	1.83	688
16	7/1.70	1.0	0.8	1.4	20.0	23.5	0.0052	1.15	916
25	7/2.14	1.2	1.0	1.6	24.5	28.5	0.0050	0.727	1416
35	19/1.53	1.2	1.0	1.6	27.0	32.0	0.0044	0.524	1846
Five Core Cables									
1.5	7/0.53	0.7	0.4	1.2	10.0	12.5	0.010	12.1	199
2.5	7/0.67	0.8	0.4	1.2	12.0	14.5	0.009	7.41	277
4	7/0.85	0.8	0.6	1.4	14.0	17.0	0.0077	4.61	404
6	7/1.04	0.8	0.6	1.4	15.5	18.5	0.0065	3.08	531
10	7/1.35	1.0	0.6	1.4	18.5	22.0	0.0065	1.83	825
16	7/1.70	1.0	0.8	1.6	22.0	26.0	0.0052	1.15	1138
25	7/2.14	1.2	1.0	1.6	27.0	31.5	0.0050	0.727	1725
35	19/1.53	1.2	1.2	1.6	30.0	35.0	0.0044	0.524	2290

2.6
Multi Core Insulated and Sheathed - Flexible Conductor

Application: PVC insulated cables intended for use with appliances and equipment in domestic or similar environments

Specifications

Type		: Cu/PVC/PVC
Standard		: SLS 1143, BS 6500
Nominal Voltage		: Light Duty - 300/300V : Ordinary Duty - 300/500V
Conductor		: Class 5 Annealed Copper
Insulation	Material	: PVC TI 2
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 2
	Colour	: Not Specified

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Mean Overall Diameter		Minimum Insulation Resistance at 70 °C	Max. d.c. Resistance at 20 °C	Approx. Weight
				Lower Limit	Upper Limit			
mm^2	x/mm	mm	mm	mm		MΩ.km	Ω/km	kg/km
Parallel Twin - Light Duty								
2 x 0.5	16/0.20	0.5	0.6	3.0 x 4.9	3.7 x 5.9	0.011	39.0	37
2 x 0.75	24/0.20	0.5	0.6	3.2 x 5.2	3.8 x 6.3	0.010	26.0	46
Parallel Twin - Ordinary Duty								
2 x 0.75	24/0.20	0.6	0.8	3.7 x 6.0	4.5x7.2	0.011	26.0	57
2 x 1	32/0.20	0.6	0.8	3.9 x 6.2	4.7 x 7.5	0.010	19.5	66
Circular Flexible Cords - Light Duty								
2 x 0.5	16/0.20	0.5	0.6	4.6	5.9	0.011	39.0	37
2 x 0.75	24/0.20	0.5	0.6	4.9	6.3	0.010	26.0	46
3 x 0.5	16/0.20	0.5	0.6	4.9	6.3	0.011	39.0	43
3 x 0.75	24/0.20	0.5	0.6	5.2	6.7	0.010	26.0	54
4 x 0.5	16/0.20	0.5	0.6	5.4	6.9	0.011	39.0	53
4 x 0.75	24/0.20	0.5	0.6	5.7	7.3	0.010	26.0	67
Circular Flexible Cords - Ordinary Duty								
2 x 0.75	24/0.20	0.6	0.8	5.7	7.2	0.011	26.0	57
2 x 1	32/0.20	0.6	0.8	5.9	7.5	0.010	19.5	66
2 x 1.5	30/0.25	0.7	0.8	6.8	8.6	0.010	13.3	89
2 x 2.5	50/0.25	0.8	1.0	8.4	10.6	0.0095	7.98	137
3 x 0.75	24/0.20	0.6	0.8	6.0	7.6	0.011	26.0	67
3 x 1	32/0.20	0.6	0.8	6.3	8.0	0.010	19.5	78
3 x 1.5	30/0.25	0.7	0.9	7.4	9.4	0.010	13.3	109
3 x 2.5	50/0.25	0.8	1.0	9.2	11.4	0.0095	7.98	163
4 x 0.75	24/0.20	0.6	0.8	6.6	8.3	0.011	26.0	81
4 x 1	32/0.20	0.6	0.8	7.1	9.0	0.010	19.5	95
4 x 1.5	30/0.25	0.7	1.0	8.4	10.5	0.010	13.3	138
4 x 2.5	50/0.25	0.8	1.1	10.1	12.5	0.0095	7.98	207
5 x 0.75	24/0.20	0.6	0.9	7.4	9.3	0.011	26.0	100
5 x 1	32/0.20	0.6	0.9	7.8	9.8	0.010	19.5	117
5 x 1.5	30/0.25	0.7	1.1	9.3	11.6	0.010	13.3	169
5 x 2.5	50/0.25	0.8	1.2	11.2	13.9	0.0095	7.98	253

3.1.1
Single Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Cu/PVC/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ºC	Approx. Weight
mm²	x/mm	mm	mm	mm	Ω/km	kg/km
50	19/1.78	1.4	1.5	14.7	0.387	605
70	19/2.14	1.4	1.6	16.7	0.268	834
95	19/2.52	1.6	1.6	19.0	0.193	1126
120	37/2.03	1.6	1.7	20.8	0.153	1384
150	37/2.25	1.8	1.7	22.8	0.124	1683
185	37/2.52	2.0	1.8	25.2	0.0991	2096
240	61/2.25	2.2	1.9	28.5	0.0754	2711
300	61/2.52	2.4	1.9	31.3	0.0601	3356
400	61/2.85	2.6	2.1	35.1	0.0470	4265
500	61/3.20	2.8	2.1	38.6	0.0366	5306
630	91/2.98	2.8	2.2	42.8	0.0283	6747
800	91/3.35	2.8	2.4	47.3	0.0221	8430
1000	91/3.74	3.0	2.5	52.1	0.0176	10431

3.1.2
Single Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

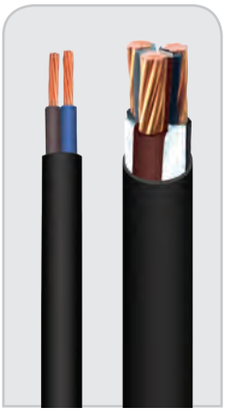
Specifications

Type		: Cu/XLPE/PVC
Standard		: BS 7889
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

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
mm²	x/mm	mm	mm	mm	Ω/km	kg/km
50	19/1.78	1.0	1.4	14.2	0.387	549
70	19/2.14	1.1	1.4	16.2	0.268	767
95	19/2.52	1.1	1.5	18.3	0.193	1038
120	37/2.03	1.2	1.5	20.2	0.153	1287
150	37/2.25	1.4	1.6	22.4	0.124	1579
185	37/2.52	1.6	1.6	24.7	0.0991	1961
240	61/2.25	1.7	1.7	27.7	0.0754	2542
300	61/2.52	1.8	1.8	30.6	0.0601	3163
400	61/2.85	2.0	1.9	34.2	0.0470	4020
500	61/3.20	2.2	2.0	38.0	0.0366	5038
630	91/2.98	2.4	2.2	42.9	0.0283	6489
800	91/3.35	2.6	2.3	47.8	0.0221	8147
1000	91/3.74	2.8	2.4	53.0	0.0176	10095

3.2.1
Two & Three Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



Specifications

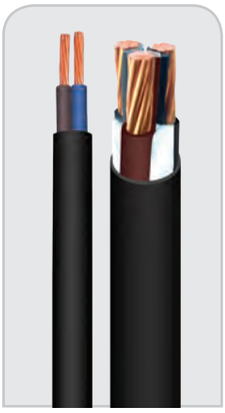
Type		: Cu/PVC/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ⁰C	Approx. Weight
mm²	mm	mm	mm	Ω/km	kg/km
Two Core					
2 x 1.5	0.6	1.4	8.7	12.1	91
2 x 2.5	0.7	1.4	9.9	7.41	122
2 x 4	0.8	1.4	11.4	4.61	167
2 x 6	0.8	1.5	12.7	3.08	222
2 x 10	1.0	1.6	15.6	1.83	343
2 x 16	1.0	1.6	17.7	1.15	479
2 x 25	1.2	1.7	21.3	0.727	718
2 x 35	1.2	1.8	24.0	0.524	945
Three Core					
3 x 1.5	0.6	1.4	9.1	12.1	114
3 x 2.5	0.7	1.4	10.5	7.41	158
3 x 4	0.8	1.4	12.1	4.61	222
3 x 6	0.8	1.5	13.5	3.08	299
3 x 10	1.0	1.6	16.6	1.83	469
3 x 16	1.0	1.6	18.8	1.15	667
3 x 25	1.2	1.7	22.8	0.727	1010
3 x 35	1.2	1.8	25.6	0.524	1340

3. Industrial - Copper

3.2.2
Two & Three Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



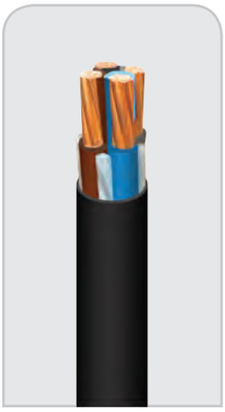
Specifications

Type		: Cu/XLPE/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm²	mm	mm	mm	Ω/km	kg/km
Two Core					
2 x 1.5	0.6	1.3	8.5	12.1	82
2 x 2.5	0.7	1.4	9.9	7.41	115
2 x 4	0.7	1.4	11.0	4.61	152
2 x 6	0.7	1.4	12.1	3.08	199
2 x 10	0.7	1.5	14.2	1.83	298
2 x 16	0.7	1.5	16.3	1.15	427
2 x 25	0.9	1.6	19.9	0.727	649
2 x 35	0.9	1.7	22.6	0.524	866
Three Core					
3 x 1.5	0.6	1.3	8.9	12.1	103
3 x 2.5	0.7	1.4	10.5	7.41	147
3 x 4	0.7	1.4	11.6	4.61	200
3 x 6	0.7	1.4	12.9	3.08	267
3 x 10	0.7	1.5	15.1	1.83	407
3 x 16	0.7	1.6	17.5	1.15	602
3 x 25	0.9	1.7	21.5	0.727	922
3 x 35	0.9	1.8	24.3	0.524	1237

3.3.1
Four Core PVC Insulated and PVC Sheathed Unarmoured - Circular & Shaped Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



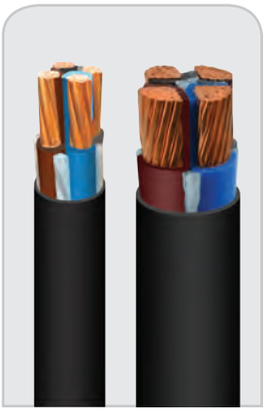
Specifications

Type		: Cu/PVC/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ^{0}C	Approx. Weight
mm^2	mm	mm	mm	Ω/km	kg/km
Circular Stranded Conductor					
4 x 1.5	0.6	1.4	9.9	12.1	140
4 x 2.5	0.7	1.4	11.4	7.41	196
4 x 4	0.8	1.5	13.3	4.61	286
4 x 6	0.8	1.5	14.7	3.08	378
4 x 10	1.0	1.6	18.1	1.83	599
4 x 16	1.0	1.7	20.9	1.15	869
4 x 25	1.2	1.8	25.2	0.727	1321
4 x 35	1.2	1.9	28.4	0.524	1754
Shaped Stranded Conductor					
4 x 35	1.2	1.9	24.1	0.524	1681
4 x 50	1.4	2.0	28.2	0.387	2233
4 x 70	1.4	2.1	32.0	0.268	3121
4 x 95	1.6	2.2	36.6	0.193	4259
4 x 120	1.6	2.4	40.4	0.153	5402
4 x 150	1.8	2.5	44.7	0.124	6406
4 x 185	2.0	2.6	49.3	0.0991	8071
4 x 240	2.2	2.8	55.6	0.0754	10381
4 x 300	2.4	3.0	61.7	0.0601	13099
4 x 400	2.6	3.3	70.3	0.0470	16204

3.3.2
Four Core XLPE Insulated and PVC Sheathed Unarmoured - Circular & Shaped Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



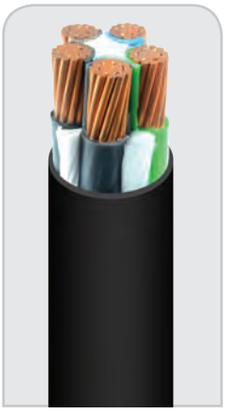
Specifications

Type		: Cu/XLPE/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

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					
4 x 1.5	0.6	1.3	9.6	12.1	126
4 x 2.5	0.7	1.4	11.4	7.41	182
4 x 4	0.7	1.4	12.6	4.61	251
4 x 6	0.7	1.5	14.2	3.08	345
4 x 10	0.7	1.5	16.5	1.83	520
4 x 16	0.7	1.6	19.2	1.15	775
4 x 25	0.9	1.7	23.6	0.727	1193
4 x 35	0.9	1.8	26.8	0.524	1606
Shaped Stranded Conductor					
4 x 35	0.9	1.8	23.0	0.524	1549
4 x 50	1.0	1.9	26.7	0.387	2048
4 x 70	1.1	2.1	31.1	0.268	2939
4 x 95	1.1	2.2	35.1	0.193	3982
4 x 120	1.2	2.3	38.9	0.153	5097
4 x 150	1.4	2.4	43.3	0.124	6047
4 x 185	1.6	2.6	48.1	0.0991	7663
4 x 240	1.7	2.7	53.9	0.0754	9826
4 x 300	1.8	2.9	59.6	0.0601	12402
4 x 400	2.0	3.2	68.3	0.0470	15389

3.4.1
Five Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



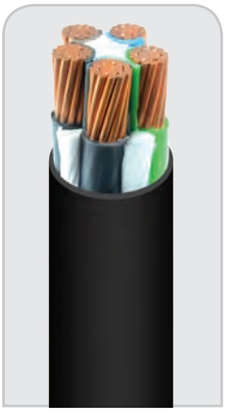
Specifications

Type		: Cu/PVC/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ⁰C	Approx. Weight
mm²	mm	mm	mm	Ω/km	kg/km
5 x 1.5	0.6	1.4	10.6	12.1	166
5 x 2.5	0.7	1.5	12.5	7.41	240
5 x 4	0.8	1.5	14.5	4.61	344
5 x 6	0.8	1.6	16.2	3.08	466
5 x 10	1.0	1.7	20.0	1.83	740
5 x 16	1.0	1.7	22.9	1.15	1063
5 x 25	1.2	1.9	27.9	0.727	1635
5 x 35	1.2	1.9	31.2	0.524	2157
5x 50	1.4	2.1	36.1	0.387	2901
5 x 70	1.4	2.2	41.2	0.268	4016

3.4.2
Five Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



Specifications

Type		: Cu/XLPE/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm²	mm	mm	mm	Ω/km	kg/km
5 x 1.5	0.6	1.4	10.6	12.1	154
5 x 2.5	0.7	1.4	12.3	7.41	217
5 x 4	0.7	1.5	13.9	4.61	309
5 x 6	0.7	1.5	15.5	3.08	417
5 x 10	0.7	1.6	18.2	1.83	643
5 x 16	0.7	1.7	21.3	1.15	958
5 x 25	0.9	1.8	26.1	0.727	1478
5 x 35	0.9	1.9	29.6	0.524	1990
5 x 50	1.0	2.0	33.7	0.387	2648
5 x 70	1.1	2.2	39.5	0.268	3762

3.5.1
Multi Core PVC Insulated and PVC Sheathed Unarmoured - Circular Auxiliary Cable

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Cu/PVC/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: White with black numbering
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ⁰C	Approx. Weight
mm²	x/mm	mm	mm	mm	Ω/km	kg/km
7 x 1.5	7/0.53	0.6	1.4	11.5	12.1	213
12 x1.5	7/0.53		1.5	14.9		346
19 x 1.5	7/0.53		1.6	17.5		516
27 x 1.5	7/0.53		1.7	20.9		716
37 x 1.5	7/0.53		1.8	23.4		954
48 x 1.5	7/0.53		1.9	26.8		1222
7 x 2.5	7/0.67	0.7	1.5	13.5	7.41	312
12 x2.5	7/0.67		1.6	17.7		510
19 x 2.5	7/0.67		1.7	20.8		767
27 x 2.5	7/0.67		1.8	24.9		1068
37 x 2.5	7/0.67		1.9	28.0		1427
48 x 2.5	7/0.67		2.1	32.3		1847
7 x 4	7/0.85	0.8	1.6	16.0	4.61	460
12 x4	7/0.85		1.7	21.0		757
19 x 4	7/0.85		1.8	24.7		1147
27 x 4	7/0.85		2.0	29.8		1616
37 x 4	7/0.85		2.1	33.6		2165
48 x 4	7/0.85		2.2	38.5		2781

3.5.2
Multi Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Auxiliary Cable

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Cu/XLPE/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: White with black numbering
Sheathing	Material	: PVC Type 9
	Colour	: Black

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
mm²	x/mm	mm	mm	mm	Ω/km	kg/km
7 x 1.5	7/0.53	0.6	1.4	11.5	12.1	196
12 x1.5	7/0.53		1.5	14.9		316
19 x 1.5	7/0.53		1.6	17.5		470
27 x 1.5	7/0.53		1.7	20.9		650
37 x 1.5	7/0.53		1.7	23.3		852
48 x 1.5	7/0.53		1.8	26.6		1092
7 x 2.5	7/0.67	0.7	1.4	13.3	7.41	281
12 x2.5	7/0.67		1.6	17.7		467
19 x 2.5	7/0.67		1.7	20.8		699
27 x 2.5	7/0.67		1.8	24.9		972
37 x 2.5	7/0.67		1.8	27.8		1283
48 x 2.5	7/0.67		2.0	32.1		1662
7 x 4	7/0.85	0.7	1.5	15.2	4.61	405
12 x4	7/0.85		1.6	19.9		666
19 x 4	7/0.85		1.7	23.5		1008
27 x 4	7/0.85		1.9	28.4		1422
37 x 4	7/0.85		2.0	32.0		1905
48 x 4	7/0.85		2.1	36.7		2446

3.6.1
Single Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Cu/PVC/AWA/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Al 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
50	19/1.78	1.4	0.8	1.25	1.5	19.1	0.387	797
70	19/2.14	1.4	0.8	1.25	1.6	21.1	0.268	1050
95	19/2.52	1.6	0.8	1.25	1.6	23.4	0.193	1368
120	37/2.03	1.6	1.0	1.6	1.7	26.3	0.153	1727
150	37/2.25	1.8	1.0	1.6	1.7	28.3	0.124	2055
185	37/2.52	2.0	1.0	1.6	1.8	30.8	0.0991	2505
240	61/2.25	2.2	1.0	1.6	1.9	34.1	0.0754	3167
300	61/2.52	2.4	1.0	1.6	1.9	37.0	0.0601	3854
400	61/2.85	2.6	1.2	2.0	2.1	42.0	0.0470	4959
500	61/3.20	2.8	1.2	2.0	2.1	45.6	0.0366	6065
630	91/2.98	2.8	1.2	2.0	2.2	49.7	0.0283	7582
800	91/3.35	2.8	1.4	2.5	2.4	55.8	0.0221	9569
1000	91/3.74	3.0	1.4	2.5	2.5	61.0	0.0176	11678

3.6.2
Single Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Cu/XLPE/AWA/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

Nominal Cross Sectional Area	No. & Dia. Of wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Al Armour Wire Diameter	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm²	x/mm	mm	mm	mm	mm	mm	Ω/km	kg/km
50	19/1.78	1.0	0.8	0.9	1.5	17.5	0.387	702
70	19/2.14	1.1	0.8	1.25	1.5	20.2	0.268	981
95	19/2.52	1.1	0.8	1.25	1.6	22.3	0.193	1278
120	37/2.03	1.2	0.8	1.25	1.6	24.2	0.153	1548
150	37/2.25	1.4	1.0	1.6	1.7	27.4	0.124	1950
185	37/2.52	1.6	1.0	1.6	1.8	30.0	0.0991	2381
240	61/2.25	1.7	1.0	1.6	1.8	32.8	0.0754	2993
300	61/2.52	1.8	1.0	1.6	1.9	35.6	0.0601	3658
400	61/2.85	2.0	1.2	2.0	2.0	40.5	0.0470	4705
500	61/3.20	2.2	1.2	2.0	2.1	44.2	0.0366	5793
630	91/2.98	2.4	1.2	2.0	2.2	48.8	0.0283	7310
800	91/3.35	2.6	1.4	2.5	2.4	55.4	0.0221	9299
1000	91/3.74	2.8	1.4	2.5	2.5	60.6	0.0176	11359

3.7.1
Two & Three Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Cu/PVC/SWA/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

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
mm²	mm	mm	mm	mm	mm	Ω/km	kg/km
Two Core							
2 x 1.5	0.6	0.8	0.9	1.4	12.3	12.1	279
2 x 2.5	0.7	0.8	0.9	1.4	13.6	7.41	335
2 x 4	0.8	0.8	0.9	1.4	15.1	4.61	411
2 x 6	0.8	0.8	0.9	1.5	16.5	3.08	491
2 x 10	1.0	0.8	1.25	1.6	20.1	1.83	778
2 x 16	1.0	0.8	1.25	1.6	21.9	1.15	970
2 x 25	1.2	1.0	1.6	1.7	26.7	0.727	1488
2 x 35	1.2	1.0	1.6	1.8	29.2	0.524	1803
Three Core							
3 x 1.5	0.6	0.8	0.9	1.4	12.8	12.1	284
3 x 2.5	0.7	0.8	0.9	1.4	14.1	7.41	352
3 x 4	0.8	0.8	0.9	1.4	15.8	4.61	446
3 x 6	0.8	0.8	1.25	1.5	18.0	3.08	721
3 x 10	1.0	0.8	1.25	1.6	21.2	1.83	987
3 x 16	1.0	0.8	1.25	1.6	23.1	1.15	1259
3 x 25	1.2	1.0	1.6	1.7	28.2	0.727	2160
3 x 35	1.2	1.0	1.6	1.8	30.8	0.524	2630

3.7.2
Two & Three Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

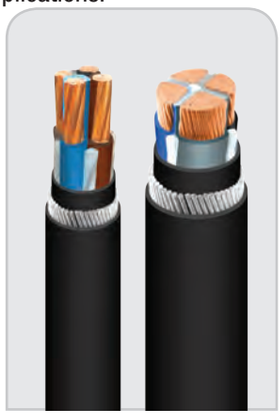
Specifications

Type		: Cu/XLPE/SWA/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

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
mm²	mm	mm	mm	mm	mm	Ω/km	kg/km
Two Core							
2 x 1.5	0.6	0.8	0.9	1.3	12.1	12.1	268
2 x 2.5	0.7	0.8	0.9	1.4	13.6	7.41	328
2 x 4	0.7	0.8	0.9	1.4	14.7	4.61	388
2 x 6	0.7	0.8	0.9	1.4	15.9	3.08	458
2 x 10	0.7	0.8	0.9	1.5	18.0	1.83	597
2 x 16	0.7	0.8	1.25	1.5	20.4	1.15	883
2 x 25	0.9	0.8	1.25	1.6	24.1	0.727	1200
2 x 35	0.9	1.0	1.6	1.7	27.7	0.524	1680
Three Core							
3 x 1.5	0.6	0.8	0.9	1.3	12.6	12.1	298
3 x 2.5	0.7	0.8	0.9	1.4	14.1	7.41	372
3 x 4	0.7	0.8	0.9	1.4	15.3	4.61	449
3 x 6	0.7	0.8	0.9	1.4	16.6	3.08	541
3 x 10	0.7	0.8	1.25	1.5	19.5	1.83	831
3 x 16	0.7	0.8	1.25	1.6	21.6	1.15	1089
3 x 25	0.9	1.0	1.6	1.7	26.7	0.727	1696
3 x 35	0.9	1.0	1.6	1.8	29.4	0.524	2105

3.8.1
Four Core PVC Insulated and PVC Sheathed Armoured - Circular & Shaped Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



Specifications

Type		: Cu/PVC/SWA/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

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 ^{0}C	Approx. Weight
mm²	mm	mm	mm	mm	mm	Ω/km	kg/km
Circular Stranded Conductor							
4 x 1.5	0.6	0.8	0.9	1.4	13.5	12.1	352
4 x 2.5	0.7	0.8	0.9	1.4	15.0	7.41	439
4 x 4	0.8	0.8	1.25	1.5	17.8	4.61	663
4 x 6	0.8	0.8	1.25	1.5	19.2	3.08	792
4 x 10	1.0	0.8	1.25	1.6	22.8	1.83	1102
4 x 16	1.0	1.0	1.6	1.7	26.3	1.15	1623
4 x 25	1.2	1.0	1.6	1.8	30.7	0.727	2221
4 x 35	1.2	1.0	1.6	1.9	33.7	0.524	2759
Shaped Stranded Conductor							
4 x 35	1.2	1.0	1.6	1.9	30.3	0.524	2539
4 x 50	1.4	1.2	2.0	2.0	35.4	0.387	3496
4 x 70	1.4	1.2	2.0	2.1	39.2	0.268	4541
4 x 95	1.6	1.2	2.0	2.2	44.3	0.193	5872
4 x 120	1.6	1.4	2.5	2.4	49.3	0.153	7627
4 x 150	1.8	1.4	2.5	2.5	53.6	0.124	8857
4 x 185	2.0	1.6	2.5	2.6	59.0	0.0991	10826
4 x 240	2.2	1.6	2.5	2.8	65.7	0.0754	13459
4 x 300	2.4	1.6	2.5	3.0	72.0	0.0601	16491
4 x 400	2.6	1.8	3.15	3.3	81.3	0.0470	21027

3.8.2
Four Core XLPE Insulated and PVC Sheathed Armoured - Circular & Shaped Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

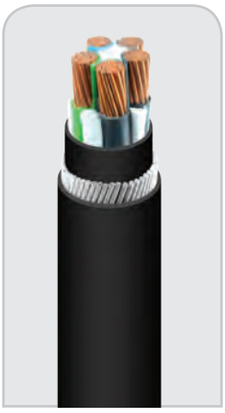
Specifications

Type		: Cu/XLPE/SWA/PVC
Standard		: SLS 1186, BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

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 ^{0}C	Approx. Weight
mm^2	mm	mm	mm	mm	mm	Ω/km	kg/km
Circular Stranded Conductor							
4 x 1.5	0.6	0.8	0.9	1.3	13.3	12.1	336
4 x 2.5	0.7	0.8	0.9	1.4	15.0	7.41	424
4 x 4	0.7	0.8	0.9	1.4	16.4	4.61	520
4 x 6	0.7	0.8	1.25	1.5	18.7	3.08	746
4 x 10	0.7	0.8	1.25	1.5	21.1	1.83	982
4 x 16	0.7	0.8	1.25	1.6	23.4	1.15	1307
4 x 25	0.9	1.0	1.6	1.7	28.9	0.727	2041
4 x 35	0.9	1.0	1.6	1.8	31.9	0.524	2558
Shaped Stranded Conductor							
4 x 35	0.9	1.0	1.6	1.8	28.6	0.524	2373
4 x 50	1.0	1.0	1.6	1.9	32.0	0.387	2996
4 x 70	1.1	1.2	2.0	2.1	37.7	0.268	4320
4 x 95	1.1	1.2	2.0	2.2	41.7	0.193	5530
4 x 120	1.2	1.4	2.5	2.3	47.1	0.153	7254
4 x 150	1.4	1.4	2.5	2.4	51.4	0.124	8430
4 x 185	1.6	1.4	2.5	2.6	56.6	0.0991	10285
4 x 240	1.7	1.6	2.5	2.7	63.0	0.0754	12819
4 x 300	1.8	1.6	2.5	2.9	68.8	0.0601	15693
4 x 400	2.0	1.8	3.15	3.2	78.1	0.0470	20086

3.9.1
Five Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



Specifications

Type		: Cu/PVC/SWA/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

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 ^{0}C	Approx. Weight
mm^2	mm	mm	mm	mm	mm	Ω/km	kg/km
5 x 1.5	0.6	0.8	0.9	1.4	14.3	12.1	394
5 x 2.5	0.7	0.8	0.9	1.5	16.3	7.41	504
5 x 4	0.8	0.8	1.25	1.5	19.0	4.61	752
5 x 6	0.8	0.8	1.25	1.6	20.9	3.08	918
5 x 10	1.0	1.0	1.6	1.7	25.8	1.83	1465
5 x 16	1.0	1.0	1.6	1.7	28.4	1.15	1885
5 x 25	1.2	1.0	1.6	1.9	33.5	0.727	2622
5 x 35	1.2	1.0	1.6	1.9	36.6	0.524	3259
5 x 50	1.4	1.2	2.0	2.1	43.0	0.387	4497
5 x 70	1.4	1.2	2.0	2.2	48.1	0.268	5823

3.9.2
Five Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

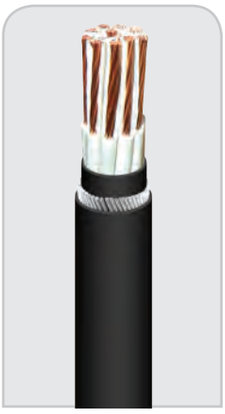
Specifications

Type		: Cu/XLPE/SWA/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

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 ⁰C	Approx. Weight
mm²	mm	mm	mm	mm	mm	Ω/km	kg/km
5 x 1.5	0.6	0.8	0.9	1.4	14.3	12.1	382
5 x 2.5	0.7	0.8	0.9	1.4	16.1	7.41	479
5 x 4	0.7	0.8	0.9	1.5	17.8	4.61	603
5 x 6	0.7	0.8	1.25	1.5	20.0	3.08	853
5 x 10	0.7	0.8	1.25	1.6	22.9	1.83	1148
5 x 16	0.7	1.0	1.6	1.7	26.6	1.15	1726
5 x 25	0.9	1.0	1.6	1.8	31.5	0.727	2407
5 x 35	0.9	1.0	1.6	1.9	34.8	0.524	3036
5 x 50	1.0	1.2	2.0	2.0	40.4	0.387	4149
5 x 70	1.1	1.2	2.0	2.2	46.3	0.268	5499

3.10.1
Multi Core PVC Insulated and PVC Sheathed Armoured - Circular Auxiliary Cable

Application: Use in fixed installations in industrial areas, buildings and similar applications.



