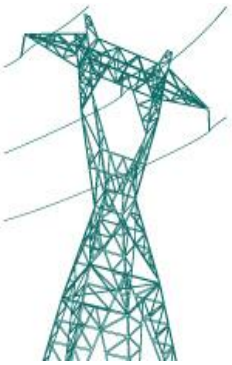
常青藤
CHANG QING TENG
Luxing Cable

Shandong New Luxing Cable Co.,Ltd
www.sdxlxdl.com luxingcable@sdxlxdl.com



Production Catalog

2023.09.30



Welcome to visit our factory.








国家级高新技术企业
常青藤
CHANG QING TENG




卓越








高新技术企业


46T

Supplied cables for bidding project.

国家电网公司 STATE GRID CORPORATION OF CHINA

中国铁建

绿地集团 Greenland Group

HUAWEI

中国电建 POWERCORPCHINA

中建安装工程有限公司 China Construction Industrial & Energy Engineering Co.,Ltd.

vanke 万科

中国中铁电气化局集团公司 CHINA CREC RAILWAY ELECTRIFICATION BUREAU GROUP

龍騰地產集團 LONGTENG REAL ESTATE GROUP

中铁十二局集团有限公司 CHINA RAILWAY 12TH BUREAU GROUP CO.,LTD

中国水利水电第三工程局有限公司 SINOHYDRO BUREAU 3 CO.,LTD.

中国石油

中国石化 SINOPEC



Certificate – Сертификат – 證明書 – Certificat – 증명서 – شهادة

Certificate of Compliance

No. 0P220321.SNLUU09

Test Report / Technical Construction File no. TLSD22031837752

Certificate's Holder: Shandong New Luxing Cable Co., Ltd.
West Size, Southern Huaxing Road, Linyi Economic Development Zone, Dezhou City, Shandong Province, China

Certification ECM Mark: European Conformity – Type Approved

Product: Power Cable (0-35KV)

Model(s): *(see the following annex)*

Verification to: Standard:
EN 60228:2005, IEC 60502-1:2021, IEC 60502-2:2014, IEC 60332:2022

related to CE Directive(s):
2014/35/EU (Low Voltage)

Remark: This document has been issued on a voluntary basis and upon request of the manufacturer. It is our opinion that the technical documentation received from the manufacturer is satisfactory for the requirements of the ECM Certification Mark. The conformity mark above can be affixed on the products accordingly to the ECM regulation about its release and its use.

Additional information and clarification about the Marking:

CE

The manufacturer is responsible for the CE Marking process, and if necessary, must refer to a Notified Body. This document has been issued on the basis of the regulation on ECM Voluntary Mark for the certification of products. RG01_ECM rev.3 available at: www.entecerma.it

Issuance date: 21 March 2022

Expiry date: 20 March 2027

Reviewer
Technical expert
Amanda Payne

Approver
ECM Service Director
Luca Bedonni

Ente Certificazione Macchine Srl
Via Ca' Bella, 243 – Loc. Castello di Serravalle – 40053 Valsamoggia (BO) - ITALY
☎ +39 051 6705141 🖷 +39 051 6705156 ✉ info@entecerma.it 🌐 www.entecerma.it

Certificate – Сертификат – 證明書 – Certificat – 증명서 – شهادة

Annex I

No. 0P220321.SNLUU09

Test Report / Technical Construction File no. TLSD22031837752

Model(s):

YJV, YJV22, YJV32, YJV62, YJV72, VV, VV22, VV32, VV62, VV72, YJLV, YJLV22, YJLV32, YJLV62, YJLV72, VLV, VLV22, VLV32, VLV62, VLV72, WDZ-YJY, JKLYJ, ACSR, ABC, RVV, RVV22, RVVP, RVSP, KVV, KVV22, KVV32, KVVR, KVVP, KVVRP, RV, BV, BVR, BVVB, N2XY, NA2XY, N2XSY, NYM, NYY, YY, SY, CY, H03VV-F, H05VV-F, BPYJVP, YG, YGCB, YGCR, GG, GGR, JHS, YC, YZ, YZW, YH, YCW, H07RN-F, H05V-U, H05V-R, H05V-K, H07V-U, H07V-R, H07V-K, GYTA53, GYTA, CAT6, CAT5, CAT5E, RG11, RG6, RG213, RG214, RG402, DJVPVP, DJVP3VP3, DJVP3VP3-32, LiYCY, JE-H(St)H, JY(ST), XV, VAV, LVAV, LSVAV, CEF/DA, CEF90/DA, CEF90/SA, U1000R2V, NYCY, BTTZ, Fire Resistant Cable

Ente Certificazione Macchine Srl
Via Ca' Bella, 243 – Loc. Castello di Serravalle – 40053 Valsamoggia (BO) - ITALY
☎ +39 051 6705141 🖷 +39 051 6705156 ✉ info@entecerma.it 🌐 www.entecerma.it

QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 00123Q31758R1M/3700

We hereby certify that

SHANDONG NEW LUXING CABLE CO., LTD.

Unified Social Credit Code: 91371424576616887Q

WEST SIDE,SOUTHERN HUAXING ROAD,LINYI ECONOMIC DEVELOPMENT ZONE,DEZHOU CITY,SHANDONG PROVINCE,CHINA

by reason of its

Quality Management System

has been awarded this certificate for compliance with the standard

GB/T 19001-2016 / ISO 9001:2015

The Quality Management System Applies in the following area:

Within the Scope of Qualification Production of PVC Insulated Sheathed Cables and Wires,PVC Insulated PVC Sheathed Cables,PVC Insulated Flexible Cables,PVC Insulated Shielded Wires,Squeezed Insulated Low-voltage Power Cables,Plastic Insulated Control Cables,1KV Overhead Insulated Cables,10KV Overhead Insulated Cables,Computer and Instrument Cables,and Low-smoke Halogen-free Flame Retardant Refractory Cables and Wires

Certified since: May 5, 2014 Valid from: March 22, 2023 Valid until: April 5, 2026

The organization was certified by other CB prior to March 6, 2023

After a surveillance cycle, the certificate is valid only when used together with an Acceptance Notice of Surveillance Audit issued by CQC.
Please access www.cqc.com.cn for checking validity of the certificate.
This certificate and its relevant information can query in the website of Certification and Accreditation Administration of the People's Republic of China (www.cnca.gov.cn).

MANAGEMENT SYSTEM
CNAS C001-M

Signed by: Xie Zhaoxiu

MEMBER OF

CHINA QUALITY CERTIFICATION CENTRE

CHINA QUALITY CERTIFICATION CENTRE

Section 9, No.188, Nansihuan(the South Fourth Ring Road) Xilu(West Road), Beijing 100070, China

http://www.cqc.com.cn

A 0025702

2022年版

No.: CHSD17072511495

Certificate of Compliance

Directive 2011/65/EU
of the European Parliament and of the council
on the restriction of the use of certain hazardous substances
in electrical and electronic equipment

Applicant :	Shandong New Luxing Cable Co., Ltd.
Address of Applicant :	West side, Southern Huaxing Road, Linyi Economic Development Zone,Dezhou City,Shandong Province,China
Product Name :	0.6/1KV WDZBN-YJY 5x16mm2 Power cable
Model No.:	0.6/1KV WDZBN-YJY 5x16mm2 Power cable
Test Method:	IEC 62321-1:2013,IEC 62321-2:2013, IEC 62321-3-1: 2013 IEC 62321-4:2013,IEC 62321-5:2013,IEC 62321-6: 2015, IEC 62321-7-1: 2015,IEC 62321-7-2: 2017
Test Report Number(s):	THSD17072511495-EN
Date of issue:	2017/08/02

Conclusion

The certificate of compliance is based on an evaluation of a sample of the above-mentioned product. Technical report and documentation are at the applicant's disposal. This is to certify that the tested sample is in compliance with Directive 2011/65/EU of the European Parliament and Commission Decision 005/618/EC on the restriction of the use of certain hazardous substances (lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (Cr VI) , polybrominated biphenyls (PBB), polybrominated dphenyl hers (PBDE) in electrical and electronic equipment.

Approved by: Hermann Weiher

For and on behalf of
Global Testing Services Co., Ltd

RoHS

GLOBAL TESTING SERVICES CO., LTD. GTS CERTIFICATION

Global Testing Services Co., Ltd
E-mail:info@gts-lab.com http://www.gts-lab.com
No. 968 Meilong West Road, Minhang District, Shanghai,201104 China

Copyright of this certificate is owned by Global Testing Services Co., Ltd and may not be reproduced other than in full and with the prior approval of the General Manager.

ZERTIFIKAT ■ CERTIFICATE ■ CERTIFICADO ■ CERTIFICAT

TÜVRheinland®
Precisely Right.

Made-in-China
Connecting Buyers with Chinese Suppliers

Report Number: MIC-ASR2251001

Audit Date : 05 Aug., 2022

This report is issued by Focus Technology Co., Ltd. (Made-in-China.com) and the supervising inspectorate (TÜV Rheinland) to confirm that:

Company Name	:	**Shandong New Luxing Cable Co., Ltd.** **山东新鲁星电缆有限公司**
Showroom	:	https://luxingcable.en.made-in-china.com
Address	:	**West Side, South of Huaxing Road, Linyi Economic Development Zone, Dezhou City, Shandong Province, China**
Product	:	**Low Voltage Cable, Medium Voltage Cable, Control Cable, Instrumentation Cable, Fire Resistant Cable**

has been on site audited for the Following Scope of Activity

1. General Information
2. Foreign Trade Capacity
3. Product Research & Development Capacity
4. Management System and Product Certification
5. Production Capacity & Quality Control
6. Working Environment
7. Energy Saving and Emission Reduction
8. Photos

Audited Supplier

General Comments:

Shandong New Luxing Cable Co., Ltd. is a professional manufacturer of low voltage cable, medium voltage cable, control cable, instrumentation cable and fire resistant cable. It was established in 2011, located in Dezhou city, Shandong province, China. The company occupies an area of 40,000 square meters, and the annual production output was 43 million dollars in last year. The company has successful foreign trading experience in South America, Europe, Africa, Mideast and Southeast Asia.

Sign for and on behalf of
TÜV Rheinland

This report only presents the documents, files and information which collected from audited enterprise of TÜV Rheinland Group, not including the subject's authenticity, enterprise status, legal advice, any suggestions related to legal issues, any compliance of local/international requirements and product testing conclusion. This report reflects our findings for the particular company in concern on the date of our service only and does not discharge or relieve the factory/sellers/suppliers from their commercial, legal or contractual obligations with buyers in respect of products provided by the factory/sellers/suppliers. Any reader other than the party for which this report has been specifically issued is hereby informed that the General Conditions of Service of TÜV Rheinland contain liability limitation provisions.

Attention: To check the authenticity of testing/inspection report & certificate, please click: https://www.verified.chn.tuv.com/en/

450/750 PVC insulated Non sheathed single core cables BS6004 (1)

300/500 PVC insulated and PVC sheathed single core and multi core cables BS6004 (2-3)

300/500 PVC insulated and PVC sheathed flat wiring cables with bare CPC BS6004 (4)

300/500 PVC insulated and PVC sheathed flat wiring cable BS6004 (5)

0.6/1KV XLPE insulated cables according to IEC60502 (6-18)

0.6/1KV PVC insulated cables according to IEC60502 (19-30)

1.8/3KV to 26/35KV single core cables according to IEC60502 (31-49)

1.8/3KV to 26/35KV three core cables according to IEC60502 (50-68)

3.8/6.6KV to 19/33KV single core cables according to BS622/BS7835 (69-77)

3.8/6.6KV to 19/33KV three core cables according to BS622/BS7835 (78-85)

0.6/1KV ABC-Aerial Bundled Cables to BS 7870-5(AL/XLPE) (86-87)

0.6/1KV ABC-Aerial Bundled Cables to HD626 S1(AL/XLPE) (88-89)

0.6/1KV ABC-Aerial Bundled Cables to NF 33-209(AL/XLPE) (90-91)

0.6/1KV ABC-Aerial Bundled Cables to AN/NZS 3560.1(AL/XLPE) (92)

0.6/1KV ABC-Aerial Bundled Cables to DES/LVC/ABC specification & IEC 60502(AL/XLPE) (93)

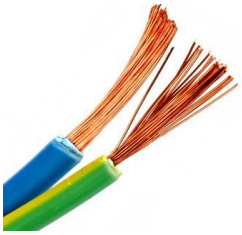
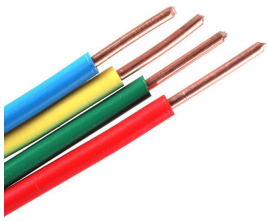
0.6/1KV ABC-Aerial Bundled Cables to IEC 60502&TNB specification (AL/PE) (94-95)

All Aluminum Conductor(AAC)Cables to BS215/BS EN 50182/IEC61089/ASTM B 231/DIN 48201 (96-103)

All Aluminum Alloy Conductor(AAAC)Cables to BS3242/BS EN 50182/IEC61089/ASTM B 399/DIN 48201 (104-110)

Aluminum Conductor Steel reinforced (ACSR)Cables to BS215/BS EN 50182/ASTM B 232/DIN 48204 (111-118)

PVC Insulated Non sheathed Single Core Cables


Standard：BS 6004

Voltage rating：450/750V

When installed in an earthed metal enclosure, cables are suitable for voltages up to 1000V a.c. or up to 750V to earth d.c.

Application：Industrial wiring.

These cables are intended for drawing into trunking and fixed, protected conduit. They may also be used inside installations such as lighting fittings, appliances, switchgear and controlgear, which are to be used in normal temperature zones.

Construction: Single core cable. Solid or stranded plain copper conductor, PVC insulated only.

Insulation colour: Black, Brown, Yellow, Blue, Red, Green/Yellow, Grey, Orange, White is also available.

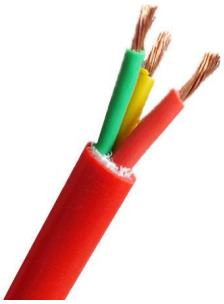
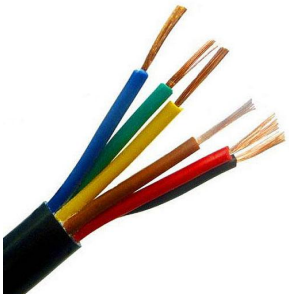
Maximum conductor temperature:70° C

Maximum conductor temperature during short Circuit:160° c

Cable 20° C water into 1h，infliction 2500V volage 5min，insulated to do not roke throuth.

PVC Insulated Non sheathed Single Core Cables								
Nominal Area	Class of conductor	Insulation Thickness	Biggest diameter	Approx weight of cable (mm)		Least insulates resistance	D．C．resistance Of conductor 20° C(Ω/km)	
mm^2		mm	mm	CU	AL	mΩ/km	CU	AL
1.0	1	0.7	2.6	14.98	/	0.011	18.1	/
	2	0.7	2.8	15.91	/	0.011	18.1	/
1.5	1	0.8	2.85	21	/	0.011	12.1	/
	2	0.8	3.03	22	/	0.010	12.1	/
2.5	1	0.8	3.46	32	/	0.010	7.41	/
	2	0.8	3.72	34	/	0.009	7.41	/
4	1	0.8	3.93	51	/	0.0085	4.61	/
	2	0.8	4.25	67	/	0.0077	4.61	/
6	1	0.8	4.44	67	/	0.0070	3.08	/
	2	0.8	4.83	73	/	0.0065	3.08	/
10	2	1.0	6.15	118	55.0	0.0070	1.83	3.08
16	2	1.0	7.20	181	79.2	0.0050	1.15	1.91
25	2	1.2	9.8	265	109.1	0.0050	0.727	1.20
35	2	1.2	11.0	358	141.5	0.0040	0.524	0.868
50	2	1.4	13.0	485	128.1	0.0045	0.387	0.641
70	2	1.4	15.0	688	261.4	0.0035	0.268	0.443
95	2	1.6	17.0	947	357.7	0.0035	0.193	0.320
120	2	1.6	19.0	1183	437.4	0.0032	0.153	0.253
150	2	1.8	21.0	1453	538.1	0.0032	0.124	0.206
185	2	2.0	23.5	1819	672.9	0.0032	0.0991	0.164

PVC Insulated and PVC sheathed Single Core and Multi Core Cables

Standard：BS 6004

Voltage rating：300/500V

Application：Domestic and light industrial .Suitble ;clipped to surface,on trays or in free air where there is Little risk of mechanical damage, Suitble for laying into trunking Or conduit etc. When mechanicl protection is required.May be embedded in plaster.

Construction:Single croe and Multi Core Cable.Soild or Stranded Plain copper ,PVC insulated and PVC sheathed.

Core colour:

single core:Brown or Blue

Two core: Brown and Blue

Three core: Brown,Blue and Green/Yellow

Four core: Green/Yellow, Black, Brown and Blue

Five core: Green/Yellow, Black, Brown,Blue and Black

Sheath colour:Grey

Other colours Available to order.

Minimum bending radius:10 times

Maximum conductor temperature:70° C

Maximum conductor temperature during short Circuit:160° c

The Cable expriments through AC 3000V 5min an voltage.

PVC Insulated and PVC sheathed Single Core and Multi Core Cables							
Nominal Area(mm^2)	Category	Insulate thickness	Coat thickness(mm)	Biggest Diameter	Approx. (kg/km)	Least insulates	D. C. resistance (Ω/km)
1x1.5	1	0.7	0.8	4.38	33.2	0.011	12.1
	2	0.7	0.8	4.56	35.9	0.010	12.1
	5	0.7	0.8	4.8	36.1	0.010	12.1
1x2.5	1	0.8	0.8	5.1	47.5	0.010	7.41
	2	0.8	0.8	5.3	50.5	0.009	7.41
	5	0.8	0.8	5.4	50.6	0.009	7.41
1x4	1	0.8	0.9	5.7	67.7	0.0085	4.61
	2	0.8	0.9	6.0	72.0	0.0077	4.61
	5	0.8	0.9	6.0	72.6	0.0077	4.61
1x6	1	0.8	0.9	5.2	88.8	0.0070	3.08
	2	0.8	0.9	6.7	96.4	0.0065	3.08
	5	0.8	0.9	7.0	100.4	0.0070	3.08
1x10	1	1.0	0.9	7.3	138.9	0.0070	1.83
	2	1.0	0.9	7.9	146.9	0.0065	1.83
	5	1.0	0.9	7.6	160.1	0.0065	1.83
1x16	2	1.0	1.0	9.1	218.3	0.0052	1.15

	5	1.0	1.0	10.8	230	0.0052	1.15
2x1.5	1	0.7	1.2	8.3	38.9	0.011	12.1
	2	0.7	1.2	8.7	41.0	0.010	12.1
2x2.5	1	0.8	1.2	9.6	45.9	0.010	7.41
	2	0.8	1.2	10.1	48.6	0.009	7.41
2x4	1	0.8	1.2	10.5	50.9	0.0085	4.61
	2	0.8	1.2	11.2	54.6	0.0077	4.61
2x6	1	0.8	1.2	11.5	56.3	0.0070	3.08
	2	0.8	1.2	12.3	60.6	0.0065	3.08
2x10	1	1.0	1.4	14.4	82.9	0.0070	1.83
	2	1.0	1.4	15.3	91.8	0.0065	1.83
2x16	1	1.0	1.4	17.4	102.0	0.0052	1.15
3x1.5	1	0.7	1.2	8.8	41.5	0.011	12.1
	2	0.7	1.2	9.2	43.7	0.010	12.1
3x2.5	1	0.8	1.2	10.1	48.6	0.010	7.41
	2	0.8	1.2	10.6	51.4	0.009	7.41
3x4	1	0.8	1.2	11.1	54.1	0.0085	4.61
	2	0.8	1.2	11.8	57.9	0.0077	4.61
3x6	1	0.8	1.4	12.6	71.4	0.0070	3.08
	2	0.8	1.4	13.4	76.5	0.0065	3.08
3x10	1	1.0	1.4	15.2	88.0	0.0070	1.83
	2	1.0	1.4	16.3	95.0	0.0065	1.83
3x16	2	1.0	1.4	18.5	109.0	0.0052	1.15
4x1.5	1	0.7	1.2	9.5	45.3	0.011	12.1
	2	0.7	1.2	10.0	48.1	0.010	12.1
4x2.5	1	0.8	1.2	11.0	53.5	0.010	7.41
	2	0.8	1.2	11.6	56.8	0.009	7.41
4x4	1	0.8	1.4	12.2	68.8	0.0085	4.61
	2	0.8	1.4	12.5	70.8	0.0077	4.61
4x6	1	0.8	1.4	13.7	78.4	0.0070	3.08
	2	0.8	1.4	14.7	84.8	0.0065	3.08
4x10	1	1.0	1.4	16.7	97.5	0.0070	1.83
	2	1.0	1.4	17.8	104.5	0.0065	1.83
4x16	2	1.0	1.4	20.4	121.1	0.0052	1.15
5x1.5	1	0.7	1.2	10.3	49.7	0.011	12.1
	2	0.7	1.2	10.8	52.5	0.010	12.1
5x2.5	1	0.8	1.2	11.3	55.2	0.010	7.41
	2	0.8	1.2	12.7	62.8	0.009	7.41
5x4	1	0.8	1.4	13.7	78.4	0.0085	4.61
	2	0.8	1.4	14.5	83.5	0.0077	4.61
5x6	1	0.8	1.4	15.0	86.7	0.0070	3.08
	2	0.8	1.4	16.1	93.7	0.0065	3.08
5x10	1	1.0	1.4	18.3	107.7	0.0070	1.83
	2	1.0	1.4	19.6	116.0	0.0065	1.83
5x16	2	1.0	1.6	22.9	155.2	0.0052	1.15

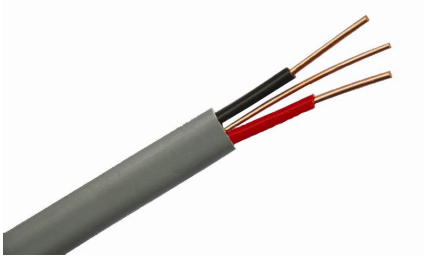
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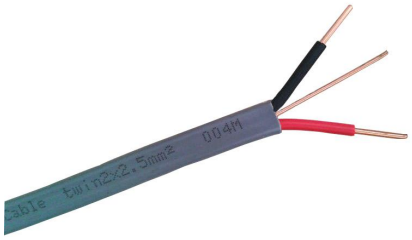
Class 1(solid conductor)

Class 2(strand conductor)

Class 5(flexible conductor)

PVC Insulated and PVC sheathed Flat Wiring Cables With Bare CPC





Standard：BS 6004

Voltage rating：300/500V

Application：Domestic and light industrial wiring.Suitable; clipped to surface, on trays or in free air where there is little risk of mechanical damage. Suitable for laying into trunking or conduit etc. when mechanical protection is required. May be embedded in plaster or laid in walls.

Construction: Two or Three core flat cables. Solid or stranded plain copper conductors, PVC insulation, laid parallel and PVC sheath.

Core colour:

Single core: Brown or Blue.

Two core: Brown and Blue.

Three core: Brown, Black and Grey.

Sheath colour:Grey

Minimum bending radius:10 times

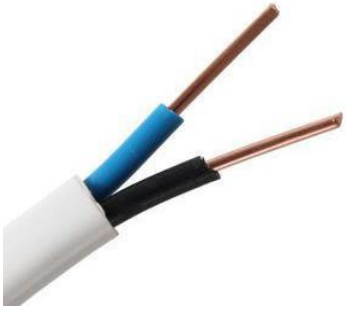
Maximum conductor temperature:70° C

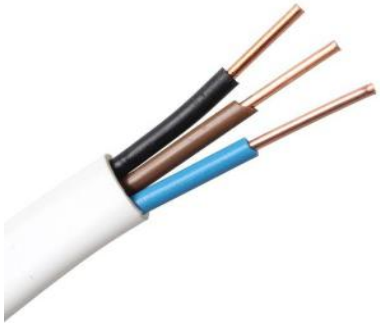
Maximum conductor temperature during short Circuit:160° c

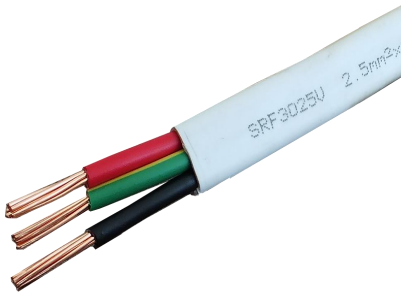
The Cable expriments through AC 3000V 5min an voltage.

PVC Insulated and PVC sheathed Flat Wiring Cables With Bare CPC								
Reference core number	Nominal Are	Class of conductor	Insulation thickness	sheath thickness	mean		CPC Class-section	Approx weight of cable
					Lower limit	Upper limit		
	mm^2		mm	mm	mm	mm	mm^2	(kg/km)
Two Cores with earth	1.0	1	0.6	0.9	4.0×7.2	4.7×8.6	1.0	68
	1.5	1	0.7	0.9	4.4×8.2	5.4×9.6	1.0	85
	2.5	1	0.8	1.0	5.2×9.8	6.2×11.5	1.5	123
	4	1	0.8	1.0	5.6×10.5	7.2×13.0	1.5	175
	6	1	0.8	1.1	6.4×12.5	8.0×15.0	2.5	240
	10	2	1.0	1.2	7.8×15.5	9.6×19.0	4	390
	16	2	1.0	1.3	9.0×18.0	11.0×22.5	6	560
Three Cores with earth	1.0	1	0.6	0.9	4.0×9.6	4.7×11.0	1.0	91
	1.5	1	0.7	0.9	4.4×10.5	5.4×12.5	1.0	117
	2.5	1	0.8	1.0	5.2×12.5	6.2×14.5	1.5	170
	4	1	0.8	1.0	5.8×14.5	7.4×18.0	1.5	250
	6	1	0.8	1.1	6.4×16.5	8.0×20.0	2.5	340
	10	2	1.0	1.2	7.8×21.0	9.6×29.5	4	540
	16	2	1.0	1.3	9.0×24.5	11.0×29.5	6	790
Single cores with	1.0	1	0.6	0.9	4.0×5.1	5.2×6.4	-	40
	1.5	1	0.7	0.9	4.4×5.4	5.8×7.0	-	48

PVC Insulated and PVC sheathed Flat Wiring Cables







Standard：BS 6004

Voltage rating：300/500V

Application：Domestic and light industrial wiring.Suitable; clipped to surface, on trays or in free air where there is little risk of mechanical damage. Suitable for laying into trunking or conduit etc. when mechanical protection is required. May be embedded in plaster or laid in walls.

Construction: Two or Three core flat cables.　Solid or stranded plain copper conductors, PVC insulated, laid parallel and PVC sheathed.

Core colour:

Two core: Red and Black.

Three core: Red, Yellow and Blue

Sheath colour:Grey or white

Minimum bending radius:10 times

Maximum conductor temperature:70° C

Maximum conductor temperature during short Circuit:160° c

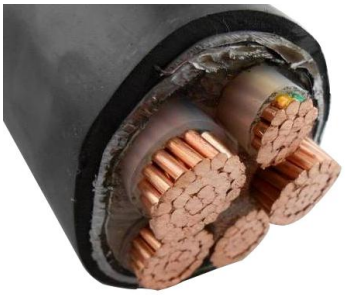
The Cable expriments through AC 3000V 5min an voltage.

PVC Insulated and PVC sheathed Flat Wiring Cables								
Reference number	Nominal Area	Class of conductor	Insulation thickness	sheath thickness	mean		Approx Weight of cable	D. C. resistance Of conductor 20° C
					Lower limit	Upper limit		
	mm^2		mm	mm	mm	mm	(kg/km)	(Ω/km)
Two core flan	1.0	1	0.6	0.9	4.0×6.2	4.7×7.4	53	18.1
	1.5	1	0.7	0.9	4.4×7.0	5.4×8.4	70	12.1
	2.5	1	0.8	1.0	5.2×8.4	6.2×9.8	104	7.41
	4	1	0.8	1.0	5.6×9.6	7.2×11.5	150	4.61
	6	1	0.8	1.1	6.4×10.5	8.0×13.0	203	3.08
	10	2	1.0	1.2	7.8×13.0	9.6×16.0	320	1.83
	16	2	1.0	1.3	9.0×15.5	11.0×18.5	470	1.15
Three core flan	1.0	1	0.6	0.9	4.0×8.4	4.7×9.8	79	18.1
	1.5	1	0.7	0.9	4.4×9.8	5.4×11.5	102	12.1
	2.5	1	0.8	1.0	5.2×11.5	6.2×13.5	150	7.41
	4	1	0.8	1.0	5.8×13.5	7.4×16.5	225	4.61
	6	1	0.8	1.1	6.4×15.0	8.1×18.0	300	3.08
	10	2	1.0	1.2	7.8×19.0	9.6×22.5	480	1.83
	16	2	1.0	1.3	9.0×22.0	11.0×26.5	695	1.15

0.6/1KV XLPE Insulated Cables according to IEC 60502-1







Applications

These cables are used for electricity supply in low voltage installation system, They are suitable for installation in indoors and outdoors, in cable ducts, under ground, in power and switching stations, local energy distributions, industrial plants, where there is no risk of mechanical damage.

Construction

Conductors

The conductors shall be either of Class 1 or Class 2 of plain or metal-coated annealed copper or of plain aluminium or aluminium alloy, or of Class 5 of plain or metal-coated copper in accordance with IEC 60228.

Insulation

XLPE material and thickness shall be as per IEC 60502 or BS 5467 rated for 90C continuous operation.

Colour Code

Colour Code (1)

1 Core	Red or Black
2 Cores	Red, Black
3 Cores	Red, Yellow, Blue
4 Cores	Red, Yellow, Blue, Black
5 Cores	Red, Yellow, Blue, Black, Green
Above 5 Cores	Black Cores with White numerals

Colour Code (2)

1 Core	Brown or Blue
2 Cores	Brown, Blue
3 Cores	Brown, Black, Grey
4 Cores	Blue, Brown, Black, Grey

5 Cores	Green/Yellow, Blue, Brown, Black, Grey
Above 5 Cores	Black Cores with White numerals

Other colours can be manufactured upon request.

Assembly / Inner Covering

The inner coverings may be extruded or lapped. For cables with circular cores, except cables with more than five cores, a lapped inner covering shall be permitted only if the interstices between the cores are substantially filled. A suitable binder is permitted before application of an extruded inner covering. The material is compatible with the insulating material,The materials used for inner coverings and fillers shall be suitable for the operating temperature of the cable and compatible with the insulating material.For halogen free cables, the inner covering and fillers shall also be halogen free compound.

Armour

Aluminum/galvanized steel/steel wires applied helically over the Inner Covering as per IEC 60502-1, or double aluminum/steel tapes and copper/tinned copper wire can also be manufactured upon request.

Outer Sheath

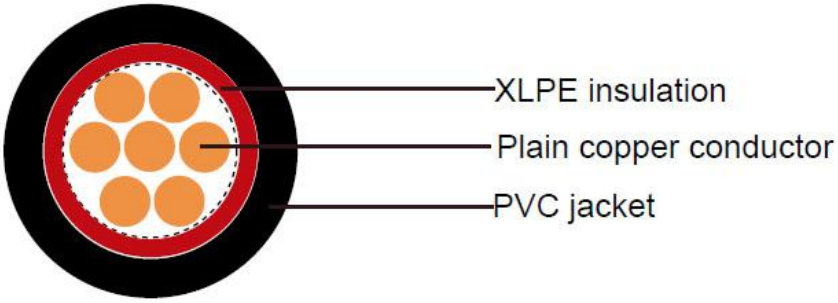
Outer sheath shall be of extruded PVC Type ST1/ST2 as per IEC 60502-1, Polyethylene type ST3/ST7, Halogen free compound ST8, Polychloroprene, chlorosulfonated polyethylene or similar polymers, type SE1 are also available on request.

Fire Performance of Cable Sheaths

Cables can be supplied with special flame retardant PVC outer sheath to comply with the flame test requirements of IEC 60332-3-22, IEC 60332-3-23 and IEC 60332-3-24, Halogen Free material comply to IEC60754-1/2 and IEC 60684-2.

