LOW VOLTAGE POWER CABLE XLPE, PVC, LSHF

prysmian

The planet's pathways

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Connecting people and businesses everywhere

150
Years of Experience

+50
Countries

33k
Employees

+17B
Sales in Euros

Sustainability-driven innovation to lead the energy transition and digital transformation

With a legacy spanning over 150 years, Prysmian is a global leader in energy and telecom cable solutions, driving innovation and sustainability. In 2024, we achieved over €17 billion in sales, supported by our 33,000 employees, 106 manufacturing plants, and operations in more than 50 countries worldwide.

We offer the broadest range of cutting-edge products, services, and technologies tailored to meet the evolving needs of our customers. From enabling the energy transition with our pioneering E-Path sustainable cable solution, to supporting critical telecom infrastructure, Prysmian plays a pivotal role in building resilient and efficient systems across the globe.

Our commitment to work closely with our customers ensures that we deliver solutions to help them expand energy and telecom networks, achieving sustainable, profitable growth while addressing the challenges of a rapidly changing world. Together, we're shaping the future of connectivity and electrification.

Our world-leading cable solutions

Transmission

- Submarine power and telecom systems
- Marine installation through inhouse fleet
- Underground interconnectors up to 525kV DC
- Complete solutions provider:
  - Turn-key execution approach
  - Continuous monitoring
  - Post-installation maintenance

Power Grid

- HV/EHV AC systems supply and installation
- MV and HV/EHV Network Components (NWC) up to 500kV
- Power Distribution cables' solutions from LV to MV (and up to 69kV)
- Data-driven permanent monitoring systems for power networks

Electrification

- Renewables
- Specialties & OEM
  - (Railway, Marine, Crane, Mining, Nuclear, Rolling Stock, Defence, Electro medical, other infrastructure)
- Data Centres
- Energy Storage Systems
- OGP Onshore/Offshore & SURF
- Elevators
- Other Industrial
- Residential, Hospitals & Commercial constructions

Digital Solutions

- Commercial Buildings
  - Passive Optical Cabling
  - Structured Cabling System
  - Building Management
- Data Centre
- Mission Critical and Harsh Environment
- Broadcast and Studio
- Marine & Shipboard

E Path: Sustainable by design

prysmian

E Path

Low impact cable solutions

A first in the cable industry, E Path uses measurable and known assessment criteria to summarize the contribution that cables can provide, in terms of climate change effect, paving the way for the cable industry to be included into low impact labelling systems.

We aim to share the same eco languaga as our customers, bringing to their supply chains products that meet measurable and recognized criteria, in a perfect fit with a circular economy.

With sustainability rooted in our DNA, each cable family has to pass a rating process based on the following criteria:

- **CARBON FOOTPRINT**
- **SUBSTANCES OF VERY HIGH CONCERN**
- **RECYCLABILITY/CIRCULARITY**
- **RECYCLING INPUT RATE**
- **ENVIRONMENTAL BENEFITS**
- **CABLE TRANSMISSION EFFICIENCY**

Network components

Empowering Reliable Grids with Comprehensive Network Components

Prysmian offers a comprehensive portfolio of network components—including joints, terminations, connectors, glands, and cleats—designed for seamless integration across low, medium, and high voltage applications. Engineered to the highest standards, our accessories ensure long-term reliability, safety, and performance in both new installations and grid upgrades. Innovations such as pre-expanded and cold-shrink technologies enable faster, more efficient installations, reducing downtime. Backed by Prysmian’s global expertise and local support, we deliver tailored solutions to meet the evolving demands of modern power networks.

Asset monitoring & systems

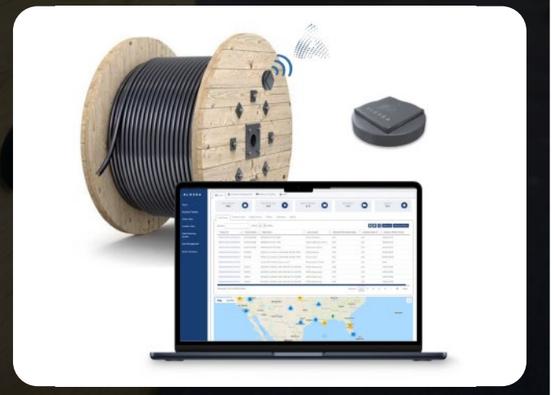
Advanced Sensing Solutions for Proactive Asset Management

Prysmian's Electronic and Optical Sensing Solutions (EOSS) provide advanced, real-time monitoring to safeguard critical infrastructure. Integrating technologies like Partial Discharge (PD) detection, Distributed Temperature Sensing (DTS), and Distributed Acoustic Sensing (DAS), EOSS enables continuous assessment of system health. Developed for Medium and High Voltage systems, our PRY-CAM portfolio offers both portable and permanent solutions, facilitating early fault detection and enhancing operational reliability. With scalable, user-friendly designs, EOSS empowers proactive maintenance strategies, reducing downtime and extending asset lifespan.

Digitalizing inventory & installation management

Smart Cable Management with Alesea

Alesea is Prysmian's IoT-based solution that turns cable drums into smart assets. It provides real-time data on location, usage, and inventory to improve logistics, reduce waste, and enhance project efficiency. Proven across global deployments, it helps teams optimize cable usage and reduce CO_2 emissions. With built-in sensors and connectivity, Alesea requires no on-site setup and scales easily across operations—streamlining workflows, supporting sustainability, and transforming traditional cable management into a connected, intelligent system.



Prysmian in the region

Prysmian operates extensively across the Asia Pacific region, supported by a robust infrastructure that includes 13 manufacturing plants across China, Malaysia, Indonesia, the Philippines, and Thailand. Our regional distribution center in Singapore serves as a strategic hub, ensuring seamless delivery of cutting-edge cable solutions for the energy, infrastructure, and telecom markets.

In Asia Pacific, Prysmian is proud to be a part of landmark projects that showcase our expertise and commitment to innovation. These include addressing the complex cable requirements of iconic developments like Marina Bay Sands in Singapore and supporting the ambitious South Vietnam submarine cable projects, which strengthen regional connectivity. Additionally, Prysmian's advanced solutions have contributed to offshore wind farm developments, highlighting our pivotal role in accelerating the region's transition to renewable energy.

With a clear focus on sustainability and a strong local presence, Prysmian is well-positioned to meet the demands of Asia Pacific's rapidly growing markets. We remain dedicated to delivering innovative technologies that empower our partners and drive the region's progress towards a more connected and sustainable future

Our corporate brand

Prysmian has a multi-brand architecture made of three levels: a strong Corporate Brand, Prysmian, which stands for the whole organization. It is the umbrella brand under which all the initiatives regarding the Company worldwide are carried out.

The second level is represented by the three well-known Commercial Brands: Prysmian, Draka and General Cable.

The third level encompasses the wide range of product brands that serve all the markets and applications in which the Company operates.

Standards

In Prysmian Group, we design and manufacture cables to the following standards:-

British Standards (BS)	
BS EN 50525-2-31 (BS6004)	Electric cables - Low voltage energy cables of rated voltages up to and including 450 / 750 V (U0/U)- for Single core non-sheathed cables with thermoplastic PVC insulation.
BS EN 50525-3-41 (BS6004)	Electric cables - Low voltage energy cables of rated voltages up to and including 450/ 750 V (U0/U)- for Single core non-sheathed cables with halogen-free crosslinked insulation, and low emission of smoke.
BS 6346	Electric cables. PVC insulated, armoured cables for voltages up to 600/1000V and 1900/3300V.
BS 6360	Specification for conductors in insulated cables and cords.
BS 6500	Electric cables, Flexible cords rated up to 300/500V, for use with appliances and equipment intended for domestic, office and similar environments.
BS 6387	Specification for performance requirements for cables required to maintain circuit integrity under fire conditions.
BS 5467	Electric cables. Thermosetting insulated, armoured cables for voltages of 600/1000V and 1900/3300V.
BS 6724	Electric cables. Thermosetting insulated, armoured cables for voltages of 600/1000V and 1900/3300V, having low emission of smoke and corrosive gases when affected by fire.
BS 7671	Requirements for Electrical Installations. IEE Wiring Regulations.
BS 7211	Electric cables. Thermosetting insulated, non-armoured cables for voltages up to and including 450/750V, for electric power, lighting and internal wiring, and having low emission of smoke and corrosive gases when affected by fire.
International Electrotechnical Commission (IEC)	
IEC 60227-3	Polyvinyl Chloride Insulated Cables of Rated Voltages up to and including 450/750V. Part 3: Non-Sheathed Cables for Fixed Wiring.
IEC 60228	Conductors of Insulated Cables.
IEC 60331	Tests for electric cables under fire conditions - Circuit integrity - Part 11: Apparatus - Fire alone at a flame temperature of at least 750°C.
IEC 60332-1-2	Tests on electric and optical fibre cables under fire conditions - Part 1-1: Test for vertical flame propagation for a single insulated wire or cable Procedure for 1 kW pre-mixed flame.
IEC 60332-3-22	Tests on electric and optical fibre cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A.
IEC 60332-3-24	Tests on electric and optical fibre cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category C.
IEC 60502-1	Power cables with extruded insulation and their accessories for rated voltages from 1kV (Um = 1,2kV) up to 30kV (Um = 36kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1,2kV) and 3kV (Um = 3.6kV).
IEC 60754-1	Test on gases evolved during combustion of materials from cables - Part 1: Determination of the amount of halogen acid gas.
IEC 60754-2	Test on gases evolved during combustion of electric cables - Part 2: Determination of degree of acidity of gases evolved during the combustion of material taken from electric cables by measuring pH and conductivity.
IEC 61034-2	Measurement of smoke density of cables burning under defined conditions.
Malaysia Standards	
MS 136	PVC-insulated cable (non-armoured) for electric power and lighting.
MS 274	PVC-insulated cables for electricity supply with rated voltage 0.6/1kV
Singapore Standards	
SS 358-3	PVC-insulated, non-sheathed cables 450/750V.
SS 299	Specification for fire resistant cables Part 1 - Performance requirements for cables required to maintain circuit integrity under fire conditions.