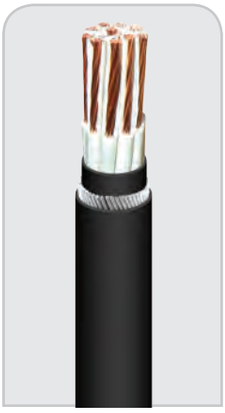
Specifications

Type		: Cu/PVC/SWA/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: PVC TI 1
	Colour	: White with black numbering
Sheathing	Material	: PVC TM 1
	Colour	: Black

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
mm²	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	15.2	12.1	458
12 x1.5	7/0.53		0.8	1.25	1.5	19.4		765
19 x 1.5	7/0.53		0.8	1.25	1.6	22.2		1000
27 x 1.5	7/0.53		1.0	1.6	1.7	26.7		1470
37 x 1.5	7/0.53		1.0	1.6	1.8	29.2		1791
48 x 1.5	7/0.53		1.0	1.6	1.9	32.9		2173
7 x 2.5	7/0.67	0.7	8.0	1.25	1.5	18.0	7.41	694
12 x2.5	7/0.67		8.0	1.25	1.6	22.4		1000
19 x 2.5	7/0.67		1.0	1.6	1.7	26.6		1516
27 x 2.5	7/0.67		1.0	1.6	1.8	30.7		1955
37 x 2.5	7/0.67		1.0	1.6	1.9	34.0		2416
48 x 2.5	7/0.67		1.2	2.0	2.1	39.5		3281
7 x 4	7/0.85	0.8	0.8	1.25	1.6	20.5	4.61	904
12 x4	7/0.85		1.0	1.6	1.7	26.8		1514
19 x 4	7/0.85		1.0	1.6	1.8	30.5		2026
27 x 4	7/0.85		1.2	2.0	2.0	37.1		2950
37 x 4	7/0.85		1.2	2.0	2.1	40.8		3653
48 x 4	7/0.85		1.2	2.0	2.2	46.0		4476

3.10.2
Multi Core XLPE Insulated and PVC Sheathed Armoured - Circular Auxiliary Cable

Application: Use in fixed installations in industrial areas, buildings and similar applications.



Specifications

Type		: Cu/XLPE/SWA/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Class 2 Annealed Copper Wires
Insulation	Material	: XLPE
	Colour	: White with black numbering
Sheathing	Material	: PVC Type 9
	Colour	: Black

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
mm²	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	15.2	12.1	441
12 x1.5	7/0.53		0.8	1.25	1.5	19.4		736
19 x 1.5	7/0.53		0.8	1.25	1.6	22.2		954
27 x 1.5	7/0.53		1.0	1.6	1.7	26.7		1404
37 x 1.5	7/0.53		1.0	1.6	1.7	29.0		1688
48 x 1.5	7/0.53		1.0	1.6	1.8	32.7		2040
7 x 2.5	7/0.67	0.7	0.8	0.9	1.4	17.1	7.41	564
12 x2.5	7/0.67		0.8	1.25	1.6	22.4		958
19 x 2.5	7/0.67		1.0	1.6	1.7	26.6		1449
27 x 2.5	7/0.67		1.0	1.6	1.8	30.7		1859
37 x 2.5	7/0.67		1.0	1.6	1.8	33.8		2270
48 x 2.5	7/0.67		1.2	2.0	2.0	39.3		3093
7 x 4	7/0.85	0.7	0.8	1.25	1.5	19.7	4.61	830
12 x4	7/0.85		1.0	1.6	1.6	25.7		1392
19 x 4	7/0.85		1.0	1.6	1.7	29.3		1851
27 x 4	7/0.85		1.0	1.6	1.9	34.4		2426
37 x 4	7/0.85		1.2	2.0	2.0	39.2		3329
48 x 4	7/0.85		1.2	2.0	2.1	44.1		4068

4.1.1
Single Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Al/PVC/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ⁰C	Approx. Weight
mm²	x/mm	mm	mm	mm	Ω/km	kg/km
50	19/1.78	1.4	1.5	14.7	0.641	306
70	19/2.14	1.4	1.6	16.7	0.443	402
95	19/2.52	1.6	1.6	19	0.320	527
120	37/2.03	1.6	1.7	20.8	0.253	628
150	37/2.25	1.8	1.7	22.8	0.206	753
185	37/2.52	2.0	1.8	25.2	0.164	930
240	61/2.25	2.2	1.9	28.5	0.125	1178
300	61/2.52	2.4	1.9	31.3	0.100	1434
400	61/2.85	2.6	2.0	35.1	0.0778	1806
500	61/3.20	2.8	2.1	38.6	0.0605	2207
630	91/2.98	2.8	2.2	42.8	0.0469	2737
800	91/3.35	2.8	2.3	47.3	0.0367	3363
1000	91/3.74	3.0	2.5	52.1	0.0313	4114

4. Industrial - Aluminium

4.1.2
Single Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

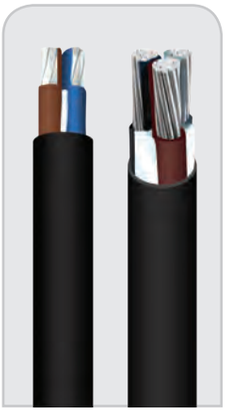
Specifications

Type		: Al/XLPE/PVC
Standard		: BS 7889
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminum Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

Nominal Cross sectional Area	No. & Dia. Of wires	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ºC	Approx. Weight
mm²	x/mm	mm	mm	mm	Ω/km	kg/km
50	19/1.78	1.0	1.4	12.9	0.641	251
70	19/2.14	1.1	1.4	14.7	0.443	335
95	19/2.52	1.1	1.5	16.6	0.320	440
120	37/2.03	1.2	1.5	18.1	0.253	530
150	37/2.25	1.4	1.6	20.1	0.206	650
185	37/2.52	1.6	1.6	22.2	0.164	795
240	61/2.25	1.7	1.7	24.8	0.125	1009
300	61/2.52	1.8	1.8	27.3	0.100	1241
400	61/2.85	2.0	1.9	30.8	0.0778	1561
500	61/3.20	2.2	2.0	34.2	0.0605	1938
630	91/2.98	2.4	2.1	37.6	0.0469	2459
800	91/3.35	2.6	2.3	41.7	0.0367	3079
1000	91/3.74	2.8	2.4	46.9	0.0291	3779

4.2.1
Two & Three Core PVC Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



Specifications

Type		: Al/PVC/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - “CABLE CORE COLOURS”
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ⁰C	Approx. Weight
mm²	mm	mm	mm	Ω/km	kg/km
Two Core					
2 x 16	1.0	1.6	17.7	1.91	278
2 x 25	1.2	1.7	21.3	1.20	399
2 x 35	1.2	1.8	24	0.868	504
Three Core					
3 x 16	1.0	1.6	18.8	1.91	364
3 x 25	1.2	1.7	22.8	1.20	531
3 x 35	1.2	1.8	25.6	0.868	675

4.2.2
Two & Three Core XLPE Insulated and PVC Sheathed Unarmoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Al/XLPE/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ºC	Approx. Weight
mm²	mm	mm	mm	Ω/km	kg/km
Two Core					
2 x 16	0.7	1.5	16.3	1.91	225
2 x 25	0.9	1.6	19.9	1.20	329
2 x 35	0.9	1.7	22.6	0.868	423
Three Core					
3 x 16	0.7	1.6	17.5	1.91	299
3 x 25	0.9	1.7	21.4	1.20	443
3 x 35	0.9	1.8	24.3	0.868	572

4.3.1
Four Core PVC Insulated and PVC Sheathed Unarmoured - Circular & Shaped Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Al/PVC/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - “CABLE CORE COLOURS”
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ⁰C	Approx. Weight
mm²	mm	mm	mm	Ω/km	kg/km
Circular Stranded Conductor					
4 x 16	1.0	1.7	20.9	1.91	465
4 x 25	1.2	1.8	25.2	1.20	681
4 x 35	1.2	1.9	28.4	0.868	867
Shaped Stranded Conductor					
4 x 35	1.2	1.9	24.1	0.868	799
4 x 50	1.4	2.0	28.2	0.641	1053
4 x 70	1.4	2.1	32.0	0.443	1394
4 x 95	1.6	2.2	36.6	0.320	1864
4 x 120	1.6	2.4	40.4	0.253	2303
4 x 150	1.8	2.5	44.7	0.206	2738
4 x 185	2.0	2.6	49.3	0.164	3407
4 x 240	2.2	2.8	55.6	0.125	4333
4 x 300	2.4	3.0	61.7	0.100	5409

4.3.2
Four Core XLPE Insulated and PVC Sheathed Unarmoured - Circular & Shaped Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Al/XLPE/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

Nominal Cross Sectional Area	Nominal Insulation Thickness	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm²	mm	mm	mm	Ω/km	kg/km
Circular Stranded Conductor					
4 x 16	0.7	1.6	19.2	1.91	371
4 x 25	0.9	1.7	23.6	1.20	554
4 x 35	0.9	1.8	26.8	0.868	719
Shaped Stranded Conductor					
4 x 35	0.9	1.8	23.0	0.868	666
4 x 50	1.0	1.9	26.8	0.641	868
4 x 70	1.1	2.1	31.1	0.443	1212
4 x 95	1.1	2.2	35.1	0.320	1587
4 x 120	1.2	2.3	39.0	0.253	1998
4 x 150	1.4	2.4	43.3	0.206	2379
4 x 185	1.6	2.6	48.1	0.164	2998
4 x 240	1.7	2.7	53.9	0.125	3778
4 x 300	1.8	2.9	59.6	0.100	4712

4.4.1
Single Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Al/PVC/AWA/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Al Armour Wire Diameter	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 °C	Approx. Weight
mm²	x/mm	mm	mm	mm	mm	mm	Ω/km	kg/km
50	19/1.78	1.4	0.8	1.25	1.5	17.8	0.641	499
70	19/2.14	1.4	0.8	1.25	1.6	19.6	0.443	618
95	19/2.52	1.6	0.8	1.25	1.6	21.7	0.320	769
120	37/2.03	1.6	1.0	1.6	1.7	24.3	0.253	971
150	37/2.25	1.8	1.0	1.6	1.7	26.1	0.206	1125
185	37/2.52	2.0	1.0	1.6	1.8	28.3	0.164	1339
240	61/2.25	2.2	1.0	1.6	1.9	31.2	0.125	1634
300	61/2.52	2.4	1.0	1.6	1.9	33.7	0.100	1932
400	61/2.85	2.6	1.2	2.0	2.0	38.4	0.0778	2501
500	61/3.20	2.8	1.2	2.0	2.1	41.7	0.0605	2966
630	91/2.98	2.8	1.2	2.0	2.2	44.6	0.0469	3572
800	91/3.35	2.8	1.4	2.5	2.3	49.5	0.0367	4501
1000	91/3.74	3.0	1.4	2.5	2.5	54.9	0.0313	5362

4.4.2
Single Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

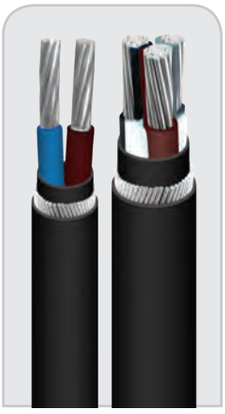
Specifications

Type		: Al/XLPE/AWA/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC Type 9
	Colour	: Black

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Al Armour Wire Diameter	Nominal Sheathing Thickness	Approx. Overall Diameter	Max. d.c. Resistance at 20 ºC	Approx. Weight
mm²	x/mm	mm	mm	mm	mm	mm	Ω/km	kg/km
50	19/1.78	1.0	0.8	0.9	1.5	16.3	0.641	403
70	19/2.14	1.1	0.8	1.25	1.5	18.7	0.443	549
95	19/2.52	1.1	0.8	1.25	1.6	20.6	0.320	679
120	37/2.03	1.2	0.8	1.25	1.6	22.1	0.253	792
150	37/2.25	1.4	1.0	1.6	1.7	25.2	0.206	1020
185	37/2.52	1.6	1.0	1.6	1.8	27.4	0.164	1215
240	61/2.25	1.7	1.0	1.6	1.8	29.9	0.125	1461
300	61/2.52	1.8	1.0	1.6	1.9	32.4	0.100	1735
400	61/2.85	2.0	1.2	2.0	2.0	37.1	0.0778	2246
500	61/3.20	2.2	1.2	2.0	2.1	40.4	0.0605	2694
630	91/2.98	2.4	1.2	2.0	2.2	43.8	0.0469	3300
800	91/3.35	2.6	1.4	2.5	2.3	49.1	0.0367	4231
1000	91/3.74	2.8	1.4	2.5	2.5	54.4	0.0291	5043

4.5.1
Two & Three Core PVC Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



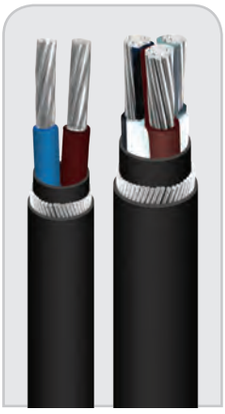
Specifications

Type		: Al/PVC/SWA/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

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
mm²	mm	mm	mm	mm	mm	Ω/km	kg/km
Two Core							
2 x 16	1.0	0.8	1.25	1.6	20.6	1.91	769
2 x 25	1.2	1.0	1.6	1.7	25.0	1.20	1170
2 x 35	1.2	1.0	1.6	1.8	27.2	0.868	1361
Three Core							
3 x 16	1.0	0.8	1.25	1.6	21.7	1.91	956
3 x 25	1.2	1.0	1.6	1.7	26.4	1.20	1680
3 x 35	1.2	1.0	1.6	1.8	28.7	0.868	1965

4.5.2
Two & Three Core XLPE Insulated and PVC Sheathed Armoured - Circular Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.



Specifications

Type		: Al/XLPE/SWA/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - “CABLE CORE COLOURS”
Sheathing	Material	: PVC Type 9
	Colour	: Black

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 ⁰C	Approx. Weight
mm²	mm	mm	mm	mm	mm	Ω/km	kg/km
Two Core							
2 x 16	0.7	0.8	1.25	1.5	19.1	1.91	682
2 x 25	0.9	0.8	1.25	1.6	22.4	1.20	880
2 x 35	0.9	1.0	1.6	1.7	25.7	0.868	1236
Three Core							
3 x 16	0.7	0.8	1.25	1.6	20.3	1.91	786
3 x 25	0.9	1.0	1.6	1.7	24.9	1.20	1217
3 x 35	0.9	1.0	1.6	1.8	27.3	0.868	1440

4.6.1
Four Core PVC Insulated and PVC Sheathed Armoured - Circular & Shaped Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Al/PVC/SWA/PVC
Standard		: BS 6346
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: PVC TI 1
	Colour	: Refer last page - "CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 1
	Colour	: Black

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
mm²	mm	mm	mm	mm	mm	Ω/km	kg/km
Circular Stranded Conductor							
4 x 16	1.0	1.0	1.6	1.7	24.7	1.91	1219
4 x 25	1.2	1.0	1.6	1.8	28.7	1.20	1581
4 x 35	1.2	1.0	1.6	1.9	31.3	0.868	1872
Shaped Stranded Conductor							
4 x 35	1.2	1.0	1.6	1.9	28.6	0.868	1657
4 x 50	1.4	1.2	2.0	2.0	33.3	0.641	2316
4 x 70	1.4	1.2	2.0	2.1	36.8	0.443	2814
4 x 95	1.6	1.2	2.0	2.2	41.5	0.320	3476
4 x 120	1.6	1.4	2.5	2.4	46.1	0.253	4528
4 x 150	1.8	1.4	2.5	2.5	50.1	0.206	5189
4 x 185	2.0	1.6	2.5	2.6	55.1	0.164	6161
4 x 240	2.2	1.6	2.5	2.8	61.2	0.125	7411
4 x 300	2.4	1.6	2.5	3.0	67.0	0.100	8800

4.6.2
Four Core XLPE Insulated and PVC Sheathed Armoured - Circular & Shaped Conductor

Application: Use in fixed installations in industrial areas, buildings and similar applications.

Specifications

Type		: Al/XLPE/SWA/PVC
Standard		: BS 5467
Nominal Voltage		: 600/1000V
Conductor		: Stranded Aluminium Wires
Insulation	Material	: XLPE
	Colour	: Refer last page - “CABLE CORE COLOURS”
Sheathing	Material	: PVC Type 9
	Colour	: Black

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 ^{0}C	Approx. Weight
mm^2	mm	mm	mm	mm	mm	Ω/km	kg/km
Circular Stranded Conductor							
4 x 16	0.7	0.8	1.25	1.6	21.8	1.91	903
4 x 25	0.9	1.0	1.6	1.7	26.9	1.20	1401
4 x 35	0.9	1.0	1.6	1.8	29.5	0.868	1971
Shaped Stranded Conductor							
4 x 35	0.9	1.0	1.6	1.8	27.0	0.868	1491
4 x 50	1.0	1.0	1.6	1.9	30.0	0.641	1816
4 x 70	1.1	1.2	2.0	2.1	35.3	0.443	2593
4 x 95	1.1	1.2	2.0	2.2	39.0	0.320	3135
4 x 120	1.2	1.4	2.5	2.3	44.0	0.253	4155
4 x 150	1.4	1.4	2.5	2.4	47.9	0.206	4762
4 x 185	1.6	1.4	2.5	2.6	52.7	0.164	5620
4 x 240	1.7	1.6	2.5	2.7	58.5	0.125	6771
4 x 300	1.8	1.6	2.5	2.9	63.8	0.100	8003

5.1
Auto Cables

Application: For use in road vehicle application.

Specifications

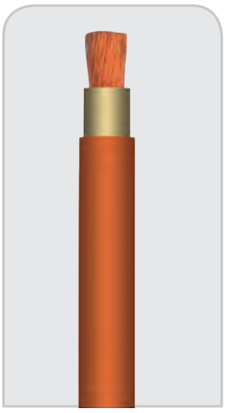
Type		: Cu/PVC
Standard		: SLS 412 Part 1, ISO 6722
Nominal Voltage		: 600V Class B
Conductor		: Soft Annealed Copper
Insulation	Material	: 100 ^{0}C rated PVC Class B
	Colour	: Black, Red, Brown, Green, Blue

Conductor		Cable			
Nominal Cross Sectional Area	**No. & Dia. of wires**	**Nominal Insulation Thickness**	**Approx. Overall Diameter**	**Max. d.c. Resistance at 20 ^{0}C**	**Approx. Weight**
mm^2	**x/mm**	**mm**	**mm**	**Ω/km**	**kg/km**
0.50	16/0.20	0.60	2.1	37.1	9
0.75	24/0.20	0.60	2.3	24.7	12
1.0	32/0.20	0.60	2.5	18.5	15
1.5	30/0.25	0.60	2.8	12.7	20
2.0	28/0.30	0.60	3.0	9.42	25
2.5	50/0.25	0.70	3.5	7.60	32
3	44/0.30	0.70	3.7	6.15	39
4	56/0.30	0.80	4.2	4.71	49
5	70/0.30	0.80	4.5	3.94	59
6	84/0.30	0.80	4.8	3.14	69
10	140/0.30	1.00	6.1	1.82	115
16	224/0.30	1.00	7.2	1.16	174
25	354/0.30	1.30	9.1	0.743	276
35	495/0.30	1.30	10.3	0.527	374
50	703/0.30	1.50	12.2	0.368	528

5.2
Welding Cables

For welding; Fabricated for hand-held metal arc welding electrodes where high current is generated during secondary connection.

Application: Touch condition on conveyor system assembly lines in automatically operated line in machine tool and spot welding machines.



Reference Standards : IS 9857, IS 6380, BS 638
Voltage Rating : 100V a.c. r.m.s.
Conductor : Flexible annealed Copper conductor
Sheath Material : Elastomeric compound
Colour of Sheath : Black or Orange

Cross-Sectional Area Max.	Maximum Diameter of wires	Conductor Resistance at 20°C	Nominal Thickness of Covering	Min. Overall Diameter	Max. Overall Diameter	Current Ratings Welding Application Duty Cycle				d.c. Voltage Drop in/ 100A/10m 90°C
						100%	85%	60%	30%	
mm^2	mm	Ω/km	mm	mm	mm	A	A	A	A	V
16	0.20	1.21	2.0	8.8	11	135	146	174	246	1.587
25	0.20	0.78	2.0	10.1	12.7	177	192	228	343	1.018
35	0.20	0.554	2.0	11.4	14.2	221	240	285	403	0.723
50	0.20	0.386	2.2	13.2	16.5	279	303	360	509	0.503
70	0.20	0.272	2.4	15.3	19.2	352	382	454	643	0.355
95	0.20	0.206	2.6	17.1	21.4	424	460	547	774	0.269

Ambient air temperature = 30 °C
Maximum conductor temperature = 90 °C

Ambient Air Temperature (°C)	25	30	35	40	45	50
Rating Factor	1.04	1.00	0.96	0.91	0.87	0.82

5.3
Coaxial Cable

Application: Designed for use in TV reception systems.

Specifications

Type		: Cu/PE/SCR/PVC
Standard		: JIS C 3501
Conductor		: Class 1 Annealed Copper
Insulation	Material	: Polyethylene (PE)
Sheathing	Material	: PVC TM 2
	Colour	: Black

Cable Classification (by characteristic Impedance)			75 Ω	75 Ω
Cable Symbol Conductor			3C - 2V	5C - 2V
Nominal Cross sectional area		mm^2	0.2	0.5
No. & Dia. Of wires		x/mm	1/0.50	1/0.80
Nominal Insulation Thickness		mm	1.3	2.05
Lower braid	**Diameter of Copper wire**	mm	0.14	0.14
	Number of wire ends per spindle		5	7
	Total number of spindles		24	24
Nominal Sheathing Thickness		mm	0.8	0.9
Max. Overall Diameter		mm	5.4±0.5	7.4±0.5
Max. d.c. Resistance at 20 ^{0}C		Ω/km	91.4	35.9
Capacitance		Ω	67±3	67±3
Approx. Weight		kg/km	42	74

5.4
PVC Insulated, Self - Supporting One Pair Drop Wire

Application : Telecommunication Drop Wire
Reference Standards : SLT Standards
Conductor Material : Solid, Circular Annealed Copper
Conductor Diameter : 0.65 ± 0.01mm
Conductor Resistance : Max. 56 Ω/km at 20 ^{0}C
Bearer Wire Material : Galvanized Steel
Bearer Wire Diameter : 1.20mm
Bearer Wire Strength : Min. 155kg Breaking Strength
Insulation Material : Weather Proof High Density PVC
Colour of Insulation : Black

5.5
PVC Insulated, Aluminium Service Main Wire 300/500 V Single Core, Twin and Flat Twin

Application : Service Main Wire
Reference Standards : IEC 60889, BS 6004, BS 7655, CEB Standards
Voltage Rating : 300/500V
No. of cores : Single or Two Core
Conductor Material : 3/4 Hard Drawn Aluminium or Hard Drawn Aluminium
Insulation Material : PVC TI 1
Sheath Material : PVC TM 1

(1) Single core service main wire, PVC insulated and sheathed	
Colour of Insulation	Brown/Blue
Colour of Sheath	Black
Cross-Sectional Area	10mm^2, 16mm^2
(2) Flat Twin Service main wire, both cores insulated and sheathed	
Colour of Insulation	Brown/Blue or Black/Grey
Colour of Sheath	Black
Cross-Sectional Area	10mm^2, 16mm^2
(3) Twin service main wire, one core insulated and other bare, both sheathed	
Colour of Insulation	Brown
Colour of Sheath	Black
Cross-Sectional Area	6mm^2,10mm^2, 16mm^2

5.6
Telecommunication Distribution Cable

Application: Use for connecting subscribers in to the exchange cable network.

Specifications

Type	: Cu/PE/PVC
Standard	: BS 3573
Conductor Material	: Solid circular Annealed Copper
Conductor Diameter	: 0.4mm, 0.5mm, 0.63mm,0.90mm
Insulation Material	: Polyethylene
Sheath Material	: PVC

Number of pairs	Conductor Diameter	Nominal Overall Diameter	Approx. Weight
	mm	mm	kg/km
1	0.50	5.3	1.9
2	0.50	6.1	3.0
5	0.50	8.0	5.1
10	0.50	9.2	9.0
20	0.50	11.6	16.5
50	0.50	21.0	42.0

Conductor Resistance at 20 ^{0}C = 91 Ω/km
Minimum Insulation Resistance = 1500 MΩ at 20 ^{0}C after electrification for one minute at 500 V d.c

Colour Chart										
Pair Number Wire	Pair 1		Pair 2		Pair 3		Pair 4		Pair 5	
	A	B	A	B	A	B	A	B	A	B
1 - Pair Centre	Orange	White								
2 - Pair Centre	Orange	White	Green	Black						
3 - Pair Centre	Orange	White	Red	Grey	Green	Black				
4 - Pair Centre	Orange	White	Red	Grey	Blue	Brown	Green	Black		
Additional Layers	Orange	White	Red	Grey	Blue	Brown	Red	Grey	Blue	Brown
5 - Pair Centre	Orange	White	Red	Grey	Blue	Brown	Red	Grey	-	-

5.7
Switchgear and Controlgear Cables

Application: These cables are intended for use in the wiring of switch, control, metering, relay and instrument panels of power switchgear, and for such purposes as internal connections in rectifier equipment and its motor starters and controllers.