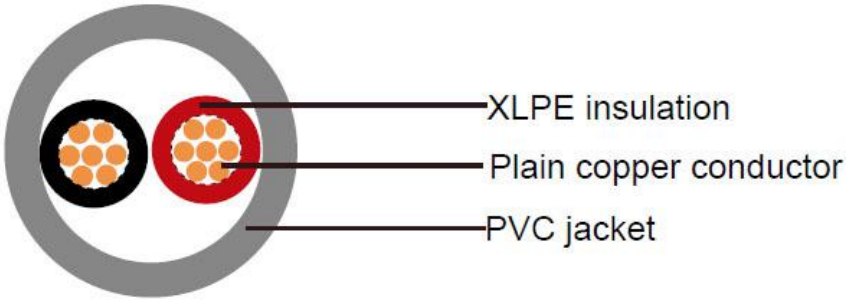
Cable Parameters

Single core(unarmoured)



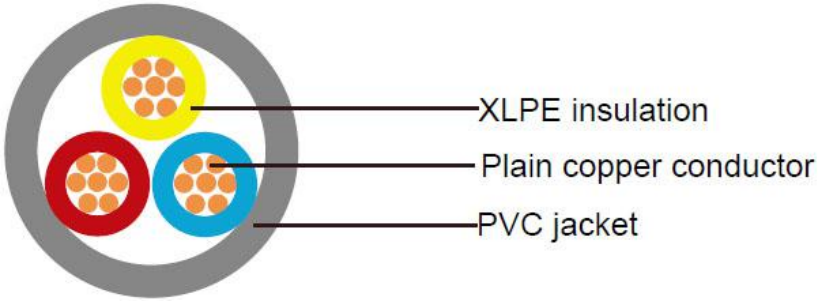
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
1x1.5	1.4	0.7	1.4	5.6
1x2.5	1.8	0.7	1.4	6.0
1x4	2.3	0.7	1.4	6.5
1x6	2.8	0.7	1.4	7.0
1x10	3.6	0.7	1.4	7.8
1x16	4.5	0.7	1.4	8.7
1x25	5.6	0.9	1.4	10.2
1x35	6.7	0.9	1.4	11.3
1x50	8.0	1	1.4	12.8
1x70	9.4	1.1	1.4	14.4
1x95	11.0	1.1	1.5	16.1
1x120	12.4	1.2	1.5	17.8
1x150	13.8	1.4	1.6	19.8
1x185	15.3	1.6	1.6	21.8
1x240	17.5	1.7	1.7	24.4
1x300	19.5	1.8	1.8	26.7
1x400	22.6	2	1.9	30.5
1x500	25.2	2.2	2.0	33.7
1x630	28.3	2.4	2.2	37.4
1x800	31.9	2.6	2.3	41.7
1x1000	35.7	2.8	2.4	46.2

Two cores(unarmoured)



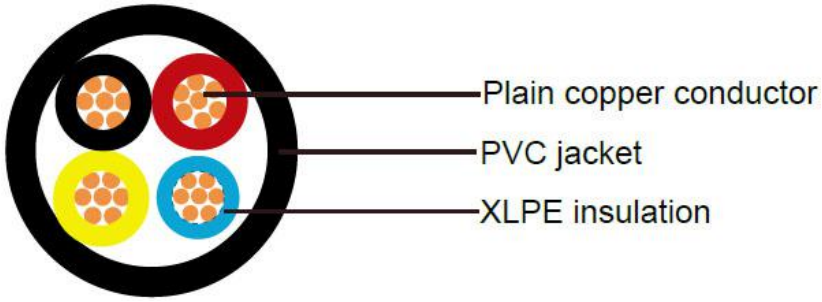
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
2x1.5	1.4	0.7	1.8	9.2
2x2.5	1.8	0.7	1.8	10.0
2x4	2.3	0.7	1.8	11.0
2x6	2.8	0.7	1.8	12.0
2x10	3.6	0.7	1.8	13.6
2x16	4.5	0.7	1.8	15.4
2x25	5.6	0.9	1.8	18.4
2x35	6.7	0.9	1.8	20.6
2x50	8.0	1	1.8	23.6
2x70	9.4	1.1	1.8	26.8
2x95	11.0	1.1	1.9	30.2
2x120	12.4	1.2	2.0	33.7
2x150	13.8	1.4	2.2	37.5
2x185	15.3	1.6	2.3	41.6
2x240	17.5	1.7	2.5	46.7
2x300	19.5	1.8	2.6	51.4
2x400	22.6	2	2.9	58.9

Three cores(unarmoured)



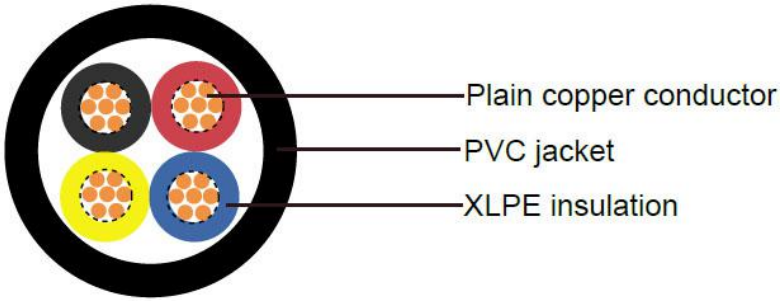
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
3x1.5	1.4	0.7	1.8	9.6
3x2.5	1.8	0.7	1.8	10.5
3x4	2.3	0.7	1.8	11.6
3x6	2.8	0.7	1.8	12.6
3x10	3.6	0.7	1.8	14.4
3x16	4.5	0.7	1.8	16.3
3x25	5.6	0.9	1.8	19.5
3x35	6.7	0.9	1.8	21.9
3x50	8.0	1	1.8	25.1
3x70	9.4	1.1	1.9	28.7
3x95	11.0	1.1	2.0	32.4
3x120	12.4	1.2	2.1	36.1
3x150	13.8	1.4	2.3	40.3
3x185	15.3	1.6	2.4	44.6
3x240	17.5	1.7	2.6	50.2
3x300	19.5	1.8	2.7	55.2
3x400	22.6	2	3.0	63.3

Three cores+1(unarmoured)



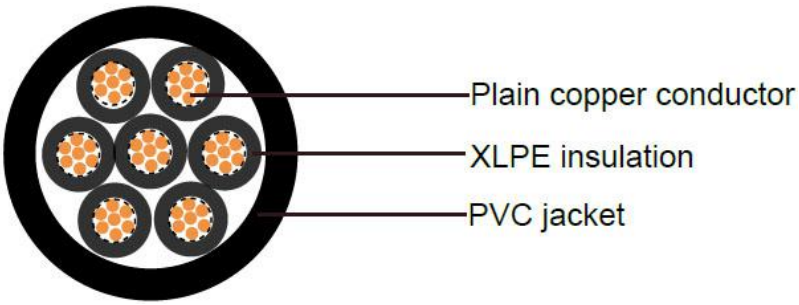
Nominal Cross Section	Diameter of Conductor (Approx.)		Nominal Insulation Thickness		Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	(3)mm	(1)mm	(3)mm	(1)mm	mm	mm
3x 16/10	4.5	3.6	0.7	0.7	1.8	17.5
3x 25/16	5.6	4.5	0.9	0.7	1.8	21.2
3x 35/16	6.7	4.5	0.9	0.7	1.8	23.8
3x 50/25	8	5.6	1	0.9	1.8	27.5
3x 70/35	9.4	6.7	1.1	0.9	2.0	31.7
3x 95/50	11	8	1.1	1	2.1	35.8
3x120/70	12.4	9.4	1.2	1.1	2.3	39.9
3x150/70	13.8	9.4	1.4	1.1	2.4	44.6
3x185/95	15.3	11	1.6	1.1	2.6	49.5
3x240/120	17.5	12.4	1.7	1.2	2.8	55.7
3x300/150	19.5	13.8	1.8	1.4	3.0	61.4
3x400/185	22.6	15.3	2	1.6	3.2	70.4

Four cores(unarmoured)



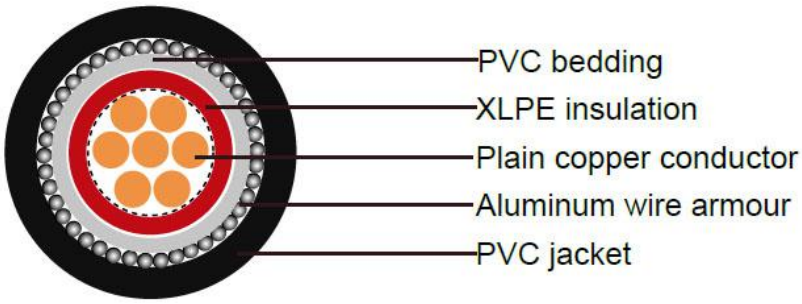
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
4x1.5	1.4	0.7	1.8	10.4
4x2.5	1.8	0.7	1.8	11.3
4x4	2.3	0.7	1.8	12.5
4x6	2.8	0.7	1.8	13.7
4x10	3.6	0.7	1.8	15.7
4x16	4.5	0.7	1.8	17.8
4x25	5.6	0.9	1.8	21.5
4x35	6.7	0.9	1.8	24.1
4x50	8.0	1	1.8	27.8
4x70	9.4	1.1	2.0	32.0
4x95	11.0	1.1	2.1	36.1
4x120	12.4	1.2	2.3	40.2
4x150	13.8	1.4	2.4	44.9
4x185	15.3	1.6	2.6	49.8
4x240	17.5	1.7	2.8	56.0
4x300	19.5	1.8	3.0	61.7
4x400	22.6	2	3.2	70.7

Multi-cores(unarmoured)



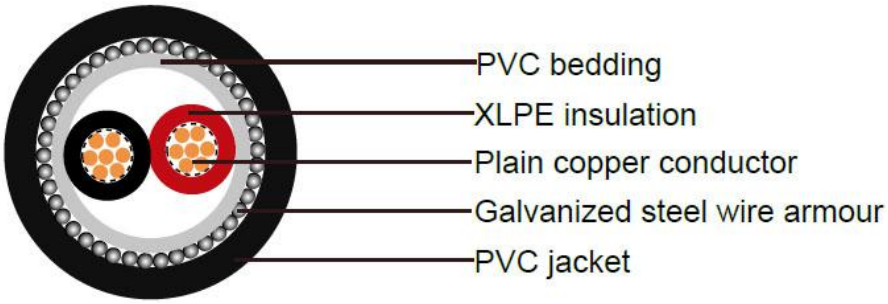
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
5x1.5	1.4	0.7	1.8	11.2
7x1.5	1.4	0.7	1.8	12.0
10x1.5	1.4	0.7	1.8	14.8
12x1.5	1.4	0.7	1.8	15.2
14x1.5	1.4	0.7	1.8	16.0
19x1.5	1.4	0.7	1.8	17.6
21x1.5	1.4	0.7	1.8	18.4
24x1.5	1.4	0.7	1.8	20.4
30x1.5	1.4	0.7	1.8	21.6
40x1.5	1.4	0.7	1.8	26.0
48x1.5	1.4	0.7	1.8	26.4
61x1.5	1.4	0.7	1.9	29.0
5x2.5	1.8	0.7	1.8	12.2
7x2.5	1.8	0.7	1.8	13.2
10x2.5	1.8	0.7	1.8	16.4
12x2.5	1.8	0.7	1.8	16.9
14x2.5	1.8	0.7	1.8	17.7
19x2.5	1.8	0.7	1.8	19.6
21x2.5	1.8	0.7	1.8	20.6
24x2.5	1.8	0.7	1.8	22.8
30x2.5	1.8	0.7	1.8	24.1
40x2.5	1.8	0.7	1.9	29.4
48x2.5	1.8	0.7	1.9	29.9
61x2.5	1.8	0.7	2.0	32.8

Single core(aluminum wire armoured)



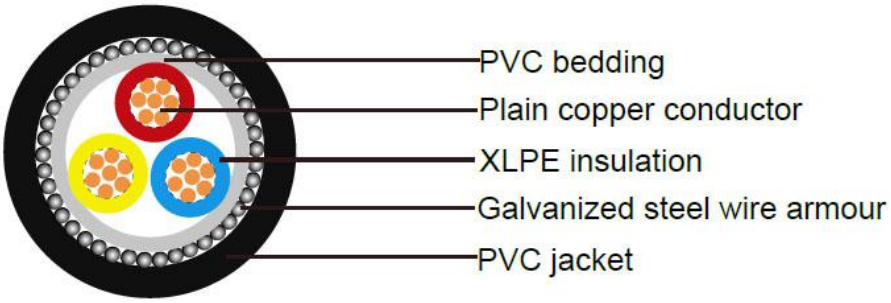
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Alum Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm
1x4	2.3	0.7	1.0	0.8	1.8	10.9
1x6	2.8	0.7	1.0	0.8	1.8	11.4
1x10	3.6	0.7	1.0	0.8	1.8	12.2
1x16	4.5	0.7	1.0	0.8	1.8	13.1
1x25	5.6	0.9	1.0	0.8	1.8	14.6
1x35	6.7	0.9	1.0	1.25	1.8	16.6
1x50	8.0	1	1.0	1.25	1.8	18.1
1x70	9.4	1.1	1.0	1.25	1.8	19.7
1x95	11.0	1.1	1.0	1.6	1.8	22.0
1x120	12.4	1.2	1.0	1.6	1.8	23.6
1x150	13.8	1.4	1.0	1.6	1.8	25.4
1x185	15.3	1.6	1.0	1.6	1.8	27.4
1x240	17.5	1.7	1.0	1.6	1.9	29.9
1x300	19.5	1.8	1.0	2.0	2.0	33.1
1x400	22.6	2	1.2	2.0	2.2	37.3
1x500	25.2	2.2	1.2	2.0	2.3	40.5

Two cores(Galvanized steel wire armoured)



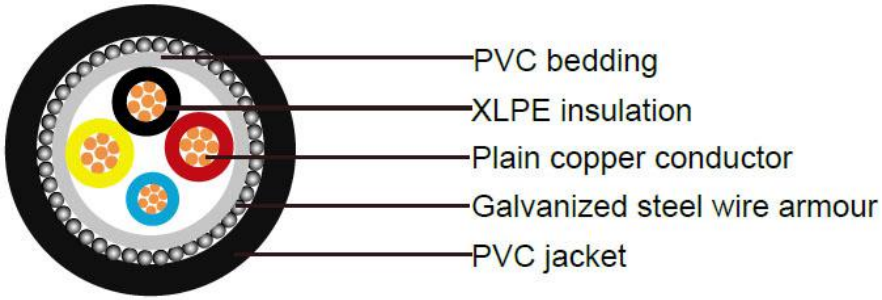
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm
2x1.5	1.4	0.7	1.0	0.8	1.8	12.8
2x2.5	1.8	0.7	1.0	0.8	1.8	13.6
2x4	2.3	0.7	1.0	0.8	1.8	14.6
2x6	2.8	0.7	1.0	1.25	1.8	16.5
2x10	3.6	0.7	1.0	1.25	1.8	18.1
2x16	4.5	0.7	1.0	1.25	1.8	19.9
2x25	5.6	0.9	1.0	1.6	1.8	23.6
2x35	6.7	0.9	1.0	1.6	1.8	25.8
2x50	8.0	1	1.0	1.6	1.9	29.0
2x70	9.4	1.1	1.0	2.0	2.0	33.2
2x95	11.0	1.1	1.2	2.0	2.1	37.1
2x120	12.4	1.2	1.2	2.0	2.3	40.5
2x150	13.8	1.4	1.2	2.5	2.4	45.4
2x185	15.3	1.6	1.4	2.5	2.6	49.9
2x240	17.5	1.7	1.4	2.5	2.7	55.1
2x300	19.5	1.8	1.6	2.5	2.9	60.2
2x400	22.6	2	1.6	2.5	3.1	67.7

Three cores(Galvanized steel wire armoured)



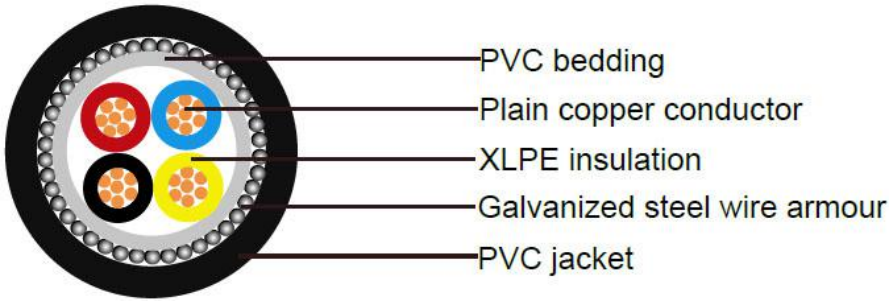
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm
3x1.5	1.4	0.7	1.0	0.8	1.8	13.2
3x2.5	1.8	0.7	1.0	0.8	1.8	14.1
3x4	2.3	0.7	1.0	0.8	1.8	15.2
3x6	2.8	0.7	1.0	1.25	1.8	17.1
3x10	3.6	0.7	1.0	1.25	1.8	18.9
3x16	4.5	0.7	1.0	1.25	1.8	20.8
3x25	5.6	0.9	1.0	1.6	1.8	24.7
3x35	6.7	0.9	1.0	1.6	1.8	27.2
3x50	8.0	1	1.0	1.6	1.9	30.6
3x70	9.4	1.1	1.0	2.0	2.1	35.2
3x95	11.0	1.1	1.2	2.0	2.2	39.3
3x120	12.4	1.2	1.2	2.0	2.3	43.0
3x150	13.8	1.4	1.4	2.5	2.5	48.6
3x185	15.3	1.6	1.4	2.5	2.7	53.0
3x240	17.5	1.7	1.4	2.5	2.8	58.5
3x300	19.5	1.8	1.6	2.5	3.0	64.0
3x400	22.6	2	1.6	3.15	3.3	73.5

Three cores+1(Galvanized steel wire armoured)



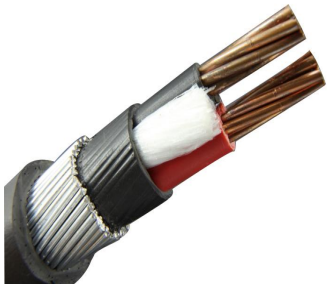
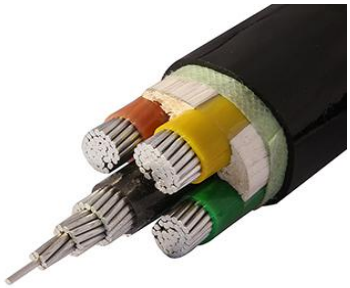
Nominal Cross Section	Diameter of Conductor (Approx.)		Nominal Insulation thickness		Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	(3) mm	(1) mm	(3) mm	(1) mm	mm	mm	mm	mm
3x 16/10	4.5	3.6	0.7	0.7	1	1.6	1.8	22.7
3x 25/16	5.6	4.5	0.9	0.7	1	1.6	1.8	26.5
3x 35/16	6.7	4.5	0.9	0.7	1	1.6	1.9	29
3x 50/25	8.0	5.6	1	0.9	1	1.6	2.1	33
3x 70/35	9.4	6.7	1.1	0.9	1.2	2	2.2	38
3x 95/50	11.0	8.0	1.1	1	1.2	2	2.3	42.4
3x120/70	12.4	9.4	1.2	1.1	1.2	2	2.5	48.0
3x150/70	13.8	9.4	1.4	1.1	1.4	2.5	2.7	52
3x185/95	15.3	11.0	1.6	1.1	1.4	2.5	2.8	57.2
3x240/120	17.5	12.4	1.7	1.2	1.6	2.5	3.1	64
3x300/150	19.5	13.8	1.8	1.4	1.6	2.5	3.2	69.8
3x400/185	22.6	15.3	2	1.6	1.6	3.15	3.6	78.6

Four cores(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm
4x1.5	1.4	0.7	1.0	0.8	1.8	14.0
4x2.5	1.8	0.7	1.0	0.8	1.8	14.9
4x4	2.3	0.7	1.0	1.25	1.8	17.0
4x6	2.8	0.7	1.0	1.25	1.8	18.2
4x10	3.6	0.7	1.0	1.25	1.8	20.2
4x16	4.5	0.7	1.0	1.6	1.8	23.0
4x25	5.6	0.9	1.0	1.6	1.8	26.7
4x35	6.7	0.9	1.0	1.6	1.9	29.5
4x50	8.0	1	1.0	2.0	2.1	34.2
4x70	9.4	1.1	1.2	2.0	2.2	38.8
4x95	11.0	1.1	1.2	2.0	2.3	42.9
4x120	12.4	1.2	1.4	2.5	2.5	48.6
4x150	13.8	1.4	1.4	2.5	2.7	53.2
4x185	15.3	1.6	1.4	2.5	2.8	58.1
4x240	17.5	1.7	1.6	2.5	3.1	64.8
4x300	19.5	1.8	1.6	2.5	3.2	70.4
4x400	22.6	2	1.8	3.15	3.6	81.3

0.6/1KV PVC Insulated Cables according to IEC 60502-1

Applications

These cables are used for electricity supply in low voltage installation system, They are suitable for installation in indoors and outdoors, in cable ducts, under ground, in power and switching stations, local energy distributions, industrial plants, where there is no risk of mechanical damage.

Construction

-Conductors

The conductors shall be either of Class 1 or Class 2 of plain or metal-coated annealed copper or of plain aluminium or aluminium alloy, or of Class 5 of plain or metal-coated copper in accordance with IEC 60228.

-Insulation

PVC Insulation material and thickness shall be as per IEC 60502-1, PVC material shall be Type A as per IEC 60502-1.

-Colour Code

Colour Code (1)

1 Core	Red or Black
2 Cores	Red, Black
3 Cores	Red, Yellow, Blue
4 Cores	Red, Yellow, Blue, Black
5 Cores	Red, Yellow, Blue, Black, Green
Above 5 Cores	Black Cores with White numerals

Colour Code (2)

1 Core	Brown or Blue
2 Cores	Brown, Blue
3 Cores	Brown, Black, Grey
4 Cores	Blue, Brown, Black, Grey
5 Cores	Green/Yellow, Blue, Brown, Black, Grey
Above 5 Cores	Black Cores with White numerals

Other colours can be manufactured upon request.

-Assembly / Inner Covering

The inner coverings may be extruded or lapped. For cables with circular cores, except cables with more than five cores, a lapped inner covering shall be permitted only if the interstices between the cores are substantially filled. A suitable binder is permitted before application of an extruded inner covering. The materials used for inner coverings and fillers shall be suitable for the operating temperature of the cable and compatible with the insulating material.For halogen free cables, the inner covering and fillers shall also be halogen free compound.

-Armour

Aluminum/galvanized steel/steel wires applied helically over the Inner Covering as per IEC 60502-1, or double aluminum/steel tapes and copper/tinned copper wire can also be manufactured upon request.

-Outer Sheath

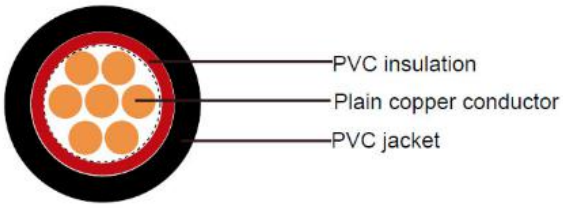
Outer sheath shall be of extruded PVC Type ST1/ST2 as per IEC 60502-1, Polyethylene type ST3/ST7, Halogen free compound ST8, Polychloroprene, chlorosulfonated polyethylene or similar polymers, type SE1 are also available on request.

-Fire Performance of Cable Sheaths

Cables can be supplied with special flame retardant PVC outer sheath to comply with the flame test requirements of IEC 60332-3-22, IEC 60332-3-23 and IEC 60332-3-24, Halogen Free material comply to IEC60754-1/2 and IEC 60684-2.

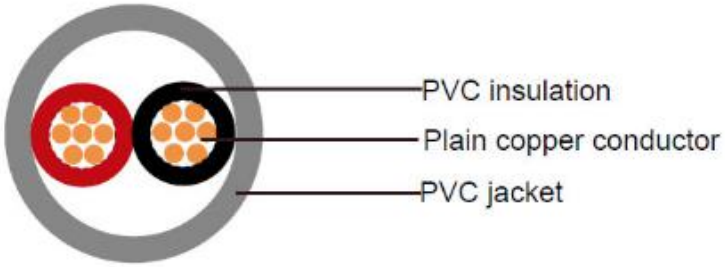
Parameters

Single core(unarmoured)



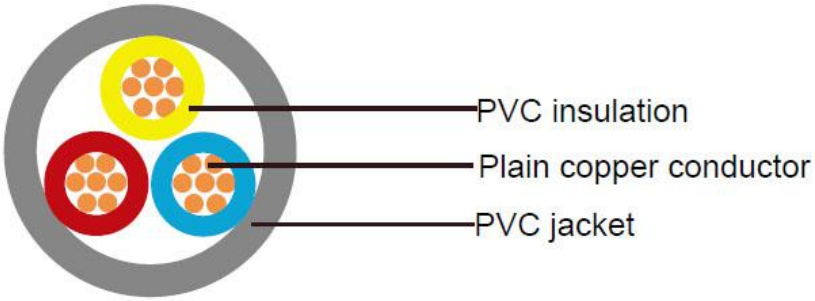
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
1x4	2.3	1	1.4	7.1
1x6	2.8	1	1.4	7.6
1x10	3.6	1	1.4	8.4
1x16	4.5	1	1.4	9.3
1x25	5.6	1.2	1.4	10.8
1x35	6.7	1.2	1.4	11.9
1x50	8	1.4	1.4	13.6
1x70	9.4	1.4	1.4	15.1
1x95	11	1.6	1.5	17.2
1x120	12.4	1.6	1.5	18.7
1x150	13.8	1.8	1.6	20.6
1x185	15.3	2	1.7	22.7
1x240	17.5	2.2	1.8	25.4
1x300	19.5	2.4	1.9	28.0
1x400	22.6	2.6	2.0	31.7
1x500	25.2	2.8	2.1	35.0
1x630	28.3	2.8	2.2	38.3

Two cores(unarmoured)



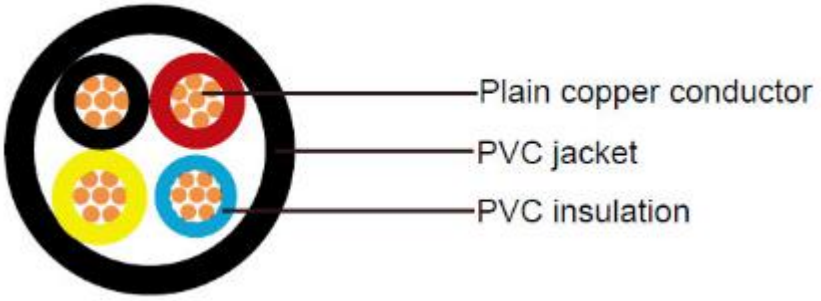
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
2x1.5	1.4	0.8	1.8	9.6
2x2.5	1.8	0.8	1.8	10.4
2x4	2.3	1	1.8	12.2
2x6	2.8	1	1.8	13.2
2x10	3.6	1	1.8	14.8
2x16	4.5	1	1.8	16.6
2x25	5.6	1.2	1.8	19.6
2x35	6.7	1.2	1.8	21.8
2x50	8	1.4	1.8	25.2
2x70	9.4	1.4	1.9	28.1
2x95	11	1.6	2.0	32.4
2x120	12.4	1.6	2.1	35.4
2x150	13.8	1.8	2.2	39.2
2x185	15.3	2	2.4	43.3
2x240	17.5	2.2	2.5	48.9
2x300	19.5	2.4	2.7	54.0
2x400	22.6	2.6	2.9	61.5

Three cores(unarmoured)



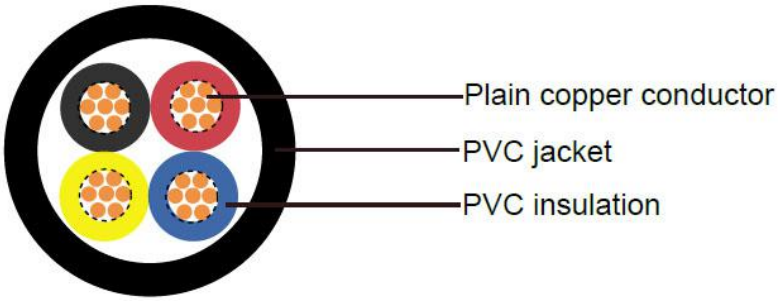
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
3x1.5	1.4	0.8	1.8	10.1
3x2.5	1.8	0.8	1.8	10.9
3x4	2.3	1	1.8	12.9
3x6	2.8	1	1.8	13.9
3x10	3.6	1	1.8	15.7
3x16	4.5	1	1.8	17.6
3x25	5.6	1.2	1.8	20.8
3x35	6.7	1.2	1.8	23.2
3x50	8	1.4	1.8	26.9
3x70	9.4	1.4	1.9	30.1
3x95	11	1.6	2.1	34.7
3x120	12.4	1.6	2.2	38.0
3x150	13.8	1.8	2.3	42.1
3x185	15.3	2	2.5	46.5
3x240	17.5	2.2	2.7	52.5
3x300	19.5	2.4	2.8	58.0
3x400	22.6	2.6	3.1	66.1

Three cores+1(unarmoured)



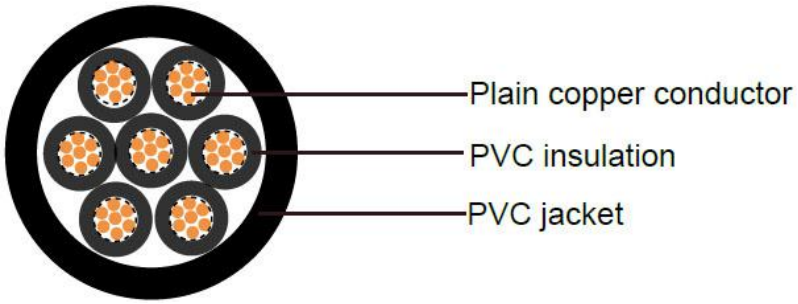
Nominal Cross Section	Diameter of Conductor (Approx.)		Nominal Insulation Thickness		Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	(3)mm	(1)mm	(3)mm	(1)mm	mm	mm
3x 16/10	4.5	3.6	1	1	1.8	19.0
3x 25/16	5.6	4.5	1.2	1	1.8	22.6
3x 35/16	6.7	4.5	1.2	1	1.8	25.3
3x 50/25	8.0	5.6	1.4	1.2	1.9	29.6
3x 70/35	9.4	6.7	1.4	1.2	2.0	33.2
3x 95/50	11.0	8.0	1.6	1.4	2.2	38.4
3x120/70	12.4	9.4	1.6	1.4	2.3	42.0
3x150/70	13.8	9.4	1.8	1.4	2.5	46.6
3x185/95	15.3	11.0	2	1.6	2.6	51.6
3x240/120	17.5	12.4	2.2	1.6	2.9	58.3
3x300/150	19.5	13.8	2.4	1.8	3.1	64.5
3x400/185	22.6	15.3	2.6	2	3.3	73.5

Four cores(unarmored)



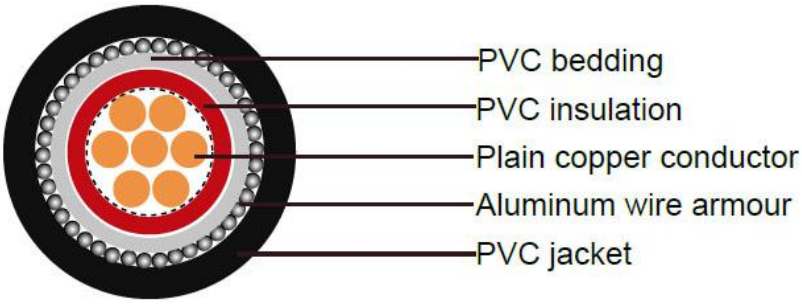
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
4x1.5	1.4	0.8	1.8	10.8
4x2.5	1.8	0.8	1.8	11.8
4x4	2.3	1	1.8	14.0
4x6	2.8	1	1.8	15.2
4x10	3.6	1	1.8	17.1
4x16	4.5	1	1.8	19.3
4x25	5.6	1.2	1.8	22.9
4x35	6.7	1.2	1.8	25.6
4x50	8	1.4	1.9	29.9
4x70	9.4	1.4	2.0	33.5
4x95	11	1.6	2.2	38.7
4x120	12.4	1.6	2.3	42.3
4x150	13.8	1.8	2.5	46.9
4x185	15.3	2	2.6	51.9
4x240	17.5	2.2	2.9	58.6
4x300	19.5	2.4	3.1	64.8
4x400	22.6	2.6	3.3	73.8

Multi-cores(unarmoured)



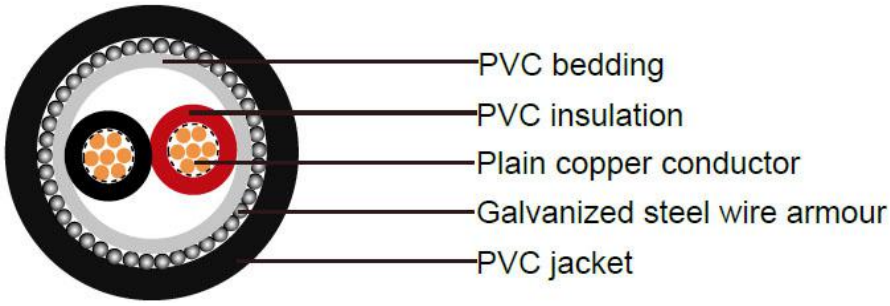
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation Thickness	Nominal Sheath Thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm
5x1.5	1.4	0.8	1.8	11.7
7x1.5	1.4	0.8	1.8	12.6
10x1.5	1.4	0.8	1.8	15.6
12x1.5	1.4	0.8	1.8	16.1
14x1.5	1.4	0.8	1.8	16.8
19x1.5	1.4	0.8	1.8	18.6
21x1.5	1.4	0.8	1.8	19.5
24x1.5	1.4	0.8	1.8	21.6
30x1.5	1.4	0.8	1.8	22.8
40x1.5	1.4	0.8	1.8	27.7
48x1.5	1.4	0.8	1.9	28.2
61x1.5	1.4	0.8	1.9	30.9
5x2.5	1.8	0.8	1.8	12.8
7x2.5	1.8	0.8	1.8	13.8
10x2.5	1.8	0.8	1.8	17.2
12x2.5	1.8	0.8	1.8	17.7
14x2.5	1.8	0.8	1.8	18.6
19x2.5	1.8	0.8	1.8	20.6
21x2.5	1.8	0.8	1.8	21.6
24x2.5	1.8	0.8	1.8	24.0
30x2.5	1.8	0.8	1.8	25.4
40x2.5	1.8	0.8	2.0	31.1
48x2.5	1.8	0.8	2.0	31.7
61x2.5	1.8	0.8	2.1	34.7

Single core(aluminum wire armoured)



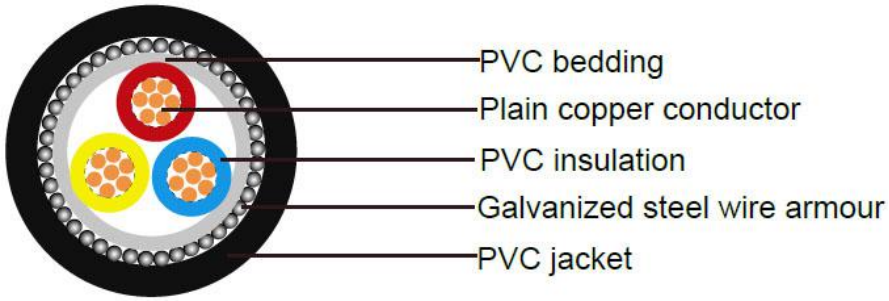
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm
1x4	2.3	1	1.0	0.8	1.8	11.5
1x6	2.8	1	1.0	0.8	1.8	12.0
1x10	3.6	1	1.0	0.8	1.8	12.8
1x16	4.5	1	1.0	0.8	1.8	13.7
1x25	5.6	1.2	1.0	0.8	1.8	15.2
1x35	6.7	1.2	1.0	1.25	1.8	17.2
1x50	8.0	1.4	1.0	1.25	1.8	18.9
1x70	9.4	1.4	1.0	1.25	1.8	20.3
1x95	11.0	1.6	1.0	1.6	1.8	23.0
1x120	12.4	1.6	1.0	1.6	1.8	24.4
1x150	13.8	1.8	1.0	1.6	1.8	26.2
1x185	15.3	2	1.0	1.6	1.9	28.2
1x240	17.5	2.2	1.0	1.6	1.9	31.0
1x300	19.5	2.4	1.0	2.0	2.1	34.4
1x400	22.6	2.6	1.2	2.0	2.2	38.6
1x500	25.2	2.8	1.2	2.0	2.3	41.8
1x630	28.3	2.8	1.2	2.5	2.4	46.2

Two cores(Galvanized steel wire armoured)



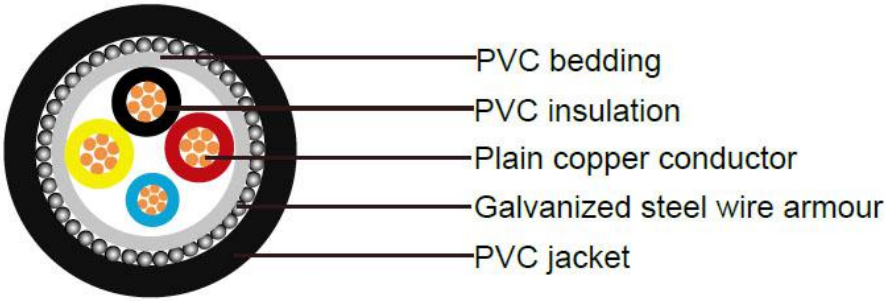
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm
2x2.5	1.8	0.8	1.0	0.8	1.8	14.0
2x4	2.3	1	1.0	1.25	1.8	16.7
2x6	2.8	1	1.0	1.25	1.8	17.7
2x10	3.6	1	1.0	1.25	1.8	19.3
2x16	4.5	1	1.0	1.25	1.8	21.1
2x25	5.6	1.2	1.0	1.6	1.8	24.8
2x35	6.7	1.2	1.0	1.6	1.8	27.0
2x50	8	1.4	1.0	1.6	1.9	30.7
2x70	9.4	1.4	1.0	2.0	2.1	34.5
2x95	11	1.6	1.2	2.0	2.2	39.2
2x120	12.4	1.6	1.2	2.0	2.3	42.2
2x150	13.8	1.8	1.2	2.5	2.5	47.2
2x185	15.3	2	1.4	2.5	2.6	51.6
2x240	17.5	2.2	1.4	2.5	2.8	57.2
2x300	19.5	2.4	1.6	2.5	3.0	62.8
2x400	22.6	2.6	1.6	2.5	3.2	70.3