PVC RANGE CABLES

CU/PVC 450/750 V, 600/1000 V

GENERAL INFO

Used in covered, dry places, in fixed plants, in distribution panels, on and under plaster as laid in conduit or on insulating support. When cable is used in fixed installations with mechanically protected switchgear and control panels, the rated voltage is 600/1000 V.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Polyvinyl Chloride (PVC)

STANDARDS APPLIED

BSEN 50525-2-31, SS 358-3
IEC 60228 Class 2
BSEN 50525-2-31
IEC 60332-1

Construction
Conductors
Insulation
Flame retardant properties

Special feature available on request:

IEC 60332-3-22 (Category A)
IEC 60332-3-24 (Category C)
Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

1-core	Green/Yellow

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	450, 600
Nominal voltage U [V]	750, 1000
Test voltage [kV / min]	2.5 kV for 5mins [for 450/750V], 3.5 kV for 5mins [for 600/1000V]
Flame retardant	In accordance with IEC 60332-1
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	70
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	8 x OD
Bending radius (fixed installed)	6 x OD

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius during Installation (mm)	Standard Packing Length (m)
1 x 1.5	1.5	0.7	2.9	21	17	3000
1 x 2.5	1.9	0.8	3.5	32	21	3000
1 x 4	2.4	0.8	4.0	48	24	3000
1 x 6	3.0	0.8	4.6	68	28	3000
1 x 10	3.9	1.0	5.9	111	35	3000
1 x 16	5.0	1.0	7.0	172	42	3000
1 x 25	6.3	1.2	8.7	271	52	3000
1 x 35	7.3	1.2	9.7	351	58	3000
1 x 50	8.7	1.4	11.5	476	69	3000
1 x 70	10.4	1.4	13.2	664	79	3000
1 x 95	12.3	1.6	15.5	919	93	3000
1 x 120	13.8	1.6	17.0	1142	102	3000
1 x 150	15.5	1.8	19.1	1424	115	3000
1 x 185	17.3	2.0	21.3	1750	128	1900
1 x 240	19.7	2.2	24.1	2318	145	1400
1 x 300	22.4	2.4	27.2	2917	163	1100
1 x 400	25.3	2.6	30.5	3698	183	900
1 x 500	28.6	2.8	34.2	4682	205	700
1 x 630	32.4	2.8	38.0	5882	228	500
1 x 16cc	4.7	1.0	6.8	168	41	3000
1 x 25cc	5.9	1.2	8.3	262	50	3000
1 x 35cc	6.9	1.2	9.3	342	56	2000
1 x 50cc	7.9	1.4	10.7	463	64	2000
1 x 70cc	9.7	1.4	12.5	654	75	2000
1 x 95cc	11.4	1.6	14.6	892	88	2000
1 x 120cc	12.7	1.6	15.9	1125	95	2000
1 x 150cc	14.2	1.8	17.8	1391	107	2000
1 x 185cc	15.9	2.0	19.9	1740	119	2000
1 x 240cc	18.9	2.2	23.3	2253	140	1500
1 x 300cc	20.3	2.4	25.1	2817	151	1200
1 x 400cc	23.0	2.6	28.2	3628	169	900
1 x 500cc	26.0	2.8	31.6	4574	190	700
1 x 630cc	29.8	2.8	35.4	5739	212	500

cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. Conductor Resistance at 20°C (Ω/km)	Max. Conductor AC Resistance at 70°C (Ω/km)	Min. Insulation Resistance at 70°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1 x 1.5	12.1	14.484	0.01	11	60
1 x 2.5	7.41	8.87	0.009	18	83
1 x 4	4.61	5.518	0.0077	28	117
1 x 6	3.08	3.687	0.0065	42	152
1 x 10	1.83	2.191	0.0065	70	198
1 x 16	1.15	1.377	0.005	112	267
1 x 25	0.727	0.87	0.005	175	335
1 x 35	0.524	0.627	0.0043	245	421
1 x 50	0.387	0.463	0.0043	350	507
1 x 70	0.268	0.321	0.0035	490	619
1 x 95	0.193	0.231	0.0035	665	715
1 x 120	0.153	0.184	0.0032	840	824
1 x 150	0.124	0.149	0.0032	1050	916
1 x 185	0.0991	0.119	0.0032	1295	1013
1 x 240	0.0754	0.091	0.0032	1680	1162
1 x 300	0.0601	0.073	0.003	2100	1287
1 x 400	0.0470	0.058	0.0028	2800	1530
1 x 500	0.0366	0.046	0.0028	3500	1706
1 x 630	0.0283	0.036	0.0025	4410	1934
1 x 16cc	1.15	1.377	0.005	112	273
1 x 25cc	0.727	0.87	0.005	175	360
1 x 35cc	0.524	0.627	0.0043	245	439
1 x 50cc	0.387	0.463	0.0043	350	545
1 x 70cc	0.268	0.321	0.0035	490	653
1 x 95cc	0.193	0.231	0.0035	665	759
1 x 120cc	0.153	0.184	0.0032	840	881
1 x 150cc	0.124	0.149	0.0032	1050	983
1 x 185cc	0.0991	0.119	0.0032	1295	1085
1 x 240cc	0.0754	0.091	0.0032	1680	1202
1 x 300cc	0.0601	0.073	0.003	2100	1394
1 x 400cc	0.0470	0.058	0.0028	2800	1655
1 x 500cc	0.0366	0.046	0.0028	3500	1846
1 x 630cc	0.0283	0.036	0.0025	4410	2076

cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	ICON Ex-Proof Cable Gland Part Number
1 x 1.5	2.9	-	-	-
1 x 2.5	3.5	-	-	-
1 x 4	4.0	M16	KM409-51	KM494-51
1 x 6	4.6	M16	KM409-51	KM494-51
1 x 10	5.9	M16	KM409-51	KM494-51
1 x 16	7.0	M16	KM409-51	KM494-51
1 x 25	8.7	M20S	KM409-52	KM494-52
1 x 35	9.7	M20S	KM409-52	KM494-52
1 x 50	11.5	M20	KM409-53	KM494-53
1 x 70	13.2	M20	KM409-53	KM494-53
1 x 95	15.5	M25	KM409-55	KM494-55
1 x 120	17.0	M25	KM409-55	KM494-55
1 x 150	19.1	M25	KM409-55	KM494-55
1 x 185	21.3	M32	KM409-56	KM494-56
1 x 240	24.1	M32	KM409-56	KM494-56
1 x 300	27.2	M40	KM409-57	KM494-57
1 x 400	30.5	M40	KM409-57	KM494-57
1 x 500	34.2	M50S / M50	KM409-58	KM494-59
1 x 630	38.0	M50	KM409-59	KM494-59
1 x 16cc	6.8	M16	KM409-51	KM494-51
1 x 25cc	8.3	M16	KM409-51	KM494-51
1 x 35cc	9.3	M20S	KM409-52	KM494-52
1 x 50cc	10.7	M20S	KM409-52	KM494-52
1 x 70cc	12.5	M20	KM409-53	KM494-53
1 x 95cc	14.6	M25	KM409-55	KM494-55
1 x 120cc	15.9	M25	KM409-55	KM494-55
1 x 150cc	17.8	M25	KM409-55	KM494-55
1 x 185cc	19.9	M32	KM409-56	KM494-56
1 x 240cc	23.3	M32	KM409-56	KM494-56
1 x 300cc	25.1	M32	KM409-56	KM494-56
1 x 400cc	28.2	M40	KM409-57	KM494-57
1 x 500cc	31.6	M40	KM409-57	KM494-57
1 x 630cc	35.4	M50S / M50	KM409-58	KM494-59

cc – Circular compacted conductor

CU/PVC/PVC 0.6/1 kV
General Power Cables

E Path

GENERAL INFO

Used as energy, utility and lighting cables, for outdoor installations, in cable ducts, underground in normal and salty water if specially produced.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Polyvinyl Chloride (PVC)
Sheath material	: Polyvinyl Chloride (PVC)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties

Special feature available on request:

IEC 60332-3-22 (Category A)
IEC 60332-3-24 (Category C)
Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

1-core	Black

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	70
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	10 x OD
Bending radius (fixed installed)	8 x OD