Specifications

Type		: Cu/PVC
Standard		: BS 6231
Nominal Voltage		: 600/1000V
No. of Cores		: Single
Conductor		: Class 5 Annealed Copper
Insulation	Material	: PVC TI 1
	Colour	: Green/Yellow, Blue or other colour

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Mean Overall Diameter		Minimum Insulation Resistance at 70 °C	Max. d.c. Resistance at 20 °C	Approx. Weight
			Lower Limit	Upper Limit			
mm^2	x/mm	mm	mm		MΩ.km	Ω/km	kg/km
0.50	16/0.20	0.8	2.4	3.0	0.0161	39.0	12
0.75	24/0.20	0.8	2.6	3.1	0.0141	26.0	15
1.0	32/0.20	0.8	2.7	3.3	0.0128	19.5	18
1.5	30/0.25	0.8	3.0	3.6	0.0111	13.3	23
2.5	50/0.25	0.8	3.4	4.1	0.0094	7.98	34
4	56/0.30	0.8	3.9	4.8	0.0077	4.95	49
6	84/0.30	0.8	4.4	5.3	0.0059	3.30	69
10	140/0.30	1.0	5.7	7.2	0.0058	1.91	115
16	224/0.30	1.0	6.7	9.0	0.0048	1.21	174
25	354/0.30	1.2	8.4	11.5	0.0047	0.78	272
35	495/0.30	1.2	9.7	12.5	0.0040	0.554	368
50	703/0.30	1.4	11.5	15.4	0.0039	0.386	890
70	988/0.30	1.4	13.2	17.5	0.0033	0.272	714
95	1344/0.30	1.6	15.1	19.2	0.0032	0.206	969
120	1702/0.30	1.6	16.7	21.2	0.0029	0.161	1209
150	756/0.50	1.8	18.6	23.9	0.0029	0.129	1494
185	925/0.50	2.0	20.6	25.9	0.0029	0.106	1829
240	1221/0.50	2.2	23.5	28.9	0.0028	0.0801	2402

5.8
Multi Core Insulated and Sheathed - Screen Cables

Application: For signal transmission and other similar applications

Specifications

Type		: Cu/PVC/SCR/PVC
Standard		: SLS 1143, BS 6500
Nominal Voltage		: 300/500V
Conductor		: Class 5 Annealed Copper
Insulation	Material	: PVC TI 2
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 2
	Colour	: Not Specified

Conductor		Cable								
Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Diameter of Copper wire for Braid	Nominal Sheathing Thickness	Approx. Overall Diameter		Minimum insulation resistance at 70 ^{0}C	Max. d.c. Resistance at 20 ^{0}C	Approx. Weight
						Lower limit	Upper limit			
mm^2	x/mm	mm	mm	mm	mm	mm	mm	MΩ.km	Ω/km	kg/km
Two Core Cables										
2 x 0.75	24/0.20	0.6	0.8	0.2	1.1	8.7	11.3	0.011	26.0	138
2 x 1.0	32/0.20	0.6	0.8	0.2	1.1	9.2	11.9	0.010	19.5	140
2 x 1.5	30/0.25	0.7	0.8	0.2	1.2	10.8	13.9	0.010	13.3	200
2 x 2.5	50/0.25	0.8	1.0	0.2	1.2	12.5	15.7	0.0095	7.98	261
Three Core Cables										
3 x 0.75	24/0.20	0.6	0.8	0.2	1.1	9.3	12.0	0.011	26.0	147
3 x 1.0	32/0.20	0.6	0.8	0.2	1.1	9.6	12.4	0.010	19.5	173
3 x 1.5	30/0.25	0.7	0.9	0.2	1.2	11.3	14.5	0.010	13.3	225
3 x 2.5	50/0.25	0.8	1.1	0.2	1.3	13.0	16.7	0.0095	7.98	303
Four Core Cables										
4 x 0.75	24/0.20	0.6	0.8	0.2	1.1	9.8	12.7	0.011	26.0	179
4 x 1.0	32/0.20	0.6	0.9	0.2	1.2	10.4	13.4	0.010	19.5	203
4 x 1.5	30/0.25	0.7	1.0	0.2	1.2	12.3	15.7	0.010	13.3	270
4 x 2.5	50/0.25	0.8	1.1	0.2	1.3	14.2	18.1	0.0095	7.98	374

5.8
Multi Core Insulated and Sheathed - Screen Cables (Continued)

Application: For signal transmission and other similar applications

Specifications

Type		:Cu/PVC/SCR/PVC
Standard		: SLS 1143, BS 6500
Nominal Voltage		: 300/300V
Conductor		: Class 5 Annealed Copper
Insulation	Material	: PVC TI 2
	Colour	: Refer last page -"CABLE CORE COLOURS"
Sheathing	Material	: PVC TM 2
	Colour	: Not Specified

Nominal Cross Sectional Area	No. & Dia. of wires	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Diameter of Copper wire for Braid	Nominal Sheathing Thickness	Approx. Overall Diameter		Max. d.c. Resistance at 20 ^{0}C	Approx. Weight
						Lower limit	Upper limit		
mm^2	x/mm	mm	mm	mm	mm	mm	mm	Ω/km	kg/km
Two Core Cables									
2 x 0.5	16/0.20	0.5	0.6	0.2	0.7	7.2	8.4	39.0	104
Three Core Cables									
3 x 0.5	16/0.20	0.5	0.6	0.2	0.7	7.4	8.8	39.0	116

6
Aerial Bundle Conductors

Aerial Bundle Conductors (ABC) are self supporting insulated cables used for low voltage electricity distribution.

ABCs comprise of three phase conductors (Aluminium) and a neutral conductor (Alloy Aluminium) bundled together with or without street lamp wires. The neutral conductor also acts as a messenger or a load bearer.

Aerial Bundled Conductors are manufactured to National French Standard NFC 33-209.

Phase Conductor

Multistrand round compacted hard drawn Aluminium conductor is insulated with black weather resistant cross-linked thermosetting polyethylene (XLPE).

Neutral Messenger

Multistrand round Aluminium Alloy conductor is insulated with black weather resistant cross-linked thermo-setting polyethylene (XLPE).

Street Lamp Wires

Multistrand round compacted hard drawn Aluminium conductor is insulated with black weather resistant cross-linked thermosetting polyethylene (XLPE) conforming to NFC 33-209.

6

Aerial Bundle Conductors - (Continued)

(3 x 25mm² Al/XLPE + N 54.6mm² + K x 16mm² ABC)

Item Description		mm²	3x25+ 54.6	3x25+54.6 +1x16	3x25+54.6 +2x16	3x25+54.6 +3x16
Nominal Cross Sectional Area	Phase Conductor	mm²	25	25	25	25
	Neutral Messenger	mm²	54.6	54.6	54.6	54.6
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	7	7	7	7
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 ⁰C	Phase Conductor	Ω/km	1.2	1.2	1.2	1.2
	Neutral Messenger	Ω/km	0.63	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	300	300	300	300
	Neutral Messenger	daN	1660	1660	1660	1660
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	3.15	3.15	3.15	3.15
Nominal Diameter of Bare Conductors	Phase Conductor	mm	6.0	6.0	6.0	6.0
	Neutral Messenger	mm	9.5	9.5	9.5	9.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190	190
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.4	1.4	1.4	1.4
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	8.8	8.8	8.8	8.8
	Neutral Messenger	mm	12.7	12.7	12.7	12.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	112	112	112	112
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	2.2	2.2	2.2	2.2

Complete Cable						
Approximate Overall Diameter		mm	30	30	30	30
Maximum Lay Pitch		cm	80	80	80	80
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.28	0.28	0.28	0.28
Impedance		Ω/km	0.501	0.501	0.501	0.501
Maximum Short Circuit Rating	for 0.2 sec	kA	5.28	5.28	5.28	5.28
	for 1.0 sec	kA	2.36	2.36	2.36	2.36
	for 3.0 sec	kA	1.36	1.36	1.36	1.36
Minimum Bending Radius		mm	229	229	229	229
Approximate Cable Weight		kg/km	514.1	580.7	647.3	713.8
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 36	SIE 36	SIE 36	SIE 36

K Represents the number of cores for public lighting, it may be zero, 1, 2 or 3

6
Aerial Bundle Conductors - (Continued)

(3 x 35mm² Al/XLPE + N 54.6mm² + K x 16mm² ABC)

Item Description		mm²	3x35 + 54.6	3x35+54.6 +1x16	3x35+54.6 +2x16	3x35+54.6 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	35	35	35	35
	Neutral Messenger	mm²	54.6	54.6	54.6	54.6
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	7	7	7	7
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 ⁰C	Phase Conductor	Ω/km	0.868	0.868	0.868	0.868
	Neutral Messenger	Ω/km	0.63	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	420	420	420	420
	Neutral Messenger	daN	1660	1660	1660	1660
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	3.15	3.15	3.15	3.15
Nominal Diameter of Bare Conductors	Phase Conductor	mm	7.0	7.0	7.0	7.0
	Neutral Messenger	mm	9.5	9.5	9.5	9.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190	190
Nominal Thickness of Insulating Sheath	Phase Conductors	mm	1.6	1.6	1.6	1.6
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductor	mm	10.2	10.2	10.2	10.2
	Neutral Messenger	mm	12.7	12.7	12.7	12.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductor	A	138	138	138	138
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	1.65	1.65	1.65	1.65

Complete Cable						
Approximate Overall Diameter		mm	33	33	33	33
Maximum Lay Pitch		cm	85	85	85	85
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.28	0.28	0.28	0.28
Impedance		Ω/km	0.501	0.501	0.501	0.501
Maximum Short Circuit Rating	for 0.2 sec	kA	7.39	7.39	7.39	7.39
	for 1.0 sec	kA	3.31	3.31	3.31	3.31
	for 3.0 sec	kA	1.91	1.91	1.91	1.91
Minimum Bending Radius		mm	229	229	229	229
Approximate Cable Weight		kg/km	621.2	687.8	754.4	820.9
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 36	SIE 36	SIE 36	SIE 36

K Represents the number of cores for public lighting, it may be zero,1,2 or 3

6

Aerial Bundle Conductors - (Continued)

(3 x 50mm²Al/XLPE + N 54.6mm²+ K x 16mm² ABC)

Item Description		mm²	3x50 + 54.6	3x50+54.6 +1x16	3x50+54.6 +2x16	3x50+54.6 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	50	50	50	50
	Neutral Messenger	mm²	54.6	54.6	54.6	54.6
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	7	7	7	7
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 ⁰C	Phase Conductor	Ω/km	0.641	0.641	0.641	0.641
	Neutral Messenger	Ω/km	0.63	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	600	600	600	600
	Neutral Messenger	daN	1660	1660	1660	1660
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	3.15	3.15	3.15	3.15
Nominal Diameter of Bare Conductors	Phase Conductor	mm	8.1	8.1	8.1	8.1
	Neutral Messenger	mm	9.5	9.5	9.5	9.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190	190
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.6	1.6	1.6	1.6
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductor	mm	11.3	11.3	11.3	11.3
	Neutral Messenger	mm	12.7	12.7	12.7	12.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductor	A	168	168	168	168
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	1.27	1.27	1.27	1.27

Complete Cable						
Approximate Overall Diameter		mm	36	36	36	36
Maximum Lay Pitch		cm	90	90	90	90
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.27	0.27	0.27	0.27
Impedance		Ω/km	0.5	0.5	0.5	0.5
Maximum Short Circuit Rating	for 0.2 sec	kA	10.56	10.56	10.56	10.56
	for 1.0 sec	kA	4.72	4.72	4.72	4.72
	for 3.0 sec	kA	2.73	2.73	2.73	2.73
Minimum Bending Radius		mm	229	229	229	229
Approximate Cable Weight		kg/km	735.0	801.6	868.2	934.8
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 19	SIE 19	SIE 19	SIE 19

K Represents the number of cores for public lighting, it may be zero,1,2 or 3

6
Aerial Bundle Conductors - (Continued

(3 x 70mm² Al/XLPE + N 54.6mm² + K x 16mm² ABC)

Item Description		mm²	3x70 + 54.6	3x70+54.6 +1x16	3x70+54.6 +2x16	3x70+54.6 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	70	70	70	70
	Neutral Messenger	mm²	54.6	54.6	54.6	54.6
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	#12	#12	#12	#12
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20⁰ C	Phase Conductor	Ω/km	0.443	0.443	0.443	0.443
	Neutral Messenger	Ω/km	0.63	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	840	840	840	840
	Neutral Messenger	daN	1660	1660	1660	1660
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	3.15	3.15	3.15	3.15
Nominal Diameter of Bare Conductors	Phase Conductor	mm	9.9	9.9	9.9	9.9
	Neutral Messenger	mm	9.5	9.5	9.5	9.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190	190
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	13.5	13.5	13.5	13.5
	Neutral Messenger	mm	12.7	12.7	12.7	12.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductors	A	213	213	213	213
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	0.87	0.87	0.87	0.87

Complete Cable						
Approximate Overall Diameter		mm	37.5	37.5	37.5	37.5
Maximum Lay Pitch		cm	100	100	100	100
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.26	0.26	0.26	0.26
Impedance		Ω/km	0.35	0.35	0.35	0.35
Maximum Short Circuit Rating	for 0.2 sec	kA	14.79	14.79	14.79	14.79
	for 1.0 sec	kA	6.61	6.61	6.61	6.61
	for 3.0 sec	kA	3.82	3.82	3.82	3.82
Minimum Bending Radius		mm	243	243	243	243
Approximate Cable Weight		kg/km	975.8	1042.3	1108.9	1175.5
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 38	SIE 38	SIE 38	SIE 38

K Represents the number of cores for public lighting, it may be zero,1,2 or 3
- can be19 strands based on customer request.

6

Aerial Bundle Conductors - (Continued)

(3 x 70mm² Al/XLPE + N 54.6mm² + K x 25mm² ABC)

Item Description		mm²	3x70+54.6 +1x25	3x70+54.6 +2x25	3x70+54.6 +3x25
Nominal Cross-Sectional Area	Phase Conductor	mm²	70	70	70
	Neutral Messenger	mm²	54.6	54.6	54.6
	Street Lighting Conductor	mm²	25	25	25
Number of Strands	Phase Conductor	Nos.	#12	#12	#12
	Neutral Messenger	Nos.	7	7	7
	Street Lighting Conductor	Nos.	7	7	7
Maximum Resistance of Conductor at 20 ⁰C	Phase Conductor	Ω/km	0.443	0.443	0.443
	Neutral Messenger	Ω/km	0.63	0.63	0.63
	Street Lighting Conductor	Ω/km	1.20	1.20	1.20
Minimum Breaking Strength	Phase Conductor	daN	840	840	840
	Neutral Messenger	daN	1660	1660	1660
	Street Lighting Conductor	daN	300	300	300
Nominal Diameter of Strands	Neutral Messenger	mm	3.15	3.15	3.15
Nominal Diameter of Bare Conductors	Phase Conductor	mm	9.9	9.9	9.9
	Neutral Messenger	mm	9.5	9.5	9.5
	Street Lighting Conductor	mm	6.0	6.0	6.0
Lay Direction	Neutral Messenger		Left	Left	Left
Lay Pitch	Neutral Messenger	mm	190	190	190
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.8	1.8	1.8
	Neutral Messenger	mm	1.6	1.6	1.6
	Street Lighting Conductor	mm	1.4	1.4	1.4
Nominal Insulated Core Diameter	Phase Conductor	mm	13.5	13.5	13.5
	Neutral Messenger	mm	12.7	12.7	12.7
	Street Lighting Conductor	mm	8.8	8.8	8.8
Current Carrying Capacity	Phase Conductors	A	213	213	213
	Street Lighting Conductor	A	111	111	111
Voltage Drop	Phase Conductor	V/A/km	0.87	0.87	0.87

Complete Cable					
Approximate Overall Diameter		mm	40	40	40
Maximum Lay Pitch		cm	100	100	100
Lay Direction			Right	Right	Right
Inductance		mH/km	0.26	0.26	0.26
Impedance		Ω/km	0.35	0.35	0.35
Maximum Short Circuit Rating	for 0.2 sec	kA	14.79	14.79	14.79
	for 1.0 sec	kA	6.61	6.61	6.61
	for 3.0 sec	kA	3.82	3.82	3.82
Minimum Bending Radius		mm	243	243	243
Approximate Cable Weight		kg/km	1077.3	1178.9	1280.4
Nominal Drum Length		m	500	500	500
Size of the Drum			SIE 39	SIE 39	SIE 39

K Represents the number of cores for public lighting, it may be zero,1,2 or 3
- can be 19 strands based on customer request.

6
Aerial Bundle Conductors - (Continued)

(3 x 70 mm² Al/XLPE + N 70mm² + K x 16mm² ABC)

Item Description		mm²	3x70 + N70	3x70+N70 +1x16	3x70+N70 +2x16	3x70+N70 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	70	70	70	70
	Neutral Messenger	mm²	70	70	70	70
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	#12	#12	#12	#12
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 ⁰C	Phase Conductor	Ω/km	0.443	0.443	0.443	0.443
	Neutral Messenger	Ω/km	0.5	0.5	0.5	0.5
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	840	840	840	840
	Neutral Messenger	daN	2050	2050	2050	2050
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	3.50	3.50	3.50	3.50
Nominal Diameter of Bare Conductors	Phase Conductor	mm	9.9	9.9	9.9	9.9
	Neutral Messenger	mm	10.5	10.5	10.5	10.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	210	210	210	210
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.5	1.5	1.5	1.5
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductor	mm	13.5	13.5	13.5	13.5
	Neutral Messenger	mm	13.5	13.5	13.5	13.5
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductor	A	213	213	213	213
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	0.87	0.87	0.87	0.87

Complete Cable						
Approximate Overall Diameter		mm	41	41	41	41
Maximum Lay Pitch		cm	100	100	100	100
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.26	0.26	0.26	0.26
Impedance		Ω/km	0.35	0.35	0.35	0.35
Maximum Short Circuit Rating	for 0.2 sec	kA	14.79	14.79	14.79	14.79
	for 1.0 sec	kA	6.61	6.61	6.61	6.61
	for 3.0 sec	kA	3.82	3.82	3.82	3.82
Minimum Bending Radius		mm	243	243	243	243
Approximate Cable Weight		kg/km	1013.3	1079.9	1146.4	1213.0
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 39	SIE 39	SIE 39	SIE 39

K Represents the number of cores for public lighting, it may be zero,1,2 or 3
- can be19 strands based on customer request.

6

Aerial Bundle Conductors - (Continued)

(3 x 95mm² Al/XLPE + N 70mm² + K x 16mm² ABC)

Item Description		mm²	3x95 + N70	3x95+N70 +1x16	3x95+N70 +2x16	3x95+N70 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	95	95	95	95
	Neutral Messenger	mm²	70	70	70	70
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	19	19	19	19
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 °C	Phase Conductor	Ω/km	0.320	0.320	0.320	0.320
	Neutral Messenger	Ω/km	0.5	0.5	0.5	0.5
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	1140	1140	1140	1140
	Neutral Messenger	daN	2050	2050	2050	2050
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	3.50	3.50	3.50	3.50
Nominal Diameter of Bare Conductors	Phase Conductor	mm	11.2	11.2	11.2	11.2
	Neutral Messenger	mm	10.5	10.5	10.5	10.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	210	210	210	210
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.5	1.5	1.5	1.5
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductor	mm	14.8	14.8	14.8	14.8
	Neutral Messenger	mm	13.5	13.5	13.5	13.5
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductor	A	258	258	258	258
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	0.67	0.67	0.67	0.67

Complete Cable						
Approximate Overall Diameter		mm	44	44	44	44
Maximum Lay Pitch		cm	110	110	110	110
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.25	0.25	0.25	0.25
Impedance		Ω/km	0.258	0.258	0.258	0.258
Maximum Short Circuit Rating	for 0.2 sec	kA	20.07	20.07	20.07	20.07
	for 1.0 sec	kA	8.98	8.98	8.98	8.98
	for 3.0 sec	kA	5.18	5.18	5.18	5.18
Minimum Bending Radius		mm	266	266	266	266
Approximate Cable Weight		kg/km	1196.2	1262.8	1329.3	1395.9
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 40	SIE 40	SIE 40	SIE 40

K Represents the number of cores for public lighting, it may be zero,1,2 or 3

6
Aerial Bundle Conductors - (Continued)

(3 x 120mm² Al/XLPE + N 70mm² + K x 16mm² ABC)

Item Description		mm²	3x120 + N70	3x120+N70 +1x16	3x120+N70 +2x16	3x120+N70 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	120	120	120	120
	Neutral Messenger	mm²	70	70	70	70
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	19	19	19	19
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 ⁰C	Phase Conductor	Ω/km	0.253	0.253	0.253	0.253
	Neutral Messenger	Ω/km	0.5	0.5	0.5	0.5
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	1440	1440	1440	1440
	Neutral Messenger	daN	2050	2050	2050	2050
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	3.50	3.50	3.50	3.50
Nominal Diameter of Bare Conductors	Phase Conductor	mm	12.2	12.2	12.2	12.2
	Neutral Messenger	mm	10.5	10.5	10.5	10.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	210	210	210	210
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.5	1.5	1.5	1.5
	Street Lighting Conductors	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductors	mm	15.8	15.8	15.8	15.8
	Neutral Messenger	mm	13.5	13.5	13.5	13.5
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductor	A	300	300	300	300
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	0.55	0.55	0.55	0.55

Complete Cable						
Approximate Overall Diameter		mm	46	46	46	46
Maximum Lay Pitch		cm	120	120	120	120
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.25	0.25	0.25	0.25
Impedance		Ω/km	0.258	0.258	0.258	0.258
Maximum Short Circuit Rating	for 0.2 sec	kA	25.35	25.35	25.35	25.35
	for 1.0 sec	kA	11.34	11.34	11.34	11.34
	for 3.0 sec	kA	6.55	6.55	6.55	6.55
Minimum Bending Radius		mm	284	284	284	284
Approximate Cable Weight		kg/km	1350.5	1417.1	1483.7	1550.2
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 38	SIE 38	SIE 38	SIE 38

K Represents the number of cores for public lighting, it may be zero,1,2 or 3

6

Aerial Bundle Conductors - (Continued)

(3 x 150mm² Al/XLPE + N 70mm² + K x 16mm² ABC)

Item Description		mm²	3x150 + N70	3x150+N70 +1x16	3x150+N70 +2x16	3x150+N70 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	150	150	150	150
	Neutral Messenger	mm²	70	70	70	70
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	19	19	19	19
	Neutral Messenger	Nos.	7	7	7	7
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 ⁰C	Phase Conductor	Ω/km	0.206	0.206	0.206	0.206
	Neutral Messenger	Ω/km	0.5	0.5	0.5	0.5
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	1800	1800	1800	1800
	Neutral Messenger	daN	2050	2050	2050	2050
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	3.50	3.50	3.50	3.50
Nominal Diameter of Bare Conductors	Phase Conductor	mm	14.1	14.1	14.1	14.1
	Neutral Messenger	mm	10.5	10.5	10.5	10.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	210	210	210	210
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.7	1.7	1.7	1.7
	Neutral Messenger	mm	1.5	1.5	1.5	1.5
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductor	mm	17.5	17.5	17.5	17.5
	Neutral Messenger	mm	13.5	13.5	13.5	13.5
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductor	A	344	344	344	344
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	0.46	0.46	0.46	0.46

Complete Cable						
Approximate Overall Diameter		mm	48	48	48	48
Minimum/Maximum Lay Pitch		cm	115/130	115/130	115/130	115/130
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.24	0.24	0.24	0.24
Impedance		Ω/km	0.257	0.257	0.257	0.257
Maximum Short Circuit Rating	for 0.2 sec	kA	31.69	31.69	31.69	31.69
	for 1.0 sec	kA	14.17	14.17	14.17	14.17
	for 3.0 sec	kA	8.18	8.18	8.18	8.18
Minimum Bending Radius		mm	315	315	315	315
Approximate Cable Weight		kg/km	1660.9	1727.5	1794.0	1860.6
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 41	SIE 41	SIE 41	SIE 41

K Represents the number of cores for public lighting, it may be zero,1,2 or 3

6
Aerial Bundle Conductors - (Continued)

(3 x 120mm² Al/XLPE + N 95mm² + K x 16mm² ABC)

Item Description		mm²	3x120 + N95	3x120+N95 +1x16	3x120+N95 +2x16	3x120+N95 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	120	120	120	120
	Neutral Messenger	mm²	95	95	95	95
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	19	19	19	19
	Neutral Messenger	Nos.	19	19	19	19
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 ⁰C	Phase Conductor	Ω/km	0.253	0.253	0.253	0.253
	Neutral Messenger	Ω/km	0.343	0.343	0.343	0.343
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	1440	1440	1440	1440
	Neutral Messenger	daN	2750	2750	2750	2750
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	2.50	2.50	2.50	2.50
Nominal Diameter of Bare Conductors	Phase Conductor	mm	12.2	12.2	12.2	12.2
	Neutral Messenger	mm	12.5	12.5	12.5	12.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	250	250	250	250
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.8	1.8	1.8	1.8
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductor	mm	15.8	15.8	15.8	15.8
	Neutral Messenger	mm	15.7	15.7	15.7	15.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductor	A	300	300	300	300
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	0.55	0.55	0.55	0.55

Complete Cable						
Approximate Overall Diameter		mm	47	47	47	47
Maximum Lay Pitch		cm	120	120	120	120
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.25	0.25	0.25	0.25
Impedance		Ω/km	0.258	0.258	0.258	0.258
Maximum Short Circuit Rating	for 0.2 sec	kA	25.35	25.35	25.35	25.35
	for 1.0 sec	kA	11.34	11.34	11.34	11.34
	for 3.0 sec	kA	6.55	6.55	6.55	6.55
Minimum Bending Radius		mm	284	284	284	284
Approximate Cable Weight		kg/mm	1413.7	1480.3	1546.9	1613.4
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 41	SIE 41	SIE 41	SIE 41

K Represents the number of cores for public lighting, it may be zero 1,2 or 3

6

Aerial Bundle Conductors - (Continued)

(3 x 150mm² Al/XLPE + N 95mm² + K x 16mm² ABC)

Item Description		mm²	3x150 +N95	3x150+N95 +1x16	3x150+N95 +2x16	3x150+N95 +3x16
Nominal Cross-Sectional Area	Phase Conductor	mm²	150	150	150	150
	Neutral Messenger	mm²	95	95	95	95
	Street Lighting Conductor	mm²	-	16	16	16
Number of Strands	Phase Conductor	Nos.	19	19	19	19
	Neutral Messenger	Nos.	19	19	19	19
	Street Lighting Conductor	Nos.	-	7	7	7
Maximum Resistance of Conductor at 20 °C	Phase Conductor	Ω/km	0.206	0.206	0.206	0.206
	Neutral Messenger	Ω/km	0.343	0.343	0.343	0.343
	Street Lighting Conductor	Ω/km	-	1.91	1.91	1.91
Minimum Breaking Strength	Phase Conductor	daN	1800	1800	1800	1800
	Neutral Messenger	daN	2750	2750	2750	2750
	Street Lighting Conductor	daN	-	190	190	190
Nominal Diameter of Strands	Neutral Messenger	mm	2.50	2.50	2.50	2.50
Nominal Diameter of Bare Conductors	Phase Conductor	mm	14.1	14.1	14.1	14.1
	Neutral Messenger	mm	12.5	12.5	12.5	12.5
	Street Lighting Conductor	mm	-	4.8	4.8	4.8
Lay Direction	Neutral Messenger		Left	Left	Left	Left
Lay Pitch	Neutral Messenger	mm	250	250	250	250
Nominal Thickness of Insulating Sheath	Phase Conductor	mm	1.7	1.7	1.7	1.7
	Neutral Messenger	mm	1.6	1.6	1.6	1.6
	Street Lighting Conductor	mm	-	1.2	1.2	1.2
Nominal Insulated Core Diameter	Phase Conductor	mm	17.5	17.5	17.5	17.5
	Neutral Messenger	mm	15.7	15.7	15.7	15.7
	Street Lighting Conductor	mm	-	7.2	7.2	7.2
Current Carrying Capacity	Phase Conductor	A	344	344	344	344
	Street Lighting Conductor	A	-	83	83	83
Voltage Drop	Phase Conductor	V/A/km	0.46	0.46	0.46	0.46

Complete Cable						
Approximate Overall Diameter		mm	49	49	49	49
Minimum/Maximum Lay Pitch		cm	115/130	115/130	115/130	115/130
Lay Direction			Right	Right	Right	Right
Inductance		mH/km	0.24	0.24	0.24	0.24
Impedance		Ω/km	0.257	0.257	0.257	0.257
Maximum Short Circuit Rating	for 0.2 sec	kA	31.69	31.69	31.69	31.69
	for 1.0 sec	kA	14.17	14.17	14.17	14.17
	for 3.0 sec	kA	8.18	8.18	8.18	8.18
Minimum Bending Radius		mm	315	315	315	315
Approximate Cable Weight		kg/km	1724.1	1790.7	1857.2	1923.3
Nominal Drum Length		m	500	500	500	500
Size of the Drum			SIE 41	SIE 41	SIE 41	SIE 41

K Represents the number of cores for public lighting, it may be zero,1,2 or 3

7.1
All Aluminium Conductors (AAC)

Description: Hard drawn Aluminium wires, stranded in successive layers, in opposite direction to form the Aluminium stranded AAC conductors as per BS EN 50182 or IEC 61089.

Application: All Aluminium bare conductors are used for aerial distribution lines having relatively short spans, aerial feeders and bus bars of substations.