Three cores(Galvanized steel wire armoured)



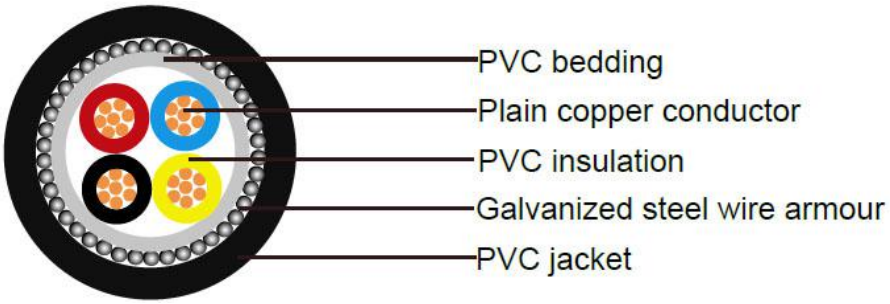
Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm
3x2.5	1.8	0.8	1.0	0.8	1.8	14.5
3x4	2.3	1	1.0	1.25	1.8	17.4
3x6	2.8	1	1.0	1.25	1.8	18.4
3x10	3.6	1	1.0	1.25	1.8	20.2
3x16	4.5	1	1.0	1.6	1.8	22.8
3x25	5.6	1.2	1.0	1.6	1.8	26.0
3x35	6.7	1.2	1.0	1.6	1.9	28.5
3x50	8.0	1.4	1.0	2	2.0	33.3
3x70	9.4	1.4	1.2	2	2.1	37.0
3x95	11.0	1.6	1.2	2	2.3	41.6
3x120	12.4	1.6	1.2	2.5	2.4	45.9
3x150	13.8	1.8	1.4	2.5	2.6	50.4
3x185	15.3	2	1.4	2.5	2.7	54.8
3x240	17.5	2.2	1.5	2.5	2.9	61.2
3x300	19.5	2.4	1.6	2.5	3.1	66.8
3x400	22.6	2.8	1.6	3.15	3.4	76.7
3x500	25.2	2.8	1.8	3.15	3.7	83.6

Three cores+1(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)		Nominal Insulation thickness		Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm	mm	mm
3x10/6	3.6	2.8	1	1	1	1.25	1.8	21.9
3x16/10	4.5	3.6	1	1	1	1.6	1.8	24.2
3x25/16	5.6	4.5	1.2	1	1	1.6	1.8	27.9
3x35/16	6.7	4.5	1.2	1	1	1.6	1.9	30.8
3x50/25	8.0	5.6	1.4	1.2	1	2.0	2.0	36.4
3x70/35	9.4	6.7	1.4	1.2	1.2	2.0	2.1	40.1
3x95/50	11.0	8.0	1.6	1.4	1.2	2.5	2.3	46.3
3x120/70	12.4	9.4	1.6	1.4	1.4	2.5	2.4	50.3
3x150/70	13.8	9.4	1.8	1.4	1.4	2.5	2.6	55.0
3x185/95	15.3	11.0	2	1.6	1.4	2.5	2.7	60.3
3x240/120	17.5	12.4	2.2	1.6	1.6	2.5	2.9	67.0
3x300/150	19.5	13.8	2.4	1.8	1.6	3.15	3.1	74.6
3x400/185	22.6	15.3	2.6	2	1.8	3.15	3.4	84.1
3x500/240	25.2	17.5	2.8	2.2	2	3.15	3.7	91.8

Four cores(Galvanized steel wire armoured)



Nominal Cross Section	Diameter of Conductor (Approx.)	Nominal Insulation thickness	Nominal Inner Covering thickness	Nominal Steel Wire dia.	Nominal Sheath thickness	Overall Diameter (Approx.)
mm^2	mm	mm	mm	mm	mm	mm
4x4	2.3	1	1	1.25	1.8	18.5
4x6	2.8	1	1	1.25	1.8	19.7
4x10	3.6	1	1	1.25	1.8	22.3
4x16	4.5	1	1	1.6	1.8	24.5
4x25	5.6	1.2	1	1.6	1.9	28.2
4x35	6.7	1.2	1	1.6	2.0	31.1
4x50	8.0	1.4	1	2.0	2.1	36.7
4x70	9.4	1.4	1.2	2.0	2.3	40.4
4x95	11.0	1.6	1.2	2.5	2.5	46.6
4x120	12.4	1.6	1.4	2.5	2.6	50.6
4x150	13.8	1.8	1.4	2.5	2.7	55.3
4x185	15.3	2	1.4	2.5	2.9	60.6
4x240	17.5	2.2	1.6	2.5	3.1	67.3
4x300	19.5	2.4	1.6	3.15	3.4	74.9
4x400	22.6	2.6	1.8	3.15	3.7	84.4
4x500	25.2	2.8	2	3.15	3.9	92.1

Single Core Cables to IEC 60502

APPLICATIONS

The single core cables are designed for distribution of electrical power with nominal voltage Uo/U ranging from 1.8/3KV to 26/35KV and frequency 50Hz.

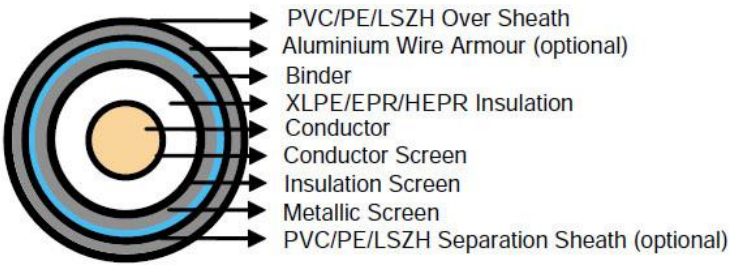
They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

STANDARD

IEC 60502 Part 1(1.8/3KV)

IEC 60502 Part 2(3.6/6KV to 18/30KV)

CONSTRUCTION





Conductor	Plain annealed copper or aluminium complying with IEC 60228 class 1 or 2.
Conductor Screen	The conductor screen consists of an extruded layer of non metallic, semi-conducting compound firmly bonded to the insulation to exclude all air voids. The conductor screen is not necessary for both PVC and EPR/HEPR insulated 1.8/3KV and 3.6/6KV cables.
Insulation	Insulation is of polyvinyl chloride (PVC) intended for 1.8/3KV and 3.6/6KV cables, cross-linked polyethylene compound (XLPE) or ethylene propylene rubber (EPR/HEPR).

Table 1. Insulation Thickness of XLPE or EPR/HEPR Insulation

Nom. Cross Section Area	Insulation Thickness at Nominal Voltage									
	1.8/3KV (Um=3.6KV)	3.6/6KV (Um=7.2KV)			6/10KV (Um=12KV)	8.7/15KV (Um=17.5KV)	12/20KV (Um=24KV)	18/30KV (Um=36KV)	21/35KV (Um=42KV)	26/35KV (Um=42KV)
mm^2	mm	mm			mm	mm	mm	mm	mm	mm
	XLPE/EPR	XLPE	EPR		XLPE/EPR	XLPE/EPR	XLPE/EPR	XLPE/EPR	XLPE/EPR	XLPE/EPR
			Unscreened	Screened						
10	2.0	2.5	3.0	2.5	-	-	-	-	-	-
16	2.0	2.5	3.0	2.5	3.4	-	-	-	-	-
25	2.0	2.5	3.0	2.5	3.4	4.5	-	-	-	-
35	2.0	2.5	3.0	2.5	3.4	4.5	5.5	-	-	-
50 – 185	2.0	2.5	3.0	2.5	3.4	4.5	5.5	8.0	9.3	10.5
240	2.0	2.6	3.0	2.6	3.4	4.5	5.5	8.0	9.3	10.5
300	2.0	2.8	3.0	2.8	3.4	4.5	5.5	8.0	9.3	10.5
400	2.0	3.0	3.0	3.0	3.4	4.5	5.5	8.0	9.3	10.5
500 -	2.2-2.8	3.2	3.2	3.2	3.4	4.5	5.5	8.0	9.3	10.5

**Insulation Thickness of PVC is 3.4mm (1- 1600mm sq) for 3.6/6KV cables.*

Insulaton Screen	The insulation screen consists of an extruded layer of non metallic, semiconducting compound extruded over the insulation. The extruded semi-conducting layer shall consist of bonded or cold strippable semi-conducting compound capable of removal for jointing or terminating. As an option, a semi-conducting tape may be applied over the extruded semi-conducting layer as a bedding for the metallic layer. The minimum thickness is 0.3 mm and the maximum resistivity is 500 Ohm-m at 90°C. The screen is tightly fitted to the insulation to exclude all air voids and can be easily hand stripped on site. The insulation screen is not necessary for both PVC and EPR/HEPR insulated 1.8/3KV and 3.6/6KV cables. The screen may be covered by semi-conductive water blocking swellable tape to ensure longitudinal watertightness.
Metallic Layer	The metallic layer may be applied over the individual cores or the core assembly collectively.

The following types of metallic layers are provided:

1) Metallic Screen

2) Concentric Conductor

3) Metallic Sheath

4) Metallic armour

The metallic screen shall consist of either copper tapes or a concentric layer of copper wires or a combination of tapes and wires to provide an earth fault current path. The concentric conductor is applied directly either over the insulation, or over the insulation screen or over an inner covering. The metallic sheath consists of lead or lead alloy applied as a tightly fitting seamless tube. The metallic armour consists of either flat wire armour, round wire armour, and double tape armour.

Table 2. Minimum Total Cross Section of Metallic Screen

Nom. Cross-Section Area of Cable	Min. Cross-Section of Metallic Screen	DC Resistance of the Copper Wire Screen
mm^2	mm^2	mm
up to 120	16	1.06
150-300	25	0.72
400-630	35	0.51
800-1000	50	0.35

Separation Sheath (for armoured cable)	The separation sheath comprises a layer of extruded PVC, PE or LSZH, applied under the armour. The nominal thickness is calculated by 0.02Du + 0.6mm where Du is the fictitious diameter under the sheath in mm. For cables without a lead sheath, the nominal separation sheath thickness shall not be less than 1.2mm. For cables where the separation sheath is applied over the lead sheath, the nominal separation sheath thickness shall not be less than 1.0mm.
Lapped Bedding (for armoured lead sheathed cable)	The lapped bedding consists of either impregnated/synthetic compounded paper tapes or a combination of two layers of these paper tapes followed by a few layers of compounded fabulous materials. The thickness is around 1.5mm.
Armour (for armoured cable)	The armour consists of round aluminium wire armour applied helically over an extruded separation sheath.

Fictitious Diameter under the Armour		Armour Wire Diameter
mm		mm
>	<	
-	10	0.8
10	15	1.25
15	25	1.6
25	35	2.0
35	60	2.5
60	-	3.15

Table 3. Round Armour Wire Diameter

Over Sheath	Overall sheath comprises a layer of extruded thermoplastic compound (PVC, PE or LSZH can be offered as an option.) or elastomeric compound (polychlorprene CSP or chlorosulfonated PE). The nominal over sheath thickness is calculated by 0.035D+1 where D is the fictitiuous diameter immediately under the over sheath in mm. For unarmoured cables and cables with the over sheath not applied over the armour, metallic screen or concentric conductor, the nominal over sheath thickness shall not be less than 1.4mm. And for cables with over sheath applied over the armour, metallic screen or concentric conductor, the nominal over sheath thickness shall not be less than 1.8mm.

PHYSICAL PROPERTIES

Operating Temperature	up to 70°C (PVC insulation); up to 90°C (XLPE or EPR insulation)
Temperature Range	-5°C (PVC or LSZH sheath); -20°C (PE sheath)
Short Circuit Temperature(5 seconds maximum duration)	140-160°C (PVC insulation) ; 250°C (XLPE or EPR insulation)
Bending Radius	12 x OD

Table 4. Nominal /Operating /Testing Voltages

Rated Voltage Uo/U	Operating Voltage (Um)	Testing Voltage (rms)
1.8/3KV	3.6KV	6.5KV
3.6/6KV	7.2KV	12.5KV
6/10KV	12KV	21KV
8.7/15KV	17.5KV	30.5KV
12/20KV	24KV	42KV
18/30KV	36KV	63KV
21/35KV	42KV	73.5(53)*KV
26/35KV	42KV	91(65)*KV

**21/35KV and 26/35KV power frequency voltage test can be made under the following conditions: 2.5Uo x 30mins or 3.0Uo x 15mins.*

Numbers in brackets refer to the test values for 3.0Uo x 1.5mins.

Single Core 1.8/3KV (Um=3.6KV)

Dimensional Data

Nom. Cross-Section Area				Unarmoured Cables				Steel Wire Armoured Cables					
	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
10	2.0	0.1	16	1.8	13	240	180	1.2	1.6	1.8	18	460	400
16	2.0	0.1	16	1.8	13	300	200	1.2	1.6	1.8	19	530	430
25	2.0	0.1	16	1.8	15	410	250	1.2	1.6	1.8	20	650	500
35	2.0	0.1	16	1.8	16	510	300	1.2	1.6	1.8	21	780	560
50	2.0	0.1	16	1.8	17	640	350	1.2	1.6	1.8	22	930	640
70	2.0	0.1	16	1.8	19	850	440	1.2	1.6	1.8	24	1170	750
95	2.0	0.1	16	1.8	20	1130	540	1.2	1.6	1.8	26	1460	870
120	2.0	0.1	16	1.8	22	1370	630	1.2	1.6	1.8	27	1730	990
150	2.0	0.1	25	1.8	23	1650	730	1.2	1.6	1.8	29	2030	1110
185	2.0	0.1	25	1.8	25	2010	860	1.2	1.6	1.9	30	2430	1280
240	2.0	0.1	25	1.8	27	2570	1050	1.2	1.6	2.0	33	3040	1530
300	2.0	0.1	25	1.8	29	3160	1250	1.2	2.0	2.1	36	3760	1860
400	2.0	0.1	35	1.9	33	3980	1560	1.2	2.0	2.2	39	4660	2230
500	2.2	0.1	35	2.1	35.5	4910	1905	1.3	2.5	2.5	43	5930	2930
630	2.4	0.1	35	2.2	39.7	6340	2420	1.4	2.5	2.6	49	7370	3430
800	2.6	0.1	50	2.3	44.5	7890	2980	1.4	2.5	2.7	52	9070	4230
1000	2.8	0.1	50	2.5	49.4	9890	3700	1.5	2.5	2.9	56	11100	4950

**Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.*

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
												CU	AL	CU	AL
mm^2	μΩ/m	μΩm	kA	pF/m	mA/m	kA	kA	μΩ/m		nH/m		μΩ/ m		μΩ/ m	
10	1830/3080	2330/3920	1.4/0.9	182	0.27	2.6	0.2	151	201	384	558	2332	3846	2332	3840
16	1150/1910	1460/2420	2.2/1.4	201	0.29	2.6	0.3	140	193	362	546	1462	2411	1478	2420
25	727/1200	927/1538	3.6/2.3	222	0.32	2.6	0.3	131	185	345	535	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	251	0.35	2.6	0.4	122	178	327	524	679	1121	695	1131
50	387/641	494/822	6.8/4.4	281	0.39	2.6	0.4	116	172	313	514	511	834	527	844
70	268/443	343/568	9.8/6.3	341	0.45	2.6	0.5	110	165	300	495	364	583	386	597
95	193/320	248/410	13.3/8.5	397	0.50	2.6	0.5	104	160	287	485	272	427	300	446
120	153/253	196/325	17.2/11.0	430	0.55	2.6	0.6	104	159	283	480	225	345	257	367
150	124/206	159/266	21.2/13.5	464	0.59	4.3	0.6	100	156	280	475	193	287	229	313
185	99.1/164	128/211	26.6/17.0	513	0.65	4.3	0.7	98	154	274	465	165	237	206	267
240	75.4/125	98/161	34.9/22.3	573	0.70	4.3	0.9	94	150	267	459	140	191	185	226
300	60.1/100	80/130	43.8/28.0	652	0.72	4.3	1.0	91	147	260	455	128	163	174	203
400	47.0/77.8	64/102	57.3/36.6	727	0.75	5.8	1.1	90	147	253	445	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	754	0.79	5.8	1.2	89	145	248	435	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	786	0.87	5.8	1.3	86	143	245	425	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	846	0.91	8.2	1.4	85	142	243	415	92	101	147	153
1000	17.6/29.1	30/46	143.0/94.0	916	0.99	8.2	1.5	83	141	239	405	88	95	144	148

Single Core 3.6/6KV (Um=7.2KV)

Dimensional Data

Nom. Cross-Section Area				Unarmoured Cables				Steel Wire Armoured Cables					
	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
10	2.5	0.1	16	1.8	16	320	260	1.2	1.6	1.8	22	610	550
16	2.5	0.1	16	1.8	16	390	290	1.2	1.6	1.8	22	680	580
25	2.5	0.1	16	1.8	18	500	340	1.2	1.6	1.8	23	810	660
35	2.5	0.1	16	1.8	19	610	400	1.2	1.6	1.8	24	940	730
50	2.5	0.1	16	1.8	20	750	450	1.2	1.6	1.8	26	1100	810
70	2.5	0.1	16	1.8	22	970	550	1.2	1.6	1.8	27	1350	930
95	2.5	0.1	16	1.8	23	1250	660	1.2	1.6	1.9	29	1670	1080
120	2.5	0.1	16	1.8	25	1500	760	1.2	1.6	1.9	31	1950	1200
150	2.5	0.1	25	1.8	26	1790	860	1.2	1.6	2.0	32	2270	1350
185	2.5	0.1	25	1.8	28	2150	1000	1.2	2.0	2.1	35	2770	1620
240	2.6	0.1	25	1.9	31	2770	1250	1.2	2.0	2.2	38	3440	1930
300	2.8	0.1	25	2.0	34	3400	1500	1.2	2.0	2.2	41	4120	2210
400	3.0	0.1	35	2.1	38	4280	1850	1.3	2.5	2.4	46	5250	2820
500	3.2	0.1	35	2.1	41.5	5325	2240	1.4	2.5	2.6	50	6520	3520
630	3.2	0.1	35	2.2	45.3	6745	2750	1.5	2.5	2.7	56	7960	4020
800	3.2	0.1	50	2.4	49.9	8290	3310	1.5	2.5	2.8	59	9660	4820
1000	3.2	0.1	50	2.5	54.2	10255	3990	1.6	2.5	3.0	63	11690	5540

**Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.*

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
												CU	AL	CU	AL
mm^2	µΩ/m	µΩm	kA	pF/m	mA/m	kA	kA	µΩ/m		nH/m		µΩ/ m		µΩ/ m	
10	1830/3080	2330/3920	1.4/0.9	202	0.26	2.6	0.4	160	214	420	610	2332	3846	2345	3840
16	1150/1910	1460/2420	2.2/1.4	232	0.29	2.6	0.4	152	205	410	600	1462	2411	1478	2421
25	727/1200	927/1538	3.6/2.3	262	0.32	2.6	0.4	142	196	400	590	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	291	0.35	2.6	0.5	133	187	390	580	679	1121	695	1131
50	387/641	494/822	6.8/4.4	321	0.39	2.6	0.5	121	179	380	570	511	834	527	844
70	268/443	343/568	9.8/6.3	371	0.45	2.6	0.6	115	173	370	550	364	583	386	597
95	193/320	248/410	13.3/8.5	417	0.50	2.6	0.6	110	168	350	540	272	427	300	446
120	153/253	196/325	17.2/11.0	459	0.55	2.6	0.7	107	165	340	520	225	345	257	367
150	124/206	159/265	21.2/13.5	494	0.59	4.3	0.7	103	161	330	510	193	287	229	313
185	99.1/164	128/211	26.6/17.0	543	0.65	4.3	0.8	100	158	320	500	165	237	206	267
240	75.4/125	98/161	34.9/22.3	583	0.70	4.3	0.9	97	155	310	490	140	191	185	226
300	60.1/100	80/130	43.8/28.0	602	0.72	4.3	1.0	95	153	300	490	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	627	0.75	5.8	1.1	92	150	290	480	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	654	0.79	5.8	1.2	90	147	290	470	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	726	0.87	5.8	1.3	87	145	280	460	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	786	0.91	8.2	1.4	85	143	270	460	92	101	147	153
1000	17.6/29.1	30/46	143.0/94.0	856	0.99	8.2	1.5	83	141	260	450	88	95	144	148

** For capacitance & charging current values, multiply values shown by 1.2 for EPR insulated cables.*

Single Core 6/10KV (Um=12KV)

Dimensional Data

Nom. Cross-Section Area				Unarmoured Cables				Steel Wire Armoured Cables					
	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
16	3.4	0.1	16	1.8	18	450	350	1.2	1.6	1.8	24	770	670
25	3.4	0.1	16	1.8	20	560	400	1.2	1.6	1.8	25	910	750
35	3.4	0.1	16	1.8	21	680	460	1.2	1.6	1.8	26	1040	820
50	3.4	0.1	16	1.8	22	810	520	1.2	1.6	1.8	28	1190	900
70	3.4	0.1	16	1.8	24	1050	620	1.2	1.6	1.9	29	1470	1040
95	3.4	0.1	16	1.8	25	1320	730	1.2	1.6	2.0	31	1780	1190
120	3.4	0.1	16	1.8	27	1580	840	1.2	2.0	2.0	34	2150	1410
150	3.4	0.1	25	1.9	28	1880	960	1.2	2.0	2.1	35	2480	1560
185	3.4	0.1	25	1.9	30	2250	1100	1.2	2.0	2.1	37	2890	1730
240	3.4	0.1	25	2.0	33	2870	1350	1.2	2.0	2.2	40	3570	2050
300	3.4	0.1	25	2.1	35	3490	1580	1.2	2.0	2.3	42	4230	2330
400	3.4	0.1	35	2.2	39	4350	1920	1.3	2.5	2.4	47	5320	2890
500	3.4	0.1	35	2.2	39.9	5235	2240	1.4	2.5	2.5	51	6510	3530
630	3.4	0.1	35	2.3	43.7	6675	2765	1.5	2.5	2.6	56	7960	4050
800	3.4	0.1	50	2.5	48.6	8225	3330	1.5	2.5	2.7	59	9670	4850
1000	3.4	0.1	50	2.6	52.9	10210	4030	1.6	2.5	2.9	63	11710	5570

**Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.*

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
												CU	AL	CU	AL
mm^2	μΩ/m	μΩm	kA	pF/m	mA/m	kA	kA	μΩ/m		nH/m		μΩ/ m		μΩ/ m	
16	1150/1910	1460/2420	2.2/1.4	187	0.39	2.6	0.5	152	216	480	680	1462	2411	1478	2421
25	727/1200	927/1538	3.6/2.3	208	0.42	2.6	0.5	144	210	460	660	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	229	0.46	2.6	0.6	136	200	440	640	679	1121	695	1131
50	387/641	494/822	6.8/4.4	252	0.50	2.6	0.6	131	195	420	620	511	834	527	844
70	268/443	343/568	9.8/6.3	288	0.58	2.6	0.7	122	188	390	600	364	583	386	597
95	193/320	248/410	13.3/8.5	323	0.65	2.6	0.7	122	182	390	580	272	427	300	446
120	153/253	196/325	17.2/11.0	353	0.71	2.6	0.8	116	172	370	550	225	345	257	367
150	124/206	159/265	21.2/13.5	380	0.76	4.3	0.8	110	166	350	530	193	287	229	313
185	99.1/164	128/211	26.6/17.0	416	0.83	4.3	0.9	107	166	340	530	165	237	206	267
240	75.4/125	98/161	34.9/22.3	460	0.92	4.3	0.9	104	163	330	520	140	191	185	226
300	60.1/100	80/130	43.8/28.0	506	1.01	4.3	1.0	100	157	320	500	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	561	1.12	5.8	1.1	94	154	300	490	113	141	164	184
500	36.6/60.5	51/81.0	72.3/46.2	619	1.24	5.8	1.2	91	151	290	480	105	124	158	171
630	28.3/46.9	42/64.0	91.2/58.3	698	1.37	5.8	1.3	91	148	290	470	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	780	1.39	8.2	1.4	88	144	280	470	92	101	147	153
1000	17.6/29.1	30/46	143.0/94.0	860	1.54	8.2	1.5	85	143	270	460	88	95	144	148

** For capacitance & charging current values, multiply values shown by 1.2 for EPR insulated cables.*

Single Core 8.7/15KV (Um=17.5KV)

Dimensional Data

Nom. Cross-Section Area				Unarmoured Cables				Steel Wire Armoured Cables					
	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
25	4.5	0.1	16	1.8	22	640	480	1.2	1.6	1.8	28	1020	860
35	4.5	0.1	16	1.8	23	760	540	1.2	1.6	1.9	29	1170	950
50	4.5	0.1	16	1.8	24	900	610	1.2	1.6	1.9	30	1340	1040
70	4.5	0.1	16	1.8	26	1140	710	1.2	1.6	2.0	32	1610	1190
95	4.5	0.1	16	1.8	27	1420	830	1.2	2.0	2.1	35	2020	1430
120	4.5	0.1	16	1.9	29	1700	950	1.2	2.0	2.1	36	2310	1570
150	4.5	0.1	25	1.9	31	1990	1070	1.2	2.0	2.2	38	2660	1740
185	4.5	0.1	25	2.0	32	2380	1230	1.2	2.0	2.2	39	3070	1920
240	4.5	0.1	25	2.1	35	3010	1490	1.2	2.0	2.3	42	3750	2240
300	4.5	0.1	25	2.1	37	3620	1720	1.3	2.5	2.4	46	4590	2690
400	4.5	0.1	35	2.2	41	4490	2070	1.3	2.5	2.5	49	5550	3120
500	4.5	0.1	35	2.3	43	5460	2460	1.3	2.5	2.6	52	6590	3600
630	4.5	0.1	35	2.4	48	6790	2590	1.4	2.5	2.7	57	8060	4110
800	4.5	0.1	50	2.6	52	8420	3570	1.5	2.5	2.8	61	9800	4970
1000	4.5	0.1	50	2.7	55	10330	4180	1.6	2.5	3.0	65	10850	5710

**Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.*

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
												CU	AL	CU	AL
mm^2	µΩ/m	µΩm	kA	pF/m	mA/m	kA	kA	µΩ/m		nH/m		µΩ/ m		µΩ/ m	
25	727/1200	927/1538	3.6/2.3	171	0.47	2.6	0.6	150	210	480	680	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	187	0.51	2.6	0.6	141	207	460	660	679	1121	695	1131
50	387/641	494/822	6.8/4.4	204	0.57	2.6	0.7	138	195	440	640	511	834	527	844
70	268/443	343/568	9.8/6.3	232	0.63	2.6	0.7	132	188	420	600	364	583	386	597
95	193/320	248/410	13.3/8.5	258	0.71	2.6	0.8	126	182	400	580	272	427	300	446
120	153/253	196/325	17.2/11.0	281	0.74	2.6	0.8	119	179	380	570	225	345	257	367
150	124/206	159/265	21.2/13.5	301	0.79	4.3	0.9	113	176	360	560	193	287	229	313
185	99.1/164	128/211	26.6/17.0	329	0.87	4.3	0.9	110	170	350	540	165	237	206	267
240	75.4/125	98/161	34.9/22.3	363	0.96	4.3	1.0	107	166	340	530	140	191	185	226
300	60.1/100	80/130	43.8/28.0	398	1.03	4.3	1.1	104	160	330	510	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	439	1.17	5.8	1.2	97	157	310	500	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	483	1.28	5.8	1.3	94	154	300	490	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	534	1.42	5.8	1.4	91	151	290	480	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	590	1.61	8.2	1.4	91	147	290	470	92	101	147	153
1000	17.6/29.1	30/46	143.0/94.0	640	1.75	8.2	1.5	88	144	280	460	88	95	144	148

** For capacitance & charging current values, multiply values shown by 1.2 for EPR insulated cables.*

Single Core 12/20KV (Um=24KV)

Dimensional Data

Nom. Cross-Section Area				Unarmoured Cables				Steel Wire Armoured Cables					
	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
25	5.5	0.1	16	1.8	24	720	560	1.2	1.6	1.8	29	1200	980
35	5.5	0.1	16	1.8	25	840	620	1.2	1.6	1.9	30	1350	1070
50	5.5	0.1	16	1.8	26	990	690	1.2	2.0	2.0	33	1550	1250
70	5.5	0.1	16	1.8	28	1230	800	1.2	2.0	2.1	35	1840	1420
95	5.5	0.1	16	1.9	30	1530	940	1.2	2.0	2.1	37	2160	1570
120	5.5	0.1	16	2.0	31	1810	1050	1.2	2.0	2.2	38	2470	1730
150	5.5	0.1	25	2.0	33	2110	1190	1.2	2.0	2.2	40	2810	1890
185	5.5	0.1	25	2.1	35	2510	1360	1.2	2.0	2.3	42	3240	2090
240	5.5	0.1	25	2.1	38	3130	1610	1.3	2.5	2.4	45	4150	2580
300	5.5	0.1	25	2.2	40	3760	1860	1.3	2.5	2.5	48	4800	2890
400	5.5	0.1	35	2.3	43	4650	2220	1.4	2.5	2.6	52	5780	3350
500	5.5	0.1	35	2.4	46	5530	2545	1.5	2.5	2.7	55	6850	3850
630	5.5	0.1	35	2.5	50	6700	3100	1.5	2.5	2.9	60	8380	4400
800	5.5	0.1	50	2.6	55	8580	3690	1.6	2.5	3.0	64	10130	5270
1000	5.5	0.1	50	2.7	59	10620	4445	1.7	2.5	3.1	68	12180	6000

**Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.*

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
												CU	AL	CU	AL
mm^2	µΩ/m	µΩm	kA	pF/m	mA/m	kA	kA	µΩ/m		nH/m		µΩ/ m		µΩ/ m	
25	727/1200	927/1538	3.6/2.3	142	0.62	2.6	0.6	162	214	490	680	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	162	0.65	2.6	0.7	150	207	470	660	679	1121	695	1131
50	387/641	494/822	6.8/4.4	177	0.71	2.6	0.8	141	201	450	640	511	834	527	844
70	268/443	343/568	9.8/6.3	200	0.80	2.6	0.8	135	195	430	620	364	583	386	597
95	193/320	248/410	13.3/8.5	222	0.89	2.6	0.9	129	188	410	600	272	427	300	446
120	153/253	196/325	17.2/11.0	241	0.96	2.6	0.9	122	182	390	580	225	345	257	367
150	124/206	159/265	21.2/13.5	257	1.03	4.3	1.0	116	176	370	560	193	287	229	313
185	99.1/164	128/211	26.6/17.0	280	1.12	4.3	1.0	116	173	370	550	165	237	206	267
240	75.4/125	98/161	34.9/22.3	307	1.23	4.3	1.1	110	170	350	540	140	191	185	226
300	60.1/100	80/130	43.8/28.0	336	1.34	4.3	1.2	107	166	340	530	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	370	1.48	5.8	1.3	100	160	320	510	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	406	1.62	5.8	1.4	97	154	310	490	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	449	1.80	5.8	1.5	94	151	300	480	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	490	1.85	8.2	1.6	91	151	290	480	92	101	147	153
1000	17.6/29.1	30/46	143.0/94.0	540	2.03	8.2	1.7	87	148	280	470	88	95	144	148

** For capacitance & charging current values, multiply values shown by 1.2 for EPR insulated cables.*

Single Core 18/30KV (Um=36KV)

Dimensional Data

Nom. Cross-Section Area				Unarmoured Cables				Steel Wire Armoured Cables					
	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
50	8.0	0.1	16	2.0	31	1250	960	1.2	2.0	2.2	38	1910	1640
70	8.0	0.1	16	2.0	34	1510	1090	1.2	2.0	2.3	41	2240	1820
95	8.0	0.1	16	2.1	35	1830	1240	1.2	2.0	2.3	42	2570	1980
120	8.0	0.1	16	2.1	37	2110	1360	1.3	2.5	2.4	45	3060	2310
150	8.0	0.1	25	2.2	38	2420	1510	1.3	2.5	2.5	47	3430	2510
185	8.0	0.1	25	2.2	40	2830	1680	1.3	2.5	2.5	50	3890	2720
240	8.0	0.1	25	2.3	43	3500	1980	1.4	2.5	2.6	52	4630	3120
300	8.0	0.1	25	2.4	45	4150	2250	1.4	2.5	2.7	54	5330	3430
400	8.0	0.1	35	2.5	49	5070	2640	1.5	2.5	2.8	58	6360	3930
500	8.0	0.1	35	2.6	52	5945	2965	1.6	2.5	2.9	61	7670	4490
630	8.0	0.1	35	2.7	56	7445	3555	1.7	2.5	3.0	65	8870	5020
800	8.0	0.1	50	2.8	61	9060	4180	1.9	2.5	3.2	69	10790	5980
1000	8.0	0.1	50	2.9	65	11140	4980	2.0	2.5	3.3	73	12860	6730

**Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.*

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
												CU	AL	CU	AL
mm^2	µΩ/m	µΩm	kA	pF/m	mA/m	kA	kA	µΩ/m		nH/m		µΩ/ m		µΩ/ m	
50	387/641	494/822	6.8/4.4	138	0.83	2.6	1.0	151	214	480	680	511	834	527	844
70	268/443	343/568	9.8/6.3	154	0.92	2.6	1.0	144	201	460	640	364	583	386	597
95	193/320	248/410	13.3/8.5	169	1.01	2.6	1.1	138	195	440	620	272	427	300	446
120	153/253	196/325	17.2/11.0	183	1.10	2.6	1.1	132	188	420	600	225	345	257	367
150	124/206	159/265	21.2/13.5	194	1.16	4.3	1.2	126	182	400	580	193	287	229	313
185	99.1/164	128/211	26.6/17.0	210	1.26	4.3	1.2	122	182	390	580	165	237	206	267
240	75.4/125	98/161	34.9/22.3	229	1.37	4.3	1.3	119	176	380	560	140	191	185	226
300	60.1/100	80/130	43.8/28.0	249	1.49	4.3	1.4	113	173	360	550	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	273	1.64	5.8	1.5	107	163	340	520	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	298	1.79	5.8	1.6	104	163	330	520	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	327	1.96	5.8	1.7	100	160	320	510	97	110	151	160
800	22.1/36.7	35/55	114.4/75.0	350	1.98	8.2	1.8	97	154	310	490	92	101	147	153
1000	17.6/29.1	30/46	143.0/94.0	380	2.15	8.2	1.9	94	149	300	490	88	95	144	148