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1 x 1.5	1.6	3.2	6.0	54	48	2000
1 x 2.5	2.0	3.6	6.4	67	51	2000
1 x 4	2.5	4.5	7.3	93	58	2000
1 x 6	3.1	5.1	7.9	118	63	2000
1 x 10	3.9	5.9	8.8	163	70	2000
1 x 16	5.0	7.0	9.8	230	78	2000
1 x 25	6.3	8.7	11.6	342	93	2000
1 x 35	7.4	9.8	12.8	434	102	2000
1 x 50	8.7	11.5	14.5	571	116	2000
1 x 70	10.5	13.3	16.3	773	130	2000
1 x 95	12.4	15.6	18.8	1053	150	2000
1 x 120	13.9	17.1	20.3	1290	162	1000
1 x 150	15.6	19.2	22.6	1599	181	1000
1 x 185	17.4	21.4	25.0	1955	200	1000
1 x 240	19.8	24.2	28.0	2562	224	1000
1 x 300	22.5	27.3	31.3	3204	250	1000
1 x 400	25.4	30.6	34.8	4083	278	1000
1 x 500	28.6	34.2	38.6	5133	308	1000
1 x 630	32.5	38.1	42.7	6421	342	500
1 x 16cc	4.7	6.7	9.5	218	76	2000
1 x 25cc	6.0	8.4	11.2	322	90	2000
1 x 35cc	7.0	9.4	12.4	422	99	2000
1 x 50cc	8.0	10.8	13.8	553	110	2000
1 x 70cc	9.8	12.6	15.6	757	125	2000
1 x 95cc	11.5	14.7	17.9	1019	143	2000
1 x 120cc	12.8	16.0	19.2	1265	154	1000
1 x 150cc	14.3	17.9	21.3	1556	170	1000
1 x 185cc	16.0	20.0	23.6	1933	189	1000
1 x 240cc	19.0	23.4	27.2	2489	218	1000
1 x 300cc	20.4	25.2	29.2	3084	234	1000
1 x 400cc	23.1	28.3	32.5	3883	260	1000
1 x 500cc	26.1	31.7	36.1	4933	289	1000
1 x 630cc	29.9	35.5	40.1	6221	321	500

cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 70°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1 x 1.5	12.1	14.48	10	11	22
1 x 2.5	7.41	8.87	9	18	34
1 x 4	4.61	5.52	8	28	48
1 x 6	3.08	3.69	7	42	66
1 x 10	1.83	2.19	7	70	99
1 x 16	1.15	1.38	6	112	143
1 x 25	0.727	0.870	5	175	189
1 x 35	0.524	0.627	5	245	239
1 x 50	0.387	0.463	5	350	302
1 x 70	0.268	0.321	5	490	376
1 x 95	0.193	0.231	5	665	442
1 x 120	0.153	0.184	5	840	517
1 x 150	0.124	0.149	5	1050	581
1 x 185	0.0991	0.119	5	1295	648
1 x 240	0.0754	0.091	5	1680	750
1 x 300	0.0601	0.073	5	2100	839
1 x 400	0.047	0.058	5	2800	1006
1 x 500	0.0366	0.046	5	3500	1135
1 x 630	0.0283	0.036	5	4410	1290
1 x 16cc	1.15	1.38	5	112	147
1 x 25cc	0.727	0.870	5	175	195
1 x 35cc	0.524	0.627	5	245	247
1 x 50cc	0.387	0.463	5	350	317
1 x 70cc	0.268	0.321	5	490	393
1 x 95cc	0.193	0.231	5	665	464
1 x 120cc	0.153	0.184	5	840	547
1 x 150cc	0.124	0.149	5	1050	616
1 x 185cc	0.0991	0.119	5	1295	686
1 x 240cc	0.0754	0.091	5	1680	772
1 x 300cc	0.0601	0.073	5	2100	899
1 x 400cc	0.047	0.058	5	2800	1077
1 x 500cc	0.0366	0.046	5	3500	1212
1 x 630cc	0.0283	0.036	5	4410	1375

cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1 x 1.5	6.0	M16	KM409-51	KM494-51
1 x 2.5	6.4	M16	KM409-51	KM494-51
1 x 4	7.3	M16	KM409-51	KM494-51
1 x 6	7.9	M16	KM409-51	KM494-51
1 x 10	8.8	M20S	KM409-52	KM494-52
1 x 16	9.8	M20S	KM409-52	KM494-52
1 x 25	11.6	M20	KM409-53	KM494-53
1 x 35	12.8	M20	KM409-53	KM494-53
1 x 50	14.5	M25	KM409-55	KM494-55
1 x 70	16.3	M25	KM409-55	KM494-55
1 x 95	18.8	M25	KM409-55	KM494-55
1 x 120	20.3	M32	KM409-56	KM494-56
1 x 150	22.6	M32	KM409-56	KM494-56
1 x 185	25.0	M32	KM409-56	KM494-56
1 x 240	28.0	M40	KM409-57	KM494-57
1 x 300	31.3	M40	KM409-57	KM494-57
1 x 400	34.8	M50S / M50	KM409-58	KM494-59
1 x 500	38.6	M50	KM409-59	KM494-59
1 x 630	42.7	M63S / M63	KM409-60	KM494-61
1 x 16cc	9.5	M20S	KM409-52	KM494-52
1 x 25cc	11.2	M20S	KM409-52	KM494-52
1 x 35cc	12.4	M20	KM409-53	KM494-53
1 x 50cc	13.8	M25	KM409-55	KM494-55
1 x 70cc	15.6	M25	KM409-55	KM494-55
1 x 95cc	17.9	M25	KM409-55	KM494-55
1 x 120cc	19.2	M32	KM409-56	KM494-56
1 x 150cc	21.3	M32	KM409-56	KM494-56
1 x 185cc	23.6	M32	KM409-56	KM494-56
1 x 240cc	27.2	M40	KM409-57	KM494-57
1 x 300cc	29.2	M40	KM409-57	KM494-57
1 x 400cc	32.5	M50S / M50	KM409-58	KM494-59
1 x 500cc	36.1	M50S / M50	KM409-58	KM494-59
1 x 630cc	40.1	M50	KM409-59	KM494-59

cc – Circular compacted conductor

CU/PVC/PVC 0.6/1 kV
General Power and Control Cables

prysmian
E Path

GENERAL INFO

Used as energy, utility and lighting cables, for outdoor installations, in cable ducts, underground in normal and salty water if specially produced.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Polyvinyl Chloride (PVC)
Filler material	: Non-hygroscopic filler
Binder material	: Polyester tape
Sheath material	: Polyvinyl Chloride (PVC)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties

Special feature available on request:

IEC 60332-3-22 (Category A)
IEC 60332-3-24 (Category C)
Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

2-cores	Brown, Blue
3-cores	Brown, Black, Blue
4-cores	Brown, Black, Grey, Blue
Multi-cores	Black with core numbering

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	70
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	10 x OD
Bending radius (fixed installed)	8 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
2 x 1.5	1.6	3.2	9.3	124	74	2000
2 x 2.5	2.0	3.6	10.1	157	81	2000
2 x 4	2.5	4.5	12.0	227	96	2000
2 x 6	3.1	5.1	13.1	290	105	2000
2 x 10	3.9	5.9	15.0	343	120	1500
2 x 16	5.0	7.0	17.1	485	137	1500
2 x 25	6.3	8.7	20.6	721	165	1500
2 x 35	7.4	9.8	22.8	933	182	2300
2 x 50	8.7	11.5	26.3	1231	210	2300
2 x 70	10.5	13.3	30.0	1695	240	2300
2 x 95	12.4	15.6	35.0	2315	280	1600
2 x 120	13.9	17.1	38.3	2928	306	1400
2 x 150	15.6	19.2	42.7	3556	342	1000
2 x 185	17.4	21.4	47.4	4355	379	800
2 x 240	19.8	24.2	53.5	5725	428	600
2 x 300	22.5	27.3	59.9	7089	479	500
2 x 400	25.4	30.6	67.0	8323	536	300

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
2 x 1.5	12.1	14.48	10	21	28
2 x 2.5	7.41	8.87	9	35	43
2 x 4	4.61	5.52	8	56	58
2 x 6	3.08	3.69	7	84	80
2 x 10	1.83	2.19	7	140	117
2 x 16	1.15	1.38	6	224	164
2 x 25	0.727	0.870	5	350	212
2 x 35	0.524	0.627	5	490	269
2 x 50	0.387	0.463	5	700	333
2 x 70	0.268	0.321	5	980	408
2 x 95	0.193	0.231	5	1330	475
2 x 120	0.153	0.184	5	1680	548
2 x 150	0.124	0.150	5	2100	615
2 x 185	0.0991	0.120	5	2590	683
2 x 240	0.0754	0.092	5	3360	785
2 x 300	0.0601	0.075	5	4200	876
2 x 400	0.047	0.060	5	5600	1045

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
3 x 1.5	1.6	3.2	9.8	147	78	2000
3 x 2.5	2.0	3.6	10.7	188	86	2000
3 x 4	2.5	4.5	12.7	277	102	2000
3 x 6	3.1	5.1	13.9	358	111	2000
3 x 10	3.9	5.9	15.9	458	127	1500
3 x 16	5.0	7.0	18.2	663	146	1500
3 x 25	6.3	8.7	22.0	1000	176	1500
3 x 35sh	15.1	17.5	21.2	1237	170	2300
3 x 50sh	17.9	20.7	24.7	1648	198	2300
3 x 70sh	21.0	23.8	28.0	2295	224	2000
3 x 95sh	24.1	27.3	32.0	3130	256	1800
3 x 120sh	27.2	30.4	35.2	3879	282	1600
3 x 150sh	30.5	34.1	39.1	4773	313	1200
3 x 185sh	33.9	37.9	43.4	5956	347	1000
3 x 240sh	38.3	42.7	48.8	7721	390	800
3 x 300sh	42.7	47.5	54.1	9602	433	600
3 x 400sh	49.1	54.3	61.3	12207	490	400

sh – Shaped conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 70°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to cable (kgf/m)
3 x 1.5	12.1	14.48	10	31	40
3 x 2.5	7.41	8.87	9	52	61
3 x 4	4.61	5.52	8	84	83
3 x 6	3.08	3.69	7	126	113
3 x 10	1.83	2.19	7	210	165
3 x 16	1.15	1.38	6	336	231
3 x 25	0.727	0.870	5	525	298
3 x 35sh	0.524	0.627	5	735	433
3 x 50sh	0.387	0.463	5	1050	531
3 x 70sh	0.268	0.321	5	1470	656
3 x 95sh	0.193	0.231	5	1995	779
3 x 120sh	0.153	0.184	5	2520	895
3 x 150sh	0.124	0.150	5	3150	1007
3 x 185sh	0.0991	0.120	5	3885	1119
3 x 240sh	0.0754	0.092	5	5040	1291
3 x 300sh	0.0601	0.075	5	6300	1456
3 x 400sh	0.047	0.060	5	8400	1713