Nominal Cross Sectional Area	No. & Dia. of Wires	Approx. Overall Diameter	Rated Strength	Max. d.c. Resistance at 20 ⁰C	Approx. Weight
mm²	x/mm	mm	kN	Ω/km	kg/km
16	7/1.70	5.10	3.02	1.7986	43.4
25	7/2.10	6.30	4.36	1.1787	66.3
35	7/2.50	7.50	6.01	0.8317	93.9
50	7/3.00	9.00	8.41	0.5776	135.2
50	19/1.80	9.00	8.94	0.5944	132.9
70	19/2.10	10.50	11.85	0.4367	180.9
95	19/2.50	12.50	16.32	0.3081	256.3
120	19/2.80	14.00	19.89	0.2456	321.5
150	37/2.25	15.80	26.48	0.1960	405.7
185	37/2.50	17.50	31.78	0.1588	500.9
240	61/2.25	20.30	43.66	0.1193	671.1
300	61/2.50	22.50	52.40	0.0966	828.5
400	61/2.89	26.00	68.02	0.0723	1107.1
500	61/3.23	29.10	82.47	0.0579	1382.9

Name	Nominal Cross Sectional Area	No. & Dia. of wires	Approx. Overall Diameter	Rated Strength	Max. d.c. Resistance at 20 ⁰C	Approx. Weight
	mm²	x/mm	mm	kN	Ω/km	kg/km
MIDGE	23.3	7/2.06	6.18	4.20	1.2249	63.8
GNAT	26.9	7/2.21	6.63	4.83	1.0643	73.4
MOSQUITO	36.9	7/2.59	7.77	6.27	0.7749	100.8
LADYBIRD	42.8	7/2.79	8.37	7.28	0.6678	117.0
ANT	52.8	7/3.10	9.30	8.72	0.5409	144.4
FLY	63.6	7/3.40	10.2	10.49	0.4497	173.7
BLUEBOTTLE	73.6	7/3.66	11.0	11.78	0.3880	201.3
EARWIG	78.6	7/3.78	11.3	12.57	0.3638	214.7
GRASSHOPPEER	84.1	7/3.91	11.7	13.45	0.3400	229.7
CLEGG	95.6	7/4.17	12.5	15.30	0.2989	261.3
WASP	106.0	7/4.39	13.2	16.95	0.2697	289.6
BEETLE	106.4	19/2.67	13.4	18.08	0.2701	292.4
BEE	132.0	7/4.90	14.7	21.12	0.2165	360.8
HORNET	157.6	19/3.25	16.3	26.01	0.1823	433.2
CATERPILLAR	185.9	19/3.53	17.7	29.75	0.1546	511.1
CHAFER	213.2	19/3.78	18.9	34.12	0.1348	586.0
SPIDER	237.6	19/3.99	20.0	38.01	0.1210	652.9
COCKROACH	265.7	19/4.22	21.1	42.52	0.1081	730.4
BUTTERFLY	322.7	19/4.65	23.3	51.63	0.0891	886.8
MOTH	373.1	19/5.00	25.0	59.69	0.0770	1025.3
DRONE	372.4	37/3.58	25.1	59.59	0.0774	1027.1
CENTIPEDE	415.2	37/3.78	26.5	66.43	0.0695	1145.1
MAYBUG	486.1	37/4.09	28.6	77.78	0.0593	1340.6
SCORPION	529.8	37/4.27	29.9	84.77	0.0544	1461.2
CICADA	628.3	37/4.65	32.6	100.54	0.0459	1732.9

7. Overhead Conductors

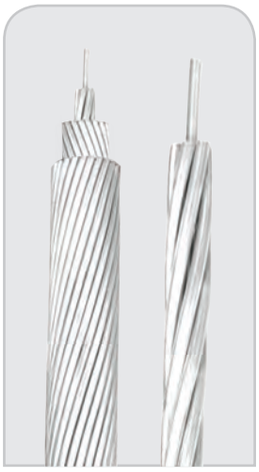
7.2

All Aluminium Alloy Conductors (AAAC)

Description: All Aluminium Alloy Conductors, stranded in successive layers to form the stranded AAAC conductor as per IEC 61089 or BS EN 50182 or ASTM B 399.

Application: AAACs are mainly used for overhead lines in transmission and distribution electrical networks, having relatively long spans. They are also used as a messenger to support overhead electrical cables.

Nominal Cross sectional area	No. & Dia. of wires	Approx. Overall Diameter	Rated Strength	Max. d.c. Resistance at 20 °C	Approx. Weight
mm²	x/mm	mm	kN	Ω/km	kg/km
16	7/1.70	5.10	4.69	2.0701	43.4
25	7/2.10	6.30	7.15	1.3566	66.2
35	7/2.50	7.50	10.14	0.9572	93.8
50	7/3.00	9.00	14.60	0.6647	135.1
50	19/1.80	9.00	14.26	0.6841	132.7
70	19/2.10	10.50	19.41	0.5026	180.7
95	19/2.50	12.50	27.51	0.3546	256.0
120	19/2.80	14.00	34.51	0.2827	321.2
150	37/2.25	15.80	43.40	0.2256	405.3
185	37/2.50	17.50	53.58	0.1827	500.3
240	61/2.25	20.30	71.55	0.1373	670.3
300	61/2.50	22.50	88.33	0.1112	827.5
400	61/2.89	26.00	118.04	0.0832	1105.9
500	61/3.23	29.10	147.45	0.0666	1381.4



Name	Nominal Cross Sectional Area	No. & Dia. of wires	Approx. Overall Diameter	Rated Strength	Max. d.c. Resistance at 20 °C	Approx. Weight
	mm²	x/mm	mm	kN	Ω/km	kg/km
BOX	18.8	7/1.85	5.55	5.55	1.7480	51.4
ACACIA	23.8	7/2.08	6.24	7.02	1.3828	64.9
ALMOND	30.1	7/2.34	7.02	8.88	1.0926	82.2
CEDAR	35.5	7/2.54	7.62	10.46	0.9273	96.8
DEODAR	42.2	7/2.77	8.31	12.44	0.7797	115.2
FIR	47.8	7/2.95	8.85	14.11	0.6875	130.6
HAZEL	59.9	7/3.30	9.90	17.66	0.5494	163.4
PINE	71.6	7/3.61	10.8	21.14	0.4591	195.6
HOLLY	84.1	7/3.91	11.7	24.79	0.3913	229.5
WILLOW	89.7	7/4.04	12.1	26.47	0.3665	245.0
OAK	118.9	7/4.65	14.0	35.07	0.2767	324.5
MULBERRY	150.9	19/3.18	15.9	44.52	0.2192	414.3
ASH	180.7	19/3.48	17.4	53.31	0.1830	496.1
ELM	211.0	19/3.76	18.8	62.24	0.1568	579.2
POPLAR	239.4	37/2.87	20.1	70.61	0.1387	659.4
SYCAMORE	303.2	37/3.23	22.6	89.40	0.1095	835.2
UPAS	362.1	37/3.53	24.7	106.82	0.0917	997.5
YEW	479.0	37/4.06	28.4	141.31	0.0693	1319.6
TOTARA	498.1	37/4.14	29.0	146.93	0.0666	1372.1
RUBUS	586.9	61/3.50	31.5	173.13	0.0567	1622.0
SORBUS	659.4	61/3.71	33.4	194.53	0.0505	1822.5
ARAUCARIA	821.1	61/4.14	37.3	242.24	0.0406	2269.4
REDWOOD	996.2	61/4.56	41.0	293.88	0.0334	2753.2

7.3
Aluminium Conductors Steel Reinforced (ACSR)

Description: An outer layer of Aluminium conductor concentrically stranded over the central core of galvanized solid or stranded steel wires to form Aluminium steel reinforced conductors as per BS EN 50182 or ASTM B 232 or IEC 61089.

Application: ACSR conductors are widely used for electrical power transmission over long distances, since they are ideal for long overhead lines spans. They are also used as a messenger for supporting overhead electrical cables.

Nominal Cross Sectional Area	No. & Dia. of wires		Appro. Overall Diameter	Rated Strength	Max. d.c. Resistance at 20 °C	Approx. Weight
	Aluminium	Steel				
mm^2	x/mm	x/mm	mm	kN	Ω/km	kg/km
16/2.5	6/1.80	1/1.80	5.4	5.80	1.8769	61.6
25/4	6/2.25	1/2.25	6.75	8.95	1.2012	96.3
35/6	6/2.70	1/2.70	8.1	12.37	0.8342	138.7
50/8	6/3.20	1/3.20	9.6	16.81	0.5939	194.8
70/12	26/1.85	7/1.44	11.7	26.27	0.4132	282.2
95/15	26/2.15	7/1.67	13.6	34.93	0.3060	380.6
120/20	26/2.44	7/1.90	15.5	44.50	0.2376	491.0
150/25	26/2.70	7/2.10	17.1	53.67	0.1940	600.8
185/30	26/3.00	7/2.33	19.0	65.27	0.1571	741.0
210/35	26/3.20	7/2.49	20.3	73.36	0.1381	844.1
240/40	26/3.45	7/2.68	21.8	85.12	0.1188	980.1
380/50	54/3.00	7/3.00	27.0	121.30	0.0758	1442.5
490/65	54/3.40	7/3.40	30.6	150.81	0.0590	1852.9

7.3
Aluminium Conductors Steel Reinforced (ACSR)-(continued)

Name	Nominal Cross Sectional Area	No. & Dia. of wires		Approx. Overall Diameter	Rated Strength	Max. d.c. Resistance at 20 °C	Approx. Weight
		Aluminium	Steel				
	mm²	x/mm	x/mm	mm	kN	Ω/km	kg/km
MOLE	12.4	6/1.50	1/1.50	4.50	4.14	2.7027	42.8
SQUIRREL	24.5	6/2.11	1/2.11	6.33	7.87	1.3659	84.7
GOPHER	30.6	6/2.36	1/2.36	7.08	9.58	1.0919	106.0
WEASEL	36.9	6/2.59	1/2.59	7.77	11.38	0.9065	127.6
FOX	42.8	6/2.79	1/2.79	8.37	13.21	0.7812	148.1
FERRET	49.5	6/3.00	1/3.00	9.00	15.27	0.6757	171.2
RABBIT	61.7	6/3.35	1/3.35	10.1	18.42	0.5419	213.5
MINK	73.6	6/3.66	1/3.66	11.0	21.67	0.4540	254.9
SKUNK	100.1	12/2.59	7/2.59	13.0	52.79	0.4568	463.0
BEAVER	87.5	6/3.99	1/3.99	12.0	25.76	0.3820	302.9
HORSE	116.2	12/2.79	7/2.79	14.0	61.26	0.3936	537.3
RACOON	92.0	6/4.09	1/4.09	12.3	27.06	0.3635	318.3
OTTER	97.9	6/4.22	1/4.22	12.7	28.81	0.3415	338.8
CAT	111.3	6/4.50	1/4.50	13.5	32.76	0.3003	385.3
HARE	122.5	6/4.72	1/4.72	14.2	36.04	0.2730	423.8
DOG	118.5	6/4.72	7/1.57	14.2	32.65	0.2733	394.0
COYOTE	151.8	26/2.54	7/1.91	15.9	45.86	0.2192	520.7
COUGAR	138.8	18/3.05	1/3.05	15.3	29.74	0.2188	418.8
TIGER	161.9	30/2.36	7/2.36	16.5	57.87	0.2202	602.2
WOLF	194.9	30/2.59	7/2.59	18.1	68.91	0.1829	725.3
DINGO	167.5	18/3.35	1/3.35	16.8	35.87	0.1814	505.2
LYNX	226.2	30/2.79	7/2.79	19.5	79.97	0.1576	841.6
CARACAL	194.5	18/3.61	1/3.61	18.1	40.74	0.1562	586.7
PANTHER	261.5	30/3.00	7/3.00	21.0	92.46	0.1363	973.1
JAGUAR	222.3	18/3.86	1/3.86	19.3	46.57	0.1366	670.8
LION	293.9	30/3.18	7/3.18	22.3	100.47	0.1213	1093.4
BEAR	326.1	30/3.35	7/3.35	23.5	111.50	0.1093	1213.4
GOAT	400.0	30/3.71	7/3.71	26.0	135.13	0.0891	1488.2
SHEEP	462.6	30/3.99	7/3.99	27.9	156.30	0.0771	1721.3
ANTELOPE	422.6	54/2.97	7/2.97	26.7	118.88	0.0773	1413.8
BISON	431.2	54/3.00	7/3.00	27.0	121.30	0.0758	1442.5
DEER	529.8	30/4.27	7/4.27	29.9	179.00	0.0673	1971.4
ZEBRA	484.5	54/3.18	7/3.18	28.6	131.92	0.0674	1620.8
ELK	588.5	30/4.50	7/4.50	31.5	198.80	0.0606	2189.5
CAMEL	537.7	54/3.35	7/3.35	30.2	146.40	0.0608	1798.8
MOOSE	597.0	54/3.53	7/3.53	31.8	159.92	0.0547	1997.3

7.3
Aluminium Conductors Steel Reinforced (ACSR)-(continued)

Name	Nominal Cross Sectional Area	No. & Dia. of wires		Approx. Overall Diameter	Rated Strength	Max. d.c. Resistance at 20 °C	Approx. Weight	
		Aluminium	Steel				Aluminium	Steel
	mm^2	x/mm	x/mm	mm	kN	Ω/km	kg/km	kg/km
GROUSE	40.5	8/2.54	1/4.24	9.3	23.1	0.7112	112	110
PETREL	51.6	12/2.34	7/2.34	11.7	46.2	0.5614	143	235
MINORCA	56.1	12/2.44	7/2.44	12.2	50.2	0.5163	156	256
LEGHORN	68.2	12/2.69	7/2.69	13.5	60.7	0.4248	189	311
GUINEA	80.4	12/2.92	7/2.92	14.6	71.1	0.3605	223	367
DOTTEREL	89.4	12/3.08	7/3.08	15.4	76.7	0.3240	248	409
DORKING	96.5	12/3.20	7/3.20	16.0	82.8	0.3002	268	441
BRAHMA	102.8	16/2.86	19/2.48	18.1	126.5	0.2819	285	722
COCHIN	107.1	12/3.37	7/3.37	16.9	91.8	0.2707	297	488
TURKEY	13.3	6/1.68	1/1.68	5.0	5.3	2.1570	36	17
SWAN	21.2	6/2.12	1/2.12	6.4	8.3	1.3545	58	27
SWANATE	21.1	7/1.96	1/2.61	6.5	10.5	1.3583	58	42
SPARROW	33.6	6/2.67	1/2.67	8.0	12.7	0.8530	92	44
SPARATE	33.5	7/2.47	1/3.30	8.3	16.1	0.8553	92	67
ROBIN	42.4	6/3.00	1/3.00	9.0	15.8	0.6764	117	55
RAVEN	53.5	6/3.37	1/3.37	10.1	19.5	0.5364	147	69
QUAIL	67.4	6/3.78	1/3.78	11.4	23.6	0.4255	185	87
PIGEON	85.1	6/4.25	1/4.25	12.7	29.5	0.3370	233	110
PENGUIN	107.2	6/4.77	1/4.77	14.3	37.1	0.2676	294	139
WAXWING	135.0	18/3.09	1/3.09	15.5	30.3	0.2133	373	59
PARTRIDGE	134.9	26/2.57	7/2.00	16.3	50.2	0.2142	373	172
OSTRICH	152.2	26/2.73	7/2.12	17.3	56.6	0.1906	421	193
MERLIN	170.2	18/3.47	1/3.47	17.4	38.2	0.1692	470	74
LINNET	170.6	26/2.89	7/2.25	18.3	62.8	0.1699	472	217
ORIOLE	170.5	30/2.69	7/2.69	18.8	77.4	0.1704	473	311
CHICKADEE	200.9	18/3.77	1/3.77	18.9	44.3	0.1432	555	87
BRANT	201.6	24/3.27	7/2.18	19.6	64.7	0.1437	558	204
IBIS	201.3	26/3.14	7/2.44	19.9	72.1	0.1438	558	256
LARK	200.9	30/2.92	7/2.92	20.5	88.7	0.1442	559	367
PELICAN	242.3	18/4.14	1/4.14	20.7	52.3	0.1193	667	105
FLICKLER	241.6	24/3.58	7/2.39	21.5	76.8	0.1199	670	245
HAWK	241.7	26/3.44	7/2.67	21.8	86.4	0.1199	670	308
HEN	241.3	30/3.20	7/3.20	22.4	105.9	0.1202	672	440
OSPREY	282.5	18/4.47	1/4.47	22.3	61.0	0.1022	777	122
PARAKEET	282.3	24/3.87	7/2.58	23.2	88.3	0.1026	782	285
DOVE	282.6	26/3.72	7/2.89	23.5	101.1	0.1025	781	359
EAGLE	282.1	30/3.46	7/3.46	24.2	122.9	0.1030	783	514
PEACOCK	306.1	24/4.03	7/2.69	24.2	95.9	0.0945	850	311
SQUAB	305.8	26/3.87	7/3.01	24.5	108.1	0.0945	849	390
WOOD DUCK	307.1	30/3.61	7/3.61	25.3	129.0	0.0947	851	559
TEAL	307.1	30/3.61	19/2.16	25.3	133.4	0.0947	851	547

7.3
Aluminium Conductors Steel Reinforced (ACSR) - (Continued)

Name	Nominal Cross Sectional Area	No. & Dia. of wires		Approx. Overall Diameter	Rated Strength	Max. d.c. Resistance at 20 °C	Approx. Weight	
		Aluminium	Steel				Aluminium	Steel
	mm^2	x/mm	x/mm	mm	kN	Ω/km	kg/km	kg/km
SWIFT	323.0	36/3.38	1/3.38	23.7	60.7	0.0893	888	70
KINGBIRD	232.0	18/4.78	1/4.78	23.9	69.7	0.0894	889	139
ROOK	232.1	24/4.14	7/2.76	24.8	101.0	0.0899	893	326
GROSBEAK	321.8	26/3.97	7/3.09	25.2	111.9	0.0900	893	409
SCOTER	322.6	30/3.70	7/3.70	25.9	135.5	0.0900	895	588
EGRET	322.6	30/3.70	19/2.22	25.9	140.6	0.0900	895	575
FLAMINGO	337.3	24/4.23	7/2.82	25.4	105.5	0.0859	936	342
GANNET	338.3	26/4.07	7/3.16	25.8	117.3	0.0857	936	429
STILT	363.3	24/4.39	7/2.92	26.3	113.3	0.0798	1005	367
STARLING	361.9	26/4.21	7/3.28	26.7	126.0	0.0800	1004	461
REDWING	362.1	30/3.92	19/2.35	27.5	154.0	0.0801	1006	646
CUCKOO	402.3	24/4.62	7/3.08	27.7	124.5	0.0720	1116	408
DRAKE	402.6	26/4.44	7/3.45	28.1	139.7	0.0720	1117	511
TERN	403.8	45/3.38	7/2.25	27.0	97.5	0.0720	1115	217
COOT	401.9	36/3.77	1/3.77	26.4	74.7	0.0717	1111	87
CONDOR	402.3	54/3.08	7/3.08	27.7	124.3	0.0720	1115	407
MALLARD	403.8	30/4.14	19/2.48	29.0	171.2	0.0721	1119	718
RUDDY	455.5	45/3.59	7/2.40	28.7	109.4	0.0636	1263	246
CANARY	456.3	54/3.28	7/3.28	29.5	141.0	0.0635	1263	461
RAIL	483.8	45/3.70	7/2.47	29.6	116.1	0.0599	1339	261
CATBIRD	484.6	36/4.14	1/4.14	29.0	87.9	0.0595	1335	105
CARDINAL	484.5	54/3.38	7/3.38	30.4	149.7	0.0599	1338	490
ORTLAN	523.9	45/3.85	7/2.57	30.8	123.3	0.0553	1450	283
TANAGER	522.8	36/4.30	1/4.30	30.1	94.8	0.0551	1444	113
CURLEW	522.5	54/3.51	7/3.51	31.6	161.8	0.0553	1450	529
BLUEJAY	565.5	45/4.00	7/2.66	32.0	132.7	0.0513	1562	304
FINCH	565.0	54/3.65	19/2.19	32.8	174.6	0.0516	1571	558
BUNTING	605.8	45/4.14	7/2.76	33.1	142.4	0.0479	1674	326
GRACKLE	602.8	54/3.77	19/2.27	34.0	186.9	0.0483	1681	599
BITTERN	644.4	45/4.27	7/2.85	34.2	151.6	0.0450	1786	348
PHEASANT	645.1	54/3.90	19/2.34	35.1	194.1	0.0452	1795	639
SKYLARK	643.3	36/4.77	1/4.77	33.4	116.7	0.0448	1777	140
DIPPER	684.2	45/4.40	7/2.93	35.2	160.7	0.0423	1897	370
MARTIN	685.4	54/4.02	19/2.41	36.2	206.1	0.0425	1906	679
BOBOLINK	725.2	45/4.53	7/3.02	36.3	170.5	0.0399	2010	392
PLOVER	726.9	54/4.14	19/2.48	37.2	218.4	0.0401	2019	719
NUTHATCH	746.2	45/4.65	7/3.10	37.2	177.6	0.0379	2120	413
PARROT	766.1	54/4.25	19/2.55	38.2	230.5	0.0380	2129	758
LAPWING	807.5	45/4.77	7/3.18	38.2	187.4	0.0359	2232	435

8.1
Technical Data for Cable Selection (For Copper Cables)

Table X1
Single-core 70 ⁰C thermoplastic (PVC) insulated cables,non-armoured, with or without sheath (COPPER CONDUCTORS)

Ambient temperature: 30 ⁰C
CURRENT-CARRYING CAPACITY (amperes): Conductor operating temperature:70 ⁰C

Conductor cross - sectional area	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)				
							Touching			Spaced 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	
										Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
1	11	10.5	13.5	12	15.5	14	-	-	-	-	-
1.5	14.5	13.5	17.5	15.5	20	18	-	-	-	-	-
2.5	20	18	24	21	27	25	-	-	-	-	-
4	26	24	32	28	37	33	-	-	-	-	-
6	34	31	41	36	47	43	-	-	-	-	-
10	46	42	57	50	65	59	-	-	-	-	-
16	61	56	76	68	87	79	-	-	-	-	-
25	80	73	101	89	114	104	131	114	110	146	130
35	99	89	125	110	141	129	162	143	137	181	162
50	119	108	151	134	182	167	196	174	167	219	197
70	151	136	192	171	234	214	251	225	216	281	254
95	182	164	232	207	284	261	304	275	264	341	311
120	210	188	269	239	330	303	352	321	308	396	362
150	240	216	300	262	381	349	406	372	356	456	419
185	273	245	341	296	436	400	463	427	409	521	480
240	321	286	400	346	515	472	546	507	485	615	569
300	367	328	458	394	594	545	629	587	561	709	659
400	-	-	546	467	694	634	754	689	656	852	795
500	-	-	626	533	792	723	868	789	749	982	920
630	-	-	720	611	904	826	1005	905	855	1138	1070
800	-	-	-	-	1030	943	1086	1020	971	1265	1188
1000	-	-	-	-	1154	1058	1216	1149	1079	1420	1337

NOTE: For cables having flexible conductors, see Table X17 for adjustment factors for current-carrying capacity and voltage drop.

8.1 Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X2

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:70 °C

Conductor Cross - Sectional Area	2 cables d.c.	2 Cables, single-Phase a.c.									3 or 4 Cables, Three-Phase a.c.											
		Reference Methods A & B (enclosed in conduit or on trunking)			Reference Methods C & F (clipped direct, on tray or in free air)						Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C & F (clipped direct, on tray or in free air)								
					Cables Touching			Cables Spaced*						Cables Touching, Trefoil			Cables Touching, Flat			Cables Spaced*, Flat		
1	2	3			4			5			6			7			8			9		
(mm²)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
1	44	44			44			44			38			38			38			38		
1.5	29	29			29			29			25			25			25			25		
2.5	18	18			18			18			15			15			15			15		
4	11	11			11			11			9.5			9.5			9.5			9.5		
6	7.3	7.3			7.3			7.3			6.4			6.4			6.4			6.4		
10	4.4	4.4			4.4			4.4			3.8			3.8			3.8			3.8		
16	2.8	2.8			2.8			2.8			2.4			2.4			2.4			2.4		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.75	1.80	0.33	1.80	1.75	0.20	1.75	1.75	0.29	1.80	1.50	0.29	1.55	1.50	0.175	1.50	1.50	0.25	1.55	1.50	0.32	1.55
35	1.25	1.30	0.31	1.30	1.25	0.195	1.25	1.25	0.28	1.30	1.10	0.27	1.10	1.10	0.170	1.10	1.10	0.24	1.10	1.10	0.32	1.15
50	0.93	0.95	0.30	1.00	0.93	0.190	0.95	0.93	0.28	0.97	0.81	0.26	0.85	0.80	0.165	0.82	0.80	0.24	0.84	0.80	0.32	0.86
70	0.63	0.65	0.29	0.72	0.63	0.185	0.66	0.63	0.27	0.69	0.56	0.25	0.61	0.55	0.160	0.57	0.55	0.24	0.60	0.55	0.31	0.63
95	0.46	0.49	0.28	0.56	0.47	0.180	0.50	0.47	0.27	0.54	0.42	0.24	0.48	0.41	0.155	0.43	0.41	0.23	0.47	0.40	0.31	0.51
120	0.36	0.39	0.27	0.47	0.37	0.175	0.41	0.37	0.26	0.45	0.33	0.23	0.41	0.32	0.150	0.36	0.32	0.23	0.40	0.32	0.30	0.44
150	0.29	0.31	0.27	0.41	0.30	0.175	0.34	0.29	0.26	0.39	0.27	0.23	0.36	0.26	0.150	0.30	0.26	0.23	0.34	0.26	0.30	0.40
185	0.23	0.25	0.27	0.37	0.24	0.170	0.29	0.24	0.26	0.35	0.22	0.23	0.32	0.21	0.145	0.26	0.21	0.22	0.31	0.21	0.30	0.36
240	0.180	0.195	0.26	0.33	0.185	0.165	0.25	0.185	0.25	0.31	0.17	0.23	0.29	0.160	0.145	0.22	0.160	0.22	0.27	0.160	0.29	0.34
300	0.145	0.160	0.26	0.31	0.150	0.165	0.22	0.150	0.25	0.29	0.14	0.23	0.27	0.130	0.140	0.190	0.130	0.22	0.25	0.130	0.29	0.32
400	0.105	0.130	0.26	0.29	0.120	0.160	0.20	0.115	0.25	0.27	0.12	0.22	0.25	0.105	0.140	0.175	0.105	0.21	0.24	0.100	0.29	0.31
500	0.086	0.110	0.26	0.28	0.098	0.155	0.185	0.093	0.24	0.26	0.10	0.22	0.25	0.086	0.135	0.160	0.086	0.21	0.23	0.081	0.29	0.30
630	0.068	0.094	0.25	0.27	0.081	0.155	0.175	0.076	0.24	0.25	0.08	0.22	0.24	0.072	0.135	0.150	0.072	0.21	0.22	0.066	0.28	0.29
800	0.053	-	-	-	0.068	0.150	0.165	0.061	0.24	0.25	-	-	-	0.060	0.130	0.145	0.060	0.21	0.22	0.053	0.28	0.29
1000	0.042	-	-	-	0.059	0.150	0.160	0.050	0.24	0.24	-	-	-	0.052	0.130	0.140	0.052	0.20	0.21	0.044	0.28	0.28

NOTE: *Spacings larger than one cable diameter will result in a larger voltage drop.

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X3
Multicore 70 ⁰C thermoplastic insulated and thermoplastic sheathed cables, non-armoured (COPPER CONDUCTORS)

Ambient temperature: 30 ⁰C
CURRENT-CARRYING CAPACITY (amperes): Conductor operating temperature:70 ⁰C

Conductor Cross-Sectional Area	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 E (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 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.	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.
1	2	3	4	5	6	7	8	9
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
1	11	10	13	11.5	15	13.5	17	14.5
1.5	14	13	16.5	15	19.5	17.5	22	18.5
2.5	18.5	17.5	23	20	27	24	30	25
4	25	23	30	27	36	32	40	34
6	32	29	38	34	46	41	51	43
10	43	39	52	46	63	57	70	60
16	57	52	69	62	85	76	94	80
25	75	68	90	80	112	96	119	101
35	92	83	111	99	138	119	148	126
50	110	99	133	118	168	144	180	153
70	139	125	168	149	213	184	232	196
95	167	150	201	179	258	223	282	238
120	192	172	232	206	299	259	328	276
150	219	196	258	225	344	299	379	319
185	248	223	294	255	392	341	434	364
240	291	261	344	297	461	403	514	430
300	334	298	394	339	530	464	593	497
400	-	-	470	402	634	557	715	597

*** With or without a protective conductor.**

NOTE: For cables having flexible conductors, see Table X17 for adjustment factors for current-carrying capacity and voltage drop.