** For capacitance & charging current values, multiply values shown by 1.2 for EPR insulated cables.*

Single Core 21/35KV (Um=42KV)

Nom. Cross-Section Area				Unarmoured Cables				Steel Wire Armoured Cables					
	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
50	9.3	0.1	16	2.0	35.7	1526	1239	1.2	2.0	2.3	43.5	2331	2116
70	9.3	0.1	16	2.1	37.6	1809	1393	1.2	2.5	2.4	46.6	2680	2325
95	9.3	0.1	16	2.2	39.4	2123	1555	1.2	2.5	2.5	48.4	2981	2482
120	9.3	0.1	16	2.2	40.8	2405	1688	1.4	2.5	2.5	49.8	3487	2867
150	9.3	0.1	25	2.2	42.3	2733	1838	1.4	2.5	2.6	51.5	3870	3055
185	9.3	0.1	25	2.3	44.7	3216	2082	1.4	2.5	2.6	53.5	4420	3370
240	9.3	0.1	25	2.4	46.9	3766	2333	1.4	2.5	2.7	55.8	4981	3676
300	9.3	0.1	25	2.4	49.3	4408	2605	1.4	2.5	2.8	58.5	5661	3971
400	9.3	0.1	35	2.5	52.3	5473	3057	1.6	2.5	2.9	61.7	6865	4550

**Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.*

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
												CU	AL	CU	AL
mm^2	µΩ/m	µΩm	kA	pF/m	mA/m	kA	kA	µΩ/m		nH/m		µΩ/ m		µΩ/ m	
50	387/641	494/822	6.8/4.4	130	0.89	2.6	1.1	156	220	495	700	511	834	527	844
70	268/443	343/568	9.8/6.3	144	0.98	2.6	1.1	150	204	475	650	364	583	386	597
95	193/320	248/410	13.3/8.5	159	1.06	2.6	1.2	142	198	455	630	272	427	300	446
120	153/253	196/325	17.2/11.0	171	1.18	2.6	1.2	137	191	435	610	225	345	257	367
150	124/206	159/265	21.2/13.5	180	1.26	4.3	1.3	131	185	415	590	193	287	229	313
185	99.1/164	128/211	26.6/17.0	193	1.34	4.3	1.3	125	185	400	590	165	237	206	267
240	75.4/125	98/161	34.9/22.3	210	1.45	4.3	1.4	123	179	390	570	140	191	185	226
300	60.1/100	80/130	43.8/28.0	228	1.57	4.3	1.5	116	176	370	560	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	249	1.74	5.8	1.6	110	166	350	530	113	141	164	184

** For capacitance & charging current values, multiply values shown by 1.2 for EPR insulated cables.*

Single Core 26/35KV (Um=42KV)

Dimensional Data

Nom. Cross-Section Area				Unarmoured Cables				Steel Wire Armoured Cables					
	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
50	10.5	0.1	16	2.1	38.3	1689	1402	1.2	2.5	2.5	46.8	2580	2395
70	10.5	0.1	16	2.2	40.2	1980	1564	1.2	2.5	2.5	48.8	2937	2611
95	10.5	0.1	16	2.2	41.8	2283	1714	1.2	2.5	2.6	50.9	3206	2737
120	10.5	0.1	16	2.3	43.4	2588	1871	1.4	2.5	2.6	51.5	3753	3177
150	10.5	0.1	25	2.3	44.9	2923	2028	1.4	2.5	2.7	53.8	4143	3371
185	10.5	0.1	25	2.4	47.3	3415	2281	1.4	2.5	2.7	55.6	4694	3693
240	10.5	0.1	25	2.5	49.5	3975	2542	1.4	2.5	2.8	57.6	5258	4005
300	10.5	0.1	25	2.5	51.9	4625	2822	1.4	2.5	2.9	60.8	5940	4301
400	10.5	0.1	35	2.6	54.9	5704	3288	1.6	2.5	3.0	63.6	7155	4894

**Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.*

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of Copper Tape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat Spaced	
												CU	AL	CU	AL
mm^2	μΩ/m	μΩm	kA	pF/m	mA/m	kA	kA	μΩ/m		nH/m		μΩ/ m		μΩ/ m	
50	387/641	494/822	6.8/4.4	126	0.95	2.6	1.2	161	227	510	720	511	834	527	844
70	268/443	343/568	9.8/6.3	138	1.04	2.6	1.2	154	207	490	660	364	583	386	597
95	193/320	248/410	13.3/8.5	151	1.13	2.6	1.3	147	202	470	640	272	427	300	446
120	153/253	196/325	17.2/11.0	161	1.24	2.6	1.3	142	194	450	620	225	345	257	367
150	124/206	159/265	21.2/13.5	169	1.36	4.3	1.4	136	188	430	600	193	287	229	313
185	99.1/164	128/211	26.6/17.0	176	1.40	4.3	1.4	128	188	410	600	165	237	206	267
240	75.4/125	98/161	34.9/22.3	192	1.51	4.3	1.5	128	183	400	580	140	191	185	226
300	60.1/100	80/130	43.8/28.0	209	1.64	4.3	1.6	119	180	380	570	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	227	1.80	5.8	1.7	114	170	360	540	113	141	164	184

** For capacitance & charging current values, multiply values shown by 1.2 for EPR insulated cables.*

Current Rating for Single Core 1.8/3KV(Um=3.6KV) to 26/35KV(Um=42KV) XLPE Insulation

Nom. Cross-Section Area	Buried direct in Ground				Laid in Single Way Duct				Laid in Air					
	Trefoil		Flat spaced		Trefoil		Flat Touching		Trefoil		Flat Touching		Flat spaced	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm^2	A		A		A		A		A		A		A	
10	84	59	87	62	78	55	98	56	103	75	106	77	122	88
16	109	84	113	88	103	80	104	81	125	97	128	99	150	116
25	140	108	144	112	132	102	133	103	163	127	167	130	196	153
35	166	129	172	134	157	122	159	123	198	154	203	157	238	185
50	196	152	203	157	186	144	188	146	238	184	243	189	286	222
70	239	186	246	192	227	176	229	178	296	230	303	236	356	278
95	285	221	293	229	271	210	274	213	361	280	369	287	434	338
120	323	252	332	260	308	240	311	242	417	324	426	332	500	391
150	361	281	366	288	343	267	347	271	473	368	481	376	559	440
185	406	317	410	324	387	303	391	307	543	424	550	432	637	504
240	469	367	470	373	447	351	453	356	641	502	647	511	745	593
300	526	414	524	419	504	397	510	402	735	577	739	586	846	677
400	590	470	572	466	564	451	571	457	845	673	837	676	938	769
500	650	530	672	546	604	504	661	537	935	773	938	776	1118	919
630	700	600	882	646	654	554	771	617	1045	883	1048	886	1318	1089
800	750	660	1002	756	694	594	871	717	1145	983	1148	986	1528	1279
1000	800	720	1112	856	724	644	971	807	1235	1083	1238	1086	1738	1469

Current Rating for Single Core 1.8/3KV(Um=3.6KV) to 26/35KV(Um=42KV) EPR Insulation

Nom. Cross-Section Area	Buried direct in Ground				Laid in Single Way Duct				Laid in Air					
	Trefoil		Flat spaced		Trefoil		Flat Touching		Trefoil		Flat Touching		Flat spaced	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm^2	A		A		A		A		A		A		A	
10	81	57	83	58	74	52	94	53	94	68	97	70	110	79
16	106	82	109	84	99	77	100	78	116	90	119	92	138	107
25	136	105	140	109	128	99	129	100	153	119	156	121	181	141
35	162	126	167	130	153	118	154	120	186	144	190	147	221	171
50	192	149	198	153	181	140	183	142	224	174	229	178	266	207
70	234	182	242	188	222	172	224	174	280	218	287	223	334	259
95	280	217	289	224	266	206	269	208	343	266	352	273	409	317
120	319	247	329	256	303	235	306	238	398	309	407	317	474	368
150	357	277	369	287	341	264	344	267	454	352	465	361	540	419
185	403	314	417	325	386	300	390	303	522	406	534	417	621	484
240	467	364	484	377	449	350	454	354	619	483	634	495	736	575
300	526	411	545	426	509	397	515	401	712	556	728	570	843	659
400	597	471	618	487	580	456	588	462	825	651	843	667	977	770
500	657	531	718	567	620	509	678	542	915	751	849	767	1157	920
630	707	601	928	667	670	559	788	622	1025	862	1054	876	1357	1090
800	757	661	1048	777	710	599	888	722	1125	961	1154	977	1567	1280
1000	807	721	1158	877	740	649	988	812	1215	1061	1244	1077	1777	1470

Current Rating Conditions

Ground Temperature	20°C
Ambient Temperature (air)	30°C
Depth of Soil	0.8m
Thermal Resistance of Soil	1.5Kom/W

Three Core Cables to IEC 60502

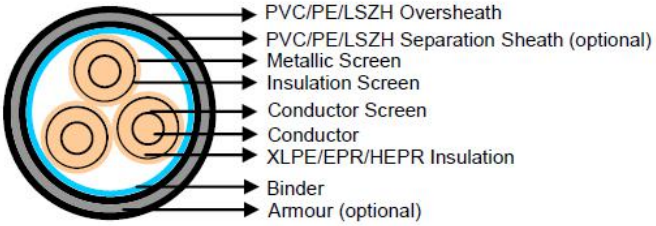
APPLICATIONS

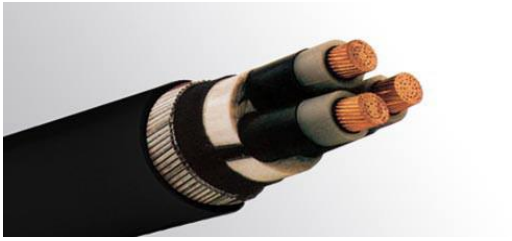
The three core cables are designed for distribution of electrical power with nominal voltage Uo/ U ranging from 1.8/3KV to 26/35KV and frequency 50Hz. They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

STANDARD:

IEC 60502 Part 1(1.8/3KV)
IEC 60502 Part 2(3.6/6KV to 18/30KV)

CONSTRUCTION:





Conductor: Plain annealed copper or aluminium complying with IEC 60228 class 1 or 2.
Conductor Screen: The conductor screen consists of an extruded layer of non metallic, semi- conducting compound applied on top of a semi conducting tape. The conductor screen is applied under triple extrusion process over the conductor along with the insulation and the insulationscreen. The extruded semi-conducting compound is firmly bonded to the insulation to exclude all air voids and can be easily hand stripped on site. The conductor screen is not necessary for both PVC and EPR/HEPR insulated 1.8/3.6KV and 3.6/6KV cables.
Insulation: Insulation is of polyvinyl chloride (PVC) intended for 1.8/3.6KV and 3.6/6KV cables, cross-linked polyethylene compound (XLPE) or ethylene propylene rubber (EPR/HEPR).
Table 1. Insulation Thickness of XLPE or EPR/HEPR insulation

Nom. Cross Section Area		Insulation Thickness at Nom. Voltage								
	1.8/3KV (Um=3.6)KV	3.6/6KV (Um=7.2)KV			6/10KV (Um=12KV)	8.7/15KV (Um=17KV)	12/20KV (Um=24KV)	18/30KV (Um=36KV)	21/35KV (Um=42KV)	26/35KV (Um=42KV)
mm^2	mm	mm			mm	mm	mm	mm	mm	mm
	XLPE/EPR	XLPE	EPR		XLPE/EPR	XLPE/EPR	XLPE/EPR	XLPE/EPR	XLPE/EPR	XLPE/EPR
			Un-screened	Screened						
10	2.0	2.5	3.0	2.5	-	-	-	-	-	-
16	2.0	2.5	3.0	2.5	3.4	-	-	-	-	-
25	2.0	2.5	3.0	2.5	3.4	4.5	-	-	-	-
35	2.0	2.5	3.0	2.5	3.4	4.5	5.5	-	-	-
50 – 185	2.0	2.5	3.0	2.5	3.4	4.5	5.5	8.0	9.3	10.5
240	2.0	2.6	3.0	2.6	3.4	4.5	5.5	8.0	9.3	10.5
300	2.0	2.8	3.0	2.8	3.4	4.5	5.5	8.0	9.3	10.5
400	2.0	3.0	3.0	3.0	3.4	4.5	5.5	8.0	9.3	10.5
500 - 1600	2.2-2.8	3.2	3.2	3.2	3.4	4.5	5.5	8.0	9.3	10.5

Insulaton Screen: The insulation screen consists of an extruded layer of non metallic, semi- conducting compound extruded over the insulation of each core. The extruded semi-conducting layer shall consist of bonded or cold strippable semi conducting compound capable of removal for jointing or terminating. As an option, a semi-conducting tape may be applied over the individual cores or core assembly as a bedding for the metallic layer. The minimum thickness is 0.3 mm and the maximum resistivity is 500 Ohm-m at 90°C. The screen is tightly fitted to the insulation to exclude all air voids and can be easily hand stripped on site. The insulation screen is not necessary for both PVC and EPR/HEPR insulated 1.8/3.6KV and 3.6/6KV cables. The screen may be covered by semi conductive water blocking swellable tape to ensure longitudinal watertightness.

Inner Covering & Fillers: For cables with a collective metallic layer or cables with a metallic layer over each individual cores with additional collective metallic layers, semi conducting inner covering and fillers shall be applied over the laid up cores. The inner covering and fillers are made of non hygroscopic material like polypropylene, except if the cable is to be made longitudinally watertight. The inner covering is extruded in general but may be lapped if theinterstices between the cores are filled.
The approximate thickness of extruded inner coverings is given in Table2:

Table 2. Approximate thickness of extruded inner coverings

Ficititous Diameter Over Laid Up Cores		Approx. Thickress of Extruded Inner Covering
mm		mm
>	<	
-	25	1.0
25	35	1.2
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2.0

*The approximate thickness of lapped inner coverings shall be 0.4mm for fictitious diameters over the laid up cores up to and including 40mm and 0.6mm for largerdiameter.

Metallic Layer: The metallic layer may be applied over the individual cores or the coreassembly collectively. The following types of metallic layers areprovided:

1) Metallic Screen
2) Concentric Conductor
3) Metallic Sheath
4) Metallic armour

The metallic screen shall consist of either copper tapes or a concentric layer of copper wires or a combination of tapes and wires. The concentric conductor is applied directly over the innercovering. The metallic sheath consists of lead or lead alloy applied as a tightly fitting seamless tube. The metallic armour consists of either flat wire armour, round wire armour, and double tape armour.

Table 3. Minimum Total Cross Section of Metallic Screen

Nom. Cross-Section Area of Cable	Min. Cross-Section of Metallic Screen	DC Resistance of the Copper Wire Screen
mm^2	mm^2	mm
up to 120	16	1.06
150-300	25	0.72
400-630	35	0.51
800-1000	50	0.35

Separation Sheath (for armoured cable): The separation sheath comprises a layer of extruded PVC, PE or LSZH applied over the laid up cores under the armour. PVC is normally of grade ST2 and PE of grade ST7. The nominal thickness is calculated by 0.02Du + 0.6mm where Du is the fictitious diameter under the sheath in mm. For cables without a lead sheath, the nominal separation sheath thickness shall not be less than 1.2mm. For cables where the separationsheath is applied over the lead sheath, the nominal separation sheath thickness shall not be less than 1.0mm.

Tabel 4. Separation Thickness

Cores Diameter		Approx. Thickress of Inner Sheath
mm		mm
>	<	
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2.0

Lapped Bedding (for armoured lead sheathed cable): The lapped bedding applied to the lead sheath consists of either impregnated/synthetic compounded paper tapes or a combination oftwo layers of these paper tapes followed by a few layers of compounded fabulous materials. The thickness is around 1.5mm.

Armour (for armoured cable): The armour is applied over the inner covering helically. It consists of either flat galvanized steel wire armour (strip), round galvanized steel wire armour, and double steel tape armour.

Table 5. Round Armour Wire Diameter

Fictitious Diameter		Armour Wire Diameter
mm		mm
>	<	
-	10	1.25
10	15	1.25
15	25	1.6
25	35	2.0
35	60	2.5
60	-	3.15

Table 6. Armour Tape Thickness

Fictitious Diameter Under the Armour		Galvanized Steel / Steel	Aluminum / Aluminium Alloy
mm		mm	mm
>	<		
-	30	0.2	0.5
30	70	0.5	0.5
70	-	0.8	0.8

For flat wire armour and fictitious diameter under the armour greater than 15mm, the nominal thickness of the flat steel wire diameter shall be 0.8mm, Cables with fictitious diameter under the armour up to and including 15mm, flat wire armour will not be used. The tape armour is applied helically in two layers so that the outer tape is approximately central over the gap of the inner tape. If tape armour is used, the inner covering shall be reinforced by taped bedding.

Over Sheath: Overall sheath comprises a layer of extruded either thermoplastic compound (PVC ST3 type or PE ST7 type) or elastomeric compound (polychlorprene CSP or chlorosulfonated PE). The nominal oversheath thickness is calculated by 0.035D+1 where D is the fictitiuous diameter immediately under the oversheath in mm. For unarmoured cables and cables with the oversheath not applied over the armour, metallic screen or concentric conductor, the nominaloversheath thickness shall not be less than 1.4mm. And for cables with oversheath applied over the armour, metallic screen or concentric conductor, the nominal oversheath thickness shall not be less than 1.8mm.

PHYSICAL PROPERTIES:
Operating Temperature: up to 70°C (PVC insulation); up to 90°C (XLPE or EPR insulation)
Temperature Range: -5°C (PVC sheath); -20°C (PE sheath)
Short Circuit Temperature(5 seconds maximum duration)**:** 140-160 °C (PVC insulation); 250°C (XLPE or EPR insulation)
Bending Radius: 15 x OD

Table 7. Nominal /Operating /Testing Voltages:

Rated Voltage Uo/U	Operating Voltage (Um)	Testing Voltage (rms)
1.8/3KV	3.6KV	6.5KV
3.6/6KV	7.2KV	12.5KV
6/10KV	12KV	21KV
8.7/15KV	17.5KV	30.5KV
12/20KV	24KV	42KV
18/30KV	36KV	63KV
21/35KV	42KV	73.5(53)*KV
26/35KV	42KV	91(65)*KV

*21/35KV and 26/35kV power frequency voltage test can be made under the following conditions: 2.5Uo x 30mins or 3.0Uo x 15mins. Numbers in brackets refer to the test values for 3.0Uo x 1.5mins.

Three Core 1.8/3KV (Um=3.6KV)

Dimensional Data

				Unarmored Cables				Steel Round-Wire Armored Cables					
Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm2	mm	mm	mm2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
10	2.0	0.1	16	1.8	23	650	460	1.2	1.6	1.8	28	1480	1290
16	2.0	0.1	16	1.8	24	840	540	1.2	1.6	1.9	29	1720	1410
25	2.0	0.1	16	1.8	26	1160	680	1.2	1.6	1.9	32	2130	1650
35	2.0	0.1	16	1.8	29	1490	820	1.2	2.0	2.1	36	2810	2140
50	2.0	0.1	16	1.9	32	1900	1000	1.2	2.0	2.2	39	3340	2450
70	2.0	0.1	16	2.0	36	2580	1290	1.2	2.0	2.3	42	4200	2910
95	2.0	0.1	16	2.2	40	3440	1640	1.3	2.5	2.4	47	5620	3820
120	2.0	0.1	16	2.3	43	4220	1950	1.3	2.5	2.5	51	6580	4310
150	2.0	0.1	25	2.4	46	5090	2290	1.4	2.5	2.7	54	7680	4870
185	2.0	0.1	25	2.5	50	6240	2730	1.5	2.5	2.8	58	9060	5560
240	2.0	0.1	25	2.7	56	8030	3430	1.6	2.5	3.0	64	11200	6600
300	2.0	0.1	25	2.8	60	9890	4100	1.6	2.5	3.1	69	13590	7500
400	2.0	0.1	35	3.1	68	12530	5150	1.8	3.15	3.4	78	17260	9880
500	2.2	0.1	35	3.3	75.7	16680	7510	1.8	3.15	3.5	84.3	21780	13025
630	2.4	0.1	35	3.5	84.9	21770	10040	1.8	3.15	3.8	94.6	27400	16050

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

	Steel Flat Wire Armoured Cables						Double Steel Tape Armoured Cables					
Nom. Cross-Section Area	Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	AppRox. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	No of Steel Tapes x Nom Tape Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL					CU	AL
mm^2	mm	mm	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
10	1.2	0.8	1.8	24.5	1245	1065	1.2	2 x 0.2	1.8	23.6	925	750
16	1.2	0.8	1.8	27.1	1565	1280	1.2	2 x 0.2	1.8	26.2	1205	925
25	1.2	0.8	1.8	29.7	1975	1525	1.2	2 x 0.2	1.9	29.0	1590	1145
35	1.2	0.8	1.9	32.5	2420	1805	1.2	2 x 0.2	1.9	31.6	1985	1370
50	1.2	0.8	2.0	35	2860	2080	1.2	2 x 0.2	2.0	34.1	2400	1605
70	1.2	0.8	2.1	38.7	3685	2525	1.2	2 x 0.5	2.2	39.5	3570	2410
95	1.3	0.8	2.2	42.9	4695	3080	1.3	2 x 0.5	2.3	43.7	4570	2950
120	1.3	0.8	2.3	46.4	5650	3585	1.3	2 x 0.5	2.4	46.1	5510	3440
150	1.4	0.8	2.4	49.6	6630	4085	1.4	2 x 0.5	2.6	50.6	6500	3955
185	1.5	0.8	2.6	54.1	7990	4820	1.5	2 x 0.5	2.7	54.9	7825	4650
240	1.6	0.8	2.7	59.2	10060	5790	1.6	2 x 0.5	2.8	60.0	9825	5600
300	1.6	0.8	2.9	64.6	12230	6865	1.6	2 x0.5	3.0	65.4	12030	6660
400	1.8	0.8	3.1	71.0	15200	8280	1.8	2 x 0.5	3.2	71.8	14970	8055
500	1.8	0.8	3.3	79.5	19090	10255	1.8	2 x 0.8	3.5	80.5	18880	10035
630	1.8	0.8	3.6	89.8	24400	12920	1.8	2 x 0.8	3.8	92.3	25070	13620

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capaci - tance	Chargin g Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
10	1830/3080	2330/3920	1.4/0.9	160	0.25	2.6	0.4	101	390
16	1150/1910	1460/2420	2.2/1.4	180	0.27	2.6	0.4	98	370
25	727/1200	929/1538	3.6/2.3	220	0.29	2.6	0.4	95	350
35	524/868	668/1113	5.0/3.2	250	0.31	2.6	0.5	92	330
50	387/641	494/822	6.8/4.4	270	0.33	2.6	0.5	88	310
70	268/443	343/568	9.8/6.3	310	0.35	2.6	0.6	84	290
95	193/320	248/410	13.3/8.5	350	0.38	2.6	0.6	81	270
120	153/253	196/325	17.2/11.0	380	0.46	2.6	0.7	79	250
150	124/206	159/265	21.2/13.5	420	0.50	2.6	0.7	77	260
185	99.1/164	128/211	26.6/17.0	460	0.56	2.6	0.8	76	250
240	75.4/125	98/161	34.9/22.3	510	0.61	4.3	0.9	74	240
300	60.1/100	80/130	43.8/28.0	570	0.68	4.3	1.0	73	250
400	47.0/77.8	64/102	57.3/36.6	590	0.70	5.8	1.1	71	240
500	36.6/60.5	57/81	72.3/46.2	610	0.72	5.8	1.2	69	230
630	28.3/46.9	42/64	91.2/58.3	630	0.74	5.8	1.3	67	220

Three Core 3.8/6.6KV (Um=7.2KV)
Dimensional Data

				Unarmoured Cables				Steel Round-Wire Armoured Cables					
Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx.Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
10	2.5	0.1	16	2.0	30	980	790	1.2	2.0	2.1	36	2310	2120
16	2.5	0.1	16	2.0	31	1190	890	1.2	2.0	2.2	38	2600	2290
25	2.5	0.1	16	2.1	34	1560	1080	1.2	2.0	2.3	41	3080	2600
35	2.5	0.1	16	2.2	37	1930	1270	1.3	2.5	2.4	45	3950	3280
50	2.5	0.1	16	2.3	40	2370	1480	1.3	2.5	2.5	47	4530	3630
70	2.5	0.1	16	2.4	43	3110	1820	1.4	2.5	2.6	51	5510	4210
95	2.5	0.1	16	2.5	47	4000	2200	1.5	2.5	2.8	55	6660	4860
120	2.5	0.1	16	2.6	50	4820	2550	1.5	2.5	2.9	59	7630	5360
150	2.5	0.1	25	2.8	54	5770	2970	1.6	2.5	3.0	62	8800	6000
185	2.5	0.1	25	2.9	58	6960	3460	1.6	2.5	3.1	66	10180	6670
240	2.6	0.1	25	3.1	65	8940	4340	1.8	3.15	3.4	75	13480	8870
300	2.8	0.1	25	3.3	70	10980	5190	1.9	3.15	3.6	81	15920	10130
400	3.0	0.1	35	3.5	79	13820	6440	2.0	3.5	3.9	90	19980	12590
500	3.2	0.1	35	3.7	87	19100	10755	2.1	3.5	4.1	98	24160	14820
630	3.2	0.1	35	4.0	95	30470	13150	2.2	3.5	4.4	107	29650	17710

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

	Steel Flat Wire Armoured Cables						Double Steel Tape Armoured Cables					
Nom. Cross - Section Area	Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	No of Steel Tapes x Nom Tape Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL					CU	AL
mm^2	mm	mm	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
10	1.2	0.8	1.8	26.9	1415	123	1.2	2X0.2	1.8	26	106	885
16	1.2	0.8	1.8	29.2	1725	144	1.2	2X0.2	1.8	28.3	134	105
25	1.2	0.8	1.9	32.2	2165	173	1.2	2X0.2	1.9	31.3	173	130
35	1.3	0.8	2.0	35.0	2645	202	1.3	2X0.2	2.0	34.1	217	155
50	1.3	0.8	2.1	37.4	3075	229	1.3	2X0.5	2.1	38.0	295	217
70	1.4	0.8	2.2	41.0	3915	275	1.4	2X0.5	2.3	41.8	379	263
95	1.5	0.8	2.3	45.3	4840	333	1.5	2X0.5	2.4	46.1	481	320
120	1.5	0.8	2.4	48.7	5915	385	1.5	2X0.5	2.5	49.5	577	370
150	1.6	0.8	2.5	52.1	6930	439	1.6	2X0.5	2.6	52.9	677	423
185	1.6	0.8	2.6	56.2	8265	510	1.6	2X0.5	2.8	57.2	812	495
240	1.8	0.8	2.8	62.2	1044	622	1.8	2X0.5	2.9	63.0	1025	602
300	1.9	0.8	3.0	68.2	1278	742	1.9	2X0.5	3.1	69.0	1257	720
400	2.0	0.8	3.3	75.9	1597	9110	2.0	2X0.5	3.4	76.7	1574	887
500	2.1	0.8	3.5	84.2	1994	1113	2.1	2X0.8	3.6	86.5	2055	1175
630	2.2	0.8	3.7	93.5	25120	13670	2.2	2X0.8	3.9	96.0	25830	14400

Electrical Data

Nom. Cross - Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capa ci- tance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm^2	µΩ/m	µΩ/m	kA	pF/m	mA/m	kA	kA	µΩ/m	nH/m
10	1830/3080	2330/3920	1.4/0.9	212	0.27	2.6	0.4	132	410
16	1150/1910	1470/2420	2.2/1.4	242	0.30	2.6	0.4	124	390
25	727/1200	927/1538	3.6/2.3	272	0.33	2.6	0.4	116	370
35	524/868	668/1113	5.0/3.2	301	0.36	2.6	0.5	108	350
50	387/641	494/822	6.8/4.4	332	0.40	2.6	0.5	102	330
70	268/443	343/568	9.8/6.3	383	0.46	2.6	0.6	97	310
95	193/320	248/410	13.3/8.5	432	0.52	2.6	0.6	92	290
120	153/253	196/325	17.2/11.0	474	0.57	2.6	0.7	89	280
150	124/206	159/265	21.2/13.5	511	0.61	4.3	0.7	87	280
185	99.1/164	128/211	26.6/17.0	562	0.67	4.3	0.8	86	270
240	75.4/125	98/161	34.9/22.3	602	0.72	4.3	0.9	83	260
300	60.1/100	80/130	43.8/28.0	622	0.75	4.3	1.0	82	260
400	47.0/77.8	64/102	57.3/36.6	648	0.78	5.8	1.1	80	250
500	36.6/60.5	51/81	72.3/46.2	668	0.82	5.8	1.2	78	250
630	28.3/46.9	42/64	91.2/58.3	758	0.92	5.8	1.3	76	240

Three Core 6/10KV (Um=12KV)
Dimensional Data

				Unarmoured Cables				Steel Round-Wire Armoured Cables					
Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
16	3.4	0.1	16	2.2	36	141	1110	1.2	2.0	2.4	42	300	270
25	3.4	0.1	16	2.3	39	180	132	1.3	2.5	2.5	46	390	343
35	3.4	0.1	16	2.3	41	217	150	1.3	2.5	2.6	49	443	377
50	3.4	0.1	16	2.4	44	263	173	1.4	2.5	2.7	52	508	419
70	3.4	0.1	16	2.6	48	340	211	1.5	2.5	2.8	56	605	475
95	3.4	0.1	16	2.7	52	431	251	1.5	2.5	2.9	60	718	538
120	3.4	0.1	16	2.8	55	515	289	1.6	2.5	3.0	63	823	596
150	3.4	0.1	25	2.9	58	610	330	1.7	2.5	3.1	67	938	658
185	3.4	0.1	25	3.0	62	731	381	1.7	3.15	3.3	72	1161	811
240	3.4	0.1	25	3.2	69	929	468	1.8	3.15	3.5	79	1411	951
300	3.4	0.1	25	3.3	73	1124	545	1.9	3.15	3.7	84	164	106
400	3.4	0.1	35	3.6	81	140	666	2.0	3.5	3.9	92	206	128
500	3.4	0.1	35	3.7	88	178	845	2.1	3.5	4.0	99.	250	165
630	3.4	0.1	35	3.9	96	20030	10895	2.2	3.5	4.1	109	30880	19670

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

	Steel Flat Wire Armoured Cables						Double Steel Tape Armoured Cables					
Nom. Cross-Section Area	Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	No of Steel Tapes x Nom Tape Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL					CU	AL
mm^2	mm	mm	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
16	1.2	0.8	2.2	39.7	279	251	1.2	2x0.5	2.3	40.5	2680	239
25	1.3	0.8	2.2	42.7	330	288	1.3	2x0.5	2.4	43.7	3195	277
35	1.3	0.8	2.3	45.2	383	321	1.3	2x0.5	2.5	46.2	3720	310
50	1.4	0.8	2.4	47.8	432	357	1.4	2x0.5	2.6	48.8	4200	344
70	1.5	0.8	2.5	51.8	532	418	1.5	2x0.5	2.7	52.8	5185	405
95	1.5	0.8	2.7	56.1	645	487	1.5	2x0.5	2.8	56.9	6280	470
120	1.6	0.8	2.8	59.7	754	551	1.6	2x0.5	2.9	60.5	7360	532
150	1.7	0.8	2.9	63.1	861	615	1.7	2x0.5	3.0	63.9	8420	595
185	1.7	0.8	3.0	67.4	1012	699	1.7	2x0.5	3.1	68.2	9910	678
240	1.8	0.8	3.2	73.0	1243	820	1.8	2x0.5	3.3	73.8	1220	797
300	1.9	0.8	3.3	78.3	1477	945	1.9	2x0.5	3.4	79.1	1453	920
400	2.0	0.8	3.5	85.2	1795	1119	2.0	2x0.8	3.7	87.7	1860	1185
500	2.1	0.8	3.7	92.8	2197	1327	2.1	2x0.8	3.9	95.3	2268	1399
630	2.2	0.8	4.0	102.7	27480	16160	2.2	2x0.8	4.1	105.0	28200	16910

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capa ci-tanc e	Chargi ng Curre nt	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Reactance	Inductance
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
16	1150/1910	1470/2420	2.2/1.4	186	0.40	2.6	0.5	131	410
25	727/1200	927/1538	3.6/2.3	216	0.43	2.6	0.5	123	390
35	524/868	668/1113	5.0/3.2	237	0.47	2.6	0.6	115	370
50	387/641	494/822	6.8/4.4	266	0.52	2.6	0.6	109	350
70	268/443	343/568	9.8/6.3	298	0.60	2.6	0.7	103	330
95	193/320	248/410	13.3/8.5	334	0.67	2.6	0.7	99	320
120	153/253	196/325	17.2/11.0	365	0.73	2.6	0.8	96	310
150	124/206	159/265	21.2/13.5	392	0.78	4.3	0.8	93	300
185	99.1/164	128/211	26.6/17.0	430	0.86	4.3	0.9	90	290
240	75.4/125	98/161	34.9/22.3	476	0.95	4.3	0.9	87	280
300	60.1/100	80/130	43.8/28.0	524	1.05	4.3	1.0	85	270
400	47.0/77.8	64/102	57.3/36.6	580	1.16	5.8	1.1	81	260
500	36.6/60.5	51/81	72.3/46.2	630	1.26	5.8	1.2	78	250
630	28.3/46.9	42/64	91.2/58.3	690	1.36	5.8	1.3	76	240

Three Core 8.7/15KV (Um=17.5KV)

Dimensional Data

				Unarmoured Cables				Steel Round-Wire Armoured Cables					
Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area *	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
25	4.5	0.1	16	2.4	44	2100	1620	1.4	2.5	2.7	52	4560	4080
35	4.5	0.1	16	2.5	46	2510	1840	1.4	2.5	2.7	54	5080	4410
50	4.5	0.1	16	2.6	49	2980	2080	1.5	2.5	2.9	57	5740	4840
70	4.5	0.1	16	2.7	53	3760	2470	1.6	2.5	3.0	62	6770	5480
95	4.5	0.1	16	2.8	57	4700	2900	1.6	2.5	3.1	65	7890	6100
120	4.5	0.1	16	3.0	60	5590	3320	1.7	2.5	3.2	69	8970	6700
150	4.5	0.1	25	3.1	64	6560	3760	1.8	3.15	3.4	74	11030	8220
185	4.5	0.1	25	3.2	67	7800	4300	1.8	3.15	3.5	78	12490	8980
240	4.5	0.1	25	3.4	74	9820	5220	1.9	3.15	3.7	84	15040	10440
300	4.5	0.1	25	3.5	79	11800	6010	2.0	3.5	3.8	90	17920	12130
400	4.5	0.1	35	3.7	86	14620	7240	2.1	3.5	4.1	98	21360	13970
500	4.5	0.1	35	3.8	93	18160	9355	2.2	3.5	4.3	106	26490	17830