sh – Shaped conductor

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
4 x 1.5	1.6	3.2	10.6	177	85	2000
4 x 2.5	2.0	3.6	11.6	229	93	2000
4 x 4	2.5	4.5	13.8	339	110	2000
4 x 6	3.1	5.1	15.2	444	122	2000
4 x 10	3.9	5.9	17.5	579	140	1500
4 x 16	5.0	7.0	20.0	858	160	1500
4 x 25	6.3	8.7	24.2	1310	194	1000
4 x 35sh	18.0	20.4	24.4	1642	195	2300
4 x 50sh	21.3	24.1	28.5	2189	228	2300
4 x 70sh	24.9	27.7	32.3	3050	258	2000
4 x 95sh	28.5	31.7	37.2	4169	298	1500
4 x 120sh	32.1	35.3	40.9	5161	327	1200
4 x 150sh	36.0	39.6	45.4	6348	363	1000
4 x 185sh	40.1	44.1	50.3	7896	402	800
4 x 240sh	45.3	49.7	56.5	10253	452	600
4 x 300sh	50.3	55.1	62.6	12769	501	500
4 x 400sh	57.8	63.0	71.1	16244	569	300

sh – Shaped conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 70°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
4 x 1.5	12.1	14.48	10	42	50
4 x 2.5	7.41	8.87	9	70	75
4 x 4	4.61	5.52	8	112	101
4 x 6	3.08	3.69	7	168	138
4 x 10	1.83	2.19	7	280	200
4 x 16	1.15	1.38	6	448	280
4 x 25	0.727	0.870	5	700	362
4 x 35sh	0.524	0.627	5	980	502
4 x 50sh	0.387	0.463	5	1400	614
4 x 70sh	0.268	0.321	5	1960	759
4 x 95sh	0.193	0.231	5	2660	894
4 x 120sh	0.153	0.184	5	3360	1027
4 x 150sh	0.124	0.150	5	4200	1156
4 x 185sh	0.0991	0.120	5	5180	1287
4 x 240sh	0.0754	0.092	5	6720	1487
4 x 300sh	0.0601	0.075	5	8400	1677
4 x 400sh	0.047	0.060	5	11200	1969

sh – Shaped conductor

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
5 x 1.5	1.6	3.2	11.6	188	93	2000
6 x 1.5	1.6	3.2	12.5	220	100	1800
7 x 1.5	1.6	3.2	12.5	237	100	1500
12 x 1.5	1.6	3.2	16.1	379	129	1500
19 x 1.5	1.6	3.2	18.7	550	150	1500
21 x 1.5	1.6	3.2	19.8	604	158	1500
27 x 1.5	1.6	3.2	22.3	759	178	1500
30 x 1.5	1.6	3.2	23.1	829	185	1500
37 x 1.5	1.6	3.2	24.9	998	199	1500
40 x 1.5	1.6	3.2	25.9	1073	207	1500
48 x 1.5	1.6	3.2	28.7	1286	230	1000
5 x 2.5	2.0	3.6	12.7	249	102	2000
6 x 2.5	2.0	3.6	13.8	300	110	1500
7 x 2.5	2.0	3.6	13.8	316	110	1500
12 x 2.5	2.0	3.6	17.9	512	143	1500
19 x 2.5	2.0	3.6	20.8	757	166	1500
21 x 2.5	2.0	3.6	22.0	831	176	1500
27 x 2.5	2.0	3.6	24.9	1049	199	1500
30 x 2.5	2.0	3.6	25.8	1150	206	1500
37 x 2.5	2.0	3.6	28.1	1404	225	1500
40 x 2.5	2.0	3.6	29.2	1511	234	1500
48 x 2.5	2.0	3.6	32.3	1810	258	1000
5 x 4	2.5	4.5	15.2	368	122	2000
6 x 4	2.5	4.5	16.6	450	133	1500
7 x 4	2.5	4.5	16.6	477	133	1500
12 x 4	2.5	4.5	21.7	784	174	1500
19 x 4	2.5	4.5	25.5	1170	204	1500
21 x 4	2.5	4.5	26.9	1287	215	1500
27 x 4	2.5	4.5	31.0	1662	248	1400
30 x 4	2.5	4.5	32.2	1822	258	1300
37 x 4	2.5	4.5	35.0	2225	280	1000
40 x 4	2.5	4.5	36.4	2396	291	1000
48 x 4	2.5	4.5	40.5	2889	324	800

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 70°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
5 x 1.5	12.1	14.48	10	52	56
6 x 1.5	12.1	14.48	10	63	63
7 x 1.5	12.1	14.48	10	73	73
12 x 1.5	12.1	14.48	10	126	98
19 x 1.5	12.1	14.48	10	199	133
21 x 1.5	12.1	14.48	10	220	139
27 x 1.5	12.1	14.48	10	283	159
30 x 1.5	12.1	14.48	10	315	170
37 x 1.5	12.1	14.48	10	388	195
40 x 1.5	12.1	14.48	10	420	203
48 x 1.5	12.1	14.48	10	504	220
5 x 2.5	7.41	8.87	9	87	86
6 x 2.5	7.41	8.87	9	105	95
7 x 2.5	7.41	8.87	9	122	111
12 x 2.5	7.41	8.87	9	210	147
19 x 2.5	7.41	8.87	9	332	200
21 x 2.5	7.41	8.87	9	367	209
27 x 2.5	7.41	8.87	9	472	237
30 x 2.5	7.41	8.87	9	525	254
37 x 2.5	7.41	8.87	9	647	288
40 x 2.5	7.41	8.87	9	700	300
48 x 2.5	7.41	8.87	9	840	325
5 x 4	4.61	5.52	8	140	115
6 x 4	4.61	5.52	8	168	127
7 x 4	4.61	5.52	8	196	148
12 x 4	4.61	5.52	8	336	194
19 x 4	4.61	5.52	8	532	261
21 x 4	4.61	5.52	8	588	273
27 x 4	4.61	5.52	8	756	305
30 x 4	4.61	5.52	8	840	326
37 x 4	4.61	5.52	8	1036	370
40 x 4	4.61	5.52	8	1120	385
48 x 4	4.61	5.52	8	1344	415

Cable Gland Selection Data

Cross Section (mm²)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
2 x 1.5	9.3	M20S	KM409-52	KM494-52
2 x 2.5	10.1	M20S	KM409-52	KM494-52
2 x 4	12.0	M20	KM409-53	KM494-53
2 x 6	13.1	M20	KM409-53	KM494-53
2 x 10	15.0	M25	KM409-55	KM494-55
2 x 16	17.1	M25	KM409-55	KM494-55
2 x 25	20.6	M32	KM409-56	KM494-56
2 x 35	22.8	M32	KM409-56	KM494-56
2 x 50	26.3	M40	KM409-57	KM494-57
2 x 70	30.0	M40	KM409-57	KM494-57
2 x 95	35.0	M50S / M50	KM409-58	KM494-59
2 x 120	38.3	M50	KM409-59	KM494-59
2 x 150	42.7	M50	KM409-59	KM494-59
2 x 185	47.4	M63S / M63	KM409-60	KM494-61
2 x 240	53.5	M63	KM409-61	KM494-61
2 x 300	59.9	M75S	KM409-62	KM494-62
2 x 400	67.0	M90	KM409-65	-

Cable Gland Selection Data

Cross Section (mm²)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
3 x 1.5	9.8	M20S	KM409-52	KM494-52
3 x 2.5	10.7	M20S	KM409-52	KM494-52
3 x 4	12.7	M20	KM409-53	KM494-53
3 x 6	13.9	M25	KM409-55	KM494-55
3 x 10	15.9	M25	KM409-55	KM494-55
3 x 16	18.2	M25	KM409-55	KM494-55
3 x 25	22.0	M32	KM409-56	KM494-56
3 x 35sh	21.2	M32	KM409-56	KM494-56
3 x 50sh	24.7	M32	KM409-56	KM494-56
3 x 70sh	28.0	M40	KM409-57	KM494-57
3 x 95sh	32.0	M50S / M50	KM409-58	KM494-59
3 x 120sh	35.2	M50S / M50	KM409-58	KM494-59
3 x 150sh	39.1	M50	KM409-59	KM494-59
3 x 185sh	43.4	M63S / M63	KM409-60	KM494-61
3 x 240sh	48.8	M63S / M63	KM409-60	KM494-61
3 x 300sh	54.1	M63	KM409-61	KM494-61
3 x 400sh	61.3	M75	KM409-63	KM494-63

sh – Shaped conductor

Cable Gland Selection Data

Cross Section (mm²)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
4 x 1.5	10.6	M20S	KM409-52	KM494-52
4 x 2.5	11.6	M20	KM409-53	KM494-53
4 x 4	13.8	M25	KM409-55	KM494-55
4 x 6	15.2	M25	KM409-55	KM494-55
4 x 10	17.5	M25	KM409-55	KM494-55
4 x 16	20.0	M32	KM409-56	KM494-56
4 x 25	24.2	M32	KM409-56	KM494-56
4 x 35sh	24.4	M32	KM409-56	KM494-56
4 x 50sh	28.5	M40	KM409-57	KM494-57
4 x 70sh	32.3	M50S / M50	KM409-58	KM494-59
4 x 95sh	37.2	M50	KM409-59	KM494-59
4 x 120sh	40.9	M50	KM409-59	KM494-59
4 x 150sh	45.4	M63S / M63	KM409-60	KM494-61
4 x 185sh	50.3	M63	KM409-61	KM494-61
4 x 240sh	56.5	M75S	KM409-62	KM494-62
4 x 300sh	62.6	M75	KM409-63	KM494-63
4 x 400sh	71.1	M90	KM409-65	-