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X4

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:70 ^{0}C

Conductor Cross-Sectional Area	Two-Core Cable, d.c.	Two-Core Cable, Single Phase a.c.			Three or Four-Core Cable, Three Phase a.c.		
1	2	3			4		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
1	44	44			38		
1.5	29	29			25		
2.5	18	18			15		
4	11	11			9.5		
6	7.3	7.3			6.4		
10	4.4	4.4			3.8		
16	2.8	2.8			2.4		
		r	x	z	r	x	z
25	1.75	1.75	0.170	1.75	1.50	0.145	1.50
35	1.25	1.25	0.165	1.25	1.10	0.145	1.10
50	0.93	0.93	0.165	0.94	0.80	0.140	0.81
70	0.63	0.63	0.160	0.65	0.55	0.140	0.57
95	0.46	0.47	0.155	0.50	0.41	0.135	0.43
120	0.36	0.38	0.155	0.41	0.33	0.135	0.35
150	0.29	0.30	0.155	0.34	0.26	0.130	0.29
185	0.23	0.25	0.150	0.29	0.21	0.130	0.25
240	0.180	0.190	0.150	0.24	0.165	0.130	0.21
300	0.145	0.155	0.145	0.21	0.135	0.130	0.185
400	0.105	0.115	0.145	0.185	0.100	0.125	0.160

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X5
Single-core armoured 70 ⁰C thermoplastic insulated cables (non-magnetic armour)
(COPPER CONDUCTORS)

Ambient temperature:30 ⁰C
CURRENT-CARRYING CAPACITY (Amperes) Conductor operating temperature:70 ⁰C

Conductor Cross-Sectional Area	Reference Method C (clipped direct)		Reference Method F (in free air or on a perforated cable tray, horizontal or vertical)								
	Touching		Touching			Spaced by one cable diameter					
	2 Cables, Single - Phase a.c. or d.c. Flat	3 or 4 Cables, Three - Phase a.c. Flat	2 Cables, Single - Phase a.c. or d.c. Flat	3 Cables, Three - Phase a.c. Flat	3 Cables, Three - Phase a.c. Ttrefoil	2 Cables, d.c.		2 Cables, Single - Phase a.c.		3 or 4 Cables, Three-Phase a.c.	
						Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
50	193	179	205	189	181	229	216	229	217	230	212
70	245	225	259	238	231	294	279	287	272	286	263
95	296	269	313	285	280	357	340	349	332	338	313
120	342	309	360	327	324	415	396	401	383	385	357
150	393	352	413	373	373	479	458	449	429	436	405
185	447	399	469	422	425	548	525	511	489	490	456
240	525	465	550	492	501	648	622	593	568	566	528
300	594	515	624	547	567	748	719	668	640	616	578
400	687	575	723	618	657	885	851	737	707	674	632
500	763	622	805	673	731	1035	997	810	777	721	676
630	843	669	891	728	809	1218	1174	893	856	771	723
800	919	710	976	777	886	1441	1390	943	905	824	772
1000	975	737	1041	808	945	1685	1627	1008	967	872	816

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X6

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:70 ^{0}C

Conductor Cross - Sectional Area	2 Cables d.c.	Reference Methods C & F (clipped direct, on tray or free air)														
		2 Cables, Single-Phase a.c.						3 or 4 Cables, Three-Phase a.c.								
		Touching			Spaced*			Trefoil and Touching			Flat and Touching			Flat and Spaced*		
1	2	3			4			5			6			7		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	0.93	0.93	0.22	0.95	0.92	0.30	0.97	0.80	0.190	0.82	0.79	0.26	0.84	0.79	0.34	0.86
70	0.63	0.64	0.21	0.68	0.66	0.29	0.72	0.56	0.180	0.58	0.57	0.25	0.62	0.59	0.32	0.68
95	0.46	0.48	0.20	0.52	0.51	0.28	0.58	0.42	0.175	0.45	0.44	0.25	0.50	0.47	0.31	0.57
120	0.36	0.39	0.195	0.43	0.42	0.28	0.50	0.33	0.170	0.37	0.36	0.24	0.43	0.40	0.30	0.50
150	0.29	0.31	0.190	0.37	0.34	0.27	0.44	0.27	0.165	0.32	0.30	0.24	0.38	0.34	0.30	0.45
185	0.23	0.26	0.190	0.32	0.29	0.27	0.39	0.22	0.160	0.27	0.25	0.23	0.34	0.29	0.29	0.41
240	0.180	0.20	0.180	0.27	0.23	0.26	0.35	0.175	0.160	0.23	0.20	0.23	0.30	0.24	0.28	0.37
300	0.145	0.160	0.180	0.24	0.190	0.26	0.32	0.140	0.155	0.21	0.165	0.22	0.28	0.20	0.28	0.34
400	0.105	0.140	0.175	0.22	0.180	0.24	0.30	0.120	0.130	0.195	0.160	0.21	0.26	0.21	0.25	0.32
500	0.086	0.120	0.170	0.21	0.165	0.23	0.29	0.105	0.145	0.180	0.145	0.20	0.25	0.190	0.24	0.30
630	0.068	0.105	0.165	0.195	0.150	0.22	0.27	0.091	0.145	0.170	0.135	0.195	0.23	0.175	0.22	0.28
800	0.053	0.095	0.160	0.185	0.145	0.21	0.25	0.082	0.140	0.160	0.125	0.180	0.22	0.170	0.195	0.26
1000	0.042	0.091	0.155	0.180	0.140	0.190	0.24	0.079	0.135	0.155	0.125	0.165	0.21	0.165	0.170	0.24

NOTE: *Spacings larger than one cable diameter will result in a larger voltage drop.

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X7
Multicore armoured 70 ^{0}C thermoplastic insulated cables
(COPPER CONDUCTORS)

Ambient temperature:30 ^{0}C
Ground ambient temperature:20 ^{0}C
Conductor operating temperature:70 ^{0}C

CURRENT-CARRYING CAPACITY (Amperes)

Conductor Cross-Sectional Area	Reference Method C (clipped direct)		Reference Method E (in free air or on a perforated cable tray etc. horizontal or vertical)		Reference Method D (direct in ground or in ducting in ground, in or around buildings)	
	1 Two-Core Cable, Single-Phase a.c. or d.c.	1 Three- or Four- Core Cable, Three Phase a.c.	1 Two- Core Cable, Single-Phase a.c. or d.c.	1 Three-or Four-Core Cable, Three Phase a.c.	1 Two-Core Cable, Single-Phase a.c. or d.c.	1 Three-or Four-Core Cable, Three Phase a.c.
1	2	3	4	5	6	7
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)
1.5	21	18	22	19	22	18
2.5	28	25	31	26	29	24
4	38	33	41	35	37	30
6	49	42	53	45	46	38
10	67	58	72	62	60	50
16	89	77	97	83	78	64
25	118	102	128	110	99	82
35	145	125	157	135	119	98
50	175	151	190	163	140	116
70	222	192	241	207	173	143
95	269	231	291	251	204	169
120	310	267	336	290	231	192
150	356	306	386	332	261	217
185	405	348	439	378	292	243
240	476	409	516	445	336	280
300	547	469	592	510	379	316
400	621	540	683	590	-	-

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X8

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:70 ^{0}C

Conductor Cross-Sectional Area	Two-Core Cable, d.c.	Two-Core Cable, Single-Phase a.c.			Three or Four Core Cable, Three-Phase a.c.		
1	2	3			4		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
1.5	29	29			25		
2.5	18	18			15		
4	11	11			9.5		
6	7.3	7.3			6.4		
10	4.4	4.4			3.8		
16	2.8	2.8			2.4		
		r	x	z	r	x	z
25	1.75	1.75	0.170	1.75	1.50	0.145	1.50
35	1.25	1.25	0.165	1.25	1.10	0.145	1.10
50	0.93	0.93	0.165	0.94	0.80	0.140	0.81
70	0.63	0.63	0.160	0.65	0.55	0.140	0.57
95	0.46	0.47	0.155	0.50	0.41	0.135	0.43
120	0.36	0.38	0.155	0.41	0.33	0.135	0.35
150	0.29	0.30	0.155	0.34	0.26	0.130	0.29
185	0.23	0.25	0.150	0.29	0.21	0.130	0.25
240	0.180	0.190	0.150	0.24	0.165	0.130	0.21
300	0.145	0.155	0.145	0.21	0.135	0.130	0.185
400	0.105	0.115	0.145	0.185	0.100	0.125	0.160

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X9
Single -core 90 ⁰C thermosetting insulated cables, non-armoured, with or without sheath (COPPER CONDUCTORS)

Ambient temperature:30 ⁰C
CURRENT-CARRYING CAPACITY (Amperes): Conductor operating temperature:90 ⁰C

Conductor Cross-Sectional Area	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 etc. horizontal or vertical etc.) touching			Reference Method G (in free air) spaced by one cable 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	
										Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
1	14	13	17	15	19	17.5	-	-	-	-	-
1.5	19	17	23	20	25	23	-	-	-	-	-
2.5	26	23	31	28	34	31	-	-	-	-	-
4	35	31	42	37	46	41	-	-	-	-	-
6	45	40	54	48	59	54	-	-	-	-	-
10	61	54	75	66	81	74	-	-	-	-	-
16	81	73	100	88	109	99	-	-	-	-	-
25	106	95	133	117	143	130	161	141	135	182	161
35	131	117	164	144	176	161	200	176	169	226	201
50	158	141	198	175	228	209	242	216	207	275	246
70	200	179	253	222	293	268	310	279	268	353	318
95	241	216	306	269	355	326	377	342	328	430	389
120	278	249	354	312	413	379	437	400	383	500	454
150	318	285	393	342	476	436	504	464	444	577	527
185	362	324	449	384	545	500	575	533	510	661	605
240	424	380	528	450	644	590	679	634	607	781	719
300	486	435	603	512	743	681	783	736	703	902	833
400	-	-	683	584	868	793	940	868	823	1085	1008
500	-	-	783	666	990	904	1083	998	946	1253	1169
630	-	-	900	764	1130	1033	1254	1151	1088	1454	1362
800	-	-	-	-	1288	1179	1358	1275	1214	1581	1485
1000	-	-	-	-	1443	1323	1520	1436	1349	1775	1671

NOTES:
1. Where it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory.
2. Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group.
3. For cables having flexible conductors see Table X17 for adjustment factors for current-carrying capacity and voltage drop.

8.1 Technical Data for Cable Selection (For Copper Cables) - (Continued)

VOLTAGE DROP (per ampere per meter):

Table X10

Conductor operating temperature:90 ^{0}C

Conductor Cross-Sectonal Area	2 cables, d.c.	2 Cables, Single-Phase a.c.									3 or 4 Cables, Three-Phase a.c.											
		Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C,F & G (clipped direct or on tray or in free air)						Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C,F & G (clipped direct, on tray or in free air)								
					Cable Touching			Cables Spaced*						Cables Touching, Trefoil			Cables Touching, Flat			Cables Spaced*,Flat		
1	2	3			4			5			6			7			8			9		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
1	46	46			46			46			40			40			40			40		
1.5	31	31			31			31			27			27			27			27		
2.5	19	19			19			19			16			16			16			16		
4	12	12			12			12			10			10			10			10		
6	7.9	7.9			7.9			7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4.7			4.0			4.0			4.0			4.0		
16	2.9	2.9			2.9			2.9			2.5			2.5			2.5			2.5		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.190	1.85	1.85	0.28	1.85	1.60	0.27	1.65	1.60	0.165	1.60	1.60	0.190	1.60	1.60	0.27	1.65
35	1.35	1.35	0.29	1.35	1.35	0.180	1.35	1.35	0.27	1.35	1.15	0.25	1.15	1.15	0.155	1.15	1.15	0.180	1.15	1.15	0.26	1.20
50	0.99	1.00	0.29	1.05	0.99	0.180	1.00	0.99	0.27	1.00	0.87	0.25	0.90	0.86	0.155	0.87	0.86	0.180	0.87	0.86	0.26	0.89
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.68	0.26	0.73	0.60	0.24	0.65	0.59	0.150	0.61	0.59	0.175	0.62	0.59	0.25	0.65
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.49	0.26	0.56	0.44	0.23	0.50	0.43	0.145	0.45	0.43	0.170	0.46	0.43	0.25	0.49
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.39	0.25	0.47	0.35	0.23	0.42	0.34	0.140	0.37	0.34	0.165	0.38	0.34	0.24	0.42
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.32	0.25	0.41	0.29	0.23	0.37	0.28	0.140	0.31	0.28	0.165	0.32	0.28	0.24	0.37
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.25	0.25	0.36	0.23	0.23	0.32	0.22	0.140	0.26	0.22	0.165	0.28	0.22	0.24	0.33
240	0.190	0.21	0.26	0.33	0.20	0.160	0.25	0.195	0.25	0.31	0.185	0.22	0.29	0.170	0.140	0.22	0.170	0.165	0.24	0.170	0.24	0.29
300	0.155	0.175	0.25	0.31	0.160	0.160	0.22	0.155	0.25	0.29	0.150	0.22	0.27	0.140	0.140	0.195	0.135	0.160	0.21	0.135	0.24	0.27
400	0.120	0.140	0.25	0.29	0.130	0.155	0.20	0.125	0.24	0.27	0.125	0.22	0.25	0.110	0.135	0.175	0.110	0.160	0.195	0.110	0.24	0.26
500	0.093	0.120	0.25	0.28	0.105	0.155	0.185	0.098	0.24	0.26	0.100	0.22	0.24	0.090	0.135	0.160	0.088	0.160	0.180	0.085	0.24	0.25
630	0.072	0.100	0.25	0.27	0.086	0.155	0.175	0.078	0.24	0.25	0.088	0.21	0.23	0.074	0.135	0.150	0.071	0.160	0.170	0.068	0.23	0.24
800	0.056		-		0.072	0.150	0.170	0.064	0.24	0.25		-		0.062	0.130	0.145	0.059	0.155	0.165	0.055	0.23	0.24
1000	0.045		-		0.063	0.150	0.165	0.054	0.24	0.24		-		0.055	0.130	0.140	0.050	0.155	0.165	0.047	0.23	0.24

NOTE: *Spacings larger than one cable diameter will result in a larger voltage drop.

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X11
Multicore 90 ^{0}C thermosetting insulated and thermoplastic sheathed cables, non-armoured (COPPER CONDUCTORS)

Ambient temperature:30 ^{0}C
CURRENT-CARRYING CAPACITY (Amperes) Conductor operating temperature:90 ^{0}C

Conductor Cross-Sectional Area	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 E (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-or Four-Core Cable*, Three-Phase a.c.	1 Two -Core Cable*, Single-Phase a.c. or d.c.	1 Three-or Four-Core Cable*, Three-Phase a.c.	1 Two -Core Cable*, Single-Phase a.c. or d.c.	1 Three-or Four-Core Cable*, Three-Phase a.c.	1 Two -Core Cable*, Single-Phase a.c. or d.c.	1 Three-or Four-Core Cable*, Three-Phase a.c.
1	2	3	4	5	6	7	8	9
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
1	14.5	13	17	15	19	17	21	18
1.5	18.5	16.5	22	19.5	24	22	26	23
2.5	25	22	30	26	33	30	36	32
4	33	30	40	35	45	40	49	42
6	42	38	51	44	58	52	63	54
10	57	51	69	60	80	71	86	75
16	76	68	91	80	107	96	115	100
25	99	89	119	105	138	119	149	127
35	121	109	146	128	171	147	185	158
50	145	130	175	154	209	179	225	192
70	183	164	221	194	269	229	289	246
95	220	197	265	233	328	278	352	298
120	253	227	305	268	382	322	410	346
150	290	259	334	300	441	371	473	399
185	329	295	384	340	506	424	542	456
240	386	346	459	398	599	500	641	538
300	442	396	532	455	693	576	741	621
400	-	-	625	536	803	667	865	741

* With or without a protective conductor.

NOTES:

1. Where it is intended to connect the cables in this ttable to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory.

2. Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group.

3. For cables having flexible conductors see Table X17 for adjustment factors for current-carrying capacity and voltage drop.

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X12

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:90 ^{0}C

Conductor Cross-Sectional Area	Two-Core Cable, d.c.	Two-Core Cable, Single-Phase, a.c.			Three or Four-Core Cable, Three-Phase a.c.		
1	2	3			4		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
1	46	46			40		
1.5	31	31			27		
2.5	19	19			16		
4	12	12			10		
6	7.9	7.9			6.8		
10	4.7	4.7			4.0		
16	2.9	2.9			2.5		
		r	x	z	r	x	z
25	1.85	1.85	0.160	1.90	1.60	0.140	1.65
35	1.35	1.35	0.155	1.35	1.15	0.135	1.15
50	0.98	0.99	0.155	1.00	0.86	0.135	0.87
70	0.67	0.67	0.150	0.69	0.59	0.130	0.60
95	0.49	0.50	0.150	0.52	0.43	0.130	0.45
120	0.39	0.40	0.145	0.42	0.34	0.130	0.37
150	0.31	0.32	0.145	0.35	0.28	0.125	0.30
185	0.25	0.26	0.145	0.29	0.22	0.125	0.26
240	0.195	0.200	0.140	0.24	0.175	0.125	0.21
300	0.155	0.160	0.140	0.21	0.140	0.120	0.185
400	0.120	0.130	0.140	0.190	0.115	0.120	0.165

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X13
Single-core armoured 90 ⁰C thermosetting insulated cables (non-magnetic armour)
(COPPER CONDUCTORS)

CURRENT-CARRYING CAPACITY (Amperes)

Conductor Cross - Sectional Area	Reference Method C (clipped direct)		Reference Method F (in free air or on a perforated cable tray, horizontal or vertical)								
	Touching		Touching		Spaced by one Cable Diameter						
	2 Cables, Single-Phase a.c. or d.c. Flat	3 or 4 Cables, Three-Phase a.c. Flat	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, d.c.		2 Cables, Single-Phase a.c.		3 or 4 Cables, Three Phase a.c.	
						Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
50	237	220	253	232	222	284	270	282	266	288	266
70	303	277	322	293	285	356	349	357	337	358	331
95	367	333	389	352	346	446	426	436	412	425	393
120	425	383	449	405	402	519	497	504	477	485	449
150	488	437	516	462	463	600	575	566	539	549	510
185	557	496	587	524	529	688	660	643	614	618	574
240	656	579	689	612	625	815	782	749	714	715	666
300	755	662	792	700	720	943	906	842	805	810	755
400	853	717	899	767	815	1137	1094	929	889	848	797
500	962	791	1016	851	918	1314	1266	1032	989	923	871
630	1082	861	1146	935	1027	1528	1474	1139	1092	992	940
800	1170	904	1246	987	1119	1809	1744	1204	1155	1042	978
1000	1261	961	1345	1055	1214	2100	2026	1289	1238	1110	1041

NOTES:

1. Where it is intended to connect the cables in this table to equipment or accessories design to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory.

2. Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group.

8.1 Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X14

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:90 ^{0}C

Conductor Cross - Sectional Area	2 Cables d.c.	Reference Methods C & F (clipped direct, on tray or in free air)														
		2 Cables, Single-Phase a.c.						3 or 4 Cables, Three-Phase a.c.								
		Touching			Spaced *			Trefoil and Touching			Flat and Touching			Flat and Spaced*		
1	2	3			4			5			6			7		
(mm^2)	(mV/A /m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	0.98	0.99	0.21	1.00	0.98	0.29	1.00	0.86	0.180	0.87	0.84	0.25	0.88	0.84	0.33	0.90
70	0.67	0.68	0.200	0.71	0.69	0.29	0.75	0.59	0.170	0.62	0.60	0.25	0.65	0.62	0.32	0.70
95	0.49	0.51	0.195	0.55	0.53	0.28	0.60	0.44	0.170	0.47	0.46	0.24	0.52	0.49	0.31	0.58
120	0.39	0.41	0.190	0.45	0.43	0.27	0.51	0.35	0.165	0.39	0.38	0.24	0.44	0.41	0.30	0.51
150	0.31	0.33	0.185	0.38	0.36	0.27	0.45	0.29	0.160	0.33	0.31	0.23	0.39	0.34	0.29	0.45
185	0.25	0.27	0.185	0.33	0.30	0.26	0.40	0.23	0.160	0.28	0.26	0.23	0.34	0.29	0.29	0.41
240	0.195	0.21	0.180	0.28	0.24	0.26	0.35	0.180	0.155	0.24	0.21	0.22	0.30	0.24	0.28	0.37
300	0.155	0.17	0.175	0.25	0.195	0.25	0.32	0.145	0.150	0.21	0.170	0.22	0.28	0.20	0.27	0.34
400	0.115	0.145	0.170	0.22	0.180	0.24	0.30	0.125	0.150	0.195	0.160	0.21	0.27	0.20	0.27	0.33
500	0.093	0.125	0.170	0.21	0.165	0.24	0.29	0.105	0.145	0.180	0.145	0.20	0.25	0.190	0.24	0.31
630	0.073	0.105	0.165	0.195	0.150	0.23	0.27	0.092	0.145	0.170	0.135	0.195	0.24	0.175	0.23	0.29
800	0.056	0.090	0.160	0.190	0.145	0.23	0.27	0.086	0.140	0.165	0.130	0.180	0.23	0.175	0.195	0.26
1000	0.045	0.092	0.155	0.180	0.140	0.21	0.25	0.080	0.135	0.155	0.125	0.170	0.21	0.165	0.180	0.24

NOTE: * Spacings larger than one cable diameter will result in a larger voltage drop.

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X15
Multicore-armoured 90 ⁰C thermosetting insulated cables
(COPPER CONDUCTORS)

Ambient temperature:30 ⁰C
Ground ambient temperature:20 ⁰C
Conductor operating temperature:90 ⁰C

CURRENT-CARRYING CAPACITY (Amperes)

Conductor Cross-Sectional Area	Reference Method C (clipped direct)		Reference Method E (in free air or on a perforated cable tray etc.,horizontal or vertical)		Reference Method D (direct in ground or in ducting in ground in or around buildings)	
	1 Two-Core Cable, Single-Phase a.c. or d.c.	1 Three or 1 Four- Core Cable, Three-Phase a.c.	1 Two-Core Cable, Single-Phase a.c. or d.c.	1 Three or 1 Four-Core Cable, Three-Phase a.c	1 Two-Core Cable, Single-Phase a.c. or d.c.	
1	2	3	4	5	6	7
(mm²)	(A)	(A)	(A)	(A)	(A)	(A)
1.5	27	23	29	25	25	21
2.5	36	31	39	33	33	28
4	49	42	52	44	43	36
6	62	53	66	56	53	44
10	85	73	90	78	71	58
16	110	94	115	99	91	75
25	146	124	152	131	116	96
35	180	154	188	162	139	115
50	219	187	228	197	164	135
70	279	238	291	251	203	167
95	338	289	354	304	239	197
120	392	335	410	353	271	223
150	451	386	472	406	306	251
185	515	441	539	463	343	281
240	607	520	636	546	395	324
300	698	599	732	628	446	365
400	787	673	847	728	-	-

NOTES:

1. Where it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory.

2. Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group.

8.1
Technical Data for Cable Selection (For Copper Cables) - (Continued)

Table X16

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:90 ^{0}C

Conductor Cross-Sectional Area	Two-Core Cable, d.c.	Two-Core Cable, Single-Phase a.c.			Three or Four-Core Cable, Three-Phase a.c.		
1	2	3			4		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
1.5	31	31			27		
2.5	19	19			16		
4	12	12			10		
6	7.9	7.9			6.8		
10	4.7	4.7			4.0		
16	2.9	2.9			2.5		
		r	x	z	r	x	z
25	1.85	1.85	0.160	1.90	1.60	0.140	1.65
35	1.35	1.35	0.155	1.35	1.15	0.135	1.15
50	0.98	0.99	0.155	1.00	0.86	0.135	0.87
70	0.67	0.67	0.150	0.69	0.59	0.130	0.60
95	0.49	0.50	0.150	0.52	0.43	0.130	0.45
120	0.39	0.40	0.145	0.42	0.34	0.130	0.37
150	0.31	0.32	0.145	0.35	0.28	0.125	0.30
185	0.25	0.26	0.145	0.29	0.22	0.125	0.26
240	0.195	0.20	0.140	0.24	0.175	0.125	0.21
300	0.155	0.16	0.140	0.21	0.140	0.120	0.185
400	0.120	0.13	0.140	0.19	0.115	0.120	0.165

Table X17

NOTE: The current carrying capacities and voltage drops tabulated above are based on cables having solid (class 1 or class 2) conductors.To obtain current carrying capacities and voltage drops for flexible conductors (class 5), the tabulated values are multiplied by the following factors.

Cable Size	Current Carrying Capacity	Voltage Drop
≤ 16mm^2	0.95	1.10
≥ 25mm^2	0.97	1.06

8.2 Technical Data for Cable Selection (For Aluminium Cables)

Table Y1

Single-core 70 ⁰C thermoplastic insulated cables, non-armoured, with or without sheath (ALUMINIUM CONDUCTORS)

CURRENT-CARRYING CAPACITY (Amperes):

Ambient temperature:30 ⁰C
Conductor operating temperature:70 ⁰C

Conductor Cross-Sectional Area	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 on a perforated cable tray, horizontal or vertical)				
							Touching			Spaced 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	
										Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
50	93	84	118	104	125	110	149	133	128	169	152
70	118	107	150	133	160	140	192	173	166	217	196
95	142	129	181	161	195	170	235	212	203	265	241
120	164	149	210	186	226	197	273	247	237	308	282
150	189	170	234	204	261	227	316	287	274	356	327
185	215	194	266	230	298	259	363	330	316	407	376
240	252	227	312	269	352	305	430	392	375	482	447
300	289	261	358	306	406	351	497	455	434	557	519
380	-	-	413	352	511	472	543	502	507	625	584
480	-	-	477	405	591	546	629	582	590	726	680
600	-	-	545	462	679	626	722	669	680	837	787
740	-	-	-	-	771	709	820	761	776	956	902
960	-	-	-	-	900	823	953	886	907	1125	1066
1200	-	-	-	-	1022	926	1073	999	1026	1293	1229

8.2 Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y2

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:70 ^{0}C

Conductor Cross-Sectional Area	2 Cables, d.c.	2 Cables, Single-Phase a.c.									3 or 4 Cables, Three -Phase a.c.											
		Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C & F (clipped direct, on tray or in free air)						Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C & F (clipped direct, on tray or in free air)								
					Cables Touching			Cables Spaced*						Cables Touching, Trefoil			Cables Touching, Flat			Cable Spaced*,Flat		
1	2	3			4			5			6			7			8			9		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	1.55	1.60	0.30	1.60	1.55	0.190	1.55	1.55	0.28	1.55	1.35	0.26	1.40	1.35	0.165	1.35	1.35	0.24	1.35	1.35	0.32	1.40
70	1.05	1.10	0.30	1.15	1.05	0.185	1.05	1.05	0.27	1.10	0.94	0.26	0.97	0.91	0.160	0.92	0.91	0.24	0.94	0.91	0.31	0.96
95	0.77	0.81	0.29	0.86	0.77	0.185	0.79	0.77	0.27	0.82	0.70	0.25	0.74	0.67	0.160	0.69	0.67	0.23	0.71	0.67	0.31	0.74
120	0.61	0.64	0.29	0.70	0.61	0.180	0.64	0.61	0.27	0.67	0.55	0.25	0.61	0.53	0.155	0.55	0.53	0.23	0.58	0.53	0.31	0.61
150	0.49	0.51	0.28	0.59	0.49	0.175	0.52	0.49	0.26	0.55	0.45	0.24	0.51	0.42	0.155	0.45	0.42	0.23	0.48	0.42	0.30	0.52
185	0.39	0.42	0.28	0.50	0.40	0.175	0.43	0.39	0.26	0.47	0.36	0.24	0.44	0.34	0.150	0.37	0.34	0.23	0.41	0.34	0.30	0.46
240	0.30	0.32	0.27	0.42	0.30	0.170	0.35	0.30	0.26	0.40	0.28	0.24	0.37	0.26	0.150	0.30	0.26	0.22	0.35	0.26	0.30	0.40
300	0.24	0.26	0.27	0.37	0.24	0.170	0.30	0.24	0.26	0.35	0.23	0.23	0.32	0.21	0.145	0.26	0.21	0.22	0.31	0.21	0.30	0.36
380	0.190	0.22	0.27	0.35	0.195	0.165	0.26	0.195	0.25	0.32	0.190	0.23	0.30	0.170	0.145	0.22	0.170	0.22	0.28	0.170	0.29	0.34
480	0.150	0.18	0.26	0.32	0.155	0.165	0.23	0.155	0.25	0.29	0.155	0.23	0.27	0.140	0.140	0.195	0.140	0.22	0.26	0.135	0.29	0.32
600	0.120	0.150	0.26	0.30	0.130	0.160	0.21	0.125	0.25	0.28	0.125	0.22	0.26	0.110	0.140	0.180	0.110	0.22	0.24	0.110	0.29	0.31
740	0.099	-	-	-	0.105	0.160	0.190	0.100	0.25	0.27	-	-	-	0.094	0.135	0.165	0.094	0.21	0.23	0.089	0.29	0.30
960	0.075	-	-	-	0.086	0.155	0.180	0.082	0.24	0.26	-	-	-	0.077	0.135	0.155	0.077	0.21	0.22	0.071	0.29	0.29
1200	0.060	-	-	-	0.074	0.155	0.170	0.068	0.24	0.25	-	-	-	0.066	0.135	0.150	0.066	0.21	0.22	0.059	0.28	0.29

NOTE: *Spacings larger than one cable diameter will result in a larger voltage drop.