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

	Steel Flat Wire Armoured Cables						Double Steel Tape Armoured Cables					
Nom. Cross-Se	Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	No of Steel Tapes x Nom Tape Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL					CU	AL
mm^2	mm	mm	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
25	1.4	0.8	2.4	48.0	3915	3495	1.4	2x0.5	2.5	48.8	3770	3345
35	1.4	0.8	2.5	50.8	4510	3890	1.4	2x0.5	2.6	51.6	4350	3735
50	1.5	0.8	2.6	53.3	5020	4270	1.5	2x0.5	2.7	54.1	4855	4105
70	1.6	0.8	2.7	57.0	5990	4870	1.6	2x0.5	2.8	57.8	5815	4690
95	1.6	0.8	2.8	61.2	7170	5600	1.6	2x0.5	3.0	62.2	7010	5435
120	1.7	0.8	2.9	65.1	8340	6320	1.7	2x0.5	3.1	66.1	8170	6145
150	1.8	0.8	3.0	68.3	9440	6955	1.8	2x0.5	3.2	69.3	9260	6770
185	1.8	0.8	3.2	72.8	10990	7880	1.8	2x0.5	3.3	73.6	10760	7650
240	1.9	0.8	3.3	78.3	13370	9155	1.9	2x0.5	3.4	79.1	13120	8900
300	2.0	0.8	3.5	83.7	15760	10460	2.0	2x0.8	3.6	86.0	16360	11070
400	2.1	0.8	3.7	90.5	19050	12260	2.1	2x0.8	3.9	93.0	19750	12960
500	2.2	0.8	3.9	98.2	23160	14430	2.2	2x0.8	4.1	100.7	23900	15190

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm^2	μΩm	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩm	nH/m
25	727/1200	927/1538	3.6/2.3	176	0.48	2.6	0.6	132	410
35	524/868	668/1113	5.0/3.2	193	0.53	2.6	0.6	123	390
50	387/641	494/822	6.8/4.4	211	0.58	2.6	0.7	116	370
70	268/443	343/568	9.8/6.3	240	0.65	2.6	0.7	110	350
95	193/320	248/410	13.3/8.5	267	0.73	2.6	0.8	105	330
120	153/253	196/325	17.2/11.0	291	0.79	2.6	0.8	102	320
150	124/206	159/265	21.2/13.5	312	0.85	4.3	0.9	98	310
185	99.1/164	128/211	26.6/17.0	340	0.93	4.3	0.9	95	300
240	75.4/125	98/161	34.9/22.3	375	1.02	4.3	1.0	91	290
300	60.1/100	80/130	43.8/28.0	411	1.12	4.3	1.1	89	280
400	47.0/77.8	64/102	57.3/36.6	454	1.24	5.8	1.2	84	270
500	36.6/60.5	51/81	72.3/46.2	504	1.34	5.8	1.3	78	250

Three Core12/20KV (Um=24KV)
Dimensional Data

				Unarmoured Cables				Steel Round-Wire Armoured Cables					
Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
35	5.5	0.1	16	2.7	51	2850	2180	1.5	2.5	2.9	60	5700	5010
50	5.5	0.1	16	2.8	54	3340	2450	1.6	2.5	3.0	62	6370	5480
70	5.5	0.1	16	2.9	58	4150	2850	1.6	2.5	3.1	66	7370	6070
95	5.5	0.1	16	3.0	62	5110	3310	1.7	3.15	3.3	72	9400	7600
120	5.5	0.1	16	3.1	65	5990	3730	1.8	3.15	3.4	75	10530	8270
150	5.5	0.1	25	3.2	68	6980	4180	1.8	3.15	3.5	80	11800	8940
185	5.5	0.1	25	3.3	72	8240	4740	1.9	3.15	3.7	83	13350	9850
240	5.5	0.1	25	3.6	79	10310	5700	2.0	3.5	3.8	90	16430	11820
300	5.5	0.1	25	3.7	84	12360	6570	2.1	3.5	4.0	95	18870	13080
400	5.5	0.1	35	3.9	91	15220	7830	2.2	4.0	4.3	103	23260	15930
500	5.5	0.1	35	4.1	97	19105	10325	2.3	4.2	4.5	110	27800	19170

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

	Steel Flat Wire Armoured Cables						Double Steel Tape Armoured Cables					
Nom. Cross-Section Area	Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	No of Steel Tapes x Nom Tape Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL					CU	AL
mm^2	mm	mm	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
35	1.5	0.8	2.7	55.7	5150	4530	1.5	2x0.5	2.8	56.5	4975	4355
50	1.6	0.8	2.8	58.2	5675	4935	1.6	2x0.5	2.9	59.0	5495	4750
70	1.6	0.8	2.9	61.9	6685	5570	1.6	2x0.5	3.0	62.7	6490	5375
95	1.7	0.8	3.0	66.4	7945	6390	1.7	2x0.5	3.1	67.2	7735	6180
120	1.8	0.8	3.1	70.0	9110	7103	1.8	2x0.5	3.2	70.8	8890	6880
150	1.8	0.8	3.2	73.2	10240	7770	1.8	2x0.5	3.3	74.0	10010	7535
185	1.9	0.8	3.3	77.7	11840	8750	1.9	2x0.5	3.4	78.5	11600	8500
240	2.0	0.8	3.5	83.2	14270	10070	2.0	2x0.8	3.6	85.5	14870	10680
300	2.1	0.8	3.6	88.6	16730	11440	2.1	2x0.8	3.8	91.1	17400	12130
400	2.2	0.8	3.9	95.6	20130	13350	2.2	2x0.8	4.0	97.9	20820	14050
500	2.3	0.8	4.1	103.3	24310	15600	2.3	2x0.8	4.2	105.6	25050	16350

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
35	524/868	668/1113	5.0/3.2	168	0.67	2.6	0.7	129	410
50	387/641	494/822	6.8/4.4	183	0.73	2.6	0.8	122	390
70	268/443	343/568	9.8/6.3	207	0.83	2.6	0.8	115	370
95	193/320	248/410	13.3/8.5	229	0.92	2.6	0.9	110	350
120	153/253	196/325	17.2/11.0	249	1.00	2.6	0.9	106	340
150	124/206	159/265	21.2/13.5	266	1.06	4.3	1.0	103	330
185	99.1/164	128/211	26.6/17.0	289	1.16	4.3	1.0	100	320
240	75.4/125	98/161	34.9/22.3	318	1.27	4.3	1.1	95	300
300	60.1/100	80/130	43.8/28.0	348	1.39	4.3	1.2	93	290
400	47.0/77.8	64/102	57.3/36.6	388	1.53	5.8	1.3	87	280
500	36.6/60.5	51/81	72.3/46.2	422	1.67	5.8	1.4	78	250

Three Core 18/30KV (Um=36KV)
Dimensional Data

				Unarmoured Cables				Steel Round-Wire Armoured Cables					
Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area *	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
						CU	AL					CU	AL
mm^2	mm	mm	mm	mm	mm	kg/km		mm	m	m	mm	kg/km	
50	8.0	0.1	16	3.2	65	4340	3460	1.8	3.15	3.5	75	8950	8080
70	8.0	0.1	16	3.3	70	5220	3930	1.9	3.15	3.6	80	10150	8860
95	8.0	0.1	16	3.4	74	6240	4440	1.9	3.15	3.7	84	11390	9590
120	8.0	0.1	16	3.5	77	7180	4910	2.0	3.5	3.8	89	13200	10860
150	8.0	0.1	25	3.6	80	8220	5420	2.1	3.5	4.0	92	14520	11720
185	8.0	0.1	25	3.7	84	9540	6040	2.1	4.0	4.1	97	17020	13510
240	8.0	0.1	25	3.9	91	11720	7110	2.2	4.0	4.3	104	19810	15200
300	8.0	0.1	25	4.0	95	13790	8000	2.3	4.5	4.5	108	23310	17470
400	8.0	0.1	35	4.3	103	16820	9430	2.4	4.5	4.7	117	27010	19620
500	8.0	0.1	35	4.5	110	21550	12880	2.5	4.5	4.9	124	31130	22610

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

	Steel Flat Wire Armoured Cables						Double Steel Tape Armoured Cables					
Nom. Cross-Section Area	Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Oveall Diameter	Approx. Weight		Nom. Bedding Thickness	No of Steel Tapes x Nom Tape Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL					CU	AL
mm^2	mm	mm	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
50	1.8	0.8	3.1	70.2	749	677	1.8	2x0.5	3.3	71.2	730	658
70	1.9	0.8	3.2	74.0	859	754	1.9	2x0.5	3.4	75.0	839	733
95	1.9	0.8	3.4	78.5	999	846	1.9	2x0.5	3.5	79.3	974	821
120	2.0	0.8	3.5	82.2	1125	927	2.0	2x0.8	3.6	84.5	1184	987
150	2.1	0.8	3.6	85.6	125	1007	2.1	2x0.8	3.7	87.9	1312	1070
185	2.1	0.8	3.7	89.8	141	1110	2.1	2x0.8	3.9	92.3	1485	1180
240	2.2	0.8	3.8	95.4	167	1257	2.2	2x0.8	4.0	97.9	1748	1332
300	2.3	0.8	4.0	100.9	193	1412	2.3	2x0.8	4.2	103.4	2008	1490
400	2.4	0.8	4.2	107.8	228	1617	2.4	2x0.8	4.4	110.3	2366	1700
500	2.5	0.8	4.4	115.5	27200	18610	2.5	2x0.8	4.6	118.0	28080	19510

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
50	387/641	494/822	6.8/4.4	142	0.85	2.6	1.0	134	430
70	268/443	343/568	9.8/6.3	159	0.95	2.6	1.0	127	400
95	193/320	248/410	13.3/8.5	175	1.05	2.6	1.1	121	390
120	153/253	196/325	17.2/11.0	189	1.13	2.6	1.1	117	370
150	124/206	159/265	21.2/13.5	201	1.21	4.3	1.2	113	360
185	99.1/164	128/211	26.6/17.0	217	1.3	4.3	1.2	109	350
240	75.4/125	98/161	34.9/22.3	237	1.42	4.3	1.3	104	330
300	60.1/100	80/130	43.8/28.0	258	1.55	4.3	1.4	101	320
400	47.0/77.8	64/102	57.3/36.6	282	1.69	5.8	1.5	96	290
500	36.6/60.5	51/81	72.3/46.2	302	1.79	5.8	1.6	78	250

Three Core 21/35KV (Um=42KV)
Dimensional Data

				Unarmoured Cables				Steel Round-Wire Armoured Cables					
Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area*	Nom. Sheath Thickness	Approx. Overall Diameter	Approx.		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx.	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
50	9.3	0.1	16	3.2	73.9	5320	4446	1.9	3.15	3.8	87.1	10970	10090
70	9.3	0.1	16	3.3	78.0	6166	4880	2.0	3.5	3.9	91.3	12220	10750
95	9.3	0.1	16	3.5	81.9	7144	5430	2.1	3.5	4.0	94.5	13560	11780
120	9.3	0.1	16	3.6	85.1	8232	6049	2.1	4.0	4.1	97.5	14880	13650
150	9.3	0.1	25	3.7	88.6	9273	6549	2.1	4.0	4.2	100.5	16150	14060
185	9.3	0.1	25	3.8	93.5	10845	7392	2.2	4.0	4.3	105.5	17840	14390
240	9.3	0.1	25	4.0	98.2	12675	8310	2.3	4.5	4.5	111.5	20410	15870
300	9.3	0.1	25	4.1	103.6	14960	9362	2.4	4.5	4.6	116.5	24100	18460
400	9.3	0.1	35	4.3	110.0	18055	10698	2.5	4.5	4.8	124.3	28680	20560

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

	Steel Flat Wire Armoured Cables						Double Steel Tape Armoured Cables					
Nom. Cross-Section Area	Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Oveall Diameter	Approx. Weight		\ Nom. Bedding Thickness	No of Steel Tapes x Nom Tape Thickness	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL					CU	AL
mm^2	mm	mm	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
50	1.9	0.8	3.3	80.5	9825	8986	1.9	2x0.5	3.5	82.5	9625	8786
70	2.0	0.8	3.6	85.5	11015	9769	2.0	2x0.8	3.8	87.6	10825	9569
95	2.1	0.8	3.8	88.5	12360	10580	2.1	2x0.8	3.9	90.5	12116	10327
120	2.1	0.8	3.9	91.5	13900	11715	2.1	2x0.8	4.0	94.5	13306	11110
150	2.1	0.8	4.0	94.8	15160	12440	2.1	2x0.8	4.1	97.5	14550	11830
185	2.2	0.8	4.1	99.5	17500	13450	2.2	2x0.8	4.2	101.7	16810	12765
240	2.3	0.8	4.2	104.1	19390	14890	2.3	2x0.8	4.4	107.5	18650	14150
300	2.4	0.8	4.4	109.5	21970	16280	2.4	2x0.8	4.6	112.8	21200	15500
400	2.5	0.8	4.6	116.3	25600	18430	2.5	2x0.8	4.8	118.8	24780	17600

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
50	387/641	494/822	6.8/4.4	135	0.91	2.6	1.1	140	450
70	268/443	343/568	9.8/6.3	151	1.01	2.6	1.1	134	415
95	193/320	248/410	13.3/8.5	166	1.11	2.6	1.2	126	405
120	153/253	196/325	17.2/11.0	179	1.21	2.6	1.2	123	385
150	124/206	159/265	21.2/13.5	189	1.29	4.3	1.3	118	375
185	99.1/164	128/211	26.6/17.0	202	1.38	4.3	1.3	114	365
240	75.4/125	98/161	34.9/22.3	221	1.49	4.3	1.4	109	345
300	60.1/100	80/130	43.8/28.0	240	1.65	4.3	1.5	105	335
400	47.0/77.8	64/102	57.3/36.6	267	1.75	5.8	1.6	101	305

Three Core 26/35KV (Um=42KV)
Dimensional Data

				Unarmoured Cables				Steel Round-Wire Armoured Cables					
Nom. Cross-Section Area	Nom. Insulation Thickness	Copper Tape Thickness	Copper Wire Screen Area *	Nom. Sheath Thickness	Approx. Overall Diameter	Approx.		Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Overall Diameter	Approx.	
						CU	AL					CU	AL
mm^2	mm	mm	mm^2	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
50	10.5	0.1	16	3.4	79.7	5928	5053	1.9	3.5	4.0	93.5	12050	11150
70	10.5	0.1	16	3.5	83.6	6900	5634	2.0	4.0	4.1	97.5	13150	11850
95	10.5	0.1	16	3.6	87.2	7863	6131	2.1	4.0	4.2	101.5	14800	12950
120	10.5	0.1	16	3.8	90.7	8817	6634	2.2	4.0	4.4	105.5	16050	13800
150	10.5	0.1	25	3.9	94.1	10085	7361	2.3	4.5	4.5	108.5	17420	14640
185	10.5	0.1	25	4.0	99.1	11573	8120	2.3	4.5	4.6	112	19200	15700
240	10.5	0.1	25	4.1	103.6	13387	9023	2.4	4.5	4.7	117	21050	16800
300	10.5	0.1	25	4.3	109.2	15658	10060	2.5	4.5	4.8	122.5	24900	19100
400	10.5	0.1	35	4.5	115.6	19013	11657	2.6	4.5	5.1	129	29200	21560

*Optional wire screen can be provided in combination of copper tapes. Nominal screen area, as stated in the table, can be supplied as standard.

	Steel Flat Wire Armoured Cables						Double Steel Tape Armoured Cables					
Nom. Cross-Section Area	Nom. Bedding Thickness	Armour Wire Size	Nom. Sheath Thickness	Approx. Oveall Diameter	Approx. Weight		Nom. Bedding Thickness	No of Steel Tapes x Nom Tape	Nom. Sheath Thickness	Approx. Overall Diameter	Approx.	
					CU	AL					CU	AL
mm^2	mm	mm	mm	mm	kg/km		mm	mm	mm	mm	kg/km	
50	1.9	0.8	3.5	86.5	10880	9990	1.9	2x0.8	3.7	87.5	10690	9800
70	2.0	0.8	3.6	90.5	12000	10795	2.0	2x0.8	3.8	91.4	10800	10590
95	2.1	0.8	3.8	94.0	13360	11570	2.1	2x0.8	3.9	95.2	13110	11327
120	2.2	0.8	3.9	96.4	13705	12710	2.2	2x0.8	4.0	98.7	14300	12110
150	2.3	0.8	4.0	99.5	16160	13440	2.3	2x0.8	4.1	102.1	15550	12800
185	2.3	0.8	4.1	105.1	18505	14465	2.3	2x0.8	4.2	107.3	17810	13765
240	2.4	0.8	4.2	109.8	20390	15890	2.4	2x0.8	4.4	112.2	19650	15150
300	2.5	0.8	4.4	115.5	22970	17280	2.5	2x0.8	4.6	118.0	22200	16500
400	2.6	0.8	4.6	122.1	26600	19430	2.6	2x0.8	4.8	124.6	25780	18600

Electrical Data

Nom. Cross-Section Area	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL 1 sec	Capacitance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of Copper Tape Screen Per Core 1 sec	Reactance	Inductance
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m
50	387/641	494/822	6.8/4.4	131	0.97	2.6	1.2	146	470
70	268/443	343/568	9.8/6.3	145	1.07	2.6	1.2	139	430
95	193/320	248/410	13.3/8.5	158	1.18	2.6	1.3	132	420
120	153/253	196/325	17.2/11.0	169	1.26	2.6	1.3	128	400
150	124/206	159/265	21.2/13.5	178	1.36	4.3	1.4	123	390
185	99.1/164	128/211	26.6/17.0	185	1.44	4.3	1.4	118	380
240	75.4/125	98/161	34.9/22.3	203	1.57	4.3	1.5	113	360
300	60.1/100	80/130	43.8/28.0	219	1.72	4.3	1.6	109	350
400	47.0/77.8	64/102	57.3/36.6	245	1.85	5.8	1.7	105	320

Current Rating for Three Core 1.8/3KV(Um=7.2)KV to 26/35KV(Um=42KV) XLPE Insulation

Nom. Cross-Section Area	Unarmored						Armored					
	Buried Direct in Ground		Laid in Single Way Duct		Laid in Air		Buried Direct in Ground		Laid in Single Way Duct		Laid in Air	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm^2	A		A		A		A		A		A	
10	76	53	62	42	87	62	76	53	63	43	88	63
16	101	78	87	67	109	84	101	78	88	68	110	85
25	129	100	112	87	142	110	129	100	112	87	143	111
35	153	119	133	103	170	132	154	119	134	104	172	133
50	181	140	158	122	204	158	181	140	158	123	205	159
70	221	171	193	150	253	196	220	171	194	150	253	196
95	262	203	231	179	304	236	263	204	232	180	307	238
120	298	232	264	205	351	273	298	232	264	206	352	274
150	334	260	297	231	398	309	332	259	296	231	397	309
185	377	294	336	262	455	355	374	293	335	262	453	354
240	434	340	390	305	531	415	431	338	387	304	529	415
300	489	384	441	346	606	475	482	380	435	343	599	472
400	553	438	501	398	696	552	541	432	492	393	683	545
500	613	498	541	451	786	652	601	492	532	446	773	645
630	663	568	591	501	896	762	651	562	582	496	883	755

Current Rating for Three Core 1.8/3KV(Um=7.2)KV to 26/35KV(Um=42KV) EPR Insulation

Nom. Cross-Section Area	Unarmored						Armored					
	Buried Direct in Ground		Laid in Single Way Duct		Laid in Air		Buried Direct in Ground		Laid in Single Way Duct		Laid in Air	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm^2	A		A		A		A		A		A	
10	73	51	59	40	82	58	73	51	60	41	82	59
16	98	76	84	65	104	80	98	76	85	66	104	81
25	125	97	109	84	135	105	125	97	109	85	136	105
35	150	116	130	101	164	127	150	116	131	101	164	127
50	176	137	154	119	195	151	177	137	155	120	197	153
70	216	167	189	147	243	189	216	168	190	147	244	190
95	258	200	227	176	296	229	257	200	227	176	296	230
120	292	227	258	201	339	263	292	227	259	201	339	264
150	328	255	291	226	385	299	327	254	291	226	385	300
185	371	289	330	257	441	343	368	288	328	257	439	343
240	429	335	384	300	519	406	424	332	381	299	513	402
300	482	378	434	340	590	462	475	374	429	338	583	459
400	545	432	494	392	678	538	534	426	485	387	666	530
500	605	492	534	445	768	638	594	486	525	440	756	630
630	655	562	584	495	878	749	644	556	575	490	862	741

Current Rating Conditions:
Ground Temperature:20°C
Ambient Temperature (air): 30°C
Depth of Soil: 0.8 m
Thermal Resistance of Soil: 1.5K•m/W

Single Core Cables to BS 6622/BS 7835

APPLICATIONS

The single core cables are designed for distribution of electrical power with nominal voltage Uo/U ranging from 3.8/6.6KV to 19/33KV and frequency 50Hz.

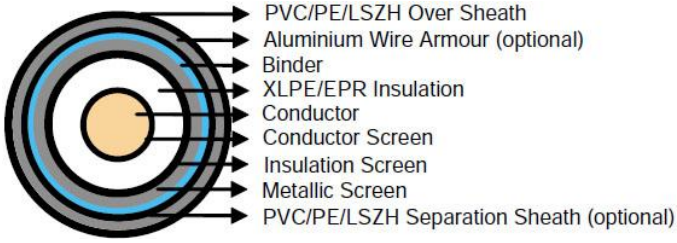
They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

STANDARD

BS 6622

BS 7835 (LSZH Version)

CONSTRUCTION





Conductor	Plain annealed copper or aluminium complying with IEC 60228/BS 6360. Copper conductors shall be stranded (class 2) and aluminium conductors shall be either solid or stranded (class 2).
Conductor Screen	Extruded layer of semi-conducting cross-linkable compound is applied over the conductor and shall cover the surface completely. The minimum thickness is 0.3mm and the maximum resistivity shall not exceed 500 Ohm-m at 90°C.
Insulation	Insulation is of cross-linked polyethylene compound XLPE (GP8) conforming to BS 7655-1.3 or EPR (GP7), conforming to BS 7655-1.2.

Table 1. Insulation Thickness

Nom. Cross Section Area	Insulation Thickness at Nominal Voltage				
	3.8/6.6KV (Um=7.2KV)	6.35/11KV (Um=12KV)	8.7/15KV	12.7/22KV (Um=24KV)	19/33KV (Um=36KV)
mm^2	mm	mm	mm	mm	mm
70 – 185	2.5	3.4	4.5	5.5	8.0
240	2.6	3.4	4.5	5.5	8.0
300	2.8	3.4	4.5	5.5	8.0
400	3.0	3.4	4.5	5.5	8.0
Above 500	3.2	3.4	4.5	5.5	8.0

Insulaton Screen	Extruded layer of semi-conducting cross-linkable compound is applied over the insulation. The extruded semi-conducting layer shall consist of bonded or cold strippable semi-conducting compound capable of removal for jointing or terminating. As an option, a semi-conducting tape may be applied over the extruded semi-conducting layer as a bedding for the metallic layer. The minimum thickness is 0.3 mm and the maximum resistivity is 500 Ohm-m at 90°C. The screen is tightly fitted to the insulation to exclude all air voids and can be easily hand stripped on site.
Metallic Layer	The metallic layer shall consist of either copper tapes or a concentric layer of copper wires or a combination of tapes and wires. The metallic layer provides an earth fault current path, capable of withstanding fault current to earth of 1000A for one second at maximum temperature 160°C. Copper wires are applied over the conducting water blocking layer with a minimum diameter of 0.5mm. And over the copper wires, copper tape with minimum thickness of 0.1mm can be applied helically with overlap. Total cross section of copper wire screen layer is shown in table 2.

Table 2. Minimum Total Cross Section of Copper Wire Screen & DC Resistance of the Screen

Nominal Cross-Section of Cables	Minimum Cross-Section of Copper Wire Screen	DC Resistance of the Copper Wire Screen at 20°C
mm^2	mm^2	Ω
up to 120	16	1.06
150-300	25	0.72
400-630	35	0.51

Separation Sheath (for armoured cable)	The separation sheath comprises a layer of extruded PVC, PE or LSZH. The nominal thickness is calculated by 0.02Du + 0.6mm where Du is the fictitious diameter under the sheath in mm. The nominal separation sheath thickness shall not be less than 1.2mm.
Armour (for armoured cable)	The armour consists of round aluminium wire with diameter specified as in Table 3.

Table 3. Armour Wire Diameter

Fictitious Diameter under the Armour		Armour Wire Diameter
mm		mm
>	<	
	25	1.6
25	35	2.0
35	60	2.5
60	-	3.15

Over Sheath	Overall sheath comprises a layer of extruded either PVC type 9 conforming to BS 7665-4.2 or MDPE type TS2 conforming to BS 7655-10.1. LSZH can be offered as an option. The over sheath is normally black in colour. When a DC voltage test is to be performed on the over sheath, a semi-conducting layer such as graphite coating shall be applied over the surface of the extruded over sheath. The nominal over sheath thickness is calculated by 0.035+D where D is the diameter immediately under the over sheath in mm. For cables with the over sheath not applied over the armour, the nominal over sheath thickness shall not be less than 1.4mm. And for cables with over sheath applied over the armour, the nominal over sheath thickness shall not be less than 1.8mm.

PHYSICAL PROPERTIES

Operating Temperature	up to 90°C
Temperature Range	-5°C (PVC or LSZH sheath); -20°C (PE sheath)
Short Circuit Temperature	250°C (short circuit duration up to 5 seconds)
Bending Radius	12 x OD

Table 4. Nominal /Operating /Test Voltages

Rated Voltage Uo/U	Operating Voltage (Um)	Testing Voltage (rms)
3.8/6.6KV	7.2KV	15KV
6.35/11KV	12KV	25.5KV
8.7/15KV	17.5KV	35KV
12.7/22KV	24KV	51KV
19/33KV	36KV	76KV

Single Core 3.8/6.6KV (Um=7.2KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Aluminium Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen	Nom. Bedding Thickness	Nom. Armour Wire	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
25	2.5	16	1.5	20.3	750	580	3.4	1.2	1.6	1.8	26.3	1150	1000
35	2.5	16	1.6	21.3	870	650	3.6	1.2	1.6	1.8	27.3	1250	1050
50	2.5	16	1.6	22.4	1090	770	3.9	1.2	1.6	1.8	28.4	1500	1190
70	2.5	16	1.7	24.2	1310	870	4.3	1.2	1.6	1.8	30.0	1740	1300
95	2.5	16	1.7	25.8	1560	960	4.7	1.2	1.6	1.9	31.8	2030	1430
120	2.5	16	1.8	27.4	1830	1070	5.0	1.2	1.6	1.9	33.2	2310	1550
150	2.5	25	1.8	29.1	2130	1190	5.3	1.2	1.6	2.0	35.1	2660	1720
185	2.5	25	1.9	30.8	2490	1320	5.8	1.2	2.0	2.0	37.4	3120	1950
240	2.6	25	1.9	33.5	3040	1520	6.3	1.2	2.0	2.1	40.3	3740	2200
300	2.8	25	2.0	36.1	3650	1770	7.0	1.2	2.0	2.2	42.9	4400	2520
400	3.0	35	2.2	40.6	4680	2170	7.7	1.2	2.0	2.3	47.2	5490	2960
500	3.2	35	2.3	43.6	5670	2570	8.5	1.3	2.5	2.5	51.6	6760	3660
630	3.2	35	2.4	48.8	6980	2990	9.5	1.4	2.5	2.6	57.0	8200	4160

Electrical Data

Nom. Cross-Section Area						Unarmoured	Aluminium								
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor	Capaci-tance	Charging Current	Short Circuit Rating of CopperWire Screen 1 sec	Short Circuit Rating ofCopper Tape Screen	Reactance		Inductance		Impedance			
								Trefoil	Flat spaced	Trefoil	Flat Spaced	Trefoil		Flat	
												CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	μΩ/m	nH/m	nH/m	μΩ/ m		μΩ/m	
25	727/1200	927/1538	3.6/2.3	263	0.32	2.6	0.4	136	194	400	590	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	291	0.35	2.6	0.5	127	185	390	580	679	1121	695	1131
50	387/641	494/822	6.8/4.4	321	0.39	2.6	0.5	121	179	380	570	511	834	527	844
70	268/443	343/568	9.8/6.3	371	0.45	2.6	0.6	115	173	370	550	364	583	386	597
95	193/320	248/410	13.3/8.5	417	0.50	2.6	0.6	110	168	350	540	272	427	300	446
120	153/253	196/325	17.2/11.0	459	0.55	2.6	0.7	107	165	340	520	225	345	257	367
150	124/206	159/265	21.2/13.5	494	0.59	4.3	0.7	103	161	330	510	193	287	229	313
185	99.1/164	128/211	26.6/17.0	543	0.65	4.3	0.8	100	158	320	500	165	237	206	267
240	75.4/125	98/161	34.9/22.3	583	0.70	4.3	0.9	97	155	310	490	140	191	185	226
300	60.1/100	80/130	43.8/28.0	602	0.72	4.3	1.0	95	153	300	490	126	163	174	203
400	47.0/77.8	64/102	57.3/36.6	627	0.75	5.8	1.1	92	150	290	480	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	654	0.79	5.8	1.2	90	149	290	470	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	726	0.87	5.8	1.3	87	145	280	460	97	110	151	160

Single Core 6.35/11KV (Um=12KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Aluminium Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
25	3.4	16	1.5	22.1	960	740	3.8	1.2	1.6	1.8	28.1	1300	780
35	3.4	16	1.6	23.3	1060	790	4.1	1.2	1.6	1.8	29.1	1400	1180
50	3.4	16	1.7	24.4	1160	840	4.4	1.2	1.6	1.8	30.2	1600	1280
70	3.4	16	1.7	26.0	1370	930	4.7	1.2	1.6	1.9	32.0	1840	1400
95	3.4	16	1.8	27.8	1640	1040	5.2	1.2	1.6	1.9	33.6	2130	1530
120	3.4	16	1.8	29.2	1900	1140	5.5	1.2	1.6	2.0	35.2	2430	1670
150	3.4	25	1.9	31.1	2220	1280	5.8	1.2	1.6	2.1	37.9	2870	1930
185	3.4	25	1.9	32.6	2570	1410	6.2	1.2	2.0	2.1	39.4	3240	2080
240	3.4	25	2.0	35.3	3130	1610	6.8	1.2	2.0	2.2	42.1	3490	2330
300	3.4	25	2.1	37.5	3730	1850	7.3	1.2	2.0	2.2	44.1	4490	2560
400	3.4	35	2.2	41.4	4730	2200	8.0	1.2	2.0	2.4	48.2	5589	3040
500	3.4	35	2.3	44.0	5700	2600	8.6	1.3	2.5	2.5	52.0	6780	3680
630	3.4	35	2.4	49.2	7010	3020	9.5	1.4	2.5	2.6	57.4	8230	4200

Electrical Data

Nom. Cross-Section Area						Unarmoured	Aluminium								
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating ofConductor	Capaci-tance	Charging Current	Short Circuit Rating ofCopper Wire Screen	Short Circuit Rating ofCopperTape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat	
												CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	μΩ/m	nH/m	nH/m	μΩ/m		μΩ/m	
25	727/1200	927/1538	3.6/2.3	208	0.42	2.6	0.5	146	206	440	640	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	229	0.46	2.6	0.6	138	201	440	640	679	1121	695	1131
50	387/641	494/822	6.8/4.4	252	0.50	2.6	0.6	132	195	420	620	511	834	527	844
70	268/443	343/568	9.8/6.3	288	0.58	2.6	0.7	122	188	390	600	364	583	386	597
95	193/320	248/410	13.3/8.5	323	0.65	2.6	0.7	122	182	390	580	272	427	300	446
120	153/253	196//325	17.2/11.0	353	0.71	2.6	0.8	116	172	370	550	225	345	257	367
150	124/206	159/265	21.2/13.5	380	0.76	4.3	0.8	110	166	350	530	193	287	229	313
185	99.1/164	128/211	26.6/17.0	416	0.83	4.3	0.9	107	166	340	530	165	237	206	267
240	75.4/125	98/161	34.9/22.3	460	0.92	4.3	0.9	104	163	330	520	140	191	185	226
300	60.1/100	80/130	43.8/28.0	506	1.01	4.3	1.0	100	157	320	500	126	163	174	203
400	47/77.8	64/102	57.3/36.6	561	1.12	5.8	1.1	94	154	300	490	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	619	1.24	5.8	1.2	91	151	290	480	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	698	1.37	5.8	1.3	91	148	290	470	97	110	151	160

Single Core 8.7/15KV (Um=17.5KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Aluminium Wire Armoured Cables						
	Nom. Insulation	Copper Wire	Nom. Sheath	Approx. Overall	Approx.		Copper Tape	Nom. Bedding	Nom. Armour	Nom. Sheath	Approx. Overall	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
25	4.5	16	1.6	23.7	940	820	4.4	1.2	1.6	1.8	30.3	1430	1210
35	4.5	16	1.7	24.9	1140	870	4.7	1.2	1.6	1.9	31.5	1630	1310
50	4.5	16	1.7	26.6	1240	920	4.9	1.2	1.6	1.9	32.6	1730	1410
70	4.5	16	1.8	28.4	1470	1030	5.3	1.2	1.6	1.9	34.2	1970	1520
95	4.5	16	1.9	30.2	1750	1160	5.7	1.2	2.0	2.0	36.8	2370	1770
120	4.5	16	1.9	31.6	2100	1250	6.1	1.2	2.0	2.1	38.4	2670	1910
150	4.5	25	2.0	33.5	2340	1400	6.4	1.2	2.0	2.1	40.1	3020	2080
185	4.5	25	2.0	35.0	2690	1520	6.8	1.2	2.0	2.2	41.8	3420	2240
240	4.5	25	2.1	36.8	3270	1740	7.4	1.2	2.0	2.3	44.5	4050	2500
300	4.5	25	2.2	39.9	3870	1990	7.9	1.2	2.0	2.3	46.5	4680	2780
400	4.5	35	2.3	43.8	4890	2370	8.5	1.3	2.5	2.5	51.8	5970	3430
500	4.5	35	2.4	46.4	5860	2760	9.2	1.3	2.5	2.6	54.4	7010	3910
630	4.5	35	2.5	51.6	7190	3190	10.0	1.4	2.5	2.7	59.8	8480	4420

Electrical Data

Nom. Cross-Section Area						Unarmoured	Aluminium								
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor	Capac-itance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of CopperTape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat	
												CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	μΩ/m	nH/m	nH/m	μΩ/m		μΩ/m	
25	727/1200	927/1538	3.6/2.3	171	0.47	2.6	0.6	154	217	480	680	936	1544	952	1554
35	524/868	668/1113	5.0/3.2	187	0.51	2.6	0.6	145	208	460	660	679	1121	695	1131
50	387/641	494/822	6.8/4.4	204	0.56	2.6	0.7	138	201	440	640	511	834	527	844
70	268/443	343/568	9.8/6.3	232	0.63	2.6	0.7	132	188	420	600	364	583	386	597
95	193/320	248/410	13.3/8.5	258	0.70	2.6	0.8	126	182	400	580	272	427	300	446
120	153/253	196/325	17.2/11.0	281	0.77	2.6	0.8	119	179	380	570	225	345	257	367
150	124/206	159/265	21.2/13.5	301	0.82	4.3	0.9	113	176	360	560	193	287	229	313
185	99.1/164	128/211	26.6/17.0	329	0.90	4.3	0.9	110	170	350	540	165	237	206	267
240	75.4/125	98/161	34.9/22.3	363	0.99	4.3	1.0	107	166	340	530	140	191	185	226
300	60.1/100	80/130	43.8/28.0	398	1.09	4.3	1.1	104	160	330	510	126	163	174	203
400	47/77.8	64/102	57.3/36.6	439	1.20	5.8	1.2	97	157	310	500	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	483	1.32	5.8	1.3	94	154	300	490	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	534	1.46	5.8	1.4	91	151	290	480	97	110	151	160