sh – Shaped conductor

Cable Gland Selection Data

Cross Section (mm²)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
5 x 1.5	11.6	M20	KM409-53	KM494-53
6 x 1.5	12.5	M20	KM409-53	KM494-53
7 x 1.5	12.5	M20	KM409-53	KM494-53
12 x 1.5	16.1	M25	KM409-55	KM494-55
19 x 1.5	18.7	M25	KM409-55	KM494-55
21 x 1.5	19.8	M32	KM409-56	KM494-56
27 x 1.5	22.3	M32	KM409-56	KM494-56
30 x 1.5	23.1	M32	KM409-56	KM494-56
37 x 1.5	24.9	M32	KM409-56	KM494-56
40 x 1.5	25.9	M40	KM409-57	KM494-57
48 x 1.5	28.7	M40	KM409-57	KM494-57
5 x 2.5	12.7	M20	KM409-53	KM494-53
6 x 2.5	13.8	M25	KM409-55	KM494-55
7 x 2.5	13.8	M25	KM409-55	KM494-55
12 x 2.5	17.9	M25	KM409-55	KM494-55
19 x 2.5	20.8	M32	KM409-56	KM494-56
21 x 2.5	22.0	M32	KM409-56	KM494-56
27 x 2.5	24.9	M32	KM409-56	KM494-56
30 x 2.5	25.8	M40	KM409-57	KM494-57
37 x 2.5	28.1	M40	KM409-57	KM494-57
40 x 2.5	29.2	M40	KM409-57	KM494-57
48 x 2.5	32.3	M50S / M50	KM409-57	KM494-57
5 x 4	15.2	M25	KM409-55	KM494-55
6 x 4	16.6	M25	KM409-55	KM494-55
7 x 4	16.6	M25	KM409-55	KM494-55
12 x 4	21.7	M32	KM409-56	KM494-56
19 x 4	25.5	M40	KM409-57	KM494-57
21 x 4	26.9	M40	KM409-57	KM494-57
27 x 4	31.0	M40	KM409-57	KM494-57
30 x 4	32.2	M50S / M50	KM409-58	KM494-59
37 x 4	35.0	M50S / M50	KM409-58	KM494-59
40 x 4	36.4	M50S / M50	KM409-58	KM494-59
48 x 4	40.5	M50	KM409-59	KM494-59

XLPE RANGE CABLES

CU/XLPE/PVC 0.6/1 kV
General Power Cables

GENERAL INFO

Used as energy, utility and lighting cables, for outdoor installations, in cable ducts, underground in normal and salty water if specially produced.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Sheath material	: Polyvinyl Chloride (PVC)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties

Special feature available on request:

IEC 60332-3-22 (Category A)
IEC 60332-3-24 (Category C)
Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

1-core	Natural

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	10 x OD
Bending radius (fixed installed)	8 x OD

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1 x 1.5	1.6	3.0	5.8	48	46	3000
1 x 2.5	2.0	3.4	6.2	60	50	2000
1 x 4	2.5	3.9	6.8	79	54	1000
1 x 6	3.1	4.5	7.3	102	58	1000
1 x 10	3.9	5.3	8.2	144	66	3000
1 x 16	5.0	6.4	9.3	208	74	3000
1 x 25	6.3	8.1	11.0	313	88	1000
1 x 35	7.4	9.2	12.2	399	98	1000
1 x 50	8.7	10.7	13.7	525	110	1000
1 x 70	10.5	12.7	15.7	723	126	3000
1 x 95	12.4	14.6	17.8	978	142	2800
1 x 120	13.9	16.3	19.5	1215	156	1000
1 x 150	15.6	18.4	21.9	1509	175	2800
1 x 185	17.4	20.6	24.0	1836	192	2800
1 x 240	19.8	23.2	26.8	2412	214	2500
1 x 300	22.5	26.1	29.9	3017	239	1000
1 x 400	25.4	29.4	33.4	3813	267	1000
1 x 500	28.6	33.0	37.3	4813	298	800
1 x 630	32.5	37.3	41.9	6109	335	550
1 x 16cc	4.7	6.1	8.9	199	71	2000
1 x 25cc	6.0	7.8	10.6	297	85	2000
1 x 35cc	7.0	8.8	11.8	393	94	2000
1 x 50cc	8.0	10.0	13.0	512	104	2000
1 x 70cc	9.8	12.0	15.0	715	120	1000
1 x 95cc	11.5	13.7	16.9	955	135	1000
1 x 120cc	12.8	15.2	18.4	1201	147	1000
1 x 150cc	14.3	17.1	20.5	1479	164	1000
1 x 185cc	16.0	19.2	22.6	1830	181	2000
1 x 240cc	19.0	22.4	26.0	2354	208	800
1 x 300cc	20.4	24.0	27.8	2922	222	1000
1 x 400cc	23.1	27.1	31.1	3694	249	1000
1 x 500cc	26.1	30.5	34.7	4710	278	1000
1 x 630cc	29.9	34.7	39.3	6014	314	550

cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1 x 1.5	12.1	15.428	2000	11	23
1 x 2.5	7.41	9.448	2000	18	35
1 x 4	4.61	5.878	2000	28	51
1 x 6	3.08	3.927	2000	42	72
1 x 10	1.83	2.333	2000	70	107
1 x 16	1.15	1.466	2000	112	151
1 x 25	0.727	0.927	2000	175	199
1 x 35	0.524	0.668	2000	245	251
1 x 50	0.387	0.493	2000	350	319
1 x 70	0.268	0.342	2000	490	390
1 x 95	0.193	0.246	2000	665	467
1 x 120	0.153	0.195	2000	840	538
1 x 150	0.124	0.159	2000	1050	599
1 x 185	0.0991	0.127	2000	1295	674
1 x 240	0.0754	0.097	2000	1680	784
1 x 300	0.0601	0.078	2000	2100	878
1 x 400	0.047	0.061	2000	2800	1048
1 x 500	0.0366	0.048	2000	3500	1173
1 x 630	0.0283	0.038	2000	4410	1316
1 x 16cc	1.15	1.466	2000	199	279
1 x 25cc	0.727	0.927	2000	175	206
1 x 35cc	0.524	0.668	2000	245	260
1 x 50cc	0.387	0.493	2000	350	337
1 x 70cc	0.268	0.342	2000	490	408
1 x 95cc	0.193	0.246	2000	665	492
1 x 120cc	0.153	0.195	2000	840	571
1 x 150cc	0.124	0.159	2000	1050	640
1 x 185cc	0.0991	0.127	2000	1295	716
1 x 240cc	0.0754	0.097	2000	1680	808
1 x 300cc	0.0601	0.078	2000	2100	944
1 x 400cc	0.047	0.061	2000	2800	1125
1 x 500cc	0.0366	0.048	2000	3500	1261
1 x 630cc	0.0283	0.038	2000	4410	1403

cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm²)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1 x 1.5	5.8	M16	KM409-51	KM494-51
1 x 2.5	6.2	M16	KM409-51	KM494-51
1 x 4	6.8	M16	KM409-51	KM494-51
1 x 6	7.3	M16	KM409-51	KM494-51
1 x 10	8.2	M20SS	KM409-71	KM494-71
1 x 16	9.3	M20S	KM409-52	KM494-52
1 x 25	11.0	M20S	KM409-52	KM494-52
1 x 35	12.2	M20	KM409-53	KM494-53
1 x 50	13.7	M25	KM409-55	KM494-55
1 x 70	15.7	M25	KM409-55	KM494-55
1 x 95	17.8	M25	KM409-55	KM494-55
1 x 120	19.5	M32	KM409-56	KM494-56
1 x 150	21.9	M32	KM409-56	KM494-56
1 x 185	24.0	M32	KM409-56	KM494-56
1 x 240	26.8	M40	KM409-57	KM494-57
1 x 300	29.9	M40	KM409-57	KM494-57
1 x 400	33.4	M50S / M50	KM409-58	KM494-59
1 x 500	37.3	M50	KM409-59	KM494-59
1 x 630	41.9	M50 / M63	KM409-59	KM494-61
1 x 16cc	8.9	M20S	KM409-52	KM494-52
1 x 25cc	10.6	M20S	KM409-52	KM494-52
1 x 35cc	11.8	M20	KM409-53	KM494-53
1 x 50cc	13.0	M20	KM409-53	KM494-53
1 x 70cc	15.0	M25	KM409-55	KM494-55
1 x 95cc	16.9	M25	KM409-55	KM494-55
1 x 120cc	18.4	M25	KM409-55	KM494-55
1 x 150cc	20.5	M32	KM409-56	KM494-56
1 x 185cc	22.6	M32	KM409-56	KM494-56
1 x 240cc	26.0	M40	KM409-57	KM494-57
1 x 300cc	27.8	M40	KM409-57	KM494-57
1 x 400cc	31.1	M40	KM409-57	KM494-57
1 x 500cc	34.7	M50S / M50	KM409-58	KM494-59
1 x 630cc	39.3	M50	KM409-59	KM494-59

cc – Circular compacted conductor

CU/XLPE/PVC 0.6/1 kV
General Power and Control Cables

GENERAL INFO

Used as energy, utility and lighting cables, for outdoor installations, in cable ducts, underground in normal and salty water if specially produced.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Filler material	: Non-hygroscopic filler
Binder material	: Polyester tape
Sheath material	: Polyvinyl Chloride (PVC)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties

Special feature available on request:

IEC 60332-3-22 (Category A)
IEC 60332-3-24 (Category C)
Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

2-cores	Brown, Blue
3-cores	Brown, Black, Blue
4-cores	Brown, Black, Grey, Blue
Multi-cores	Black with core numbering

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	10 x OD
Bending radius (fixed installed)	8 x OD