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y3
Multi-core 70 °C thermoplastic insulated & thermoplastic sheathed cables, non-armoured (ALUMINIUM CONDUCTORS)

Ambient temperature:30 °C
CURRENT-CARRYING CAPACITY (Amperes): Conductor operating temperature:70 °C

Conductor Cross - Sectional Area	Reference Method A (enclosed in conduit in thermally insulating wall etc.)		Reference Method B (enclosed in conduit on wall or in trunking etc.)		Reference Method C (clipped direct)		Reference Method E (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 or Four-Core Cable, Three-Phase a.c.	1 Two-Core Cable, Single-Phase a.c. or d.c	1 Three or Four-Core Cable, Three-Phase a.c.	1 Two-Core Cable, Single-Phase a.c. or d.c	1 Three or Four-Core Cable, Three-Phase a.c.	1 Two-Core Cable, Single-Phase a.c. or d.c	1 Three or Four-Core Cable, Three-Phase a.c.
1	2	3	4	5	6	7	8	9
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
16	44	41	54	48	66	59	73	61
25	58	53	71	62	83	73	89	78
35	71	65	86	77	103	90	111	96
50	86	78	104	92	125	110	135	117
70	108	98	131	116	160	140	173	150
95	130	118	157	139	195	170	210	183
120	-	135	-	160	-	197	-	212
150	-	155	-	176	-	227	-	245
185	-	176	-	199	-	259	-	280
240	-	207	-	232	-	305	-	330
300	-	237	-	265	-	351	-	381

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y4

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:70 °C

Conductor Cross-Sectional Area	Two-Core Cable, d.c.	Two-Core Cable, Single-Phase a.c.			Three- or Four-Core Cable, Three-Phase a.c.		
1	2	3			4		
(mm²)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
16	4.5	4.5			3.9		
		r	x	z	r	x	z
25	2.9	2.9	0.175	2.9	2.5	0.150	2.5
35	2.1	2.1	0.170	2.1	1.80	0.150	1.80
50	1.55	1.55	0.170	1.55	1.35	0.145	1.35
70	1.05	1.05	0.165	1.05	0.90	0.140	0.92
95	0.77	0.77	0.160	0.79	0.67	0.140	0.68
120	-	-	-	-	0.53	0.135	0.55
150	-	-	-	-	0.42	0.135	0.44
185	-	-	-	-	0.34	0.135	0.37
240	-	-	-	-	0.26	0.130	0.30
300	-	-	-	-	0.21	0.130	0.25

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y5
Single-core armoured 70 °C thermoplastic insulated cables (non-magnetic armour)
(ALUMINIUM CONDUCTORS)

Ambient temperature:30 ^{0}C
Conductor operating temperature:70 ^{0}C

CURRENT-CARRYING CAPACITY (Amperes):

Conductor Cross-Sectional Area	Reference Method C (clipped direct)		Reference Method F (In free Air or on a Perforated Cable Tray, Horizontal or Vertical)								
	Touching		Touching			Spaced by one Cable Diameter					
	2 Cables, Single-Phase a.c. or d.c Flat	3 or 4 Cables, Three-Phase a.c. Flat	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, d.c.		2 Cables, Single-Phase a.c.		3 or 4 Cables, Three-Phase a.c.	
						Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
50	143	133	152	141	131	167	157	168	159	169	155
70	183	168	194	178	168	214	202	212	200	213	196
95	221	202	234	214	205	261	247	259	245	255	236
120	255	233	270	246	238	303	288	299	285	293	272
150	294	267	310	282	275	349	333	340	323	335	312
185	334	303	352	319	315	400	382	389	371	379	354
240	393	354	413	374	372	472	452	457	437	443	415
300	452	405	474	427	430	545	523	520	498	505	475
380	518	452	543	479	497	638	613	583	559	551	518
480	586	501	616	534	568	742	715	655	629	604	568
600	658	550	692	589	642	859	828	724	696	656	618
740	728	596	769	642	715	986	952	802	770	707	666
960	819	651	868	706	808	1171	1133	866	832	770	726
1200	893	692	952	756	880	1360	1317	938	902	822	774

8.2 Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y6

VOLTAGE DROP (per ampere per meter):

Conductor operating temperature:70 ^{0}C

Conductor Cross-Section Area	2 Cables, d.c.	Reference Methods C & F (clipped direct, on tray or in free air)														
		2 Cables, Single-Phase a.c.						3 or 4 Cables, Three -Phase a.c.								
		Touching			Spaced*			Trefoil and Touching			Flat and Touching			Flat and Spaced*		
1	2	3			4			5			6			7		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	1.55	1.55	0.23	1.55	1.55	0.31	1.55	1.35	0.195	1.35	1.35	0.27	1.35	1.30	0.34	1.35
70	1.05	1.05	0.22	1.10	1.05	0.30	1.10	0.92	0.190	0.93	0.93	0.26	0.96	0.95	0.33	1.00
95	0.77	0.78	0.21	0.81	0.81	0.29	0.86	0.68	0.185	0.70	0.70	0.25	0.75	0.73	0.32	0.80
120	0.61	0.62	0.21	0.66	0.65	0.29	0.71	0.54	0.180	0.57	0.57	0.25	0.62	0.60	0.32	0.68
150	0.49	0.50	0.20	0.54	0.53	0.28	0.60	0.44	0.175	0.47	0.46	0.24	0.52	0.50	0.31	0.58
185	0.39	0.41	0.195	0.45	0.44	0.28	0.52	0.35	0.170	0.39	0.38	0.24	0.45	0.42	0.30	0.51
240	0.30	0.32	0.190	0.37	0.34	0.27	0.44	0.28	0.165	0.32	0.30	0.23	0.38	0.33	0.29	0.44
300	0.24	0.26	0.185	0.32	0.28	0.26	0.39	0.22	0.160	0.27	0.24	0.23	0.34	0.28	0.29	0.40
380	0.190	0.22	0.185	0.28	0.26	0.25	0.36	0.185	0.155	0.24	0.22	0.22	0.32	0.27	0.26	0.38
480	0.150	0.180	0.180	0.25	0.22	0.25	0.33	0.155	0.155	0.22	0.195	0.22	0.29	0.24	0.25	0.35
600	0.120	0.150	0.175	0.23	0.195	0.24	0.31	0.130	0.150	0.200	0.170	0.21	0.27	0.21	0.24	0.32
740	0.097	0.135	0.170	0.22	0.180	0.23	0.29	0.115	0.145	0.185	0.160	0.20	0.26	0.200	0.22	0.30
960	0.075	0.115	0.160	0.200	0.165	0.21	0.27	0.100	0.140	0.175	0.150	0.185	0.24	0.190	0.195	0.27
1200	0.060	0.110	0.155	0.190	0.160	0.180	0.24	0.094	0.140	0.170	0.145	0.160	0.22	0.185	0.165	0.25

NOTE: *Spacings larger than one cable diameter will result in a larger voltage drop.

sierra cables
733 1143 1186 750

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y7
Multi-core armoured 70 °C thermoplastic insulated cables.
(ALUMINIUM CONDUCTORS)

Ambient temperature:30 ^{0}C
Ground ambient temperature: 20°C
Conductor operating temperature:70 ^{0}C

CURRENT-CARRYING CAPACITY (Amperes):

Conductor Cross - Sectional Area	Reference Method C (clipped direct)		Reference Method E (in free air or on a perforated cable tray etc, horizontal or vertical)		Reference Method D (direct in ground or in ducting in ground, in or around buildings)	
	1 Two-Core Cable, Single-Phase a.c. or d.c.	1 Three-or 1 Four-Core Cable, Three-Phase a.c.	1 Two- Core Cable, Single-Phase a.c. or d.c.	1 Three-or 1 Four-Core Cable, Three-Phase a.c.	1 Two- Core Cable, Single-Phase a.c. or d.c.	1 Three-or 1 Four-Core Cable, Three-Phase a.c.
1	2	3	4	5	6	7
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)
16	68	58	71	61		
25	89	76	94	80	77	64
35	109	94	115	99	93	77
50	131	113	139	119	109	91
70	165	143	175	151	135	112
95	199	174	211	186	159	132
120	-	202	-	216	-	150
150	-	232	-	250	-	169
185	-	265	-	287	-	190
240	-	312	-	342	-	218
300	-	360	-	399	-	247

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y8

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:70 ^{0}C

Conductor Cross-Sectional Area	Two-Core Cable, d.c.	Two-Core Cable, Single-Phase a.c.			Three- or Four-Core Cable, Three-Phase a.c.		
1	2	3			4		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
16	4.5	4.5			3.9		
		r	x	z	r	x	z
25	2.9	2.9	0.175	2.9	2.5	0.150	2.5
35	2.1	2.1	0.170	2.1	1.80	0.150	1.80
50	1.55	1.55	0.170	1.55	1.35	0.145	1.35
70	1.05	1.05	0.165	1.05	0.90	0.140	0.92
95	0.77	0.77	0.160	0.79	0.67	0.140	0.68
120	-	-	-	-	0.53	0.135	0.55
150	-	-	-	-	0.42	0.135	0.44
185	-	-	-	-	0.34	0.135	0.37
240	-	-	-	-	0.26	0.130	0.30
300	-	-	-	-	0.21	0.130	0.25

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y9
Single-core 90 °C thermosetting insulated cables, non-armoured with or without sheath (ALUMINIUM CONDUCTORS)

Ambient temperature:30 °C
CURRENT-CARRYING CAPACITY (Amperes): Conductor operating temperature:90 °C

Conductor Cross - Sectional Area	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 etc.)			Reference Method G (in free air)	
							Touching			Spaced by one Cable 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	
										Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm²)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
50	125	113	157	140	154	136	184	165	159	210	188
70	158	142	200	179	198	174	237	215	206	271	244
95	191	171	242	217	241	211	289	264	253	332	300
120	220	197	281	251	280	245	337	308	296	387	351
150	253	226	307	267	324	283	389	358	343	448	408
185	288	256	351	300	371	323	447	413	395	515	470
240	338	300	412	351	439	382	530	492	471	611	561
300	387	344	471	402	508	440	613	571	544	708	652
380	-	-	-	-	658	594	679	628	638	798	742
480	-	-	-	-	765	692	786	728	743	927	865
600	-	-	-	-	871	791	903	836	849	1058	990
740	-	-	-	-	1001	911	1025	951	979	1218	1143
960	-	-	-	-	1176	1072	1191	1108	1151	1440	1355
1200	-	-	-	-	1333	1217	1341	1249	1307	1643	1550

NOTES:

1. Where it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory.

2. Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group.

8.2 Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y10

VOLTAGE DROP (per ampere per meter): Conductor operating temperature:90 ^{0}C

Conductor Cross-Section Area	2 Cables, d.c.	2 Cables, Single-Phase a.c.									3 or 4 cables, three -phase a.c.											
		Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C,F & G (clipped direct, on tray or in free air)						Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C & F (clipped direct, on tray or in free air)								
					Cables touching			Cables spaced*						Cables Touching, Trefoil			Cables Touching, Flat			Cable Spaced*,Flat		
1	2	3			4			5			6			7			8			9		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	1.65	1.70	0.30	1.72	1.65	0.190	1.66	1.65	0.28	1.68	1.44	0.26	1.46	1.44	0.165	1.45	1.44	0.24	1.46	1.44	0.32	1.48
70	1.13	1.17	0.30	1.21	1.12	0.185	1.14	1.12	0.27	1.15	1.00	0.26	1.04	0.97	0.160	0.98	0.97	0.24	1.00	0.97	0.31	1.02
95	0.82	0.86	0.29	0.91	0.82	0.185	0.84	0.82	0.27	0.94	0.75	0.25	0.79	0.71	0.160	0.73	0.71	0.23	0.75	0.71	0.31	0.78
120	0.65	0.68	0.29	0.74	0.65	0.180	0.67	0.65	0.27	0.70	0.59	0.25	0.64	0.57	0.155	0.59	0.57	0.23	0.61	0.57	0.31	0.64
150	0.53	0.54	0.28	0.61	0.52	0.175	0.55	0.52	0.26	0.58	0.48	0.24	0.54	0.45	0.155	0.47	0.45	0.23	0.50	0.45	0.30	0.54
185	0.42	0.45	0.28	0.53	0.43	0.175	0.46	0.42	0.26	0.49	0.38	0.24	0.45	0.36	0.150	0.39	0.36	0.23	0.43	0.36	0.30	0.47
240	0.32	0.34	0.27	0.43	0.32	0.170	0.36	0.32	0.26	0.41	0.30	0.24	0.38	0.28	0.150	0.32	0.28	0.22	0.35	0.28	0.30	0.41
300	0.26	0.28	0.27	0.38	0.26	0.170	0.31	0.26	0.26	0.36	0.25	0.23	0.34	0.22	0.145	0.27	0.22	0.22	0.31	0.22	0.30	0.37
380	0.20	-	-	-	0.21	0.165	0.27	0.21	0.25	0.33	0.20	0.23	0.31	0.180	0.145	0.23	0.180	0.22	0.28	0.180	0.29	0.34
480	0.160	-	-	-	0.170	0.165	0.23	0.165	0.25	0.30	0.165	0.23	0.28	0.150	0.140	0.20	0.150	0.22	0.27	0.145	0.29	0.32
600	0.130	-	-	-	0.140	0.160	0.21	0.135	0.25	0.28	0.135	0.22	0.26	0.120	0.140	0.185	0.120	0.22	0.25	0.120	0.29	0.31
740	0.105	-	-	-	0.115	0.160	0.19	0.110	0.25	0.27	-	-	-	0.100	0.135	0.170	0.100	0.21	0.23	0.095	0.29	0.30
960	0.080	-	-	-	0.092	0.155	0.18	0.087	0.24	0.26	-	-	-	0.082	0.135	0.160	0.082	0.21	0.23	0.076	0.29	0.30
1200	0.064	-	-	-	0.079	0.155	0.17	0.073	0.24	0.25	-	-	-	0.070	0.135	0.150	0.070	0.21	0.22	0.063	0.28	0.29

NOTE: *Spacings larger than one cable diameter will result in a larger voltage drop.

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y11
Multi-core 90 °C thermosetting insulated & thermoplastic sheathed cables, non-armoured (ALUMINIUM CONDUCTORS)

Ambient temperature:30 ^{0}C
CURRENT-CARRYING CAPACITY (Amperes): Conductor operating temperature:90 ^{0}C

Conductor Cross-Sectional Area	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 E (in free air on a perforated cable tray etc, horizontal or vertical)	
	1 Two-core Cable, Single-Phase a.c. or d.c	1 Three or Four-Core Cable, Three-Phase a.c.	1 Two-Core Cable, Single-Phase a.c. or d.c	1 Three or Four-Core Cable, Three-Phase a.c.	1 Two- Core Cable, Single-Phase a.c. or d.c	1 Three or Four-Core Cable, Three-Phase a.c.	1 Two- Core Cable, Single-Phase a.c. or d.c	1 Three or Four-Core Cable, Three-Phase a.c.
1	2	3	4	5	6	7	8	9
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
16	60	55	72	64	84	76	91	77
25	78	71	94	84	101	90	108	97
35	96	87	115	103	126	112	135	120
50	115	104	138	124	154	136	164	146
70	145	131	175	156	198	174	211	187
95	175	157	210	188	241	211	257	227
120	-	180	-	216	-	245	-	263
150	-	206	-	240	-	283	-	304
185	-	233	-	272	-	323	-	347
240	-	273	-	318	-	382	-	409
300	-	313	-	364	-	440	-	471

NOTES:

1. Where it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory.
2. Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group.

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y12

VOLTAGE DROP (per ampere per meter): Conductor operating temperature: 90 ^{0}C

Conductor Cross-Sectional Area	Two-Core Cable, d.c.	Two-Core Cable, Single-Phase a.c.			Three- or Four-Core Cable, Three-Phase a.c.		
1	2	3			4		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
16	4.8	4.8			4.2		
		r	x	z	r	x	z
25	3.1	3.1	0.165	3.1	2.7	0.140	2.7
35	2.2	2.2	0.160	2.2	1.90	0.140	1.95
50	1.60	1.65	0.160	1.65	1.40	0.135	1.45
70	1.10	1.10	0.155	1.15	0.96	0.135	0.97
95	0.82	0.82	0.150	0.84	0.71	0.130	0.72
120	-	-	-	-	0.56	0.130	0.58
150	-	-	-	-	0.45	0.130	0.47
185	-	-	-	-	0.37	0.130	0.39
240	-	-	-	-	0.28	0.125	0.31
300	-	-	-	-	0.23	0.125	0.26

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y13
Single-core Armoured 90 °C thermosetting insulated cables (non-magnetic armour)
(ALUMINIUM CONDUCTORS)

Ambient Temperature:30 ^{0}C
CURRENT-CARRYING CAPACITY (Amperes): Conductor operating temperature:90 ^{0}C

Conductor Cross-Sectional Area	Reference Method C (clipped direct)		Reference Method F (in free air on a perforated cable tray, horizontal or vertical)								
	Touching		Touching			Spaced by one Cable Diameter					
	2 Cables, Single-Phase a.c. or d.c Flat	3 or 4 Cables, Three-Phase a.c. Flat	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, d.c.		2 Cables, Single-Phase a.c.		3 or 4 Cables, Three-Phase a.c.	
						Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
50	179	165	192	176	162	216	197	212	199	215	192
70	228	209	244	222	207	275	253	269	254	270	244
95	276	252	294	267	252	332	307	328	310	324	296
120	320	291	340	308	292	384	357	378	358	372	343
150	368	333	390	352	337	441	411	429	409	424	394
185	419	378	444	400	391	511	480	490	467	477	447
240	494	443	521	468	465	605	572	576	549	554	523
300	568	508	597	536	540	701	666	654	624	626	595
380	655	573	688	608	625	812	780	735	704	693	649
480	747	642	786	685	714	942	906	825	790	765	717
600	836	706	880	757	801	1076	1036	909	872	832	780
740	934	764	988	824	897	1250	1205	989	950	890	835
960	1056	838	1121	911	1014	1488	1435	1094	1052	970	911
1200	1163	903	1236	990	1118	1715	1658	1187	1141	1043	980

NOTES:

1. Where it is intended to connect the cables in this table to operate at a temperature lower than the maximum operating temperature of the cable, the cable should be rated at the maximum operating temperature of the equipment or accessory.

2. Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group.

8.2 Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y14

VOLTAGE DROP (per ampere per meter): Conductor operating temperature: 90 °C

Conductor Cross-Sectional Area	2 Cables, d.c.	Reference Methods C & F (clipped direct, on tray or in free air)														
		2 Cables, Single-Phase a.c.						3 or 4 Cables, Three -Phase a.c.								
		Touching			Spaced*			Trefoil and Touching			Flat and Touching			Flat and Spaced*		
1	2	3			4			5			6			7		
(mm²)	(mV/A/m)	(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)			(mV/A/m)		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	1.60	1.60	0.22	1.60	1.60	0.30	1.60	1.40	0.185	1.40	1.40	0.26	1.40	1.35	0.34	1.40
70	1.10	1.10	0.21	1.15	1.10	0.29	1.15	0.96	0.180	0.98	0.97	0.25	1.00	0.99	0.33	1.05
95	0.82	0.83	0.20	0.85	0.85	0.29	0.90	0.71	0.175	0.74	0.74	0.25	0.78	0.76	0.32	0.83
120	0.66	0.66	0.20	0.69	0.69	0.28	0.74	0.57	0.170	0.60	0.60	0.24	0.64	0.63	0.31	0.70
150	0.52	0.53	0.195	0.57	0.56	0.28	0.62	0.46	0.170	0.49	0.49	0.24	0.54	0.52	0.30	0.60
185	0.42	0.43	0.190	0.47	0.46	0.27	0.54	0.38	0.165	0.41	0.40	0.24	0.47	0.44	0.30	0.53
240	0.32	0.34	0.185	0.39	0.37	0.27	0.45	0.29	0.160	0.34	0.32	0.23	0.39	0.35	0.29	0.46
300	0.26	0.27	0.185	0.33	0.30	0.26	0.40	0.24	0.160	0.29	0.26	0.23	0.34	0.29	0.29	0.41
380	0.21	0.23	0.180	0.29	0.26	0.25	0.36	0.195	0.155	0.25	0.23	0.22	0.32	0.27	0.27	0.38
480	0.160	0.185	0.175	0.25	0.23	0.25	0.34	0.160	0.155	0.22	0.20	0.21	0.29	0.24	0.26	0.35
600	0.130	0.160	0.175	0.24	0.20	0.24	0.31	0.135	0.150	0.20	0.175	0.21	0.27	0.22	0.25	0.33
740	0.105	0.140	0.170	0.22	0.190	0.22	0.29	0.120	0.145	0.190	0.165	0.195	0.26	0.21	0.22	0.30
960	0.080	0.120	0.160	0.20	0.170	0.21	0.27	0.105	0.140	0.175	0.150	0.180	0.24	0.195	0.195	0.28
1200	0.064	0.105	0.160	0.190	0.155	0.20	0.25	0.093	0.135	0.165	0.140	0.175	0.22	0.180	0.185	0.26

NOTE: *Spacings larger than one cable diameter will result in a larger voltage drop.

8.2
Technical Data for Cable Selection (For Aluminium Cables) - (Continued)

Table Y15
Multi-core armoured 90 °C thermosetting insulated cables,
(ALUMINIUM CONDUCTORS)

Ambient temperature: 30 ^{0}C
Ground ambient temperature: 20°C
Conductor operating temperature: 90 ^{0}C

CURRENT-CARRYING CAPACITY (Amperes):

Conductor Cross-Sectional Area	Reference method C (clipped direct)		Reference Method E (in free air or on a perforated cable tray etc, horizontal or vertical)		Reference Method D (direct in ground or in ducting in ground, in or around buildings)	
	1 Two-Core Cable, Single-Phase a.c. or d.c	1 Three or 1 Four-Core Cable, Three-Phase a.c.	1 Two- Core Cable, Single-Phase a.c. or d.c	1 Three or 1 Four-Core Cable, Three-Phase a.c.	1 Two- Core Cable, Single-Phase a.c. or d.c	1 Three or 1 Four-Core Cable, Three-Phase a.c.
1	2	3	4	5	6	7
(mm^2)	(A)	(A)	(A)	(A)	(A)	(A)
16	82	71	85	74	71	59
25	108	92	112	98	90	75
35	132	113	138	120	108	90
50	159	137	166	145	128	106
70	201	174	211	185	158	130
95	242	214	254	224	186	154
120	-	249	-	264	-	174
150	-	284	-	305	-	197
185	-	328	-	350	-	220
240	-	386	-	418	-	253
300	-	441	-	488	-	286

NOTES:

1. Where it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cable should be rated at the maximum operating temperature of the equipment or accessory.

2. Where it is intended to group a cable in this cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group .

8.2
Technical Data for Cable Selection (For Aluminium Cables)- (Continued)

Table Y16

VOLTAGE DROP (per ampere per meter): Conductor operating temperature: 90 ^{0}C

Conductor Cross-Sectional Area	Two-Core Cable, d.c.	Two-Core Cable, Single-Phase a.c.			Three- or Four-Core Cable, Three-Phase a.c.		
1	2	3			4		
(mm^2)	(mV/A/m)	(mV/A/m)			(mV/A/m)		
16	4.8	4.8			4.2		
		r	x	z	r	x	z
25	3.1	3.1	0.165	3.1	2.7	0.140	2.7
35	2.2	2.2	0.160	2.2	1.90	0.140	1.95
50	1.60	1.65	0.160	1.65	1.40	0.135	1.45
70	1.10	1.10	0.155	1.15	0.96	0.135	0.97
95	0.82	0.82	0.150	0.84	0.71	0.130	0.72
120	-	-	-	-	0.56	0.130	0.58
150	-	-	-	-	0.45	0.130	0.47
185	-	-	-	-	0.37	0.130	0.39
240	-	-	-	-	0.28	0.125	0.31
300	-	-	-	-	0.23	0.125	0.26

8.3
Technical Data for Cable Installation

Voltage Drop in Consumers' Installations

The voltage drop between the origin of an installation and any load point should not be greater than the values in the table below expressed with respect to the value of the nominal voltage of the installation.

The calculated voltage drop should include any effects due to harmonic currents.

Voltage drop

	Lighting	Other uses
(i) Low voltage installations supplied directly from a public low voltage distribution system	3%	5%
(ii) Low voltage installation supplied from private LV supply(*)	6%	8%
(*) The voltage drop within each final circuit should not exceed the values given in (i). Where the wiring systems of the installation are longer than 100m, the voltage drops indicated above may be increased by 0.005% per metre of the wiring system beyond 100m, without this increase being greater than 0.5%. The voltage drop is determined from the demand of the current-using equipment, applying diversity factors where applicable, or from the value of the design current of the circuit.		

NOTE 1: A greater voltage drop may be acceptable for a motor circuit during starting and for other equipment with a high inrush current, provided that in both cases it is ensured that the voltage variations remain within the limits specified in the relevant equipment standard.

NOTE 2: The following temporary conditions are excluded:
- voltage transients
- voltage variations due to abnormal operation.

METHODS OF INSTALLATION

Table A1 lists the methods of installation for which this appendix provides guidance for the selection of the appropriate cable size. Table A2 lists the appropriate tables for selection of current ratings for specific cable constructions. The Reference Methods are those methods of installation for which the current-carrying capacities given in Tables X1 to Y15 have been determined (see Reference Methods below). The use of other methods is not precluded and in that case the evaluation of current-carrying capacity may need to be based on experimental work.

Reference Methods

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

NOTE 1: It is impractical to calculate and publish current ratings for every installation method, since many would result in the same current rating. Therefore a suitable (limited) number of current ratings have been calculated which cover all of the installation methods stated in Table A1 and have been called Reference Methods.

Reference Method A, for example, Installation Methods 1 and 2 of Table A1 (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/m^2K. 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.

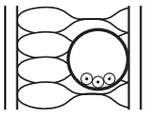
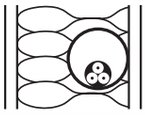
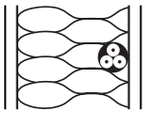
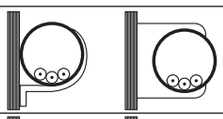
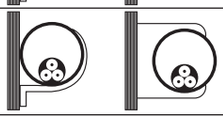
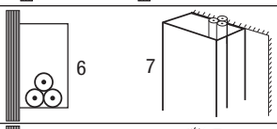
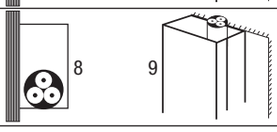
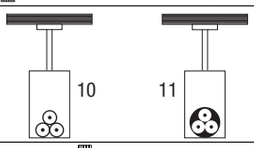
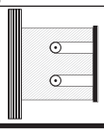
Reference Method B, for example, Installation Method 4 of Table A1 (non-sheathed cables in conduit mounted on a wooden or masonry wall) and Installation Method 5 of Table A1 (multicore cable in conduit on a wooden or masonry wall).

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.