Single Core 12.7/22KV (Um=24KV)

Nom. Cross-Section Area		Unarmoured Cables					Aluminium Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
35	5.5	16	1.7	27.4	1100	800	5.2	1.2	1.6	1.9	31.4	1400	1200
50	5.5	16	1.8	28.8	1330	1010	5.4	1.2	1.6	2.0	34.8	1850	1540
70	5.5	16	1.9	30.6	1570	1130	5.9	1.2	2.0	2.0	37.2	2190	1750
95	5.5	16	1.9	32.2	1840	1240	6.2	1.2	2.0	2.1	39.0	2510	1900
120	5.5	16	2.0	33.8	2120	1360	6.6	1.2	2.0	2.1	40.4	2810	2040
150	5.5	25	2.0	35.5	2440	1500	6.9	1.2	2.0	2.2	42.3	3180	2240
185	5.5	25	2.1	37.2	2810	1640	7.4	1.2	2.0	2.2	43.8	3560	2380
240	5.5	25	2.2	39.9	3390	1860	7.8	1.2	2.0	2.3	46.5	4200	2640
300	5.5	25	2.2	41.9	3990	2110	8.4	1.3	2.5	2.4	49.9	5030	3130
400	5.5	35	2.3	45.8	5100	2490	9.0	1.3	2.5	2.5	53.8	6140	3600
500	5.5	35	2.4	48.4	6000	2900	9.7	1.4	2.5	2.6	56.6	7210	4100
630	5.5	35	2.5	53.6	7340	3340	10.4	1.4	2.5	2.8	62.0	8700	4650

Dimensional Data

Electrical Data

Nom. Cross-Section Area						Unarmoured	Aluminium								
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating ofConductor CU / AL1	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of CopperTape Screen 1 sec	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat	
												CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	μΩ/m	nH/m	nH/m	μΩ/m		μΩ/m	
35	524/868	668/1113	5.0/3.2	162	0.7	2.6	0.7	147	207	470	620	679	1121	695	1131
50	387/641	494/822	6.8/4.4	177	0.8	2.6	0.8	141	201	450	640	511	834	527	844
70	268/443	343/568	9.8/6.3	200	0.8	2.6	0.8	135	195	430	620	364	583	386	597
95	193/320	248/410	13.3/8.5	222	0.9	2.6	0.9	129	188	410	600	272	427	300	446
120	153/253	196/325	17.2/11.0	241	0.9	2.6	0.9	122	182	390	580	225	345	257	367
150	124/206	159/265	21.2/13.5	257	1.0	4.3	1.0	116	176	370	560	193	287	229	313
185	99.1/164	128/211	26.6/17.0	280	1.0	4.3	1.0	116	173	370	550	165	237	206	267
240	75.4/125	98/161	34.9/22.3	307	1.1	4.3	1.1	110	170	350	540	140	191	185	226
300	60.1/100	80/130	43.8/28.0	336	1.2	4.3	1.2	107	166	340	530	126	163	174	203
400	470/77.8	64/102	57.3/36.6	370	1.3	5.8	1.3	100	160	320	510	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	406	1.4	5.8	1.4	97	154	310	490	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	449	1.5	5.8	1.5	94	151	300	480	97	110	151	160

Single Core 19/33KV (Um=36KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Aluminium Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
50	8.0	16	2.0	34.2	1580	1270	6.7	1.2	2.0	2.2	41.0	2300	1980
70	8.0	16	2.0	35.8	1820	1380	7.1	1.2	2.0	2.2	42.6	2560	2120
95	8.0	16	2.1	37.6	2120	1510	7.5	1.2	2.0	2.3	44.4	2890	2290
120	8.0	16	2.1	39.0	2400	1630	7.9	1.2	2.0	2.3	45.8	3200	2430
150	8.0	25	2.2	40.9	2740	1810	8.2	1.3	2.5	2.4	48.9	3760	2830
185	8.0	25	2.2	42.4	3110	1950	8.6	1.3	2.5	2.5	50.6	4180	3010
240	8.0	25	2.3	45.1	3720	2180	9.2	1.3	2.5	2.5	53.1	4830	3270
300	8.0	25	2.4	47.3	4350	2460	9.7	1.4	2.5	2.6	55.5	5540	3630
400	8.0	35	2.5	51.2	5410	2880	10.3	1.4	2.5	2.7	59.4	6680	4130
500	8.0	35	2.6	53.8	6420	3320	11.0	1.5	2.5	2.8	62.2	7790	4690
630	8.0	35	2.7	59.0	7800	3780	11.8	1.5	2.5	2.9	67.4	9290	5220

Electrical Data

Nom. Cross-Section Area						Unarmoured	Aluminium								
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen 1 sec	Short Circuit Rating of CopperTape	Reactance		Inductance		Impedance			
								Trefoil	Flat Spaced	Trefoil	Flat Spaced	Trefoil		Flat	
												CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	μΩ/m	nH/m	nH/m	μΩ/m		μΩ/m	
50	387/641	494/822	6.8/4.4	138	0.83	2.6	1.0	151	214	480	680	511	834	527	844
70	268/443	343/568	9.8/6.3	154	0.92	2.6	1.0	144	201	460	640	364	583	386	597
95	193/320	248/410	13.3/8.5	169	1.01	2.6	1.1	138	195	440	620	272	427	300	446
120	153/253	196/325	17.2/11.0	183	1.10	2.6	1.1	132	188	420	600	225	345	257	367
150	124/206	159/265	21.2/13.5	194	1.16	4.3	1.2	126	182	400	580	193	287	229	313
185	99.1/164	128/211	26.6/17.0	210	1.26	4.3	1.2	122	182	390	580	165	237	206	267
240	75.4/125	98/161	34.9/22.3	229	1.37	4.3	1.3	119	176	380	560	140	191	185	226
300	60.1/100	80/130	43.8/28.0	249	1.49	4.3	1.4	113	173	360	550	126	163	174	203
400	47/77.8	64/102	57.3/36.6	273	1.64	5.8	1.5	107	163	340	520	113	141	164	184
500	36.6/60.5	51/81	72.3/46.2	298	1.79	5.8	1.6	104	163	330	520	105	124	158	171
630	28.3/46.9	42/64	91.2/58.3	327	1.96	5.8	1.7	100	160	320	510	97	110	151	160

Current Rating for 3.8/6.6KV (Um=7.2KV), 6.35/11KV (Um=12KV) & 8.7/15KV (Um=17.5KV)

Nom. Cross-Section Area	Ground				Duct				Air			
	Trefoil		Flat		Trefoil		Flat		Trefoil		Flat	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm^2	A		A		A		A		A		A	
25	160/160	120/120	170/170	125/125	165/165	125/125	165/165	125/125	170/170	130/130	230/235	180/180
35	180/180	150/150	190/190	155/15	185/185	155/155	185/185	155/155	200/200	160/160	260/265	210/210
50	220/220	170/170	230/230	175/175	225/220	175/170	220/220	170/170	235/250	180/195	295/300	230/230
70	270/270	210.210	280/280	215/215	270/260	215/210	270/270	210/210	285/310	225/240	370/370	290/290
95	320/320	250/250	335/335	260/260	320/305	255/245	325/325	250/250	360/375	280/295	455/460	350/355
120	360/360	280/280	380/380	295/295	360/340	285/275	370/370	285/285	415/430	320/355	520/530	410/410
150	410/410	320/315	430/430	330/330	400/375	315/300	415/410	320/320	470/490	365/380	600/600	465/465
185	460/455	360/355	485/485	375/375	440/410	350/335	465/460	360/360	540/550	425/435	690/690	530/530
240	530/520	415/405	560/560	440/440	505/460	405/380	540/540	420/420	640/650	500/510	820/820	640/630
300	600/580	475/455	640/640	495/495	560/500	455/420	610/610	475/470	740/740	580/580	940/940	730/730
400	680/650	540/510	730/730	570/570	610/530	510/455	690/690	540/540	840/840	670/670	1100/1100	860/860
500	750/710	610/570	830/830	650/650	680/570	570/500	790/780	620/620	940/930	790/770	1280/1280	1010/1010
630	830/760	680/640	940/940	750/750	750/620	640/550	890/890	710/700	1110/1040	910/880	1500/1480	1190/1180

Current Rating for 12.7/22KV (Um=24KV)

Nom. Cross-Section Area	Ground				Duct				Air			
	Trefoil		Flat		Trefoil		Flat		Trefoil		Flat	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm^2	A		A		A		A		A		A	
35	180/180	130/130	200/200	135/135	180/170	130/125	180/175	130/125	190/175	145/135	225/230	175/175
50	220/220	170/170	230/230	175/175	225/210	175/170	225/220	175/170	245/260	190/200	295/300	230/230
70	270/270	210.210	280/280	215/215	270/260	210/205	270/270	210/210	300/320	235/245	365/370	285/285
95	320/320	250/245	335/335	260/260	320/300	250/245	320/325	250/250	360/380	280/295	450/450	345/350
120	360/360	280/280	380/380	295/295	360/340	280/275	365/365	285/285	425/440	330/340	520/520	400/400
150	410/410	320/310	430/430	330/330	405/370	320/300	410/410	320/315	485/490	375/385	590/590	455/455
185	460/450	360/350	485/485	375/375	445/400	350/335	460/460	360/360	550/560	430/440	670/670	520/520
240	530/510	415/405	560/560	440/440	520/450	415/380	530/530	415/415	650/650	510/510	800/800	620/620
300	600/570	475/450	640/640	495/495	570/490	460/415	600/600	470/470	740/730	580/580	920/910	710/710
400	690/640	550/510	730/730	570/570	630/530	520/460	690/680	540/530	850/830	680/670	1070/1060	840/830
500	760/700	610/570	830/830	650/650	700/570	570/510	780/770	610/610	980/940	790/770	1250/1230	980/970
630	850/760	690/640	950/940	750/750	780/610	650/560	890/880	700/700	1130/1050	920/880	1450/1430	1060/1140

Nom. Cross-Section Area	Ground				Duct				Air			
	Trefoil		Flat		Trefoil		Flat		Trefoil		Flat	
	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL	CU	AL
mm^2	A		A		A		A		A		A	
50	220/220	170/170	230/230	175/175	225/220	175/170	225/220	175/170	245/260	190/200	295/300	230/230
70	270/270	210.210	280/280	215/215	270/260	210/205	270/270	210/210	300/320	235/245	365/370	285/285
95	320/320	250/245	335/335	260/260	320/300	250/245	320/325	250/250	360/380	280/295	450/450	345/350
120	360/360	280/280	380/380	295/295	360/340	280/275	365/365	285/285	425/440	330/340	520/520	400/400
150	410/410	320/310	430/430	330/330	405/370	320/300	410/410	320/315	485/490	375/385	590/590	455/455
185	460/450	360/350	485/485	375/375	445/400	350/335	460/460	360/360	550/560	430/440	670/670	520/520
240	530/510	415/405	560/560	440/440	520/450	415/380	530/530	415/415	650/650	510/510	800/800	620/620
300	600/570	475/450	640/640	495/495	570/490	460/415	600/600	470/470	740/730	580/580	920/910	710/710
400	690/640	550/510	730/730	570/570	630/530	520/460	690/680	540/530	850/830	680/670	1070/1060	840/830
500	760/700	610/570	830/830	650/650	700/570	570/510	780/770	610/610	980/940	790/770	1250/1230	980/970
630	850/760	690/640	940/940	750/750	780/610	650/560	890/880	700/700	1130/1050	920/880	1450/1430	1060/1140

Current Rating Conditions

Ground Temperature	20°C
Ambient Temperature (air)	30°C
Depth of Soil	0.8m
Thermal Resistance of Soil	1.5Kom/W

Three Core Cables to BS 6622/BS 7835

APPLICATIONS

The three core cables are designed for distribution of electrical power with nominal voltage Uo/U ranging from 3.6/6.6KV to 19/33KV and frequency 50Hz.

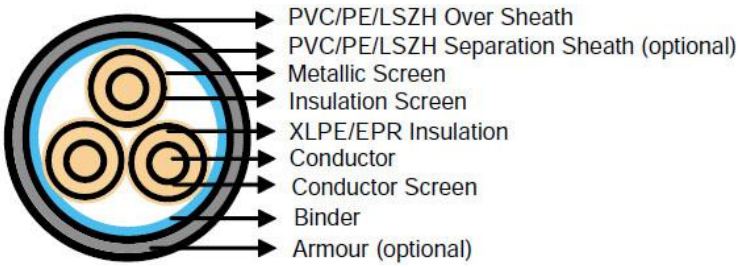
They are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations.

STANDARD

BS 6622

BS 7835 (LSZH Version)

CONSTRUCTION





Conductor	Plain annealed copper or aluminium complying with IEC 60228/BS 6360. Copper conductors shall be stranded (class 2) and aluminium conductors shall be either solid or stranded (class 2).
Conductor Screen	Extruded layer of semi-conducting cross-linkable compound is applied over the conductor and shall cover the surface completely. The minimum thickness is 0.3mm and the maximum resistivity shall not exceed 500 Ohm-m at 90°C.
Insulation	Insulation is of cross-linked polyethylene compound XLPE (GP8) conforming to BS 7655-1.3 or EPR (GP7), conforming to BS 7655-1.2.

Table 1. Insulation Thickness

Nom. Cross Section Area	Insulation Thickness at Nominal Voltage				
	3.8/6.6KV (Um=7.2KV)	6.35/11KV (Um=12KV)	8.7/15KV (Um=17.5KV)	12.7/22KV (Um=24KV)	19/33KV (Um=36KV)
mm^2	mm	mm	mm	mm	mm
70 – 185	2.5	3.4	4.5	5.5	8.0
240	2.6	3.4	4.5	5.5	8.0
300	2.8	3.4	4.5	5.5	8.0
400	3.0	3.4	4.5	5.5	8.0
Above 500	3.2	3.4	4.5	5.5	8.0

Insulaton Screen	Extruded layer of semi-conducting cross-linkable compound is applied over the insulation. The extruded semi-conducting layer shall consist of bonded or cold strippable semi-conducting compound capable of removal for jointing or terminating. As an option, a semi-conducting tape may be applied over the extruded semi-conducting layer as a bedding for the metallic layer. The minimum thickness is 0.3 mm and the maximum resistivity is 500 Ohm-m at 90°C. The screen is tightly fitted to the insulation to exclude all air voids and can be easily hand stripped on site.
Inner Covering & Fillers	For cables with a collective metallic layer or cables with a metallic layer over each individual cores with additional collective metallic layers, semi-conducting inner covering and fillers shall be applied over the laid up cores. The inner covering is made of non hygroscopic material, except if the cable is to be made longitudinally watertight. The inner covering shall be extruded or lapped.

The approximate thickness of extruded inner coverings is given in Table 2:

Table 2. Approximate Thickness of Extruded Inner Coverings

Ficititous Diameter over Laid Up Cores		Approx. Thickress of Extruded Inner Covering
mm		mm
>	<	
35	45	1.0
25	35	1.2
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2.0

**The approximate thickness of lapped inner coverings shall be 0.6mm.*

Metallic Layer	The metallic layer shall be applied over each core or applied as a collective screen. The metallic screen shall consist of either copper tapes or a concentric layer of copper wires or a combination of tapes and wires. The metallic layer provides an earth fault current path, capable of withstanding fault current to earth of 1000A for one second at maximum temperature 160°C. Copper wires are applied over the conducting water blocking layer with a minimum diameter of 0.5mm. And over the copper wires, copper tape with minimum thickness of 0.1mm can be applied helically with overlap.

Total cross section of copper wire screen is shown in table 3:

Nominal Cross-Section Area of Cable	Minimum Cross-Section of Copper Wire Screen Area	DC Resistance of the Copper Wire Screen
mm^2	mm^2	mm
up to 120	16	1.06
150-300	25	0.72
400-630	35	0.51

Table 3. Minimum Total Cross Section of Copper Wire Screen & DC Resistance of The Screen

Separation Sheath (for armoured cable)	The separation sheath comprises a layer of extruded PVC, PE or LSZH. The nominal thickness is calculated by 0.02Du + 0.6mm where Du is the fictitious diameter under the sheath in mm. The nominal separation sheath thickness shall not be less than 1.2mm.
Armour (for armoured cable)	The armour consists of galvanized steel wire applied over the inner covering with diameter specified as in Table 4.

Table 4. Armour Wire Diameter

Fictitiious Diameter under the Armour		Armour Wire Diameter
mm		mm
>	<	
	25	1.6
25	35	2.0
35	60	2.5
60	-	3.15

Over Sheath	Overall sheath comprises a layer of extruded either PVC type 9 conforming to BS 7665-4.2 or MDPE type TS2 conforming to BS 7655-10.1; LSZH can be offered as an option. The over sheath is normally black in colour. When a DC voltage test is to be performed on the over sheath, a semi-conducting layer such as graphite coating shall be applied over the surface of the extruded over sheath. The nominal over sheath thickness is calculated by 0.035+D where D is the diameter immediately under the over sheath in mm. For cables with the over sheath not applied over the armour, the nominal over sheath thickness shall not be less than 1.4mm. And for cables with over sheath applied over the armour, the nominal over sheath thickness shall not be less than 1.8mm.

PHYSICAL PROPERTIES

Operating Temperature	up to 90°C
Temperature Range	-5°C (PVC or LSZH sheath); -20°C (PE sheath)
Short Circuit Temperature	250°C (short circuit duration up to 5 seconds)
Bending Radius	15 x OD

Table 5. Nominal /Operating /Test Voltages

Rated Voltage Uo/U	Operating Voltage (Um)	Testing Voltage (rms)
3.8/6.6KV	7.2KV	15KV
6.35/11KV	12KV	25.5KV
8.7/15KV	17.5KV	35KV
12.7/22KV	24KV	51KV
19/33KV	36KV	76KV

Three Core 3.8/6.6KV (Um=7.2KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Steel Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
25	2.5	16	2.1	37.7	2205	1740	3.4	1.2	2.0	2.2	44.5	3890	3465
35	2.5	16	2.3	41.2	2690	2010	3.6	1.2	2.5	2.3	46.8	4420	3730
50	2.5	16	2.5	44.9	3340	2350	3.8	1.3	2.5	2.5	51.5	5640	4690
70	2.5	16	2.6	48.0	4050	2730	4.3	1.3	2.5	2.6	55.0	6570	5240
95	2.5	16	2.7	51.7	5000	3180	4.7	1.4	2.5	2.7	58.9	7760	5890
120	2.5	16	2.8	54.7	5890	3590	5.0	1.5	2.5	2.8	62.1	8810	6510
150	2.5	25	2.9	58.4	6960	4160	5.3	1.5	2.5	2.9	65.8	10110	7310
185	2.5	25	3.0	61.9	8160	4650	5.8	1.6	2.5	3.0	69.5	11520	7960
240	2.6	25	3.2	68.1	10210	5530	6.3	1.7	2.5	3.2	75.9	13920	9140
300	2.8	25	3.5	73.6	12380	6670	7.0	1.8	3.15	3.5	83.1	17400	11620
400	3.0	35	3.7	83.8	16190	8430	7.7	2.0	3.15	3.7	93.0	21900	13980

Electrical Data

Nom. Cross-Section Area						Unarmoured Cables	Steel Wire Armoured Cables			Current Ratings					
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of CopperTape Screen Per Core 1 sec	Reac-tance	Induc-tance	Ground		Duct		Air	
										CU	AL	CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A		A		A	
25	727/1200	927/1538	3.6/2.3	272	0.33	2.6	0.4	113	370	140	115	125	95	145	115
35	524/868	668/1113	5.0/3.2	301	0.36	2.6	0.5	108	350	170	135	150	115	175	140
50	387/641	494/822	6.8/4.4	332	0.40	2.6	0.5	102	330	210	160	180	135	220	170
70	268/443	343/568	9.8/6.3	383	0.46	2.6	0.6	97	310	255	195	215	165	270	210
95	193/320	248/410	13.3/8.5	432	0.52	2.6	0.6	92	290	300	230	255	200	330	250
120	153/253	196/325	17.2/11.0	474	0.57	2.6	0.7	89	280	340	265	290	225	375	295
150	124/206	159/265	21.2/13.5	511	0.61	4.3	0.7	87	280	380	295	330	255	430	330
185	99.1/164	128/211	26.6/17.0	562	0.67	4.3	0.8	86	270	430	335	370	290	490	385
240	75.4/125	98/161	34.9/22.3	602	0.72	4.3	0.9	83	260	490	380	425	335	570	450
300	60.1/100	80/130	43.8/28.0	622	0.75	4.3	1.0	82	260	540	435	470	375	650	510
400	47.0/77.8	64/102	57.3/36.6	648	0.78	5.8	1.1	80	250	590	480	520	420	700	570

Three Core 6.35/11KV (Um=12KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Steel Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
25	3.4	16	2.3	42.8	2600	2120	3.8	1.3	2.5	2.4	50.0	4930	4400
35	3.4	16	2.3	45.3	3000	2320	4.1	1.3	2.5	2.5	52.3	5380	4700
50	3.4	16	2.4	48.5	3630	2690	4.4	1.4	2.5	2.6	55.7	6210	5260
70	3.4	16	2.5	52.0	4440	3110	4.7	1.4	2.5	2.7	59.2	7200	5870
95	3.4	16	2.7	56.0	5440	3620	5.2	1.5	2.5	2.8	63.2	8420	6550
120	3.4	16	2.8	59.4	6370	4020	5.5	1.6	2.5	3.0	67.0	9580	7190
150	3.4	25	2.9	62.7	7430	4630	5.8	1.6	2.5	3.1	70.3	10830	8030
185	3.4	25	3.0	66.1	8680	5150	6.2	1.7	2.5	3.2	73.9	12290	8720
240	3.4	25	3.1	71.7	10690	5990	6.8	1.8	3.15	3.4	81.2	15620	10790
300	3.4	25	3.3	76.4	12770	7050	7.3	1.9	3.15	3.6	86.1	18030	12240
400	3.4	35	3.5	85.1	16460	8680	8.0	2.0	3.15	3.8	95.0	22350	14350

Electrical Data

Nom. Cross-Section Area						Unarmoured Cables	Steel Wire Armoured Cables			Current Ratings					
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of CopperTape Screen Per Core 1 sec	Reac-tance	Induc-tance	Ground		Duct		Air	
										CU	AL	CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A		A		A	
25	727/1200	927/1538	3.6/2.3	216	0.43	2.6	0.5	123	390	140	115	125	95	145	115
35	524/868	668/1113	5.0/3.2	237	0.47	2.6	0.6	115	370	170	135	150	115	175	140
50	387/641	494/822	6.8/4.4	260	0.52	2.6	0.6	109	350	210	160	180	135	220	170
70	268/443	343/568	9.8/6.3	298	0.60	2.6	0.7	103	330	255	195	215	165	270	210
95	193/320	248/410	13.3/8.5	334	0.67	2.6	0.7	99	310	300	230	255	200	330	250
120	153/253	196/325	17.2/11.0	365	0.73	2.6	0.8	96	310	340	265	290	225	375	295
150	124/206	159/265	21.2/13.5	392	0.78	4.3	0.8	93	300	380	295	330	255	430	330
185	99.1/164	128/211	26.6/17.0	430	0.86	4.3	0.9	90	290	430	335	370	290	490	385
240	75.4/125	98/161	34.9/22.3	476	0.95	4.3	0.9	87	280	490	380	425	335	570	450
300	60.1/100	80/130	43.8/28.0	524	1.05	4.3	1.0	85	270	540	435	470	375	650	510
400	47.0/77.8	64/102	57.3/36.6	580	1.16	5.8	1.1	81	260	590	480	520	420	700	570

Three Core 8.7/15KV (Um=17.5KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Steel Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
25	4.5	16	2.4	48.4	3000	2420	4.4	1.4	2.5	2.6	55.2	5600	5100
35	4.5	16	2.5	50.4	3450	2670	4.7	1.4	2.5	2.7	57.6	6130	5440
50	4.5	16	2.6	53.7	4140	3190	4.9	1.5	2.5	2.8	61.1	7010	6060
70	4.5	16	2.7	57.2	4980	3640	5.3	1.5	2.5	2.9	64.6	8030	6700
95	4.5	16	2.8	60.6	5900	4050	5.7	1.6	2.5	3.0	68.2	9160	7330
120	4.5	16	2.9	63.9	6870	4560	6.1	1.7	2.5	3.1	71.7	10340	8030
150	4.5	25	3.0	67.9	8030	5230	6.4	1.7	2.5	3.2	75.4	11730	8930
185	4.5	25	3.1	71.1	9310	5770	6.8	1.8	3.15	3.4	80.6	14170	10570
240	4.5	25	3.3	76.9	11390	6680	7.4	1.9	3.15	3.6	86.6	16670	11810
300	4.5	25	3.5	81.6	13510	7790	7.9	2.0	3.15	3.7	91.3	19140	13340
400	4.5	35	3.7	89.9	17130	9340	8.5	2.1	3.15	4.0	100.0	23360	15410

Electrical Data

Nom. Cross-Section Area						Unarmoured Cables	Steel Wire Armoured Cables			Current Ratings					
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of CopperTape Screen Per Core 1 sec	Reac-tance	Induc-tance	Ground		Duct		Air	
										CU	AL	CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A		A		A	
25	727/1200	927/1538	3.6/2.3	176	0.48	2.6	0.6	138	410	140	115	125	95	145	115
35	524/868	668/1113	5.0/3.2	193	0.53	2.6	0.6	123	390	170	135	150	115	175	140
50	387/641	494/822	6.8/4.4	211	0.58	2.6	0.7	116	370	210	160	180	135	220	170
70	268/443	343/568	9.8/6.3	240	0.65	2.6	0.7	110	350	255	195	215	165	270	210
95	193/320	248/410	13.3/8.5	267	0.73	2.6	0.8	105	330	300	230	255	200	330	250
120	153/253	196//325	17.2/11.0	291	0.79	2.6	0.8	102	320	340	265	290	225	375	295
150	124/206	159/265	21.2/13.5	312	0.85	4.3	0.9	98	310	380	300	330	255	430	330
185	99.1/164	128/211	26.6/17.0	340	0.93	4.3	0.9	95	300	430	335	370	290	490	385
240	75.4/125	98/161	34.9/22.3	375	1.02	4.3	1.0	91	290	490	380	425	335	570	450
300	60.1/100	80/130	43.8/28.0	411	1.12	4.3	1.1	89	280	540	435	470	375	650	510
400	47.0/77.8	64/102	57.3/36.6	454	1.24	5.8	1.2	84	270	590	480	520	420	700	570

Three Core 12.7/22KV (Um=24KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Steel Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
35	5.5	16	2.7	51	3750	2880	5.2	1.5	2.5	2.8	62.3	6870	6140
50	5.5	16	2.8	54	4240	3250	5.4	1.5	2.5	2.9	65.6	7710	6810
70	5.5	16	2.9	58	5050	3650	5.9	1.6	2.5	3.0	69.0	8710	7370
95	5.5	16	3.0	62	6010	4110	6.2	1.7	2.5	3.2	73.1	10000	8130
120	5.5	16	3.1	65	6990	4660	6.6	1.7	3.15	3.3	77.7	12040	9730
150	5.5	25	3.2	68	8130	5330	6.9	1.8	3.15	3.4	81.7	13550	10750
185	5.5	25	3.3	72	9410	5870	7.4	1.9	3.15	3.6	85.5	15150	11610
240	5.5	25	3.5	79	11490	6880	7.8	2.0	3.15	3.7	91.3	17710	12840
300	5.5	25	3.7	84	13710	7890	8.2	2.0	3.15	3.9	96.0	20170	14360
400	5.5	35	3.9	91	17230	9440	9.0	2.2	3.15	4.1	104.8	24520	16480

Electrical Data

Nom. Cross-Section Area						Unarmoured Cables	Steel Wire Armoured Cables			Current Ratings					
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of CopperTape Screen Per Core 1 sec	Reac-tance	Induc-tance	Ground		Duct		Air	
										CU	AL	CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A		A		A	
35	524/868	668/1113	5.0/3.2	168	0.67	2.6	0.7	129	410	170	135	155	120	180	145
50	387/641	494/822	6.8/4.4	183	0.73	2.6	0.8	122	390	210	160	185	140	225	175
70	268/443	343/568	9.8/6.3	207	0.83	2.6	0.8	115	370	255	195	225	170	275	215
95	193/320	248/410	13.3/8.5	229	0.92	2.6	0.9	110	350	295	230	260	205	330	260
120	153/253	196/325	17.2/11.0	249	1.00	2.6	0.9	106	340	335	260	300	235	380	300
150	124/206	159/265	21.2/13.5	266	1.06	4.3	1.0	103	330	375	290	335	265	430	335
185	99.1/164	128/211	26.6/17.0	289	1.16	4.3	1.0	100	320	420	330	380	300	490	390
240	75.4/125	98/161	34.9/22.3	318	1.27	4.3	1.1	95	300	480	380	430	345	570	460
300	60.1/100	80/130	43.8/28.0	348	1.39	4.3	1.2	93	300	530	425	480	385	650	520
400	47.0/77.8	64/102	57.3/36.6	383	1.53	5.8	1.3	87	280	590	480	520	420	700	570

Three Core 19/33KV (Um=36KV)

Dimensional Data

Nom. Cross-Section Area		Unarmoured Cables					Steel Wire Armoured Cables						
	Nom. Insulation Thickness	Copper Wire Screen Area	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight		Copper Tape Screen Area	Nom. Bedding Thickness	Nom. Armour Wire Diameter	Nom. Sheath Thickness	Approx. Overall Diameter	Approx. Weight	
					CU	AL						CU	AL
mm^2	mm	mm^2	mm	mm	kg/km		mm^2	mm	mm	mm	mm	kg/km	
35	8.0	16	3.1	60	3750	2880	6.5	1.7	2.5	3.2	74.9	9460	8700
50	8.0	16	3.2	65	5240	4260	6.7	1.8	3.15	3.4	79.0	10620	9680
70	8.0	16	3.3	70	6120	4730	7.1	1.8	3.15	3.5	82.5	11840	10440
95	8.0	16	3.4	74	7140	5240	7.5	1.9	3.15	3.6	86.4	13200	11350
120	8.0	16	3.5	77	8080	5710	7.9	2.0	3.15	3.7	89.9	14520	12190
150	8.0	25	3.6	80	9120	6220	8.2	2.0	3.15	3.8	93.6	16070	13280
185	8.0	25	3.7	84	10440	6940	8.6	2.1	3.15	3.9	97.3	17710	14090
240	8.0	25	3.9	91	12620	8010	9.2	2.2	3.15	4.1	103.2	20370	15460
300	8.0	25	4.0	95	14690	8800	9.7	2.3	3.15	4.3	108.2	22980	17210
400	8.0	35	4.3	103	17720	10230	10.3	2.4	3.15	4.5	116.8	27480	19450

Electrical Data

Nom. Cross-Section Area						Unarmoured Cables	Steel Wire Armoured Cables			Current Ratings					
	D C Resistance CU / AL	A C Resistance CU / AL	Short Circuit Rating of Conductor CU / AL1 sec	Capaci-tance	Charging Current	Short Circuit Rating of Copper Wire Screen Per Core 1 sec	Short Circuit Rating of CopperTape Screen Per Core 1 sec	Reac-tance	Induc-tance	Ground		Duct		Air	
										CU	AL	CU	AL	CU	AL
mm^2	μΩ/m	μΩ/m	kA	pF/m	mA/m	kA	kA	μΩ/m	nH/m	A		A		A	
35	524/868	668/1113	5.0/3.2	132	0.79	2.6	0.9	140	460	170	135	155	120	180	145
50	387/641	494/822	6.8/4.4	142	0.85	2.6	1.0	134	430	210	160	185	140	225	175
70	268/443	343/568	9.8/6.3	159	0.95	2.6	1.0	127	400	255	195	225	170	275	215
95	193/320	248/410	13.3/8.5	175	1.05	2.6	1.1	121	390	295	230	260	205	330	260
120	153/253	196/325	17.2/11.0	189	1.13	2.6	1.1	117	370	335	260	300	235	380	300
150	124/206	159/265	21.2/13.5	201	1.21	4.3	1.2	113	360	375	290	335	265	430	335
185	99.1/164	128/211	26.6/17.0	217	1.30	4.3	1.2	109	350	420	330	380	300	490	390
240	75.4/125	98/161	34.9/22.3	237	1.42	4.3	1.3	104	330	480	380	430	345	570	460
300	60.1/100	80/130	43.8/28.0	258	1.55	4.3	1.4	101	320	530	425	480	385	650	520
400	47.0/77.8	64/102	57.3/36.6	282	1.69	5.8	1.5	96	290	590	480	520	420	700	570

600/1000V ABC –Aerial Bundled Cables to BS 7870-5 (AL/XLPE)

Application

The aerial bundled cables designed for overhead distribution lines have all conductors made of aluminium 1350 and insulated with XLPE. Phase and neutral cores are laid up in a bundle with a left hand lay. Can be used for fixed installation as overhead power lines up to 1000 V incl.

Standard

BS 7870-5:1999

Construction

Conductor (for either phase, neutral or street lighting)	The conductors shall be of aluminium 1350 wires and are compacted circular stranded(RM).
Insulation	XLPE. 1, 2 and 3 raised longitudinal ribs on the surface of the cores. The surface of the neutral core should have at least 12 ribs for cross-sections up to 50 mm^2 and a minimum of 16 ribs for cores above 50 mm^2. In the case of five core bundles the surface of the protective core should be smooth.
Assembly	2 up to 4 cores of equal cross section are stranded together in left-hand lay, additionally 1 or 2 cores of reduced cross section can be co-stranded.