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
2 x 1.5	1.6	3.0	8.9	110	71	2000
2 x 2.5	2.0	3.4	9.7	141	78	2000
2 x 4	2.5	3.9	10.8	187	86	2000
2 x 6	3.1	4.5	11.9	245	95	2000
2 x 10	3.9	5.3	13.8	301	110	1500
2 x 16	5.0	6.4	15.9	436	127	1500
2 x 25	6.3	8.1	19.4	657	155	1500
2 x 35	7.4	9.2	21.6	851	173	2300
2 x 50	8.7	10.7	24.7	1125	198	2300
2 x 70	10.5	12.7	28.6	1566	229	2300
2 x 95	12.4	14.6	33.0	2151	264	1800
2 x 120	13.9	16.3	36.7	2661	294	1500
2 x 150	15.6	18.4	41.1	3371	329	1200
2 x 185	17.4	20.6	45.6	4059	365	1000
2 x 240	19.8	23.2	51.3	5307	410	800
2 x 300	22.5	26.1	57.5	6677	460	500
2 x 400	25.4	29.4	64.4	7873	515	400
2 x 16cc	4.7	6.1	15.3	420	122	1500
2 x 25cc	5.9	7.7	18.5	628	148	1500
2 x 35cc	6.9	8.7	20.7	833	166	1000
2 x 50cc	8.2	10.2	23.6	1126	189	1000
2 x 70cc	9.7	11.9	27.0	1532	216	1000
2 x 95cc	11.5	13.7	31.0	2076	248	1000
2 x 120cc	12.8	15.2	34.5	2629	276	1000
2 x 150cc	14.3	17.1	38.5	3306	308	1000
2 x 185cc	16.0	19.2	42.9	4042	343	1000
2 x 240cc	19.0	22.4	49.7	5262	398	800
2 x 300cc	20.4	24.0	53.3	6474	426	700
2 x 400cc	23.1	27.1	59.8	8128	478	500

cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
2 x 1.5	12.1	15.43	2000	21	29
2 x 2.5	7.41	9.45	2000	35	45
2 x 4	4.61	5.88	2000	56	65
2 x 6	3.08	3.93	2000	84	88
2 x 10	1.83	2.33	2000	140	127
2 x 16	1.15	1.47	2000	224	176
2 x 25	0.727	0.927	2000	350	226
2 x 35	0.524	0.668	2000	490	284
2 x 50	0.387	0.493	2000	700	354
2 x 70	0.268	0.342	2000	980	428
2 x 95	0.193	0.246	2000	1330	504
2 x 120	0.153	0.196	2000	1680	572
2 x 150	0.124	0.159	2000	2100	639
2 x 185	0.0991	0.128	2000	2590	710
2 x 240	0.0754	0.098	2000	3360	819
2 x 300	0.0601	0.08	2000	4200	913
2 x 400	0.047	0.064	2000	5600	1087
2 x 16cc	1.15	1.47	2000	224	183
2 x 25cc	0.727	0.927	2000	350	236
2 x 35cc	0.524	0.668	2000	490	296
2 x 50cc	0.387	0.493	2000	700	371
2 x 70cc	0.268	0.342	2000	980	454
2 x 95cc	0.193	0.246	2000	1330	536
2 x 120cc	0.153	0.196	2000	1680	609
2 x 150cc	0.124	0.159	2000	2100	682
2 x 185cc	0.0991	0.128	2000	2590	755
2 x 240cc	0.0754	0.098	2000	3360	845
2 x 300cc	0.0601	0.08	2000	4200	985
2 x 400cc	0.047	0.064	2000	5600	1171

cc – Circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
3 x 1.5	1.6	3.0	9.3	129	74	2000
3 x 2.5	2.0	3.4	10.3	168	82	2000
3 x 4	2.5	3.9	11.4	229	91	2000
3 x 6	3.1	4.5	12.6	304	101	2000
3 x 10	3.9	5.3	14.6	406	117	2000
3 x 16	5.0	6.4	16.9	597	135	2000
3 x 25	6.3	8.1	20.7	915	166	2000
3 x 35sh	15.1	16.9	20.0	1133	160	2300
3 x 50sh	17.9	19.9	23.0	1499	184	2300
3 x 70sh	21.0	23.2	26.6	2127	213	2300
3 x 95sh	24.1	26.3	29.9	2879	239	1800
3 x 120sh	27.2	29.6	33.5	3620	268	1600
3 x 150sh	30.5	33.3	37.6	4476	301	1400
3 x 185sh	33.9	37.1	41.6	5580	333	1100
3 x 240sh	38.3	41.7	46.6	7246	373	800
3 x 300sh	42.7	46.3	51.5	9017	412	700
3 x 400sh	49.1	53.1	58.9	11526	471	400
3 x 16cc	4.7	6.1	16.3	571	130	2000
3 x 25cc	6.0	7.8	19.9	869	159	1800
3 x 35cc	6.9	8.7	22.0	1155	176	2300
3 x 50cc	8.2	10.2	25.2	1584	202	2000
3 x 70cc	9.7	11.9	29.1	2177	233	1800
3 x 95cc	11.5	13.7	33.3	2921	266	1600
3 x 120cc	12.8	15.2	36.9	3680	295	1500
3 x 150cc	14.3	17.1	41.4	4583	331	1200
3 x 185cc	16.0	19.2	46.1	5707	369	1000
3 x 240cc	19.0	22.4	53.4	7455	427	600
3 x 300cc	20.4	24.0	57.2	9239	458	500
3 x 400cc	23.1	27.1	64.4	11617	515	400

sh – Shaped conductor

cc – Circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
3 x 1.5	12.1	15.43	2000	31	42
3 x 2.5	7.41	9.45	2000	52	63
3 x 4	4.61	5.88	2000	84	92
3 x 6	3.08	3.93	2000	126	125
3 x 10	1.83	2.33	2000	210	180
3 x 16	1.15	1.47	2000	336	249
3 x 25	0.727	0.927	2000	525	317
3 x 35sh	0.524	0.668	2000	735	459
3 x 50sh	0.387	0.493	2000	1050	571
3 x 70sh	0.268	0.342	2000	1470	691
3 x 95sh	0.193	0.246	2000	1995	834
3 x 120sh	0.153	0.196	2000	2520	940
3 x 150sh	0.124	0.159	2000	3150	1047
3 x 185sh	0.0991	0.128	2000	3885	1167
3 x 240sh	0.0754	0.098	2000	5040	1352
3 x 300sh	0.0601	0.08	2000	6300	1529
3 x 400sh	0.047	0.064	2000	8400	1783
3 x 16cc	1.15	1.47	2000	336	258
3 x 25cc	0.727	0.927	2000	525	330
3 x 35cc	0.524	0.668	2000	735	418
3 x 50cc	0.387	0.493	2000	1050	521
3 x 70cc	0.268	0.342	2000	1470	631
3 x 95cc	0.193	0.246	2000	1995	749
3 x 120cc	0.153	0.196	2000	2520	854
3 x 150cc	0.124	0.159	2000	3150	951
3 x 185cc	0.0991	0.128	2000	3885	1053
3 x 240cc	0.0754	0.098	2000	5040	1180
3 x 300cc	0.0601	0.08	2000	6300	1377
3 x 400cc	0.047	0.064	2000	8400	1630

sh – Shaped conductor

cc – Circular compacted conductor

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
4 x 1.5	1.6	3.0	10.1	155	81	2000
4 x 2.5	2.0	3.4	11.1	204	89	2000
4 x 4	2.5	3.9	12.4	280	99	2000
4 x 6	3.1	4.5	13.8	376	110	2000
4 x 10	3.9	5.3	16.0	512	128	1500
4 x 16	5.0	6.4	18.6	771	149	1500
4 x 25	6.3	8.1	22.8	1180	182	1000
4 x 35sh	18.0	19.8	22.9	1502	183	2300
4 x 50sh	21.3	23.3	26.6	1999	213	2300
4 x 70sh	24.9	27.1	30.7	2831	246	2000
4 x 95sh	28.5	30.7	34.7	3843	278	1600
4 x 120sh	32.1	34.5	38.8	4823	310	1300
4 x 150sh	36.0	38.8	43.3	5937	346	1000
4 x 185sh	40.1	43.3	48.2	7407	386	800
4 x 240sh	45.3	48.7	54.0	9622	432	600
4 x 300sh	50.3	53.9	59.6	11980	477	500
4 x 400sh	57.8	61.8	68.1	15301	545	300
4 x 16cc	4.7	6.1	17.8	736	142	900
4 x 25cc	6.0	7.8	22.0	1120	176	900
4 x 35cc	6.9	8.7	24.4	1512	195	2300
4 x 50cc	8.2	10.2	28.1	2030	225	2000
4 x 70cc	9.7	11.9	32.4	2887	259	1800
4 x 95cc	11.5	13.7	37.1	3822	297	1500
4 x 120cc	12.8	15.2	41.2	4860	330	1200
4 x 150cc	14.3	17.1	46.0	5994	368	1000
4 x 185cc	16.0	19.2	51.5	7545	412	800
4 x 240cc	19.0	22.4	59.6	9870	477	500
4 x 300cc	20.4	24.0	63.8	12077	510	400
4 x 400cc	23.1	27.1	71.8	15218	574	300

sh – Shaped conductor
cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
4 x 1.5	12.1	15.43	2000	42	52
4 x 2.5	7.41	9.45	2000	70	79
4 x 4	4.61	5.88	2000	112	113
4 x 6	3.08	3.93	2000	168	152
4 x 10	1.83	2.33	2000	280	219
4 x 16	1.15	1.47	2000	448	301
4 x 25	0.727	0.927	2000	700	384
4 x 35sh	0.524	0.668	2000	980	535
4 x 50sh	0.387	0.493	2000	1400	658
4 x 70sh	0.268	0.342	2000	1960	798
4 x 95sh	0.193	0.246	2000	2660	958
4 x 120sh	0.153	0.196	2000	3360	1082
4 x 150sh	0.124	0.159	2000	4200	1212
4 x 185sh	0.0991	0.128	2000	5180	1343
4 x 240sh	0.0754	0.098	2000	6720	1556
4 x 300sh	0.0601	0.08	2000	8400	1762
4 x 400sh	0.047	0.064	2000	11200	2056
4 x 16cc	1.15	1.47	2000	448	315
4 x 25cc	0.727	0.927	2000	700	398
4 x 35cc	0.524	0.668	2000	980	502
4 x 50cc	0.387	0.493	2000	1400	623
4 x 70cc	0.268	0.342	2000	1960	756
4 x 95cc	0.193	0.246	2000	2660	896
4 x 120cc	0.153	0.196	2000	3360	1019
4 x 150cc	0.124	0.159	2000	4200	1141
4 x 185cc	0.0991	0.128	2000	5180	1257
4 x 240cc	0.0754	0.098	2000	6720	1409
4 x 300cc	0.0601	0.08	2000	8400	1646
4 x 400cc	0.047	0.064	2000	11200	1950