TABLE A1

Schedule of installation methods of cables (including Reference Methods) for determining current-carrying capacity

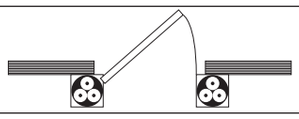
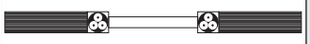
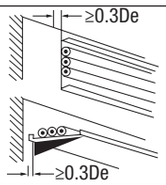
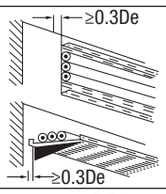
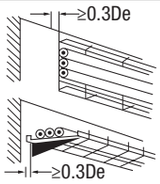
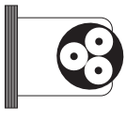
NOTE 1: The illustrations are not intended to depict actual product or installation practices but are indicative of the method described.
NOTE 2: The installation and reference methods stated are in line with IEC. However, not all methods have a corresponding rating for all cable types.

Installation Method			Reference Method to be used to determine current-carrying capacity
Number	**Examples**	**Description**	
1	 Room	Non-sheathed cables in conduit in a thermally insulated wall with an inner skin having a thermal conductance of not less than 10 W/m²K [c]	A
2	 Room	Multicore cable in conduit in a thermally insulated wall with an inner skin having a thermal conductance of not less than 10 W/m²K [c]	A
3	 Room	Multicore cable direct in a thermally insulated wall with an inner skin having a thermal conductance of not less than 10 W/m²K [c]	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 run 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 are for a single circuit. Where there is more than one circuit in the trunking the group rating factor given in Table C1 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 A1 - Continued

Installation Method			Reference Method to be used to determine current-carrying capacity
Number	Examples	Description	
13 14		Deleted by BS 7671:2008 Amendment No 1	
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	C (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 C1
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
33		Single-core or multicore cables: - spaced more than 0.3 times the cable diameter from a wall	E, F or G[g]

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.

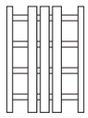
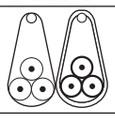
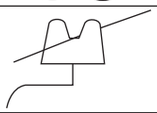
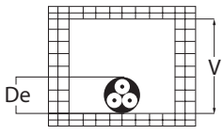
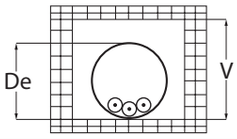
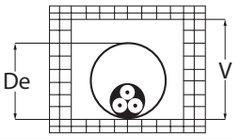
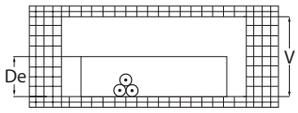
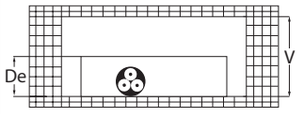
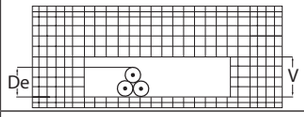
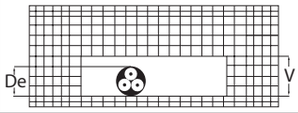
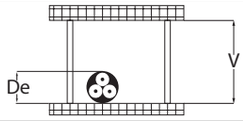
f The thermal resistivity of the enclosure is assumed to be poor because of the material of construction and possible air spaces. Where the construction is thermally equivalent to Installation Methods 6, 7, 8 or 9, Reference Method B may be used.

g The factors in Table C1 may also 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 A1 - Continued

Installation Method			Reference Method to be used to determine current-carrying capacity
Number	Examples	Description	
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 $D_e \leq V < 20\ D_e$ 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 $D_e \leq V$ 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 $D_e \leq V$ 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 $D_e \leq V$ 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 $D_e \leq V$ use B
45		Non-sheathed cables in cable ducting in masonry having a thermal resistivity not greater than 2 K.m, W [c,i,j]	Where 1.5 $D_e \leq V < 50\ D_e$ 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 $D_e \leq V < 50\ D_e$ use B
47		Single-core or multicore cable: - in ceiling void - in a suspended floor [h,i]	Where 1.5 $D_e \leq V < 50\ D_e$ 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.

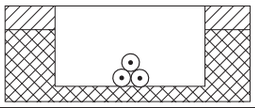
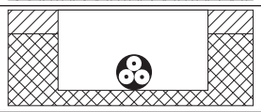
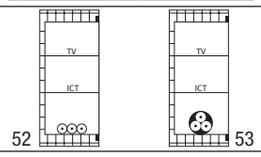
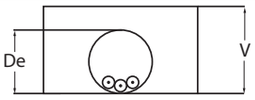
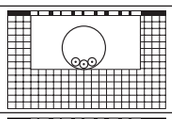
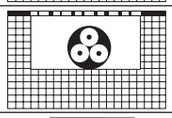
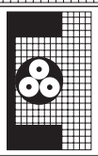
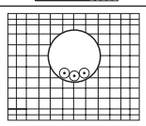
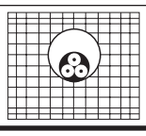
g The factors in Table C1 may also be used.

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 sinlgle-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 D_e = external diameter of conduit or vertical depth of cable ducting.

TABLE A1 - 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 $D_e \leq V$ 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 [0]	B
60		Mlulticore cables in conduit in masonry having a thermal resistivity not greater than 2 K.m/W[0]	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.

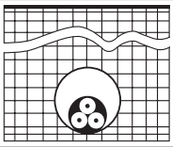
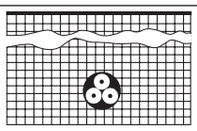
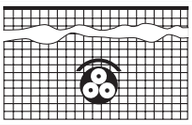
l For multicore cable installed as Method 55, use current-carrying capacity for Reference Method B.

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).

TABLE A1 - Continued

Installation Method			Reference Method to be used to determine current-carrying capacity
Number	Examples	Description	
70		Multicore armoured cable in conduit or in cable ducting in the ground	D For multicore armoured cable only
71		Deleted by BS 7671:2008 Amendment No 1	
72		Sheathed, armoured or multicore cables direct in the ground: -without added mechanical protection (see note)	D
73		Sheathed, armoured or multicore cables direct in the ground: - with added mechanical protection (e.g. cable covers) (see note)	D

NOTE: The inclusion of directly buried cables is satisfactory where the soil thermal resistivity is of the order of 2.5 K.m/W. For lower soil resistivities, the current-carrying capacity for directly buried cables is appreciably higher than for cables in ducts.

TABLE A1 - Continued
(Installation Methods for cables enclosed in floor concrete troughs)

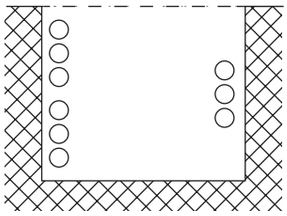
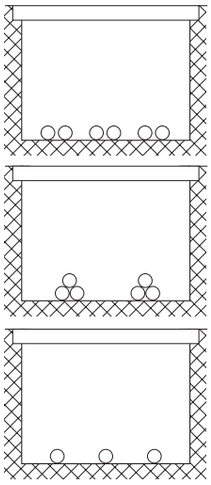
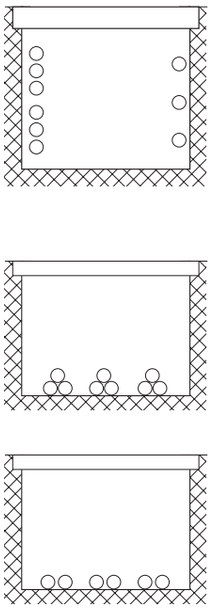
Installation Method			Reference Method to be used to determine current-carrying capacity
Number	Examples	Description	
117		Cables supported on the wall of an open or ventilated infloor concrete trough with spacing as follows: - Sheathed single-core cables in free air (any supporting metalwork under the cables occupying less than 10% of plan area). - Two or three cables vertically one above the other, minimum distance between cable surfaces equal to the overall cable diameters, distance from the wall not less than 1/2 the cable diameter. - Two or three cables horizontally with spacing as above.	E or F
118		Cables in enclosed trench 450 mm wide by 300 mm deep (minimum dimensions) including 100 mm cover - Two to six single-core cables with surfaces separated by a minimum of one cable diameter - One or two groups of three single-core cables in trefoil formation - One to four 2-core cables or one to three cables of 3 or 4 cores with all cables separated by a minimum of 50 mm	E or F using rating factors in Table C6
119		Cables enclosed in an infloor concrete trough 450 mm wide by 600 mm deep (minimum dimensions) including 100 mm cover. Six to twelve single-core cables arranged in flat groups of two or three on the vertical trench wall with cables separated by one cable diameter and a minimum of 50 mm between groups. or two to four groups of three single-core cables in trefoil formation with a minimum of 50 mm between trefoil formations. or four to eight 2-core cables or three to six cables of 3 or 4 cores with cables separated by a minimum of 75 mm. All cables spaced at least 25 mm from trench wall.	E or F using rating factors in Table C6

TABLE A1 - Continued

(Installation methods for cables enclosed in floor concrete troughs)

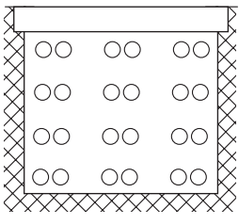
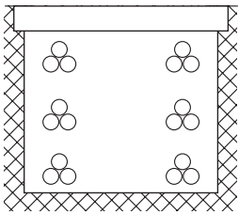
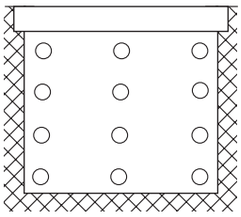
Installation Method			Reference Method to be used to determine current-carrying capacity
Number	**Examples**	**Description**	
120		Cables enclosed in an infloor concrete trough 600 mm wide by 760 mm deep (minimum dimensions) including 100 mm cover. Twelve to twenty four single-core cables arranged in either flat formation of two or three cables in a group with cables separated by one cable diameter and each cable group separated by a minimum of 50 mm either horizontally or vertically	E or F using rating factors in Table C6
		or single-core cables in trefoil formation with each group or trefoil formation separated by a minimum of 50 mm either horizontally or vertically	
		or eight to sixteen 2-core cables or six to twelve cables of 3 or 4 cores with cables separated by a minimum of 75 mm either horizontally or vertically. All cables spaced at least 25 mm from trench wall	

TABLE A2

Schedule of cable specifications and current rating tables

Specification number	Specification title	Applicable current rating tables	Conductor operating temperature
BS 5467	Electric cables -Thermosetting insulated, armoured cables for voltages of 600/1000 V and 1900/3300 V.	X13, X14, X15, X16, Y13, Y14, Y15, Y16	90 °C
BS 6004	Electric cables -PVC insulated, non-armoured cables for voltages up to and including 450/750 V, for electric power, lighting and internal wiring (fixed installation). Low temperature PVC insulated and sheathed flexible cable (flexible cables).	X1, X2, X3, X4	70 °C 60 °C
BS 6231	Deleted by BS 7671 Amendment 3 -.		
BS 6346 (withdrawn) Retained here for historical purposes	Electric cables- PVC insulated, armoured cables for voltages of 600/1000 V and 1900/3300 V.	X5, X6, X7, X8 Y5, Y6, Y7, Y8, Y13, Y14, Y15, Y16	70 °C
BS 6500	Deleted by BS 7671 Amendment 3 -.		
BS 6724	Electric cables- Thermosetting insulated, armoured cables for voltages of 600/1000 V and 1900/3300 V, having low emission of smoke and corrosive gases when affected by fire.	X13, X14, X15, X16, Y13, Y14, Y15, Y16	90 °C
BS 7211	Electric cables-Thermosetting insulated, non-armoured cables for voltages up to and including 450/750 V, for electric power, lighting and internal wiring and having low emission of smoke and corrosive gases when affected by fire.	X9, X10, X11, X12	90 °C
BS 7629-1	Electric cables- Specification for 300/500 V fire-resistant electric cables having low emission of smoke and corrosive gases when affected by fire - Part 1: Multicore cables.	X3, X4	70 °C
BS 7846	Electric cables- Thermosetting insulated, armoured, fire-resistant cables of rated voltage 600/ 1000 V having low emission of smoke and corrosive gases when affected by fire. Specification	X13, X14, X15, X16	90 °C
BS 7889	Electric cables- Thermosetting insulated, PVC sheathed, unarmoured cables for a voltage of 600/1000 V.	X9, X10, X11, X12	90 °C
BS 7919	Deleted by BS 7671 Amendment 3 -.		
BS 8436	Electric cables-300/500 V screened electric cables having low emission of smoke and corrosive gases when affected by fire, for use in walls, partitions and building voids-multicore cables.	X3, X4	70 °C
BS 8573	Electric cables- Thermosetting insulated. non-armoured cables with a voltage of 600/1000 V, for fixed installations, having low emission of smoke and corrosive gases when affected by fire.	X9, X10, X11, X12	90 °C
BS EN 50525-2-31,3-41	Electric cables-Low voltage energy cables of rated voltages up to and including 450/750 V (fixed installation)	X1, X2, X9, X10	70 °C. 90 °C

** Sheath operating temperature.

TABLE B1

Rating factors (C_a) for ambient air temperatures other than 30 ºC

Ambient temperature [a] ºC	Insulation				
				Mineral [a]	
	60 °C thermosetting	70 °C thermoplastic	90 °C thermosetting	Thermoplastic covered or bare and exposed to touch 70 °C	Bare and not exposed to touch 105 °C
25	1.04	1 .03	1 .02	1 .07	1 .04
30	1 .00	1.00	1 .00	1 .00	1 .00
35	0.91	0.94	0.96	0.93	0.96
40	0.82	0.87	0.91	0.85	0.92
45	0.71	0.79	0.87	0.78	0.88
50	0.58	0.71	0.82	0.67	0.84
55	0.41	0.61	0.76	0.57	0.80
60	-	0.50	0.71	0.45	0.75
65	-	-	0.65	-	0.70
70	-	-	0.58	-	0.65
75	-	-	0.50	-	0.60
80	-	-	0.41	-	0.54
85	-	-	-	-	0.47
90	-	-	-	-	0.40
95	-	-	-	-	0.32

a- For higher ambient temperatures, consult manufacturer.

TABLE B2

Rating factors (C_a) for ambient ground temperatures other than 20 ºC

Ground temperature ºC	Insulation	
	70 ºC thermoplastic	90 ºC thermosetting
10	1.10	1.07
15	1.05	1.04
20	1 .00	1 .00
25	0.95	0.96
30	0.89	0.93
35	0.84	0.89
40	0.77	0.85
45	0.71	0.80
50	0.63	0.76
55	0.55	0.71
60	0.45	0.65
65	-	0.60
70	-	0.53
75	-	0.46
80	-	0.38

TABLE B3

Rating factors (C_s) for cables buried direct in the ground or in an underground conduit system to BS EN 50086-2-4 for soil thermal resistivities other than 2.5 K.m/W to be applied to the current-carrying capacities for Reference Method D

Thermal resistivity, K.m/W	0.5	0.8	1	1.2	1 .5	2	2.5	3
Rating factor for cables in buried ducts	1.28	1.20	1.18	1.13	1.1	1.05	1	0.96
Rating factor for direct buried cables	1.88	1.62	1.5	1.40	1.28	1.12	1	0.90

NOTE 1: The rating factors given have been averaged over the range of conductor sizes and types of installation included in the relevant tables. The overall accuracy of rating factors is within ± 5%.
NOTE 2: Where more precise values are required they may be calculated by methods given in BS 7769 (BS IEC 60287).
NOTE 3: The rating factors are applicable to ducts buried at depths of up to 0.8 m.

TABLE B4

Rating factors (C_d) for depths of laying other than 0.7 m for direct buried cables and cables in buried ducts

Depth of laying, m	Buried direct	In buried ducts
0.5	1 .03	1 . 02
0.7	1 .00	1 .00
1	0.97	0.98
1 .25	0.95	0.96
1 .5	0.94	0.95
1 .75	0.93	0.94
2	0.92	0.93
2.5	0.90	0.92
3	0.89	0.91

TABLE B5

Rating factors for cables having more than 4 loaded cores

Number of loaded cores	5	6	7	10	12	14	19
Rating factor	0.72	0.67	0.63	0.56	0.53	0.51	0.45
Number of loaded cores	24	27	30	37	44	46	48
Rating factor	0.42	0.40	0.39	0.36	0.34	0.33	0.33

NOTE 1: The current-carrying capacity for a cable in the size range 1.5 to 4 mm^2, having more than 4 loaded cores, is obtained by multiplying the current-carrying capacity of a 2-core, having the same insulation type, by the factor selected from this table. The current-carrying capacity for the 2-core cable is that for the installation condition to be used for the multicore cable.
NOTE 2: If, due to known operating conditions, a core is expected to carry not more than 30% of its current-carrying capacity in the multicore cable it may be ignored for the purpose of determining the number of cores in the cable.
NOTE 3: If, due to known operating conditions, a core is expected to carry not more than 30% of it's rating, after applying the rating factor for the total number of current-carrying cores, it may be ignored for the purpose of obtaining the rating factor for the number of loaded cores.

For example, the current-carrying capacity of a cable having N loaded cores would normally be obtained by multiplying the current-carrying capacity of a 2-core, having the same insulation type, by the factor selected from this table for N cores. That is

$$I_{zlc} = I_{t2c} \times C_{gN}$$

where:

I_{zlc} is the current-carrying capacity of the multicore cable after applying the rating factor for the total number of current-carrying cores

I_{t2c} is the tabulated current-carrying capacity of a 2-core cable, having the same insulation type as the multi-core cable

C_{gN} is the rating factor from Table B5 for the total number of current-carrying cores. However, if M cores in the cable carry loads which are not greater than 0.3 x I_{t2c} x C_{gN}, the current-carrying capacity can be obtained by using the rating factor corresponding to (N-M) cores.
The "not greater than 0.3 x I_{t2c} x C_{gN}" calculation should be applied before the adjacent multicore cable grouping factor, if applicable, from Table C1. The 30% rule should not be further applied to any adjacent cable grouping factor calculations.

I_{zlc} should be greater than or equal to I_n or I_b as appropriate, divided by the relevant rating factor(s) C, that is $I_{zlc} \geq I_n$ or I_b / C

TABLE C1

Rating factors for one circuit or one multicore cable or for a group of circuits, or a group of multicore cables, to be used with current-carrying capacities of Tables X1 to Y15

Item	Arrangement (cables touching)	Number of circuits or multicore cables												To be used with current-carrying capacities, Reference Method
		1	2	3	4	5	6	7	8	9	12	16	20	
1	Bunched in air, on a surface, embedded or enclosed	1 .00	0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50	0.45	0.41	0.38	A to F
2	Single layer on wall or floor	1.00	0.85	0.79	0.75	0.73	0.72	0.72	0.71	0.70	0.70	0.70	0.70	C
3	Single layer multicore on a perforated horizontal or vertical cable tray system	1 .00	0.88	0.82	0.77	0.75	0.73	0.73	0.72	0.72	0.72	0.72	0.72	E
4	Single layer multicore on cable ladder system or cleats etc.	1 .00	0.87	0.82	0.80	0.80	0.79	0.79	0.78	0.78	0.78	0.78	0.78	

NOTE 1: These factors are applicable to uniform groups of cables, equally loaded.

NOTE 2: Where horizontal clearances between adjacent cables exceed twice their overall diameter, no rating factor need be applied.

NOTE 3: The same factors are applied to:
- groups of two or three single-core cables;
- multi core cables.

NOTE 4: If a group consists of both two- and three-core cables, the total number of cables is taken as the number of circuits, and the corresponding factor is applied to the tables for two loaded conductors for the two-core cables, and to the Tables for three loaded conductors for the three-core cables.

NOTE 5: If a group consists of *n* single-core cables it may either be considered as *n*/2 circuits of two loaded conductors or *n*/3 circuits of three loaded conductors.

NOTE 6: The rating factors given have been averaged over the range of conductor sizes and types of installation included in Tables X1 to Y15 and the overall accuracy of tabulated values is within 5%.

NOTE 7: For some installations and for other methods not provided for in the above table, it may be appropriate to use factors calculated for specific cases, see for example Tables C4 and C5.

NOTE 8: Where cables having differing conductor operating temperature are grouped together, the current rating is to be based upon the lowest operating temperature of any cable in the group.

NOTE 9: If, due to known operating conditions, a cable is expected to carry not more than 30 % of its grouped rating, it may be ignored for the purpose of obtaining the rating factor for the rest of the group.

For example, a group or N loaded cables would normally require a group rating factor of C_g applied to the tabulated I_t. However, if M cables in the group carry loads which are not greater than 0.3 C_g I_t amperes the other cables can be sized by using the group rating factor corresponding to (N-M) cables.

TABLE C2

Rating factors for more than one circuit, cables buried directly in the ground Reference Method D in Tables X7 to Y15 multicore cables

Number of circuits	Cable-to-cable clearance (α)				
	Nil (cables touching)	One cable diameter	0.125 m	0.25 m	0.5 m
2	0.75	0.80	0.85	0.90	0.90
3	0.65	0.70	0.75	0.80	0.85
4	0.60	0.60	0.70	0.75	0.80
5	0.55	0.55	0.65	0.70	0.80
6	0.50	0.55	0.60	0.70	0.80

Multicore cables

NOTE 1: Values given apply to an installation depth of 0.7 m and a soil thermal resistivity of 2.5 K.m/W. These are average values for the range of cable sizes and types quoted for Tables X7 to Y15. The process of averaging, together with rounding off, can result in some cases in errors of up to ±10%. (Where more precise values are required they may be calculated by methods given in BS 7769 (BS IEC 60287).)

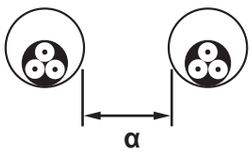
NOTE 2: In case of a thermal resistivity lower than 2.5 K.m/W the rating factors can, in general, be increased and can be calculated by the methods given in BS 7769 (BS IEC 60287).

TABLE C3

Rating factors for more than one circuit, single cables in ducts buried in the ground Reference Method D in Tables X7 to Y15 (Multicore cables in single-way ducts)

Number of ducts	Duct-to-duct clearance (*a*)			
	Nil (ducts touching)	0.25 m	0.5 m	1.0 m
2	0.85	0.90	0.95	0.95
3	0.75	0.85	0.90	0.95
4	0.70	0.80	0.85	0.90
5	0.65	0.80	0.85	0.90
6	0.60	0.80	0.80	0.90

Multicore cables

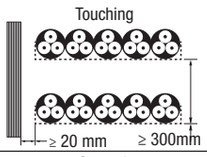
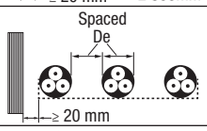
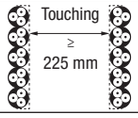
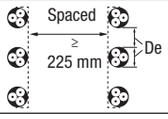
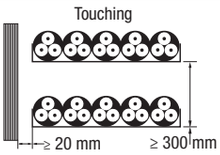
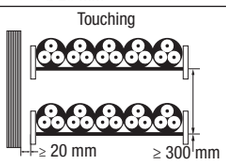
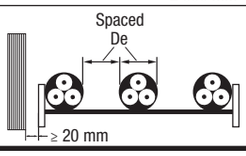


NOTE 1: Values given apply to an installation depth of 0.7 m and a soil thermal resistivity of 2.5 K.m/W. They are average values for the range of cable sizes and types quoted for Tables X7 to Y15. The process of averaging, together with rounding off, can result in some cases in errors of up to ±10%. (Where more precise values are required they may be calculated by methods given in BS 7769 (BS IEC 60287).)

NOTE 2: In case of a thermal resistivity lower than 2.5 K.m/W the rating factors can, in general, be increased and can be calculated by the methods given in BS 7769 (BS IEC 60287).

TABLE C4

Rating factors for groups of more than one multicore cable, to be applied to reference current-carrying capacities for multicore cables in free air-Reference Method E in Tables X3 to Y15

Installation Method in Table A1			Number of trays or ladders	Number of cables per tray or ladder					
				1	2	3	4	6	9
Perforated cable tray systems (Note 3)	31		1	See item 3 of Table C1					
			2	1.00	0.87	0.80	0.77	0.73	0.68
			3	1.00	0.86	0.79	0.76	0.71	0.66
			6	1.00	0.84	0.77	0.73	0.68	0.64
			1	1 .00	1 .00	0.98	0.95	0.91	-
			2	1 .00	0.99	0.96	0.92	0.87	
			3	1 .00	0.98	0.95	0.91	0.85	-
Vertical perforated cable tray systems (Note 4)	31		1	See item 3 of Table C1					
			2	1.00	0.88	0.81	0.76	0.71	0.70
			1	1 .00	0.91	0.89	0.88	0.87	-
			2	1.00	0.91	0.88	0.87	0.85	-
Unperforated cable tray systems	30		1	0.97	0.84	0.78	0.75	0.71	0.68
			2	0.97	0.83	0.76	0.72	0.68	0.63
			3	0.97	0.82	0.75	0.71	0.66	0.61
			6	0.97	0.81	0.73	0.69	0.63	0.58
Cable ladder systems, cleats, wire mesh tray, etc. (Note 3)	32 33		1	See item 4 of Table C1					
			2	1 .00	0.86	0.80	0.78	0.76	0.73
			3	1 .00	0.85	0.79	0.76	0.73	0.70
			6	1 .00	0.84	0.77	0.73	0.68	0.64
	34		1	1.00	1.00	1.00	1.00	1.00	-
			2	1 .00	0.99	0.98	0.97	0.96	-
			3	1 .00	0.98	0.97	0.96	0.93	-

NOTE 1: Values given are averages for the cable types and range of conductor sizes considered in Tables X3 to Y15. The spread of values is generally less than 5%.

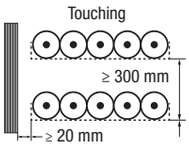
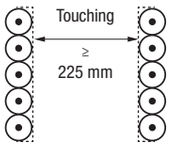
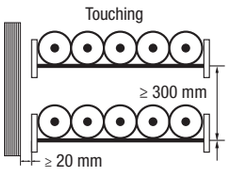
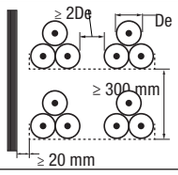
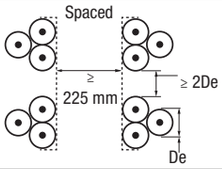
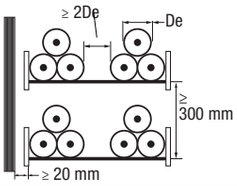
NOTE 2: Factors apply to single layer groups of cables as shown above and do not apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and must be determined by an appropriate method.

NOTE 3: Values are given for vertical spacing between cable trays of 300 mm and at least 20 mm between cable trays and wall. For closer spacing the factors should be reduced.

NOTE 4: Values are given for horizontal spacing between cable trays of 225 mm with cable trays mounted back-to-back. For closer spacing the factors should be reduced.

TABLE C5

Rating factors for groups of one or more circuits of single-core cables to be applied to reference current-carrying capacity for one circuit of single-core cables in free air - reference method F in Tables X1 to Y13

Installation Method in Table A1			Number of trays or ladders	Number of 3 phase circuits per tray or ladder			Use as a multiplier to rating for
				1	2	3	
Perforated cable tray systems (Note 3)	31		1	0.98	0.91	0.87	Three cables in horizontal formation
			2	0.96	0.87	0.81	
			3	0.95	0.85	0.78	
Vertical perforated cable tray systems (Note 4)	31		1	0.96	0.86	-	Three cables in vertical formation
			2	0.95	0.84	-	
Cable ladder systems cleates, wire mesh tray, etc. (Note 3)	32		1	1 .00	0.97	0.96	Three cables in horizontal formation
	33		2	0.98	0.93	0.89	
	34		3	0.97	0.90	0.86	
Perforated systems (Note 3)	31		1	1 .00	0.98	0.96	Three cables in trefoil formation
			2	0.97	0.93	0.89	
			3	0.96	0.92	0.86	
Vertical perforated cable tray systems (Note 4)	31		1	1.00	0.91	0.89	
			2	1.00	0.90	0.86	
Cable ladder systems, cleats, wire mesh tray, etc. (Note 3)	32		1	1 .00	1 .00	1 .00	
	33		2	0.97	0.95	0.93	
	34		3	0.96	0.94	0.90	

NOTE 1: Values given are averages for the cable types and range of conductor sizes considered in Tables X1 to Y13. The spread of values is generally less than 5%.

NOTE 2: Factors apply to single layer groups of cables (or trefoil groups) as shown above and do not apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and must be determined by an appropriate method.

NOTE 3: Values are given for vertical spacing between cable trays of 300 mm and at least 20 mm between cable trays and wall. For closer spacing the factors should be reduced.

NOTE 4: Values are given for horizontal spacing between cable trays of 225 mm with cable trays mounted back-to-back. For closer spacing the factors should be reduced.

NOTE 5: For circuits having more than one cable in parallel per phase, each three-phase set of conductors is to be considered as a circuit for the purpose of this table.