Technical Data

Rated voltage	kV	0.6/1
Test voltage	Veff kV	4
Laying temperature	°C	min. -20
Operating temperature	°C	-30 ~ +80
Conductor temperature	°C	max. +80
Short-circuit temperature	°C/s	max. +130 /5
Bending radius (min.)		18 × o of cable

Dimensions

number of cores x nominal cross section	max. conductor-resistance	min. breaking load of conductor strand	Current rating in the air	Outer diameter	Total weight
mm^2	Ohm/km	kN	A	mm	kg/km
1x 16 RM	1,910	2,5	72	80	74
1x 25 RM	1,200	4,0	107	90	106
1x 35 RM	0,868	5,5	132	105	138
1x 50 RM	0,641	8,0	165	118	182
1x 70 RM	0,443	10,7	205	130	252
1x 95 RM	0,320	13,7	240	154	333
1x 120 RM	0,253	18,6	290	170	408
1x 150 RM	0,206	23,2	334	190	502
1x 185 RM	0,164	28,7	389	210	611
1x 240 RM	0,125	37,2	467	240	801
2x 16 RM	1,910	2,5	72	156	147
2x 25 RM	1,200	4,0	107	180	208
2x 35 RM	0,868	5,5	132	200	277
2x 50 RM	0,641	8,0	165	235	361
2x 70 RM	0,443	10,7	205	254	505
2x 95 RM	0,320	13,7	240	303	666
2x 150 RM	0,206	23,2	334	380	1004
4x 16 RM	1,910	2,5	72	188	286
4x 25 RM	1,200	4,0	107	212	430
4x 35 RM	0,868	5,5	132	241	553
4x 50 RM	0,641	8,0	165	278	746
4x 70 RM	0,443	10,7	205	318	1009
4x 95 RM	0,320	13,7	240	378	1332
4x 120 RM	0,253	18,6	290	544	1632
4x 50 + 1x 25 RM	0,641/1,200	8,0/4,0	165/107	319	814
4x 50 + 1x 35 RM	0,641/0,868	8,5/5,5	165/132	319	845
4x 70 + 1x 25 RM	0,443/1,200	10,7/4,0	205/107	360	1105
4x 70 + 2x 25 RM	0,443/1,200	10,7/4,0	205/107	400	1217
4x 95 + 1x 25 RM	0,320/1,200	13,7/4,0	240/107	418	1438
4x 95 + 2x 25 RM	0,320/1,200	13,7/4,0	240/107	420	1544
4x120 + 1x 25 RM	0,253/1,200	18,6/4,0	290/107	590	2050

other cross-sections on request

600/1000V ABC–Aerial Bundled Cables to HD 626 S1 (AL/XLPE)

Application

The aerial bundled cables designed for fixed installation as overhead power lines up to 1000 V incl.

Standard

HD 626 S1

Construction

Conductor	Aluminium conductor, round stranded compressed (RM)
Insulation	XLPE

Technical Data

Rated voltage	kV	0.6/1
Test voltage	Veff kV/Hz	4/50
Laying temperature	°C	min. -20
Operating temperature	°C	-30 bis +80
Conductor temperature	°C	max. +80
Short-circuit temperature	°C/s	max. +130 /5
Bending radius (min.)	mm	18 × O of cable

Dimensions

Number of cores x nominal cross section	min. breaking load of conductor strand	Current rating in the air	Outer diameter	Total weight
mm^2	kN	A	mm	kg/km
2x 16 RM	1,910	2,5	72	147
2x 25 RM	1,200	4,0	107	208
2x 35 RM	0,868	5,5	132	277
2x 50 RM	0,641	8,0	165	361
4x 16 RM	1,910	2,5	72	286
4x 25 RM	1,200	4,0	107	430
4x 35 RM	0,868	5,5	132	553
4x 50 RM	0,641	8,0	165	746
4x 70 RM	0,443	10,7	205	1009
4x 95 RM	0,320	13,7	240	1332
4x 120 RM	0,253	18,6	290	1632
4x 35 + 1x 35 RM	0,868/0,868	5,5/5,5	132/132	694
4x 50 + 1x 25 RM	0,641/1,200	8,0/4,0	165/107	814
4x 50 + 1x 35 RM	0,641/0,868	8,5/5,5	165/132	845
4x 70 + 1x 25 RM	0,443/1,200	10,7/4,0	205/107	1105
4x 70 + 2x 25 RM	0,443/1,200	10,7/4,0	205/107	1217
4x 70 + 1x 35 RM	0,443/0,868	10,7/5,5	205/132	1150
4x 70 + 2x 35 RM	0,443/0,868	10,7/5,5	205/132	1289
4x 95 + 1x 25 RM	0,320/1,200	13,7/4,0	240/107	1438
4x 95 + 1x 35 RM	0,320/0,868	13,7/5,5	240/132	1467
4x 95 + 2x 25 RM	0,320/1,200	13,7/4,0	240/107	1544

other cross-sections on request

600/1000V ABC –Aerial Bundled Cables to NFC 33-209 (AL/XLPE)

Application

The aerial bundled cables designed for fixed installation as overhead power lines up to 1000 V incl.

Standard

NFC 33-209

Construction

Phase Conductor	Aluminium conductor, round stranded compressed (RM).
Neutral Conductor	Alloy aluminium conductor (AlMgSi), round stranded compressed (RM).
Insulation	XLPE. Load-bearing / neutral core – marked with standard and producers phase core – marked with digits 1, 2, 3.
Assembly	Cores and the neutral, conductor stranded together in right-hand lay, additionally 1, 2 or 3 cores of reduced cross section can be co-stranded.

Technical Data

Rated voltage	kV	0.6/1
Test voltage	Veff kV/Hz	4/50
Laying temperature	°C	min. -5
Operating temperature	°C	-30 ~ +90
Conductor temperature	°C	max. +90
Short-circuit temperature	°C/s	max. +250 /5
Bending radius (min.)	mm	20 × O of cable

Dimensions

Number of cores x nominal cross section	Max. conductor- resistance	Min. breaking load of conductor strand	Current rating in the air	Outer diameter	Total weight
mm^2	Ohm/km	kN	A	mm	kg/km
2x10 RM	3.080	1.5	38	12.8	93
4x10 RM	3.080	1.5	38	15.4	183
2x16 RM	1.910	2.3	72	14.8	129
2x16 RN + 2x1.5 RE	1.910/12.100	2.3	72	14.8	176
4x16 RM	1.910	2.3	72	17.8	257
4x16 RN + 2x1.5 RE	1.910/12.100	2.3	72	17.8	304
2x25 RM	1.200	3.8	107	18.0	202
2x25 RM + 2x1,5 RE	1.200/12.100	3.8	107	18.0	249
4x25 RM	1.200	3.8	107	21.7	404
4x25 RM + 2x1,5 RE	1.200/12.100	3.8	107	21.7	451
2x35 RM	0.868	5.2	132	20.8	269
2x35 RM + 2x1,5 RE	0.868/12.100	5.2	132	20.8	316
4x35 RM	0.868	5.2	132	25.1	539
4x35 RM + 2x1,5 RE	0.868/12.100	5.2	132	25.1	586
2x50 RM	0.641	7.6	165	23.4	352
2x50 RM + 2x1,5 RE	0.641/12.100	7.6	165	23.4	399
1x54.6 RM + 3x25 RM	0.630/1.200	3.8	107	21.7	507
1x54.6 RM + 3x25 RM + 1x16 RM	0.630/1.200/1.910	3.8/2.3	107/72	24.3	573
1x54.6 RM + 3x25 RM + 2x16 RM	0.630/1.200/1.910	3.8/2.3	107/72	29.7	639
1x54.6 RM + 3x25 RM + 3x16 RM	0.630/1.200/1.910	3.8/2.3	107/72	31.1	705
1x54.6 RM + 3x35 RM	0.630/0.868	5.2	132	25.1	615
1x54.6 RM + 3x35 RM + 1x16 RM	0.630/0.868/1.910	5.2/2.3	132/72	28.1	680
1x54.6 RM + 3x35 RM + 2x16 RM	0.630/0.868/1.910	5.2/2.3	132/72	34.3	748
1x54.6 RM + 3x35 RM + 3x16 RM	0.630/0.868/1.910	5.2/2.3	132/72	35.9	814
1x54.6 RM + 3x35 RM + 1x25 RM	0.630/0.868/1.200	5.2/3.8	132/107	28.1	714
1x54.6 RM + 3x50 RM	0.630/0.641	7.6	165	28.2	741
1x54.6 RM + 3x50 RM + 1x16 RM	0.630/0.641/1.910	7.6/2.3	165/72	31.6	806
1x54.6 RM + 3x50 RM + 2x16 RM	0.630/0.641/1.910	7.6/2.3	165/72	38.6	875
1x54.6 RM + 3x50 RM + 3x16 RM	0.630/0.641/1.910	7.6/2.3	165/72	40.4	940
1x54.6 RM + 3x50 RM + 1x25 RM	0.630/0.641/1.200	7.6/3.8	165/107	31.6	841
1x54.6 RM + 3x70 RM	0.630/0.443	10.2	205	33.0	950
1x54.6 RM + 3x70 RM + 1x16 RM	0.630/0.443/1.910	10.2/2.3	205/72	37.0	1014
1x54.6 RM + 3x70 RM + 2x16 RM	0.630/0.443/1.910	10.2/2.3	205/72	45.2	1083
1x54.6 RM + 3x70 RM + 3x16 RM	0.630/0.443/1.910	10.2/2.3	205/72	47.3	1148
1x54.6 RM + 3x70 RM + 1x25 RM	0.630/0.443/1.200	10.2/3.8	205/107	37.0	1048
1x54.6 RM + 3x70 RM + 2x25 RM	0.630/0.443/1.200	10.2/3.8	205/107	45.2	1150
1x54.6 RM + 3x70 RM + 3x25 RM	0.630/0.443/1.200	10.2/3.8	205/107	47.3	1250
1x54.6 RM + 3x95 RM	0.630/0.320	13.5	240	37.4	1176
1x54.6 RM + 3x95 RM + 1x16 RM	0.630/0.320/1.910	13.5/2.3	240/72	41.9	1243

other cross-sections on request

600/1000V ABC –Aerial Bundled Cables to AS/NZS 3560.1 (AL/XLPE)

Application

The aerial bundled cables designed for overhead distribution lines have all conductors made of aluminium 1350 and insulated with XLPE. Can be used for fixed installation as overhead power lines up to 1000 V incl.

Standard

AS/NZS 3560.1

Construction

Conductor (for either phase, neutral or street lighting)	The conductors shall be of aluminium 1350 wires and are compacted circular stranded (RM).
Insulation	XLPE.
Assembly	The cores shall be laid up with a left-hand lay.

Dimensions

Number of cores x nominal cross section	min. breaking load of conductor strand	Current rating in the air	Outer diameter	Total weight
mm^2	kN	A	mm	kg/km
2x16 RM	4.4	78	15.0	140
2x25 RM	7.0	105	17.6	210
2x35 RM	9.8	125	19.6	270
2x50 RM	11.4	150	22.8	370
2x95 RM	15.3	230	30.6	680
3x25 RM	8.8	97	19.0	310
3x35 RM	9.8	120	21.1	410
3x50 RM	11.4	140	24.6	550
4x16 RM	8.8	74	18.1	290
4x25 RM	14.0	97	21.2	410
4x35 RM	19.6	120	23.7	550
4x50 RM	28.0	140	27.5	740
4x70 RM	39.2	175	31.9	1000
4x95 RM	53.2	215	36.9	1370
4x120 RM	67.2	250	40.6	1690
4x150 RM	84.0	280	43.9	2020

other cross-sections on request

600/1000V ABC –Aerial Bundled Cables to DES/LVC/ABC Specification & IEC 60502 (AL/XLPE)

Application

The aerial bundled cables designed for overhead distribution lines have all conductors made of aluminium 1350 and insulated with XLPE. Can be used for fixed installation as overhead power lines up to 1000 V incl.

Standard

DES/LVC/ABC Specification

IEC 60502

Construction

Conductor (for either phase, neutral or street lighting)	The conductors shall be of H68 aluminium conductor and compacted circular stranded (RM).
Insulation	XLPE.
Assembly	The cores shall be laid up with a left-hand lay.

Dimensions

Number of cores x nominal cross section	min. breaking load of conductor strand	Current rating in the air	Outer diameter	Total weight
mm^2	kN	A	mm	kg/km
4x25 RM	3.5	84	21.5	420
4x35 RM	4.9	104	23.9	550
4x120+1x25 RM	16.8	246	43.8	1800
4x185+1x25 RM	25.9	332	50.7	2700

other cross-sections on request

600/1000V ABC –Aerial Bundled Cables to IEC 60502 & TNB Specification (AL/PE)

Application

The aerial bundled cables designed for overhead distribution lines have an insulated neutral messenger made of AAAC, which the insulation aluminium phase conductors are helically wound over it. Can be used for fixed installation as overhead power lines up to 1000 V incl.

Standard

TNB Specification

IEC 60502

Construction

Phase Conductor	H68 condition aluminium conductor, round stranded compressed.
Neutral or Messenger Conductor	Alloy aluminium conductor, round stranded compressed.
Street Lighting Conductor	H68 condition aluminium conductor, round stranded compressed.
Insulation	PE.
Assembly	The cable consists of insulated phase and street lighting aluminium conductors, shall be held firmly onto the insulated neutral messenger aluminium alloy conductor in a right hand (Z) lay.

Dimensions

Number of cores x nominal cross section	min. breaking load of conductor strand	Current rating in the air	Outer diameter	Total weight
mm^2	kN	A	mm	kg/km
1x16+1x 25 RM	6.4	61	15.3	160
3x16+1x 25 RM	6.4	61	19.0	290
3x25+1x 25 RM	6.4	84	23.2	400
3x35+1x 25 RM	6.4	104	25.6	500
3x50+1x 35 RM	8.9	129	30.0	680
3x70+1x 50 RM	12.1	167	34.9	920
3x95+1x 70 RM	18.0	209	40.6	1270
3x120+1x 70 RM	18.0	246	44.1	1510
3x150+1x 95 RM	24.2	283	49.2	1870
3x185+1x120 RM	30.8	332	54.9	2340
3x25+1x25+1x16 RM	6.4	84	23.2	470
3x35+1x25+1x16 RM	6.4	104	25.6	560
3x50+1x35+1x16 RM	8.9	129	30.0	740
3x70+1x50+1x16 RM	12.1	167	34.9	980
3x95+1x70+1x16 RM	18.0	209	40.6	1330
3x120+1x70+1x16 RM	18.0	246	44.1	1580
3x150+1x95+1x16 RM	24.2	283	49.2	1940
3x185+1x120+1x16 RM	30.8	332	54.9	2410

other cross-sections on request

All Aluminum Conductor (AAC) Cables

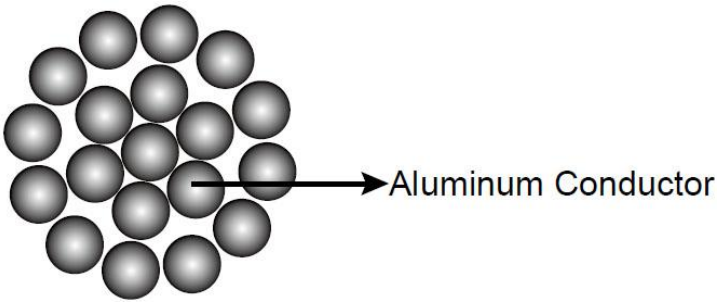
Application

AAC conductor is also known as aluminium stranded conductor. It is manufactured from electrolytically refined aluminium, with a minimum purity of 99.7%.

Standard

Basic design to BS 215-1 / BS EN 50182 / IEC 61089 / ASTM B 231/B 231M / DIN 48201-5 standards

Construction



Concentric lay stranded Aluminium Conductor (AAC) is made up of one or more strands of hard drawn 1350 aluminum alloy. These conductors are used in low, medium and high voltage overhead lines.

AAC has seen extensive use in urban areas where spans are usually short but high conductivity us required. The excellent corrosion resistance of aluminium has made AAC a conductor of choice in coastal areas.

Because of its relatively poor strength to weight ratio, AAC had limited use in transmission lines and rural distribution because of long spans utilized.

All aluminium conductors are made up of one or more strands of aluminium wire dep.

Electrical Properties

Density@20oC	2.703 kg/dm
Temperature Coefficient@20°C	0.00403 (°C)
Resistivity@20°C	0.028264
Linear Expansivity	23 x10-6 (°C)

Service Conditions

Ambient Temperature	-5°C - 50°C
Wind Pressure	80 – 130kg/m2
Seismic Acceleration	0.12 - 0.05g
Isokeraunic Level	10 – 18
Relative Humidity	5 – 100%

Construction Parameters

BS 215 Part 1

Code	Nominal Area		Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	Nominal	Teorical						
	mm^2	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
Midge	22	23.33	7/2.06	6.18	64	3.99	1.227	106
Gnat	25	26.8	7/2.21	6.6	73.8	4.83	1.0643	122
Mosquito	35	37	7/2.59	7.8	102.1	6.27	0.7749	141
Ladybird	40	42.8	7/2.79	8.4	117.9	7.28	0.6678	157
Ant	50	52.83	7/3.1	9.3	145	8.28	0.5419	175
Fly	60	63.55	7/3.4	10.2	174	9.9	0.4505	196
Wasp	100	106	7/4.39	13.17	290	16	0.2702	268
Hornet	150	157.6	19/3.25	16.25	434	25.7	0.1825	342
Charfer	200	213.2	19/3.78	18.9	587	35.4	0.1349	412
Cockroach	250	265.7	19/4.22	21.1	731	40.4	0.1083	471
Butterfly	300	322.7	19/4.65	23.25	888	48.75	0.08916	530
Centipede	400	415.2	37/3.78	26.46	1145	63.1	0.06944	616
Maybug	475	486,1	37/4,09	28,6	1342	0.05571	0,05900	740
Skorpion	500	529,8	37/4,27	29,9	1460	0.04916	0,05400	887
Cicada	600	628,3	37/4,65	32,6	1733	0.03423	0,04500	1056

*Note: *The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C*

BS EN 50182

Code	Nominal Area		Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	Nominal	Teorical						
	mm^2	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
Gnat	25	26.9	7/2.21	6.63	73	4.83	1.0643	115
Mosquito	35	36.9	7/2.59	7.77	101	6.27	0.7749	140
Ladybird	40	42.8	7/2.79	8.37	117	7.28	0.6678	154
Bluebottle	70	73.6	7/3.66	10.98	201	11.78	0.388	215
Earwig	75	78.6	7/3.78	11.34	215	12.57	0.3638	223
Grasshopper	80	84.1	7/3.91	11.73	230	13.45	0.34	233
Clegg	90	95.6	7/4.17	12.51	261	15.3	0.2989	252
Beetle	100	106.4	19/2.67	13.35	292	18.08	0.2701	269
Bee	120	132	7/4.90	14.7	361	21.12	0.2165	307
Caterpillar	180	185.9	19/3.53	17.65	511	29.75	0.1546	379
Spider	220	237.6	19/3.99	19.95	653	38.01	0.121	440
Moth	350	373.1	19/5.00	25	1025	59.69	0.077	579
Drone	350	372.4	37/3.58	25.06	1027	59.59	0.0774	577
Maybug	450	486.1	37/4.09	28.63	1341	77.78	0.0593	677
Scorpion	500	529.8	37/4.27	29.89	1461	84.77	0.0544	713
Cicada	600	628.3	37/4.65	32.55	1733	100.54	0.0459	788

*Note: *The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.*

IEC 61089

Code	Nominal Area	Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
10	10	7/1.35	4.05	27.4	1.95	2.8633	62
16	16	7/1.71	5.13	43.8	3.04	1.7896	84
25	25	7/2.13	6.39	68.4	4.5	1.1453	110
40	40	7/2.70	8.1	109.4	6.8	0.7158	147
63	63	7/3.39	10.17	172.3	10.39	0.4545	195
100	100	19/2.59	12.95	274.8	17	0.2877	259
125	125	19/2.89	14.45	343.6	21.25	0.2302	297
160	160	19/3.27	16.35	439.8	26.4	0.1798	345
200	200	19/3.66	18.3	549.7	32	0.1439	396
250	250	19/4.09	20.45	687.1	40	0.1151	454
315	315	37/3.29	23.03	867.9	51.97	0.0916	522
400	400	37/3.71	25.97	1102	64	0.0721	603
450	450	37/3.94	27.58	1239.8	72	0.0641	647
500	500	37/4.15	29.05	1377.6	80	0.0577	688
560	560	37/4.39	30.73	1542.9	89.6	0.0515	736
630	630	61/3.63	32.67	1738.3	100.8	0.0458	789
710	710	61/3.85	34.65	1959.1	113.6	0.0407	845
800	800	61/4.09	36.81	2207.4	128	0.0361	905
900	900	61/4.33	38.97	2483.3	144	0.0321	967
1000	1000	61/4.57	41.13	2759.2	160	0.0289	1026
1120*	1120	91/3.96	43.56	3093.5	179.2	0.0258	1091
1250*	1250	91/4.18	45.98	3452.6	200	0.0231	1157
1400*	1400	91/4.43	48.73	3866.9	224	0.0207	1226
1500*	1500	91/4.58	50.38	4143.1	240	0.0193	1270

** The items marked with "*" are not in our current product range and the details are for information only.*

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

ASTM B 231/B 231M

Code	Nominal Area		Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	AWG&MCM	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
Peachbell	6	13.3	7/1.56	4.68	36.6	2.53	2.1477	75
Rose	4	21.1	7/1.96	5.88	58.2	3.91	1.3606	99
Iris	2	33.6	7/2.47	7.41	92.6	5.99	0.8567	132
Pansy	1	42.4	7/2.78	8.34	116.6	7.3	0.6763	153
Poppy	1/0.0	53.5	7/3.12	9.36	147.2	8.84	0.5369	176
Aster	2/0.0	67.4	7/3.50	10.5	185.7	11.1	0.4267	203
Phlox	3/0.0	85	7/3.93	11.79	233.9	13.5	0.3384	234
Oxlip	4/0.0	107.2	7/4.42	13.26	295.2	17	0.2675	270
Valerian	250	126.7	19/2.91	14.55	348.6	20.7	0.2274	299
Sneezewort	250	126.7	7/4.80	14.4	348.8	20.1	0.2269	299
Laurel	266.8	135.2	19/3.01	15.05	372.2	22.1	0.2125	312
Daisy	266.8	135.2	7/4.96	14.88	372.3	21.4	0.2125	311
Peony	300	152	19/3.19	15.95	418.3	24.3	0.1892	335
Tulip	336.4	170.5	19/3.38	16.9	469.5	27.3	0.1686	359
Daffodil	350	177.3	19/3.45	17.25	487.9	28.4	0.1618	369
Canna	397.5	201.4	19/3.67	18.35	554.9	31.6	0.143	397
Goldentuft	450	228	19/3.91	19.55	627.6	35	0.126	429
Syringa	477	241.7	37/2.88	20.16	664.8	38.6	0.1192	444
Cosmos	477	241.7	19/4.02	20.1	664.8	37	0.1192	444
Hyacinth	500	253.3	37/2.95	20.65	696.8	40.5	0.1136	458
Zinnia	500	253.3	19/4.12	20.6	697.1	38.9	0.1134	458
Dahlia	556.5	282	19/4.35	21.75	775.8	43.3	0.1018	489
Mistletoe	556.5	282	37/3.12	21.84	775.7	44.3	0.1016	490
Meadowsweet	600	304	37/3.23	22.61	836.3	47.5	0.0948	511
Orchid	636	322.3	37/3.33	23.31	886.9	50.4	0.0892	530
Heuchera	650	329.4	37/3.37	23.59	907.4	51.7	0.0871	538

Flag	700	354.7	61/2.72	24.48	975.8	57.1	0.0811	561
Varbena	700	354.7	37/3.49	24.43	975.7	55.4	0.0812	561
Nasturtium	715.5	362.6	61/2.75	24.75	998.5	58.4	0.0793	569
Violet	715.5	362.6	37/3.53	24.71	998.5	56.7	0.0794	568
Cattail	750	380	61/2.82	25.38	1046	60.3	0.0754	587
Petunia	750	380	37/3.62	25.34	1046	58.6	0.0755	586
Lilac	795	402.8	61/2.90	26.1	1110	63.8	0.0713	607
Arbutus	795	402.8	37/3.72	26.04	1109	61.8	0.0715	605
Snapdragon	900	456	61/3.09	27.81	1256	70.8	0.0628	654
Cockscomb	900	456	37/3.96	27.72	1256	68.4	0.0631	652
Goldenrod	954	483.4	61/3.18	28.62	1331	75	0.0593	677
Magnolia	954	483.4	37/4.08	28.56	1331	72.6	0.0594	676
Camellia	1000	506.7	61/3.25	29.25	1394	78.3	0.0568	695
Hawkweed	1000	506.7	37/4.18	29.26	1395	76.2	0.0566	696
Larkspur	1033.5	523.7	61/3.31	29.79	1442	81.3	0.0547	710
Bluebell	1033.5	523.7	37/4.25	29.75	1441	78.8	0.0547	710
Marigold	1113	564	61/3.43	30.87	1553	87.3	0.051	740
Hawthorn	1192.5	604.2	61/3.55	31.95	1662	93.5	0.0476	771
Narsissus	1272	644.5	61/3.67	33.03	1774	98.1	0.0445	802
Columbine	1351	694.8	61/3.78	34.02	1884	104	0.042	829
Carnation	1431	725.1	61/3.89	35.01	1997	108	0.0396	858
Gladiolus	1510.5	765.4	61/4.00	36	2108	114	0.0375	885
Coreopsis	1590	805.7	61/4.10	36.9	2216	120	0.0357	911
Jassamine	1750	886.7	61/4.30	38.7	2442	132	0.0324	962
Cowslip*	2000	1013	91/3.77	41.47	2787	153	0.0286	1032
Sagebrush*	2250	1140	91/3.99	43.89	3166	167	0.0255	1099
Lupine*	2500	1267	91/4.21	46.31	3519	186	0.0229	1163
Bitterrot*	2750	1393	91/4.42	48.62	3872	205	0.0208	1223
Trillium*	3000	1520	127/3.90	50.7	4226	223	0.0193	1271
Bluebonnet*	3500	1773	127/4.22	54.86	4977	261	0.0165	1373

** The items marked with "*" are not in our current product range and the details are for information only.*

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

DIN 48201 Part 5

Nominal Area		Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
Nominal	Teorical						
mm^2	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
16	15.89	7/1.70	5.1	43	2.84	1.8022	83
25	24.25	7/2.10	6.3	66	4.17	1.181	108
35	34.36	7/2.50	7.5	94	5.78	0.8333	134
50	49.48	7/3.00	9	135	7.94	0.5787	168
50	48.35	19/1.80	9	133	8.45	0.5951	166
70	65.81	19/2.10	10.5	181	11.32	0.4372	200
95	93.27	19/2.50	12.5	256	15.68	0.3085	248
120	116.99	19/2.80	14	322	18.78	0.2459	285
150	147.11	37/2.25	15.8	406	25.3	0.196	328
185	181.62	37/2.50	17.5	500	30.54	0.1588	373
240	242.54	61/2.25	20.3	670	39.51	0.1191	445
300	299.43	61/2.50	22.5	827	47.7	0.0965	506
400	400.14	61/2.89	26	1104	60.86	0.0722	602
500	499.83	61/3.23	29.1	1379	74.67	0.0578	688
625*	626.2	91/2.96	32.6	1732	95.25	0.0462	786
800*	802.09	91/3.35	36.9	2218	118.39	0.036	907
1000*	999.71	91/3.74	41.1	2767	145.76	0.0289	1026

** The items marked with "*" are not in our current product range and the details are for information only.*

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

Technical Data

Numbers of Wires	Final Modules of Elasticity		Coeficient of linear Expansion	
AL	Kg/mm^2	lb/in^2	1/Co	1/Fo
7	6000	8.5×10^{6}	23.0×10^{-6}	112.8×10^{-6}
19	5700	8.1×10^{6}	23.0×10^{-6}	112.8×10^{-6}
37	5700	8.1×10^{6}	23.0×10^{-6}	112.8×10^{-6}
61	5500	7.8×10^{6}	23.0×10^{-6}	112.8×10^{-6}
91	5500	7.8×10^{6}	23.0×10^{-6}	112.8×10^{-6}

All Aluminum Alloy Conductor (AAAC) Cables

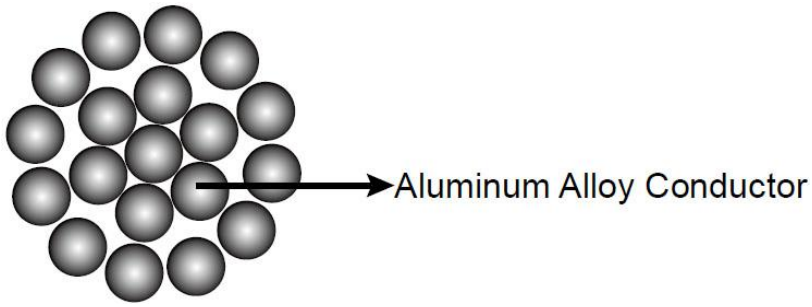
Application

AAAC is mainly used as bare overhead transmission cable and as primary and secondary distribution cable. It is also suitable for laying across basins, rivers and valleys where special geographical teatures exist.

Standard

Basic design to BS 3242 / BS EN 50182 / IEC 61089 / ASTM B 399/B 399M / DIN 48201-6 standards

Construction



AAAC cable bvconsists of aluminum alloy wires. The aluminum alloy wires are concentrically stranded.

This section deals with heat-treatable magnesium silicon type aluminium alloys to the applicable International Standard, the electrical and mechanical properties of which all fall within the values suggested by relevant standard.

Conductors to all other recognized specifications can also be supplied. The alloys referred to have higher strength but lower conductivity than pure aluminium.

Being lighter, alloy conductors can sometimes be used to advantage in place of the more conventional ACSR; Having lower breaking loads than the later, their use becomes particularly favourable when ice and wind loadings are low.

Electrical Properties

Density@20oC	2.70 kg/dm
Temperature Coefficient@20°C	0.00360 (°C)
Resistivity@20°C	0.0326 Ohms mm^2/m
Linear Expansivity	23 x10-6(°C)

Service Conditions

Ambient Temperature	-5°C - 50°C
Wind Pressure	80 – 130kg/m^2
Seismic Acceleration	0.12 - 0.05g
Isokeraunic Level	10 – 18
Relative Humidity	5 – 100%

Construction Parameters

BS 3242

Code	AL Nominal Area	Cu Nominal Area Equivalent	Total Area	Stranding	Overall Diameter	Weight
	mm^2	mm^2	mm^2	No.×mm	mm	kg/km
-	-	6.45	11.7	7/1.47	4.41	32.2
Box	-	9.68	18.8	7/1.85	5.55	51.7
Acacia	-	12.9	21.9	7/2.08	6.24	66.1
Almond	25	16.1	30.1	7/2.34	7.02	82.9
Ceda	30	19.4	35.5	7/2.54	7.62	97.8
-	40	22.6	42.2	7/2.77	8.31	116.4
Fir	50	25.8	47.8	7/2.95	8.85	131.8
Hazel	100	32.3	59.9	7/3.30	9.9	165
Pine	-	38.7	71.7	7/3.61	10.83	197.7
-	-	45.2	84.1	7/3.91	11.73	231.6
Willow	150	48.4	89.8	7/4.04	12.12	247.5
-	175	51.6	96.5	7/4.19	12.57	266.2
-	300	58.1	108.8	7/4.45	13.35	299.8
Oak	-	64.5	118.9	7/4.65	13.95	327.8
-	-	80.6	118.8	19/2.82	14.1	327.6
Mulberry	-	96.8	151.1	19/3.18	15.9	416.7
Ash	-	113	180.7	19/3.48	17.4	498.1
Elm	-	129	211	19/3.76	18.8	582.1
Poplar	-	145	239	37/2.87	20.09	658.8
-	-	161	270.8	37/3.05	21.35	746.7
Sycamore	-	194	303	37/3.23	22.61	834.9
Upas	-	226	362.1	37/3.53	24.71	998.6
-	-	258	421.8	37/3.81	26.47	1163
Yew	-	-	479.9	37/4.06	28.42	1323

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

BS EN 50182

Code	Stranding	Nominal Area	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	No.×mm	mm^2	mm	kg/km	KN	Ω/Km	A
Box	7/1.85	18.8	5.55	51.4	5.55	1.748	87
Acacia	7/2.08	23.8	6.24	64.9	7.02	1.3828	101
Almond	7/2.34	30.1	7.02	82.2	8.88	1.0926	116
Cedar	7/2.54	35.5	7.62	96.8	10.46	0.9273	129
Deodar	7/2.77	42.2	8.31	115.2	12.44	0.7797	143
Fir	7/2.95	47.8	8.85	130.6	14.11	0.6875	155
Hazel	7/3.30	59.9	9.9	163.4	17.66	0.5494	178
Pine	7/3.61	71.6	10.83	195.6	21.14	0.4591	199
Holly	7/3.91	84.1	11.73	229.5	24.79	0.3913	219
Willow	7/4.04	89.7	12.12	245	26.47	0.3665	228
Oak	7/4.65	118.9	13.95	324.5	35.07	0.2767	272
Mulberry	19/3.18	150.9	15.9	414.3	44.52	0.2192	314
Ash	19/3.48	180.7	17.4	496.1	53.31	0.183	351
Elm	19/3.76	211	18.8	579.2	62.24	0.1568	386
Poplar	37/2.87	239.4	20.09	659.4	70.61	0.1387	416
Sycamore	37/3.23	303.2	22.61	835.2	89.4	0.1095	480
Upas	37/3.53	362.1	24.71	997.5	106.82	0.0917	535
Yew	37/4.06	479	28.42	1319.6	141.31	0.0693	633
Totara	37/4.14	498.1	28.98	1372.1	146.93	0.0666	648
Rubus	61/3.50	586.9	31.5	1622	173.13	0.0567	714
Sorbus	61/3.71	659.4	33.39	1822.5	194.53	0.0505	764
Araucaria	61/4.14	821.1	37.26	2269.4	242.24	0.0406	868
Redwood	61/4.56	996.2	41.04	2753.2	293.88	0.0334	970

*Note: *The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.*

IEC 61089

Code	Nominal Area	Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
16	18.4	18.4	5.49	50.4	5.43	1.7896	86
25	28.8	28.8	6.87	78.7	8.49	1.1453	113
40	46	46	8.67	125.9	13.58	0.7158	151
63	72.5	72.5	10.89	198.3	21.39	0.4545	200
100	115	115	13.9	316.3	33.95	0.2877	266
125	144	144	15.5	395.4	42.44	0.2302	305
160	184	184	17.55	506.1	54.32	0.1798	355
200	230	230	19.65	632.7	67.91	0.1439	407
250	288	288	21.95	790.8	84.88	0.1151	466
315	363	363	24.71	998.9	106.95	0.0916	535
400	460	460	27.86	1268.4	135.81	0.0721	618
450	518	518	29.54	1426.9	152.79	0.0641	663
500	575	575	31.15	1585.5	169.76	0.0577	706
560	645	645	33.03	1778.4	190.14	0.0516	755
630	725	725	35.01	2000.7	213.9	0.0458	809
710	817	817	37.17	2254.8	241.07	0.0407	866
800	921	921	39.42	2540.6	271.62	0.0361	928
900*	1036	1036	41.91	2861.1	305.58	0.0321	992
1000*	1151	1151	44.11	3179	339.53	0.0289	1051
1120*	1289	1289	46.75	3560.5	380.27	0.0258	1118
1250*	1439	1439	49.39	3973.7	424.41	0.0231	1185

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

ASTM B 399/B 399M

Nominal Area		Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
AWG&MCM	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
6	13.2	7/1.55	4.65	36.2	4.18	2.5361	69
4	21.1	7/1.96	5.88	57.9	6.69	1.586	93
2	33.5	7/2.47	7.41	92	10.6	0.9987	123
0	53.5	7/3.12	9.36	146.8	17	0.62592	165
2/0	67.3	7/3.50	10.5	184.8	20.4	0.49738	190
3/0	84.9	7/3.93	11.79	233	25.7	0.3945	219
4/0	107	7/4.42	13.26	294.7	32.5	0.31188	253
250	126	19/2.91	14.55	346.7	38.8	0.26509	280
300	152	19/3.19	15.95	416.7	46.6	0.22059	313
350	178	19/3.45	17.25	487.3	52	0.1886	345
400	203	19/3.69	18.45	557.5	59.5	0.16486	375
450	228	19/3.91	19.55	626	66.8	0.14683	402
500	253	19/4.12	20.6	695	74.2	0.13224	429
550	279	37/3.10	21.7	766.2	83.9	0.11995	455
600	303	37/3.23	22.61	831.9	91	0.11049	478
650	330	37/3.37	23.59	905.5	94.9	0.1015	504
700	354	37/3.49	24.43	971.2	101	0.09464	525
750	381	37/3.62	25.34	1045	109	0.08796	549
800	404	37/3.73	26.11	1109	116	0.08285	569
900	456	37/3.96	27.72	1250	131	0.07351	612
1000	508	37/4.18	29.26	1393	146	0.06597	653
1250	631	61/3.63	32.67	1732	179	0.05306	743
1500	759	61/3.98	35.82	2082	215	0.04414	827
1750	886	61/4.30	38.7	2431	251	0.03781	904

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

DIN 48201 Part 6

Nominal Area		Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
Nominal	Teorical						
mm^2	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
16	15.89	7/1.70	5.1	43	4.44	2.0742	78
25	24.25	7/2.10	6.3	66	6.77	1.3593	102
35	34.36	7/2.50	7.5	94	9.6	0.9591	126
50	49.48	7/3.00	9	135	13.82	0.666	158
50	48.35	19/1.80	9	133	13.5	0.6849	156
70	65.81	19/2.10	10.5	181	18.38	0.5032	189
95	93.27	19/2.50	12.5	256	26.05	0.3551	234
120	116.99	19/2.80	14	322	32.68	0.2831	269
150	147.11	37/2.25	15.8	406	41.09	0.2256	309
185	181.62	37/2.50	17.5	500	50.73	0.1828	352
240	242.54	61/2.25	20.3	670	67.74	0.1371	420
300	299.43	61/2.50	22.5	827	83.63	0.111	477
400	400.14	61/2.89	26	1104	111.76	0.0831	568
500	499.83	61/3.23	29.1	1379	139.6	0.0665	649
625*	626.2	91/2.96	32.6	1732	174.9	0.0531	742
800*	802.09	91/3.35	36.9	2218	224.02	0.0415	857
1000*	999.71	91/3.74	41.1	2767	279.22	0.0333	971

** The items marked with "*" are not in our current product range and the details are for information only.*

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

Technical Data

Code	AL Nominal Area	Maximum Resistance DC at 20o		Current Rating	
				Temperate	Tropical
	mm^2	Ω / km	Ω / 1000ft	Amp	Amp
-	-	2.87	0.873	90	73
Box	-	1.79	0.544	121	98
Acacia	-	1.4	0.426	140	114
Almond	25	1.11	0.339	162	131
Ceda	30	0.944	0.288	180	145
-	40	0.794	0.242	200	162
Fir	50	0.7	0.213	217	175
Hazel	100	0.559	0.17	250	201
Pine	-	0.467	0.142	279	224
-	-	0.398	0.121	309	247
Willow	150	0.373	0.114	322	258
-	175	0.347	0.106	337	270
-	300	0.308	0.0938	343	290
Oak	-	0.282	0.0859	384	307
-	-	0.282	0.086	385	307
Mulberry	-	0.222	0.0676	448	356
Ash	-	0.185	0.0565	501	398
Elm	-	0.159	0.048	553	438
Poplar	-	0.14	0.0427	598	473
-	-	0.124	0.0337	647	511
Sycamore	-	0.111	0.0377	694	547
Upas	-	0.0925	0.0282	776	610
-	-	0.0794	0.0242	854	669
Yew	-	0.0698	0.0213	925	723

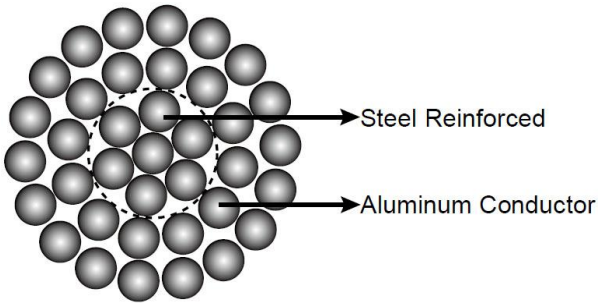
Application

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.