sh – Shaped conductor
cc – Circular compacted conductor

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
5 x 1.5	1.6	3.0	11.1	163	89	2000
6 x 1.5	1.6	3.0	11.9	192	95	2000
7 x 1.5	1.6	3.0	11.9	204	95	2000
12 x 1.5	1.6	3.0	15.3	324	122	1800
19 x 1.5	1.6	3.0	17.7	466	142	1600
21 x 1.5	1.6	3.0	18.7	510	150	1500
27 x 1.5	1.6	3.0	21.1	640	169	1500
30 x 1.5	1.6	3.0	21.8	698	174	1500
37 x 1.5	1.6	3.0	23.5	837	188	1500
40 x 1.5	1.6	3.0	24.5	900	196	1500
48 x 1.5	1.6	3.0	26.9	1066	215	1000
5 x 2.5	2.0	3.4	12.2	218	98	2000
6 x 2.5	2.0	3.4	13.2	258	106	1500
7 x 2.5	2.0	3.4	13.2	278	106	1500
12 x 2.5	2.0	3.4	17.0	448	136	1500
19 x 2.5	2.0	3.4	19.8	657	158	1500
21 x 2.5	2.0	3.4	20.9	721	167	1500
27 x 2.5	2.0	3.4	23.6	909	189	1500
30 x 2.5	2.0	3.4	24.5	995	196	1500
37 x 2.5	2.0	3.4	26.5	1201	212	1500
40 x 2.5	2.0	3.4	27.8	1305	222	1500
48 x 2.5	2.0	3.4	30.5	1549	244	1000
5 x 4	2.5	3.9	13.6	306	109	2000
6 x 4	2.5	3.9	14.8	395	118	1500
7 x 4	2.5	3.9	14.8	624	118	1500
12 x 4	2.5	3.9	19.2	644	154	1500
19 x 4	2.5	3.9	22.5	961	180	1500
21 x 4	2.5	3.9	23.7	1057	190	1500
27 x 4	2.5	3.9	26.9	1338	215	1500
30 x 4	2.5	3.9	28.1	1483	225	1500
37 x 4	2.5	3.9	30.4	1797	243	1300
40 x 4	2.5	3.9	31.8	1950	254	1200
48 x 4	2.5	3.9	35.2	2335	282	1000

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
5 x 1.5	12.1	15.43	2000	52	59
6 x 1.5	12.1	15.43	2000	63	66
7 x 1.5	12.1	15.43	2000	73	77
12 x 1.5	12.1	15.43	2000	126	103
19 x 1.5	12.1	15.43	2000	199	141
21 x 1.5	12.1	15.43	2000	220	147
27 x 1.5	12.1	15.43	2000	283	168
30 x 1.5	12.1	15.43	2000	315	181
37 x 1.5	12.1	15.43	2000	388	206
40 x 1.5	12.1	15.43	2000	420	214
48 x 1.5	12.1	15.43	2000	504	234
5 x 2.5	7.41	9.45	2000	87	89
6 x 2.5	7.41	9.45	2000	105	99
7 x 2.5	7.41	9.45	2000	122	116
12 x 2.5	7.41	9.45	2000	210	154
19 x 2.5	7.41	9.45	2000	332	210
21 x 2.5	7.41	9.45	2000	367	219
27 x 2.5	7.41	9.45	2000	472	250
30 x 2.5	7.41	9.45	2000	525	268
37 x 2.5	7.41	9.45	2000	647	305
40 x 2.5	7.41	9.45	2000	700	315
48 x 2.5	7.41	9.45	2000	840	344
5 x 4	4.61	5.88	2000	140	129
6 x 4	4.61	5.88	2000	168	142
7 x 4	4.61	5.88	2000	196	166
12 x 4	4.61	5.88	2000	336	219
19 x 4	4.61	5.88	2000	532	296
21 x 4	4.61	5.88	2000	588	310
27 x 4	4.61	5.88	2000	756	351
30 x 4	4.61	5.88	2000	840	374
37 x 4	4.61	5.88	2000	1036	426
40 x 4	4.61	5.88	2000	1120	440
48 x 4	4.61	5.88	2000	1344	477

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
2 x 1.5	8.9	M20S	KM409-52	KM494-52
2 x 2.5	9.7	M20S	KM409-52	KM494-52
2 x 4	10.8	M20S	KM409-52	KM494-52
2 x 6	11.9	M20	KM409-53	KM494-53
2 x 10	13.8	M25	KM409-55	KM494-55
2 x 16	15.9	M25	KM409-55	KM494-55
2 x 25	19.4	M32	KM409-56	KM494-56
2 x 35	21.6	M32	KM409-56	KM494-56
2 x 50	24.7	M32	KM409-56	KM494-56
2 x 70	28.6	M40	KM409-57	KM494-57
2 x 95	33.0	M50S / M50	KM409-58	KM494-59
2 x 120	36.7	M50	KM409-59	KM494-59
2 x 150	41.1	M50	KM409-59	KM494-59
2 x 185	45.6	M63S / M63	KM409-60	KM494-61
2 x 240	51.3	M63	KM409-61	KM494-61
2 x 300	57.5	M75S	KM409-62	KM494-62
2 x 400	64.4	M75	KM409-63	KM494-63
2 x 16cc	15.3	M25	KM409-55	KM494-55
2 x 25cc	18.5	M25	KM409-55	KM494-55
2 x 35cc	20.7	M32	KM409-56	KM494-56
2 x 50cc	23.6	M32	KM409-56	KM494-56
2 x 70cc	27.0	M40	KM409-57	KM494-57
2 x 95cc	31.0	M40	KM409-57	KM494-57
2 x 120cc	34.5	M50S / M50	KM409-58	KM494-59
2 x 150cc	38.5	M50	KM409-59	KM494-59
2 x 185cc	42.9	M63S / M63	KM409-60	KM494-61
2 x 240cc	49.7	M63S / M63	KM409-60	KM494-61
2 x 300cc	53.3	M63	KM409-61	KM494-61
2 x 400cc	59.8	M75S	KM409-62	KM494-62

cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
3 x 1.5	9.3	M20S	KM409-52	KM494-52
3 x 2.5	10.3	M20S	KM409-52	KM494-52
3 x 4	11.4	M20	KM409-53	KM494-53
3 x 6	12.6	M20	KM409-53	KM494-53
3 x 10	14.6	M25	KM409-55	KM494-55
3 x 16	16.9	M25	KM409-55	KM494-55
3 x 25	20.7	M32	KM409-56	KM494-56
3 x 35sh	20.0	M32	KM409-56	KM494-56
3 x 50sh	23.0	M32	KM409-56	KM494-56
3 x 70sh	26.6	M40	KM409-57	KM494-57
3 x 95sh	29.9	M40	KM409-57	KM494-57
3 x 120sh	33.5	M50S / M50	KM409-58	KM494-59
3 x 150sh	37.6	M50	KM409-59	KM494-59
3 x 185sh	41.6	M50	KM409-59	KM494-59
3 x 240sh	46.6	M63S / M63	KM409-60	KM494-61
3 x 300sh	51.5	M63	KM409-61	KM494-61
3 x 400sh	58.9	M75S	KM409-62	KM494-62
3 x 16cc	16.3	M25	KM409-55	KM494-55
3 x 25cc	19.9	M32	KM409-56	KM494-56
3 x 35cc	22.0	M32	KM409-56	KM494-56
3 x 50cc	25.2	M32	KM409-56	KM494-56
3 x 70cc	29.1	M40	KM409-57	KM494-57
3 x 95cc	33.3	M50S / M50	KM409-58	KM494-59
3 x 120cc	36.9	M50S / M50	KM409-58	KM494-59
3 x 150cc	41.4	M50	KM409-59	KM494-59
3 x 185cc	46.1	M63S / M63	KM409-60	KM494-61
3 x 240cc	53.4	M63	KM409-61	KM494-61
3 x 300cc	57.2	M75S	KM409-62	KM494-62
3 x 400cc	64.4	M75	KM409-63	KM494-63

sh – Shaped conductor
cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm²)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
4 x 1.5	10.1	M20S	KM409-52	KM494-52
4 x 2.5	11.1	M20S	KM409-52	KM494-52
4 x 4	12.4	M20	KM409-53	KM494-53
4 x 6	13.8	M25	KM409-55	KM494-55
4 x 10	16.0	M25	KM409-55	KM494-55
4 x 16	18.6	M25	KM409-55	KM494-55
4 x 25	22.8	M32	KM409-56	KM494-56
4 x 35sh	22.9	M32	KM409-56	KM494-56
4 x 50sh	26.6	M40	KM409-57	KM494-57
4 x 70sh	30.7	M40	KM409-57	KM494-57
4 x 95sh	34.7	M50S / M50	KM409-58	KM494-59
4 x 120sh	38.8	M50	KM409-59	KM494-59
4 x 150sh	43.3	M63S / M63	KM409-60	KM494-61
4 x 185sh	48.2	M63S / M63	KM409-60	KM494-61
4 x 240sh	54.0	M63	KM409-61	KM494-61
4 x 300sh	59.6	M75S / M75	KM409-62	KM494-63
4 x 400sh	68.1	M90	KM409-65	-
4 x 16cc	17.8	M25	KM409-55	KM494-55
4 x 25cc	22.0	M32	KM409-56	KM494-56
4 x 35cc	24.4	M32	KM409-56	KM494-56
4 x 50cc	28.1	M40	KM409-57	KM494-57
4 x 70cc	32.4	M50S / M50	KM409-58	KM494-59
4 x 95cc	37.1	M50	KM409-59	KM494-59
4 x 120cc	41.2	M50 / M63	KM409-59	KM494-61
4 x 150cc	46.0	M63	KM409-61	KM494-61
4 x 185cc	51.5	M63	KM409-61	KM494-61
4 x 240cc	59.6	M75S / M75	KM409-62	KM494-63
4 x 300cc	63.8	M75	KM409-63	KM494-63
4 x 400cc	71.8	M90	KM409-65	-