TABLE C6

Rating factors for cables enclosed in infloor concrete troughs
(Installation Methods 118 to 120 of Table A1)

The rating factors tabulated below relate to the disposition of cables illustrated in items 118 to 120 of Table A1 and are applicable to the current-carrying capacities for Reference Methods E and F as given in the relevant tables of this appendix.

Conductor cross-sectional area	Rating factor									
	Installation method 118				Installation method 119			Installation method 120		
	2 single-core cables, or 1 three- or four-core cables	3 single-core cables, or 2 two-core cables	4 single-core cables, or 2 three- or four-core cables	6 single-core cables, 4 two-core cables, or 3 three- or four-core cables	6 single-core cables, 4 two-core cables, or 3 three- or four-core cables	8 single-core cables, or 4 three- or four-core cables	12 single-core cables, 8 two-core cables, or 6 three- or four-core cables	12 single-core cables, 8 two-core cables, or 6 three- or four-core cables	18 single-core cables, 12 two-core cables, or 9 three- or four-core cables	24 single core cables, 16 two-core cables, or 12 three- or four-core cables
1	2	3	4	5	6	7	8	9	10	11
(mm^2)										
4	0.93	0.90	0.87	0.82	0.86	0.83	0.76	0.81	0.74	0.69
6	0.92	0.89	0.86	0.81	0.86	0.82	0.75	0.80	0.73	0.68
10	0.91	0.88	0.85	0.80	0.85	0.80	0.74	0.78	0.72	0.66
16	0.91	0.87	0.84	0.78	0.83	0.78	0.71	0.76	0.70	0.64
25	0.90	0.86	0.82	0.76	0.81	0.76	0.69	0.74	0.67	0.62
35	0.89	0.85	0.81	0.75	0.80	0.74	0.68	0.72	0.66	0.60
50	0.88	0.84	0.79	0.74	0.78	0.73	0.66	0.71	0.64	0.59
70	0.87	0.82	0.78	0.72	0.77	0.72	0.64	0.70	0.62	0.57
95	0.86	0.81	0.76	0.70	0.75	0.70	0.63	0.68	0.60	0.55
120	0.85	0.80	0.75	0.69	0.73	0.68	0.61	0.66	0.58	0.53
150	0.84	0.78	0.74	0.67	0.72	0.67	0.59	0.64	0.57	0.51
185	0.83	0.77	0.73	0.65	0.70	0.65	0.58	0.63	0.55	0.49
240	0.82	0.76	0.71	0.63	0.69	0.63	0.56	0.61	0.53	0.48
300	0.81	0.74	0.69	0.62	0.68	0.62	0.54	0.59	0.52	0.46
400	0.80	0.73	0.67	0.59	0.66	0.60	0.52	0.57	0.50	0.44
500	0.78	0.72	0.66	0.58	0.64	0.58	0.51	0.56	0.48	0.43
630	0.77	0.71	0.65	0.56	0.63	0.57	0.49	0.54	0.47	0.41

NOTES:

I. The factors in Table C6 are applicable to groups of cables all of one size. The value of current derived from application of the appropriate factors is the maximum current to be carried by any of the cables in the group.

2. If, due to known operating conditions, a cable is expected to carry not more than 30% of its grouped rating, it may be ignored for the purpose of obtaining the rating factor for the rest of the group.

3. Where cables having different conductor operating temperatures are grouped together the current rating should be based on the lowest operating temperature of any cable in the group.

4. When the number of cables used differs from those stated in the table, the rating factor for the next higher stated number of cables should be used.

8.4
Selection of Protective Conductor

8.4.1
Cross Sectional Areas

$$S = \frac{\sqrt{I^2t}}{k}$$

NOTE: This equation is an adiabatic equation and is applicable for disconnection times not exceeding 5s.
where:
S - is the nominal cross-sectional area of the conductor in mm^2
I - is the value in amperes (rms for a.c.) of fault current for a fault of negligible impedance, which can flow through the associated protective device, due account being taken of the current limiting effect of the circuit impedances and the limiting capability (I^2t) of that protective device
t - is the operating time of the protective device in seconds corresponding to the fault current **I** amperes
k - is a factor taking account of the resistivity, temperature coefficient and heat capacity of the conductor material, and the appropriate initial and final temperatures.
Values of k for protective conductors in various use or service are as given in Tables D1 to D5. The values are based on the initial and final temperatures indicated in each table.

Where the application of the formula produces a non-standard size, a conductor having the nearest larger standard cross-sectional area shall be used.

TABLE D1
values of k for insulated protective conductor not incorporated in a cable and not bunched with cables, or for separate bare protective conductor in contact with cable covering but not bunched with cables, where the assumed initial temperature is 30 °C

Material of conductor	Insulation of protective conductor or cable covering		
	70 °C thermoplastic	90 °C thermoplastic	90 °C thermosetting
Copper	143/133*	143/133*	176
Aluminium	95/88*	95/88*	116
Steel	52	52	64
Assumed initial temperature	30 °C	30 °C	30 °C
Final temperature	160 °C/140 °C*	160 °C/140 °C*	250 °C

* Above 300 mm^2

TABLE D2
values of k for protective conductor incorporated in a cable or bunched with cables, where the assumed initial temperature is 70 °C or greater

Material of conductor	Insulation material		
	70 °C thermoplastic	90 °C thermoplastic	90 °c thermosetting
Copper	115/103*	100/86*	143
Aluminium	76/68*	66/57*	94
Assumed initial temperature	70 °C	90°C	90 °C
Final temperature	160 °C/140 °C*	160 °C/140 °C*	250 °C

* Above 300 mm^2

TABLE D3

values of k for protective conductor as a the sheath or armour of a cable as the protective conductor

Material of conductor	Insulation material		
	70 °C thermoplastic	90 °C thermoplastic	90 °C thermosetting
Aluminium	93	85	85
Steel	51	46	46
Lead	26	23	23
Assumed initial temperature	60 °C	80 °C	80 °C
Final temperature	200 °C	200 °C	200 °C

TABLE D4

Values of k for steel conduit, ducting and trunking as the protective conductor

Material of protective conductor	Insulation material		
	70 °C thermoplastic	90 °C thermoplastic	90 °C thermosetting
Steel conduit, ducting and trunking	47	44	58
Assumed initial temperature	50 °C	60 °C	60 °C
Final temperature	160 °C	160 °C	250 °C

TABLE D5

Values of k for bare conductor where there is no risk of damage to any neighbouring material by the temperatures indicated

NOTE: The temperatures indicated are valid only where they do not impair the quality of the connections.

Material of conductor	Insulation material		
	Visible and in restricted areas	Normal conditions	Fire risk
Copper	228	159	138
Aluminium	125	105	91
Steel	82	58	50
Assumed initial temperature Final temperature	30 °C	30 °C	30 °C
Copper conductor	500 °C	200 °C	150 °C
Aluminium conductor	300 °C	200 °C	150 °C
Steel conductor	500 °C	200 °C	150 °C

Where it is desired not to calculate the minimum cross-sectional area of a protective conductor in accordance with equation at 8.4.1the cross-sectional area may be determined in accordance with Table D6.

Where the application of Table D6 produces a non-standard size, a conductor having the nearest larger standard cross-sectional area shall be used.

TABLE D6

Minimum cross-sectional area of protective conductor in relation to the cross-sectional area of associated line conductor

Cross-sectional area of line conductor S	Minimum cross-sectional area of the corresponding protective conductor	
	If the protective conductor is of the same material as the line conductor	If the protective conductor is not of the same material as the line conductor
(mm^2)	(mm^2)	(mm^2)
$S \leq 16$	S	$\frac{k_1}{k_2} \times S$
$16 < S \leq 35$	16	$\frac{k_1}{k_2} \times 16$
$S > 35$	$\frac{S}{2}$	$\frac{k_1}{k_2} \times \frac{S}{2}$

where:

k_1 is the value of k for the line conductor, selected from Table D7 according to the materials of both conductor and insulation.

k_2 is the value of k for the protective conductor, selected from Tables D1 to D5, as applicable.

TABLE D7

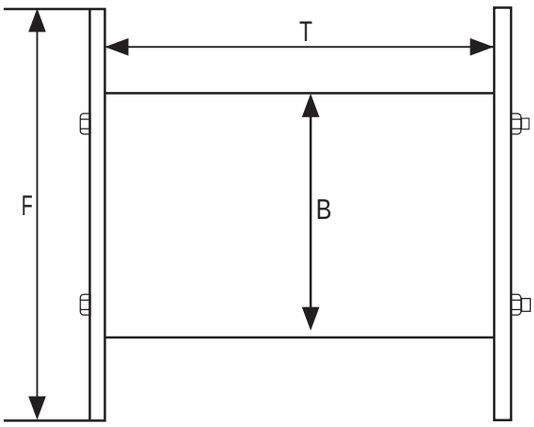
Values of k for common materials, for calculation of effects of fault current for disconnection times to 5 seconds

	Conductor insulation					
	Thermoplastic				Thermosetting	
	90		70 °C		90 °C	60 °C
Conductor cross sectional area/ mm^2	≤ 300	> 300	≤ 300	> 300	-	-
Initial temperature / °C	90		70		90	60
Final temperature / °C	160	140	160	140	250	200
Copper conductor	K=100	K=86	K=115	K=103	K=143	K=141
Aluminium conductor	K=66	K=57	K=76	K=68	K=94	K=93

9 Maximum Resistance of Armour Wire Single, Two, Three, Four and Five Core Cables

Nominal Cross-Sectional Area of Conductors	Cables with stranded Copper conductor														Cables with solid Aluminium conductor											
	Single Core				Two Core		Three Core				Four Core		Five Core		Single Core				Two Core		Three Core				Four Core	
	600/1000V		1900/3300V		600/1000V		600/1000V		1900/3300V		600/1000V		600/1000V		600/1000V		1900/3300V		600/1000V		600/1000V		1900/3300V		600/1000V	
	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC
mm²	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω
1.5	-	-	-	-	10.2	10.2	9.5	9.5	-	-	8.8	8.8	8.2	8.2	-	-	-	-	-	-	-	-	-	-	-	-
2.5	-	-	-	-	8.8	8.8	8.2	8.2	-	-	7.7	7.7	6.8	6.8	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	7.9	7.5	7.5	7.0	-	-	6.8	4.6	6.2	4.1	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	7.0	6.8	6.7	4.6	-	-	4.3	4.1	3.9	3.8	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	6.0	3.9	4.0	3.7	-	-	3.7	3.4	3.4	2.3	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	3.7	3.4	3.5	3.1	1.9	1.9	3.1	2.2	2.2	2.0	-	-	-	-	4.0	3.7	3.8	3.4	2.0	1.9	3.4	2.4
25	-	-	-	-	3.7	2.6	2.5	2.4	1.7	1.7	2.3	2.1	1.8	1.7	-	-	-	-	4.1	2.9	2.7	2.5	1.9	1.8	2.4	2.3
35	-	-	-	-	2.6	2.4	2.3	2.1	1.8	1.7	2	1.9	1.6	1.5	-	-	-	-	2.9	2.7	2.5	2.3	1.9	1.9	2.2	2.0
50	1.3	0.82	0.75	0.73	2.3	2.1	2	1.9	1.3	1.3	1.8	1.3	1.1	1.1	1.4	0.90	0.79	0.79	2.6	2.4	2.2	2.0	1.4	1.4	1.9	1.4
70	0.75	0.73	0.67	0.65	2.0	1.9	1.8	1.4	1.2	1.2	1.2	1.2	0.94	0.89	0.84	0.79	0.73	0.71	2.3	2.1	1.9	1.4	1.3	1.2	1.3	1.3
95	0.67	0.64	0.61	0.45	1.4	1.3	1.3	1.2	1.1	1.1	1.1	0.98	-	-	0.75	0.71	0.67	0.49	1.6	1.5	1.4	1.3	1.2	1.1	1.2	1.1
120	0.61	0.45	0.42	0.42	1.3	1.2	1.2	1.1	0.76	0.74	0.76	0.71	-	-	0.69	0.49	0.47	0.46	-	-	1.2	1.2	0.82	0.80	0.82	0.78
150	0.42	0.40	0.39	0.39	1.2	1.1	0.78	0.74	0.71	0.69	0.68	0.65	-	-	0.47	0.45	0.43	0.43	-	-	0.86	0.82	0.76	0.74	0.74	0.71
185	0.38	0.37	0.37	0.36	0.82	0.78	0.71	0.68	0.65	0.64	0.61	0.59	-	-	0.42	0.41	0.40	0.40	-	-	0.76	0.73	0.71	0.69	0.67	0.64
240	0.34	0.33	0.34	0.33	0.73	0.69	0.63	0.6	0.59	0.58	0.54	0.52	-	-	0.38	0.37	0.37	0.37	-	-	0.68	0.65	0.64	0.63	0.59	0.57
300	0.31	0.30	0.31	0.30	0.67	0.63	0.58	0.54	0.55	0.53	0.49	0.47	-	-	0.35	0.34	0.34	0.34	-	-	0.63	0.59	0.59	0.57	0.54	0.52
400	0.22	0.21	0.22	0.21	0.59	0.56	0.52	0.49	0.50	0.48	0.35	0.34	-	-	0.25	0.24	0.25	0.24	-	-	-	-	-	-	-	-
500	0.20	0.19	0.20	0.19	-	-	-	-	-	-	-	-	-	-	0.22	0.22	0.22	0.22	-	-	-	-	-	-	-	-
630	0.18	0.18	0.18	0.18	-	-	-	-	-	-	-	-	-	-	0.20	0.20	0.20	0.20	-	-	-	-	-	-	-	-
800	0.13	0.13	0.13	0.13	-	-	-	-	-	-	-	-	-	-	0.15	0.15	0.15	0.15	-	-	-	-	-	-	-	-
1000	0.12	0.12	0.12	0.12	-	-	-	-	-	-	-	-	-	-	0.13	0.13	0.13	0.13	-	-	-	-	-	-	-	-

10.1
Drum Specification



F - Flange Diameter
B - Barrel Diameter
T - Internal Width

CODE NO.	SIZE (inch.)	(F) mm	(B) mm	(T) mm
SIE 1	30	762	305	508
SIE 2	36	914	406	610
SIE 3	38	965	406	610
SIE 4	32	813	508	508
SIE 5	32	813	508	610
SIE 6	36	914	508	508
SIE 7	39	1000	500	630
SIE 8	42	1067	508	610
SIE 9	43	1100	500	600
SIE 10	43	1100	500	630
SIE 11	44	1118	660	610
SIE 12	48	1219	660	660
SIE 13	48	1219	762	508
SIE 14	49	1250	600	600
SIE 15	49	1250	600	630
SIE 16	54	1372	762	508
SIE 17	55	1400	700	600
SIE 18	55	1400	800	980
SIE 19	56	1422	660	686
SIE 20	64	1626	610	686
SIE 21	72	1829	762	762
SIE 22	63	1600	800	960
SIE 23	56	1422	1100	686
SIE 24	56	1422	1100	960
SIE 25	64	1626	1100	960
SIE 26	64	1626	1200	960
SIE 27	65	1650	1100	980
SIE 28	71	1800	1100	960
SIE 29	72	1829	1200	960
SIE 30	72	1829	1500	960
SIE 31	79	2000	1100	960
SIE 32	79	2000	1500	960
SIE 33	85	2150	1200	960
SIE 34	85	2150	1500	960

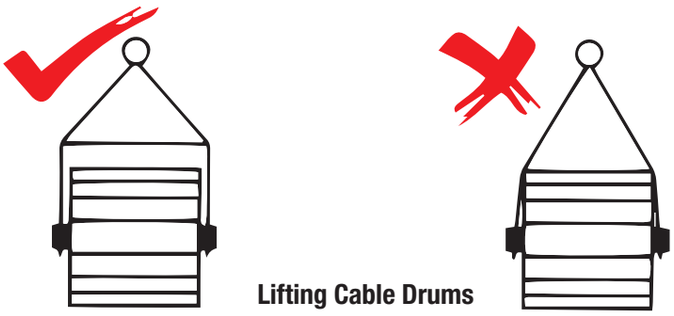
10. Drum Details

10.2
Capacity Chart for Timber Drums

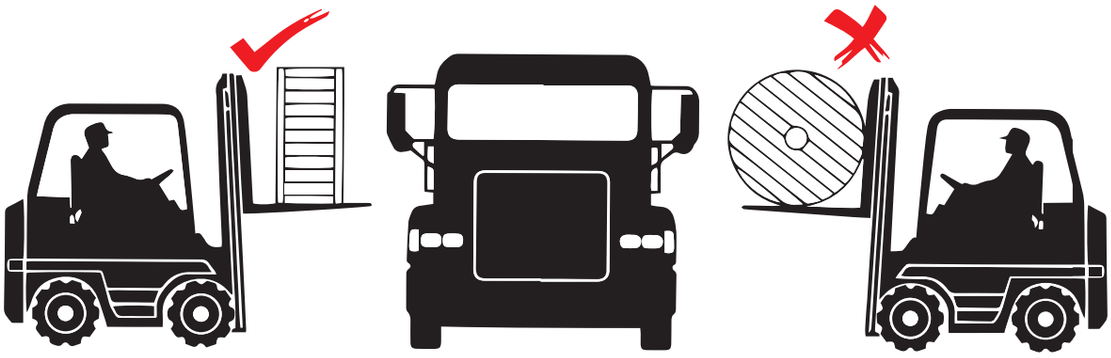
CODE NO.	Overall Diameter mm																
	6	8	10	12	14	18	20	22	24	26	28	30	32	34	36	38	40
SIE 1	4002	2284	1456	1007	737	442	-	-	-	-	-	-	-	-	-	-	-
SIE 2	6821	3922	2502	1732	1268	762	615	507	424	-	-	-	-	-	-	-	-
SIE 3	7897	4570	2915	2018	1477	888	717	590	494	-	-	-	-	-	-	-	-
SIE 4	2916	1714	1093	756	553	332	268	220	184	156	134	117	-	-	-	-	-
SIE 5	3508	2064	1316	911	667	401	324	267	223	190	163	141	-	-	-	-	-
SIE 6	4757	2685	1712	1184	866	520	419	345	289	245	210	183	-	-	-	-	-
SIE 7	8122	4554	2905	2011	1473	885	715	589	493	419	360	312	-	-	-	-	-
SIE 8	9155	5292	3376	2337	1711	1028	830	684	572	486	418	363	-	-	-	-	-
SIE 9	10141	5745	3664	2536	1857	1116	900	742	621	527	453	393	-	-	-	-	-
SIE 10	10654	6036	3850	2665	1952	1173	947	780	653	555	477	414	-	-	-	-	-
SIE 11	8297	4744	3026	2094	1534	921	744	613	513	436	374	325	285	251	223	200	180
SIE 12	11944	6898	4401	3047	2232	1342	1083	892	748	635	546	474	415	367	326	292	262
SIE 13	7728	4399	2804	1940	1419	852	687	565	473	402	345	299	262	231	205	183	165
SIE 14	12898	7333	4677	3237	2370	1424	1149	947	793	673	578	502	440	388	345	309	277
SIE 15	13550	7704	4915	3402	2491	1497	1209	996	834	708	609	528	463	409	363	325	292
SIE 16	11871	6682	4260	2946	2156	1294	1044	859	719	610	524	454	398	351	312	278	250
SIE 17	15963	9102	5806	4018	2942	1768	1427	1175	984	836	718	623	546	482	428	383	344
SIE 18	23211	13155	8402	5823	4269	2572	2079	1714	1438	1222	1052	914	802	709	631	565	509
SIE 19	19867	11365	7252	5021	3678	2212	1786	1472	1233	1047	900	782	685	605	538	481	433
SIE 20	28857	16286	10392	7195	5271	3170	2560	2109	1767	1501	1290	1121	982	867	771	690	621
SIE 21	39347	22298	14233	9857	7223	4346	3511	2894	2425	2061	1772	1539	1349	1192	1060	949	854
SIE 22	33273	18817	12018	8328	6106	3678	2973	2452	2056	1748	1504	1307	1146	1013	902	808	727
SIE 23	8691	4919	3139	2173	1592	957	773	637	534	453	390	338	297	262	233	208	187
SIE 24	12193	6907	4411	3057	2241	1350	1091	900	755	642	552	480	421	372	331	296	267
SIE 25	22912	13075	8350	5786	4242	2555	2066	1703	1428	1214	1045	908	797	704	627	561	505
SIE 26	18376	10386	6633	4597	3370	2030	1641	1353	1135	965	830	722	633	559	498	446	401
SIE 27	24955	14230	9089	6298	4618	2782	2249	1855	1555	1322	1138	989	867	767	682	611	550
SIE 28	34980	19635	12540	8690	6371	3838	3102	2558	2145	1824	1569	1364	1196	1057	941	843	759
SIE 29	32190	18109	11565	8015	5876	3540	2861	2359	1978	1682	1447	1258	1103	975	868	777	700
SIE 30	15324	8642	5519	3825	2804	1689	1365	1126	944	803	691	600	527	465	414	371	334
SIE 31	49340	28050	17914	12414	9101	5483	4431	3655	3064	2605	2242	1949	1709	1511	1344	1204	1084
SIE 32	28001	15895	10151	7035	5157	3107	2511	2071	1736	1476	1270	1104	968	856	762	682	614
SIE 33	56668	32287	20620	14289	10476	6311	5101	4207	3527	2999	2580	2243	1967	1739	1548	1386	1248
SIE 34	39802	22820	14574	10100	7404	4460	3605	2973	2493	2120	1824	1585	1390	1229	1094	980	882

11
Handling Instructions

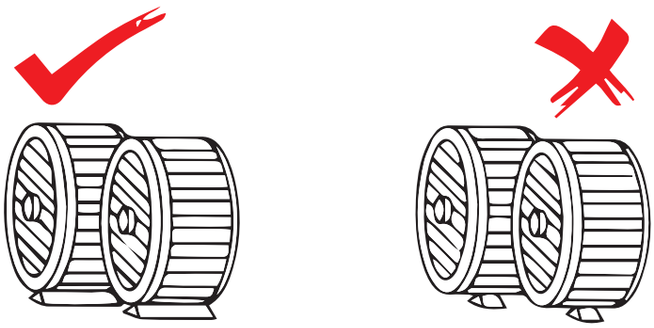
Cables should be installed and stored according to international regulation by trained persons with good engineering practice. Cables are supplied on heavy wooden/steel drums and handling these drums can be considered hazardous. Particular care should be taken during loading and unloading. Indicated here are some of the common mistakes which can be made during handling,



Lifting Cable Drums

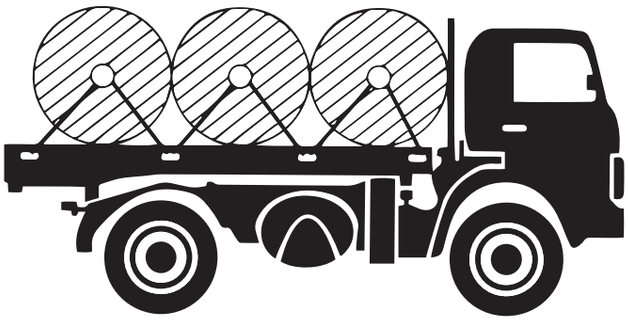


Lift drums on Fork Trucks

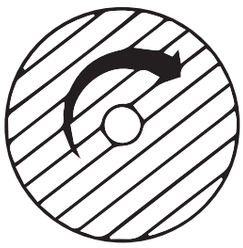


Use proper stops to prevent drums rolling

Don't lay drums flat on their sides.



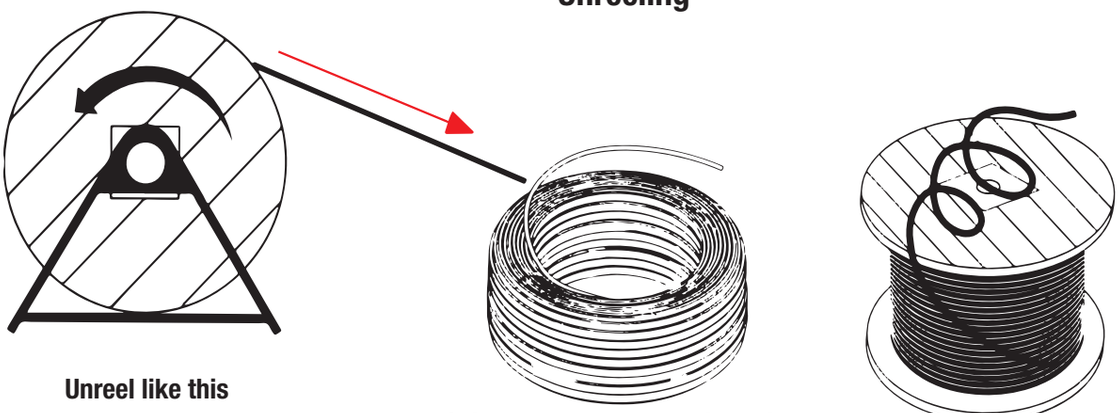
Secure drums adequately before moving



Roll in the direction shown by the arrow

12
Laying Instructions

Unreeling

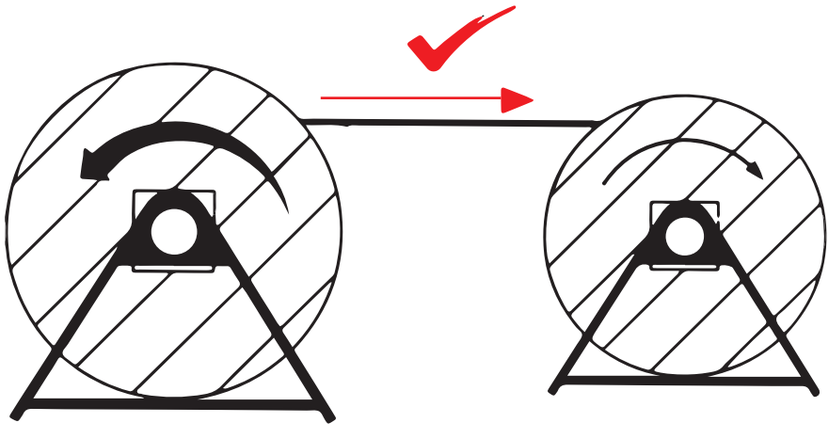


Unreel like this

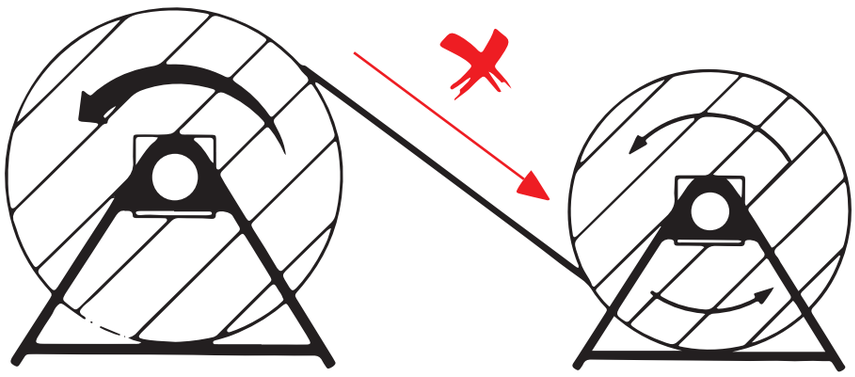
Coils may be unwound like this, according to the manufacture's instructions

Never unreel this way

Rewinding



Recommended method



Not recommended

13
Cable Core Colours

Cable to BS 6004		
Cable type	**Old core colours**	**New core colours**
Single Core	Red or Black	Brown or Blue
Two Core	Red , Black	Brown, Blue
Three Core	Red ,Yellow, Blue	Brown, Black, Grey
Standard 600/1000V armoured cable to BS 6346, BS 5467 or BS 6724		
Cable type	**Old core colours**	**New core colours**
Single Core	Red or Black	Brown or Blue
Two Core	Red , Black	Brown, Blue
Three Core	Red ,Yellow, Blue	Brown, Black, Grey
Four Core	Red ,Yellow, Blue, Black	Brown, Black, Grey, Blue
Five Core	Red ,Yellow, Blue, Black Green and Yellow	Brown, Black, Grey, Blue, Green and Yellow
Flexible cable to BS 6500		
Cable type	**Old core colours**	**New core colours**
Two Core	Brown, Blue	No change
Three Core	Brown, Blue, Green and Yellow	No change
Four Core	Black, Blue, Brown, Green and Yellow	Brown, Black, Grey, Green & yellow
Five Core	Black, Blue, Brown, Black, Green and Yellow	Brown, Black, Grey, Blue, Green and Yellow

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