Standard

Basic design to BS 215-2 / BS EN 50182 / IEC 61089 / ASTM B 232/B 232M / DIN 48204 / JIS C 3110 standards

Construction



ACSR conductors are formed by several wires of aluminium and galvanized steel, stranded in concentric layers. The wire or wires which form the core, are made of galvanized steel and the external layer or layers, are of aluminium. Galvanized steel core consist normally of 1, 7 or 19 wires. The diameters of steel and aluminium wires can be the same, or different.

By varying the relative proportions of aluminium and steel, the required characteristics for any particular application can be reached. A higher U. T. S. Can be obtained, by increasing steel content, and a higher current carrying capacity by increasing aluminium content.

Electrical Properties

Density@20oC	Aluminium: 2.703 kg/dm
	Galvanised Steel: 7.80 kg/dm
Temperature Coefficient@20°C	Aluminium: 0.00403 (°C)
Resistivity@20°C	Aluminium: Should not exceed 0.028264
Linear Expansivity	Aluminium: 23 x10 (°C)
	Galvanised Steel: 11.5 x10 (1/°C)

Service Conditions

Ambient Temperature	-5°C - 50°C
Wind Pressure	80 – 130kg/m^2
Seismic Acceleration	0.12 - 0.05g
Isokeraunic Level	10 – 18
Relative Humidity	5 – 100%

Construction Parameters

BS 215-2

Code	Nominal Area				Stranding		Overall Diameter		Weight(CU)			Rated Strength	Electrical Resistance @20o
	AL		Steel	Total	AL	Steel	Core	Total	AL	Steel	Total		
	Nominal	Teorical											
	mm^2	mm^2	mm^2	mm^2	No.×mm	No.×mm	mm	mm	Kg/Km	Kg/Km	Kg/Km	KN	Ω/Km
Mole	10	10.62	1.77	12.39	6/1.50	1/1.50	1.50	4.5	29	14	43	4.14	2.706
Squirrel	20	20.94	3.49	24.43	6/2.11	1/2.11	2.11	6.33	57	28	85	7.88	1.368
Gopher	25	26.24	4.38	30.62	6/2.36	1/2.36	2.36	7.08	71	35	106	9.61	1.093
Weasel	30	31.61	5.27	36.88	6/2.59	1/2.59	2.59	7.77	87	41	128	11.45	0.9077
Fox	35	36.66	6.11	42.77	6/2.79	1/2.79	2.79	8.37	101	48	149	13.2	0.7822
Ferret	40	42.41	7.07	49.48	6/3.00	1/3.00	3.0	9.0	117	55	172	15.2	0.6766
Rabbit	50	52.88	8.82	61.7	6/3.35	1/3.35	3.35	10.05	145	69	214	18.35	0.5426
Mink	60	63.18	10.53	73.71	6/3.66	1/3.66	3.66	10.98	171	84	255	2.18	0.4545
Shunk	60	63.27	37.03	100.3	12/2.59	7/2.59	7.77	12.95	178	287	465	5.3	0.4567
Beaver	70	74.82	12.47	87.29	6/3.99	1/3.99	3.99	11.97	203	99	302	2.57	0.3825
Horse	70	73.37	42.63	116.2	12/2.79	7/2.79	8.37	13.95	203	335	538	61.2	0.3936
Racoon	75	79.2	13.2	92.4	6/4.1	1/4.1	4.1	12.3	216	104	320	27.2	0.3622
Otter	80	83.88	13.98	97.86	6/4.22	1/4.22	4.22	13.98	226	113	339	28.8	0.3419
Cat	90	95.44	15.86	111.3	6/4.5	1/4.5	4.5	15.9	258	128	386	32.7	0.3007
Hare	100	105	17.5	122.5	6/4.72	1/4.72	4.72	17.5	284	141	425	36.0	0.2733
Dog	100	105	13.5	118.5	6/4.72	7/1.57	4.71	14.15	288	106	394	32.7	0.2733
Hyena	100	105.8	20.4	126.2	7/4.39	7/1.93	5.79	14.57	250	200	450	40.9	0.2712
Leoperd	125	131.3	16.8	148.1	8/5.28	7/1.75	5.25	15.81	310	182	492	40.7	0.2184
Coyotte	125	132.1	20.1	152.2	26/2.54	7/1.91	5.73	15.89	410	112	522	46.4	0.2187
Congar	125	130.3	7.2	137.5	18/3.05	1/3.05	3.05	15.25	361	58	419	29.8	0.2189
Tiger	125	131.1	30.6	161.7	30/2.36	7/2.36	7.08	16.52	365	237	602	58	0.2202
Wolf	150	158.1	36.8	194.9	30/2.59	7/2.59	7.77	18.13	441	285	726	69.2	0.1828
Dingo	150	158.7	8.8	167.5	18/3.35	1/3.35	3.35	16.75	437	69	506	35.7	0.1815
Lynx	175	183.4	42.8	226.2	30/2.79	7/2.79	8.37	19.53	507	335	842	79.8	0.1576
Caracal	175	184.3	10.2	194.5	18/3.61	1/3.61	3.61	18.05	507	80	587	41.1	0.1563
Panther	200	212.1	49.4	261.5	30/3.00	7/3.00	9.0	21.0	586	388	974	92.25	0.1363
Jaguar	200	210.6	11.7	222.3	18/3.86	1/3.86	3.86	19.3	580	91	671	46.55	0.1367
Lion	225	238.5	55.7	294.2	30/3.18	7/3.18	9.54	22.26	657	438	1095	100.6	0.1212
Bear	250	264	61.6	325.6	30/3.35	7/3.35	10.05	23.45	728	485	1213	111.1	0.1090
Goat	300	324.3	75.7	400	30/3.71	7/3.71	11.13	25.79	894	595	1489	135.7	0.0891
Sheep	350	374.1	87.3	461.4	30/3.99	7/3.99	11.97	27.93	1031	687	1718	155.9	0.0770
Antilope	350	373.1	48.4	421.5	54/2.97	7/2.97	8.91	26.73	1040	371	1411	118.2	0.0772
Bizon	350	381.8	49.5	431.3	54/3.00	7/3.00	9.0	27.0	1064	380	1444	120.9	0.7573
Zebra	400	428.9	55.6	484.5	54/3.18	7/3.18	9.54	28.62	1185	436	1621	131.9	0.0674

BS EN 50182

Code	Stranding		Sectional Area			Overall Diameter	Weight	Breakign Load	Electrical Resistance	Current Rating*
	AL	Steel	AL	Steel	Total					
	No.×mm	No.×mm	mm^2	mm^2	mm^2	mm	Kg/Km	KN	Ω/Km	A
Mole	6/1.50	1/1.50	10.6	1.77	12.4	4.5	42.8	4.14	2.7027	66
Squirrel	6/2.11	1/2.11	21	3.5	24.5	6.33	84.7	7.87	1.3659	101
Fox	6/2.79	1/2.79	36.7	6.11	42.8	8.37	148.1	13.21	0.7812	142
Mink	6/3.66	1/3.66	63.1	10.5	73.6	10.98	254.9	21.67	0.454	199
Skunk	12/2.59	7/2.59	63.2	36.9	100.1	12.95	463	52.79	0.4568	206
Beaver	6/3.99	1/3.99	75	12.5	87.5	11.97	302.9	25.76	0.382	221
Racoon	6/4.09	1/4.09	78.8	13.1	91.9	12.27	318.3	27.06	0.3635	228
Otter	6/4.22	1/4.22	83.9	14	97.9	12.66	338.8	28.81	0.3415	237
Cat	6/4.50	1/4.50	95.4	15.9	111.3	13.5	385.3	32.76	0.3003	256
Hare	6/4.72	1/4.72	105	17.5	122.5	14.16	423.8	36.04	0.273	271
Coyote	26/2.54	7/1.91	131.7	20.1	151.8	15.89	520.7	45.86	0.2192	311
Cougar	18/3.05	1/3.05	131.5	7.31	138.8	15.25	418.8	29.74	0.2188	308
Tiger	30/2.36	7/2.36	131.2	30.6	161.8	16.52	602.2	57.87	0.2202	313
Lion	30/3.18	7/3.18	238.3	55.6	293.9	22.26	1093.4	100.47	0.1213	450
Bear	30/3.35	7/3.35	264.4	61.7	326.1	23.45	1213.4	111.5	0.1093	480
Goat	30/3.71	7/3.71	324.3	75.7	400	25.97	1488.2	135.13	0.0891	543
Sheep	30/3.99	7/3.99	375.1	87.5	462.6	27.93	1721.3	156.3	0.0771	592
Antelope	54/2.97	7/2.97	374.1	48.5	422.6	26.73	1413.8	118.88	0.0773	586
Bison	54/3.00	7/3.00	381.7	49.5	431.2	27	1442.5	121.3	0.0758	593
Deer	30/4.27	7/4.27	429.6	100.2	529.8	29.89	1971.4	179	0.0673	643
Elk	30/4.50	7/4.50	477.1	111.3	588.4	31.5	2189.5	198.8	0.0606	684
Camel	54/3.35	7/3.35	476	61.7	537.7	30.15	1798.8	146.4	0.0608	677
Moose	54/3.53	7/3.53	528.5	68.5	597	31.77	1997.3	159.92	0.0547	720

*Note: *The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.*

IEC 61089

Code	Nominal Area			Stranding		Overall Diameter	Weight	Breakign Load	Electrical Resistance	Current Rating*
	AL	Steel	Total	AL	Steel					
	mm^2	mm^2	mm^2	No.×mm	No.×mm	mm	Kg/Km	KN	Ω/Km	A
16	16	2.67	18.7	6/1.84	1/1.84	5.52	64.6	6.08	1.7934	85
25	25	4.17	29.2	6/2.30	1/2.30	6.9	100.9	9.13	1.1478	112
40	40	6.67	46.7	6/2.91	1/2.91	8.73	161.5	14.4	0.7174	150
63	63	10.5	73.5	6/3.66	1/3.66	10.98	254.4	21.63	0.4555	198
100	100	16.7	117	6/4.61	1/4.61	13.83	403.8	34.33	0.2869	263
125	125	6.94	132	18/2.97	1/2.97	14.85	397.9	29.17	0.2304	299
125	125	20.4	145	26/2.47	7/1.92	15.64	503.9	45.69	0.231	302
160	160	8.89	169	18/3.36	1/3.36	16.8	509.3	36.18	0.18	347
160	160	26.1	186	26/2.80	7/2.18	17.74	644.9	57.69	0.1805	351
200	200	11.1	211	18/3.76	1/3.76	18.8	636.7	44.22	0.144	398
200	200	32.6	233	26/3.13	7/2.43	19.81	806.2	70.13	0.1444	402
250	250	24.6	275	22/3.80	7/2.11	21.53	880.6	68.72	0.1154	458
250	250	40.7	291	26/3.50	7/2.72	22.16	1007.7	87.67	0.1155	461
315	315	21.8	337	45/2.99	7/1.99	23.91	1039.6	79.03	0.0917	526
315	315	51.3	366	26/3.93	7/3.05	24.87	1269.7	106.83	0.0917	530
400	400	27.7	428	45/3.36	7/2.24	26.88	1320.1	98.36	0.0722	607
400	400	51.9	452	54/3.07	7/3.07	27.63	1510.3	123.04	0.0723	610
450	450	31.1	481	45/3.57	7/2.38	28.56	1485.2	107.47	0.0642	651
450	450	58.3	508	54/3.26	7/3.26	29.34	1699.1	138.42	0.0643	655
500	500	34.6	535	45/3.76	7/2.51	30.09	1650.2	119.41	0.0578	693
500	500	64.8	565	54/3.43	7/3.43	30.87	1887.9	153.8	0.0578	697
560	560	38.7	599	45/3.98	7/2.65	31.83	1848.2	133.74	0.0516	741
560*	560	70.9	631	54/3.63	19/2.18	32.68	2103.4	172.59	0.0516	745
630	630	43.6	674	45/4.22	7/2.81	33.75	2079.2	150.45	0.0459	794
630*	630	79.8	710	54/3.85	19/2.31	34.65	2366.3	191.77	0.0459	798
710	710	49.1	759	45/4.48	7/2.99	35.85	2343.2	169.56	0.0407	851
710*	710	89.9	800	54/4.09	19/2.45	36.79	2666.8	216.12	0.0407	856
800*	800	34.6	835	72/3.76	7/2.51	37.61	2480.2	167.41	0.0361	910
800*	800	66.7	867	84/3.48	7/3.48	38.28	2732.7	205.33	0.0362	912
800*	800	101	901	54/4.34	19/2.61	39.09	3004.9	243.52	0.0362	916
900*	900	38.9	939	72/3.99	7/2.66	39.9	2790.2	188.33	0.0321	972
900*	900	75	975	84/3.69	7/3.69	40.59	3074.2	226.5	0.0322	974
1000*	1000	43.2	1043	72/4.21	7/2.80	42.08	3100.3	209.26	0.0289	1031
1120*	1120	47.3	1167	72/4.45	19/1.78	44.5	3464.9	234.53	0.0258	1096
1120*	1120	91.2	1211	84/4.12	19/2.47	45.31	3811.5	283.17	0.0258	1100
1250*	1250	102	1352	84/4.35	19/2.61	47.85	4253.9	316.04	0.0232	1165
1250*	1250	52.8	1303	72/4.70	19/1.88	47	3867.1	261.75	0.0231	1163

** The items marked with "*" are not in our current product range and the details are for information only.*

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

ASTM B 232/B 232M

Code	Stranding		Stranding			Overall Diameter	Weight	Breakign Load	Electrical Resistance	Current Rating*
	AL	Steel	AL	Steel	Total					
	No.×mm	No.×mm	mm^2	mm^2	mm^2	mm	Kg/Km	KN	Ω/Km	A
Turkey	13.3	2.22	6/1.68	1/1.68	5.04	15.52	53.6	4.98	2.1499	76
Swan	21.18	3.53	6/2.12	1/2.12	6.36	24.71	85.3	7.83	1.3501	101
Swanate	21.12	5.35	7/1.96	1/2.61	6.53	26.47	99.6	9.79	1.3539	102
Sparrow	33.59	5.6	6/2.67	1/2.67	8.01	39.19	135.7	11.92	0.8512	135
Sparate	33.54	8.55	7/2.47	1/3.30	8.24	42.09	158.7	15.08	0.8525	135
Robin	42.41	7.07	6/3.00	1/3.00	9	49.48	171.1	14.86	0.6742	156
Raven	53.52	8.92	6/3.37	1/3.37	10.11	62.44	216.1	18.33	0.5343	180
Quail	67.33	11.22	6/3.78	1/3.78	11.34	78.55	272	22.46	0.4247	207
Pigeon	85.12	14.19	6/4.25	1/4.25	12.75	99.31	343	28.02	0.3359	239
Penguin	107.22	17.87	6/4.77	1/4.77	14.31	125.09	432.7	35.36	0.2667	275
Waxwing	134.98	7.5	18/3.09	1/3.09	15.45	142.48	430.2	29.8	0.2129	313
Partridge	134.87	21.99	26/2.57	7/2.00	16.28	156.86	545.9	47.15	0.2141	316
Ostrich	152.19	24.71	26/2.73	7/2.12	17.28	176.9	613.4	53.38	0.1897	341
Merlin	170.22	9.46	18/3.47	1/3.47	17.35	179.68	542.8	37.36	0.1688	361
Linnet	170.55	27.83	26/2.89	7/2.25	18.31	198.38	687.5	59.16	0.1693	365
Oriole	170.5	39.78	30/2.69	7/2.69	18.83	210.28	783.3	72.06	0.1698	367
Chickadee	200.93	11.16	18/3.77	1/3.77	18.85	212.09	641.3	43.15	0.143	400
Brant	201.56	26.13	24/3.27	7/2.18	19.62	227.69	761	61.83	0.1433	403
Ibis	201.34	32.73	26/3.14	7/2.44	19.88	234.07	812.4	68.05	0.1434	404
Lark	200.9	46.88	30/2.92	7/2.92	20.44	247.78	925.2	84.07	0.1441	406
Pelican	242.31	13.46	18/4.14	1/4.14	20.7	255.77	769.7	51.15	0.1186	448
Flicker	241.58	31.4	24/3.58	7/2.39	21.49	272.98	913.5	72.06	0.1195	450
Hawk	241.65	39.19	26/3.44	7/2.67	21.77	280.84	975.1	81.84	0.1195	451
Hen	241.27	56.3	30/3.20	7/3.20	22.4	297.57	1110.6	98.3	0.12	453
Osprey	282.47	15.69	18/4.47	1/4.47	22.35	298.16	897.7	59.6	0.1017	492
Parakeet	282.31	36.6	24/3.87	7/2.58	23.22	318.91	1065.6	83.18	0.1023	495
Dove	282.59	45.92	26/3.72	7/2.89	23.55	328.51	1138.6	94.3	0.1022	497
Eagle	282.07	65.82	30/3.46	7/3.46	24.22	347.89	1295.6	114.76	0.1026	499
Peacock	306.13	39.78	24/4.03	7/2.69	24.19	345.91	1158.9	90.74	0.0943	520
Squab	305.83	49.81	26/3.87	7/3.01	24.51	355.64	1237	101.41	0.0944	521
Wood Duck	307.06	71.65	30/3.61	7/3.61	25.27	378.71	1408.4	121.43	0.0943	525
Teal*	307.06	69.62	30/3.61	19/2.16	25.24	376.68	1396.6	124.54	0.0943	525
Kingbird	323.01	17.95	18/4.78	1/4.78	23.9	340.96	1026.6	68.05	0.089	533
Swift	323.02	8.97	36/3.38	1 /3.38	23.66	331.99	956.5	60.05	0.089	532
Rook	323.07	41.88	24/4.14	7/2.76	24.84	364.95	1217.5	95.19	0.0894	537
Grosbeak	321.84	52.49	26/3.97	7/3.09	25.15	374.33	1300.8	104.97	0.0897	537
Scoter	322.56	75.26	30/3.70	7/3.70	25.9	397.82	1480.7	127.66	0.0897	541
Egret*	322.56	73.54	30/3.70	19/2.22	25.9	396.1	1469	130.77	0.0897	541
Flamingo	337.27	43.72	24/4.23	7/2.82	25.38	380.99	1276.6	99.64	0.0856	551
Gannet	338.26	54.9	26/4.07	7/3.16	25.76	393.16	1363.3	110.31	0.0854	553
Stilt	363.27	46.88	24/4.39	7/2.92	26.32	410.15	1370.4	107.2	0.0795	576

Starling	361.93	59.15	26/4.21	7/3.28	26.68	421.08	1463.7	118.32	0.0798	577
Redwing*	362.06	82.41	30/3.92	19/2.35	27.43	444.47	1650.6	143.23	0.0799	580
Coot	401.86	11.16	36/3.77	1/3.77	26.39	413.02	1195.8	73.39	0.0715	607
Tern	403.77	27.83	45/3.38	7/2.25	27.03	431.6	1331.8	94.3	0.0715	610
Condor	402.33	52.15	54/3.08	7/3.08	27.72	454.48	1520.7	118.32	0.0718	612
Cuckoo	402.33	52.15	24/4.62	7/3.08	27.72	454.48	1522.2	117.43	0.0718	612
Drake	402.56	65.44	26/4.44	7/3.45	28.11	468	1626.4	131.66	0.0717	615
Mallard*	403.84	91.78	26/4.44	7/3.45	28.96	495.62	1836	159.24	0.0717	619
Ruddy	455.5	31.67	45/3.59	7/2.40	28.74	487.17	1507.3	104.53	0.0634	656
Canary	456.28	59.15	54/3.28	7/3.28	29.52	515.43	1723.1	134.33	0.0633	660
Catbird	484.61	13.46	36/4.14	1/4.14	28.98	498.07	1434.4	86.74	0.0593	679
Rail	483.84	33.54	45/3.70	7/2.47	29.61	517.38	1598.1	110.76	0.0597	680
Cardinal	484.53	62.81	54/3.38	7/3.38	30.42	547.34	1825.9	142.34	0.0596	685
Cardinal	484.53	62.81	54/3.38	7/3.38	30.42	547.34	1825.9	142.34	0.0596	685
Tanager	522.79	14.52	36/4.30	1/4.30	30.1	537.31	1553.5	93.85	0.055	710
Orotlan	523.87	36.31	45/3.85	7/2.57	30.81	560.18	1730.5	118.32	0.0551	713
Curlew	522.51	67.73	54/3.51	7/3.51	31.59	590.24	1977.6	153.9	0.0553	716
Bluejay	565.49	38.9	45/4.00	7/2.66	31.98	604.39	1866	127.66	0.0511	745
Finch*	565.03	71.57	54/3.65	19/2.19	32.85	636.6	2127.8	164.58	0.0514	748
Bunting	605.76	41.88	45/4.14	7/2.76	33.12	647.64	1996.9	136.55	0.0477	776
Grackle*	602.79	76.89	54/3.77	19/2.27	33.97	679.68	2278.1	176.59	0.0481	777
Skylark	646.02	17.95	36/4.78	1/4.78	33.46	663.97	1913.6	115.65	0.0445	804
Bittern	644.4	44.66	45/4.27	7/2.85	34.17	689.06	2130.8	145.89	0.0448	805
Pheasant*	645.08	81.71	54/3.90	19/2.34	35.1	726.79	2431.4	183.26	0.045	808
Dipper	684.24	47.2	45/4.40	7/2.93	35.19	731.44	2263.2	154.79	0.0422	834
Martin*	685.39	86.67	54/4.02	19/2.41	36.17	772.06	2581.7	194.82	0.0423	838
Bobolink	725.27	50.14	45/4.53	7/3.02	36.24	775.41	2397.2	164.13	0.0398	862
Plover*	726.92	91.78	54/4.14	19/2.48	37.24	818.7	2734.9	206.39	0.0399	866
Nuthatch	764.2	52.83	45/4.65	7/3.10	37.2	817.03	2529.6	171.25	0.0378	888
Parrot*	766.06	97.03	54/4.25	19/2.55	38.25	863.09	2883.7	217.51	0.0379	892
Lapwing	807.53	55.6	45/4.78	7/3.18	38.22	863.13	2663.5	180.14	0.0358	916
Falcon*	806.23	102.43	54/4.36	19/2.62	39.26	908.66	3038.5	229.52	0.036	919
Chukar*	903.18	73.54	84/3.70	19/2.22	40.7	976.72	3083.1	217.51	0.0321	976
Bluebird*	1092.84	88.84	84/4.07	19/2.44	44.76	1181.68	3731.9	256.65	0.0266	1083
Kiwi*	1099.76	47.52	72/4.41	7/2.94	44.1	1147.28	3423.9	215.28	0.0264	1083
Thrasher*	1171.42	63.94	76/4.43	19/2.07	45.79	1235.36	3754.2	243.75	0.0248	1122
Grouse**	40.54	14.12	8/2.54	1/4.24	9.32	54.66	221.4	21.75	0.7089	153
Petrel**	51.61	30.1	12/2.34	7/2.34	11.7	81.71	377.7	42.08	0.5595	181
Minorca**	56.11	32.73	12/2.44	7/2.44	12.2	88.84	411.1	45.81	0.5146	191
Leghorn**	68.2	39.78	12/2.69	7/2.69	13.45	107.98	499.2	55.16	0.4234	215
Guinea**	80.36	46.88	12/2.92	7/2.92	14.6	127.24	589.7	64.94	0.3593	238
Dotterel**	89.41	52.15	12/3.08	7/3.08	15.4	141.56	656.1	70.28	0.323	254
Dorking**	96.51	56.3	12/3.20	7/3.20	16	152.81	707.8	75.62	0.2992	267
Cochin**	107.04	62.44	12/3.37	7/3.37	16.85	169.48	783.9	84.07	0.2698	284
Brahma*&**	102.79	91.78	12/3.37	7/3.37	18.12	194.57	1003.8	114.76	0.2809	283

** The items, marked with "*" are not in our current product range and the details are for information only.*

***The items, marked with "**" are ACSR Cables with high strength stranding.*

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

DIN 48204

Nominal Sectional		Sectional Area			Stranding		Overall Diameter	Weight	Breakign Load	Electrical Resistance	Current Rating*
AL	Steel	AL	Steel	Total	AL	Steel					
mm^2	mm^2	mm^2	mm^2	mm^2	No.×mm	No.×mm	mm	Kg/Km	KN	Ω/Km	A
16	2.5	15.27	2.54	17.8	6/1.80	1/1.80	5.4	62	5.81	1.8793	83
25	4	23.86	3.98	27.8	6/2.25	1/2.25	6.8	97	9.02	1.2028	109
35	6	34.35	5.73	40.1	6/2.70	1/2.70	8.1	140	12.7	0.8353	136
44	32	43.98	31.67	75.7	14/2.00	7/2.40	11.2	373	45.46	0.6573	166
50	8	48.25	8.04	56.3	6/3.20	1/3.20	9.6	196	17.18	0.5946	168
50	30	51.17	29.85	81	12/2.33	7/2.33	11.7	378	44.28	0.5644	181
70	12	69.89	11.4	81.3	26/1.85	7/1.44	11.7	284	26.31	0.413	211
95	15	94.39	15.33	109.7	26/2.15	7/1.67	13.6	383	35.17	0.3058	254
95	55	96.51	56.3	152.8	12/3.20	7/3.20	16	714	80.2	0.2992	267
105*	75	105.67	75.55	181.2	14/3.10	19/2.25	17.5	899	106.69	0.2736	284
120	20	121.57	19.85	141.4	26/2.44	7/1.90	15.5	494	44.94	0.2374	297
120	70	122.15	71.25	193.4	12/3.60	7/3.60	18	904	98.16	0.2364	308
125	30	127.92	29.85	157.8	30/2.33	7/2.33	16.3	590	57.86	0.2259	308
150	25	148.86	24.25	173.1	26/2.70	7/2.10	17.1	604	54.37	0.1939	336
170	40	171.77	40.08	211.9	30/2.70	7/2.70	18.9	794	77.01	0.1682	369
185	30	183.78	29.85	213.6	26/3.00	7/2.33	19	744	66.28	0.1571	382
210	35	209.1	34.09	243.2	26/3.20	7/2.49	20.3	848	74.94	0.138	414
210	50	212.06	49.48	261.5	30/3.00	7/3.00	21	979	92.25	0.1363	420
230	30	230.91	29.85	260.8	24/3.50	7/2.33	21	874	73.09	0.1249	438
240	40	243.05	39.49	282.5	26/3.45	7/2.68	21.8	985	86.46	0.1188	453
265	35	263.66	34.09	297.8	24/3.74	7/2.49	22.4	998	82.94	0.1094	475
300	50	304.26	49.48	353.7	26/3.86	7/3.00	24.5	1233	105.09	0.0949	520
305	40	304.62	39.49	344.1	54/2.68	7/2.68	24.1	1155	99.3	0.0949	518
340	30	339.29	29.85	369.1	48/3.00	7/2.33	25	1174	92.56	0.0851	551
380	50	381.7	49.48	431.2	54/3.00	7/3.00	27	1448	120.91	0.0757	593
385	35	386.04	34.09	420.1	48/3.20	7/2.49	26.7	1336	104.31	0.0748	595
435	55	434.29	56.3	490.6	54/3.20	7/3.20	28.8	1647	136.27	0.0666	641
450	40	448.71	39.49	488.2	48/3.45	7/2.68	28.7	1553	120.19	0.0644	651
490	65	490.28	63.55	553.8	54/3.40	7/3.40	30.6	1860	152.85	0.059	689
550	70	549.65	71.25	620.9	54/3.60	7/3.60	32.4	2085	167.42	0.0526	737
560	50	561.7	49.48	611.2	48/3.86	7/3.00	32.2	1943	146.28	0.0514	744
680*	85	678.58	85.95	764.5	54/4.00	19/2.40	36	2564	209.99	0.0426	834

** The items marked with "*" are not in our current product range and the details are for information only.*

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

JiS C 3110

Nominal Sectional	Sectional Area			Stranding		Overall Diameter	Weight	Breakign Load	Electrical Resistance @20o
	AL	Steel	Total	AL	Steel				
mm^2	mm^2	mm^2	mm^2	No.×mm	No.×mm	mm	Kg/Km	KN	Ω/Km
25	24.9	4.2	29.1	6/2.30	1/2.30	6.9	101	8.89	1.15
32	31.9	5.3	37.2	6/2.60	1/2.60	7.8	129	11.17	0.899
58	57.7	9.6	67.3	6/3.50	1/3.50	10.5	233	19.40	0.497
95	95.4	15.9	111.3	6/4.50	1/4.50	13.5	385	31.16	0.301
120	124.7	29.1	153.8	30/2.3	7/2.3	16.1	574	54.29	0.233
160	159.3	37.2	196.5	30/2.6	7/2.6	18.2	733	68.40	0.182
200	198.2	46.2	244.4	30/2.9	7/2.9	20.3	912	84.67	0.147
240	241.2	59.3	300.5	30/3.2	7/3.2	22.4	1110	100.06	0.120
330	326.8	52.8	379.6	26/4.0	7/3.1	25.3	1320	107.31	0.0888
410	413.4	67.3	480.7	26/4.5	7/3.5	28.5	1673	136.32	0.0702
520	519.5	67.3	586.8	54/3.5	7/3.5	31.2	1969	152.88	0.0559
610	612.4	79.4	691.8	54/3.8	7/3.8	34.2	2320	179.83	0.0474
810	814.5	56.3	870.8	45/3.8	7/3.2	38.4	2700	181.10	0.0356

Technical Data

Numbers of Wires		Final Modules of Elasticity		Coeficient of linear Expansion	
AL	Steel	Kg/mm^2	lb/in^2	1/Co	1/Fo
6	1	81	11.5×10^6	19.1×10^{-6}	10.6×10^{-6}
6	7	77	11.0×10^6	19.8×10^{-6}	11.0×10^{-6}
12	7	107	15.2×10^6	15.3×10^{-6}	8.5×10^{-6}
18	1	67	9.5×10^6	21.2×10^{-6}	11.8×10^{-6}
24	7	74	10.5×10^6	19.6×10^{-6}	10.9×10^{-6}
26	7	77	10.9×10^6	18.9×10^{-6}	10.5×10^{-6}
28	7	79	11.2×10^6	18.4×10^{-6}	10.2×10^{-6}
30	7	82	11.6×10^6	17.8×10^{-6}	9.9×10^{-6}
30	19	80	11.4×10^6	18.0×10^{-6}	10.0×10^{-6}
32	19	82	11.7×10^6	17.5×10^{-6}	9.7×10^{-6}
54	7	70	9.9×10^6	19.3×10^{-6}	10.7×10^{-6}
54	19	68	9.7×10^6	19.4×10^{-6}	10.8×10^{-6}