sh – Shaped conductor

cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm²)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
5 x 1.5	11.1	M20S	KM409-52	KM494-52
6 x 1.5	11.9	M20	KM409-53	KM494-53
7 x 1.5	11.9	M20	KM409-53	KM494-53
12 x 1.5	15.3	M25	KM409-55	KM494-55
19 x 1.5	17.7	M25	KM409-55	KM494-55
21 x 1.5	18.7	M25	KM409-55	KM494-55
27 x 1.5	21.1	M32	KM409-56	KM494-56
30 x 1.5	21.8	M32	KM409-56	KM494-56
37 x 1.5	23.5	M32	KM409-56	KM494-56
40 x 1.5	24.5	M32	KM409-56	KM494-56
48 x 1.5	26.9	M40	KM409-57	KM494-57
5 x 2.5	12.2	M20	KM409-53	KM494-53
6 x 2.5	13.2	M25	KM409-55	KM494-55
7 x 2.5	13.2	M25	KM409-55	KM494-55
12 x 2.5	17.0	M25	KM409-55	KM494-55
19 x 2.5	19.8	M32	KM409-56	KM494-56
21 x 2.5	20.9	M32	KM409-56	KM494-56
27 x 2.5	23.6	M32	KM409-56	KM494-56
30 x 2.5	24.5	M32	KM409-56	KM494-56
37 x 2.5	26.5	M40	KM409-57	KM494-57
40 x 2.5	27.8	M40	KM409-57	KM494-57
48 x 2.5	30.5	M40	KM409-57	KM494-57
5 x 4	13.6	M25	KM409-55	KM494-55
6 x 4	14.8	M25	KM409-55	KM494-55
7 x 4	14.8	M25	KM409-55	KM494-55
12 x 4	19.2	M32	KM409-56	KM494-56
19 x 4	22.5	M32	KM409-56	KM494-56
21 x 4	23.7	M32	KM409-56	KM494-56
27 x 4	26.9	M40	KM409-57	KM494-57
30 x 4	28.1	M40	KM409-57	KM494-57
37 x 4	30.4	M40	KM409-57	KM494-57
40 x 4	31.8	M50S / M50	KM409-58	KM494-59
48 x 4	35.2	M50	KM409-59	KM494-59

CU/XLPE/PVC/AWA/PVC 0.6/1 kV
General Power Cables

GENERAL INFO

Suitable for heavy operating conditions, laying and installation. Used underground and under normal and salty water if specially produced.

CABLE CONSTRUCTION

Conductor Material	: Copper
Conductor Surface	: Bare
Insulation Material	: Crosslinked Polyethylene (XLPE)
Inner Sheath Material	: Polyvinyl Chloride (PVC)
Armour Material	: Aluminium Wires
Sheath material	: Polyvinyl Chloride (PVC)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Armour
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties

Special feature available on request:

IEC 60332-3-22 (Category A)
IEC 60332-3-24 (Category C)
Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low Smoke Halogen Free

CORE IDENTIFICATION

1-core	Natural

*Other core colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	12 x OD
Bending radius (fixed installed)	10 x OD

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1 x 50	8.7	1.0	12.9	1.6	19.3	764	193	2000
1 x 70	10.5	1.1	14.8	1.6	21.3	991	213	1800
1 x 95	12.4	1.1	16.7	1.6	23.4	1280	234	1600
1 x 120	13.9	1.2	18.5	1.6	25.4	1553	254	1400
1 x 150	15.6	1.4	20.6	1.6	27.5	1872	275	1200
1 x 185	17.4	1.6	22.8	1.6	29.9	2242	299	1000
1 x 240	19.8	1.7	25.4	1.6	32.7	2865	327	1000
1 x 300	22.5	1.8	28.3	1.6	35.8	3511	358	800
1 x 400	25.4	2.0	32.0	2.0	40.7	4510	407	600
1 x 500	28.6	2.2	35.6	2.0	44.5	5576	445	600
1 x 630	32.5	2.4	39.9	2.0	49.0	6942	490	500
1 x 50cc	8.2	1.0	12.3	1.6	18.8	756	188	2000
1 x 70cc	9.7	1.1	14.0	1.6	20.5	978	205	1800
1 x 95cc	11.5	1.1	15.8	1.6	22.5	1242	225	1600
1 x 120cc	12.8	1.2	17.0	1.6	23.2	1461	232	1400
1 x 150cc	14.3	1.4	18.9	1.6	25.1	1753	251	1200
1 x 185cc	16.0	1.6	21.4	1.6	28.5	2217	285	1000
1 x 240cc	18.4	1.7	24.0	1.6	31.3	2841	313	1000
1 x 300cc	20.4	1.8	26.2	1.6	33.7	3386	337	800
1 x 400cc	23.1	2.0	29.7	2.0	38.4	4345	384	600
1 x 500cc	26.1	2.2	33.1	2.0	42.0	5428	420	600
1 x 630cc	29.9	2.4	37.3	2.0	46.4	6938	464	500

cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1 x 50	0.387	0.493	2000	350	181
1 x 70	0.268	0.342	2000	490	230
1 x 95	0.193	0.246	2000	665	284
1 x 120	0.153	0.195	2000	840	331
1 x 150	0.124	0.159	2000	1050	382
1 x 185	0.0991	0.127	2000	1295	433
1 x 240	0.0754	0.097	2000	1680	514
1 x 300	0.0601	0.078	2000	2100	587
1 x 400	0.047	0.061	2000	2800	688
1 x 500	0.0366	0.048	2000	3500	787
1 x 630	0.0283	0.038	2000	4410	900
1 x 50cc	0.387	0.493	2000	350	186
1 x 70cc	0.268	0.342	2000	490	239
1 x 95cc	0.193	0.246	2000	665	296
1 x 120cc	0.153	0.195	2000	840	362
1 x 150cc	0.124	0.159	2000	1050	418
1 x 185cc	0.0991	0.127	2000	1295	454
1 x 240cc	0.0754	0.097	2000	1680	537
1 x 300cc	0.0601	0.078	2000	2100	623
1 x 400cc	0.047	0.061	2000	2800	729
1 x 500cc	0.0366	0.048	2000	3500	833
1 x 630cc	0.0283	0.038	2000	4410	950

cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Inner covering diameter (mm)	Armour wire diameter (mm)	Overall cable diameter (mm)	Recommended cable gland size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1 x 50	12.9	1.6	19.3	M25	KA422-55	KCA455-55
1 x 70	14.8	1.6	21.3	M25	KA422-55	KCA455-55
1 x 95	16.7	1.6	23.4	M25	KA422-55	KCA455-55
1 x 120	18.5	1.6	25.4	M25	KA422-55	KCA455-55
1 x 150	20.6	1.6	27.5	M32	KA422-56	KCA455-56
1 x 185	22.8	1.6	29.9	M32	KA422-56	KCA455-56
1 x 240	25.4	1.6	32.7	M32	KA422-56	KCA455-56
1 x 300	28.3	1.6	35.8	M40	KA422-57	KCA455-57
1 x 400	32.0	2.0	40.7	M50S	KA422-58	KCA455-58
1 x 500	35.6	2.0	44.5	M50S	KA422-58	KCA455-58
1 x 630	39.9	2.0	49.0	M50	KA422-59	KCA455-59
1 x 50cc	12.3	1.6	18.8	M25	KA422-55	KCA455-55
1 x 70cc	14.0	1.6	20.5	M25	KA422-55	KCA455-55
1 x 95cc	15.8	1.6	22.5	M25	KA422-55	KCA455-55
1 x 120cc	17.0	1.6	23.2	M25	KA422-55	KCA455-55
1 x 150cc	18.9	1.6	25.1	M25	KA422-55	KCA455-55
1 x 185cc	21.4	1.6	28.5	M32	KA422-56	KCA455-56
1 x 240cc	24.0	1.6	31.3	M32	KA422-56	KCA455-56
1 x 300cc	26.2	1.6	33.7	M40	KA422-57	KCA455-57
1 x 400cc	29.7	2.0	38.4	M40	KA422-57	KCA455-57
1 x 500cc	33.1	2.0	42.0	M50S	KA422-58	KCA455-58
1 x 630cc	37.3	2.0	46.4	M50	KA422-59	KCA455-59

cc – Circular compacted conductor

CU/XLPE/PVC/SWA/PVC 0.6/1 kV
General Power and Control Cables

prysmian
E Path

GENERAL INFO

High resistant against outer mechanical reactions with introduction of galvanized steel wires. Suitable for heavy operating conditions, laying and installation. Used underground and under normal and salty water if specially produced.

CABLE CONSTRUCTION

Conductor Material	: Copper
Conductor Surface	: Bare
Insulation Material	: Crosslinked Polyethylene (XLPE)
Filler Material	: Non-hygroscopic filler
Binder Material	: Polyester tape
Inner Sheath Material	: Polyvinyl Chloride (PVC)
Armour Material	: Round Steel Wires
Sheath material	: Polyvinyl Chloride (PVC)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Armour
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties

Special feature available on request:

IEC 60332-3-22 (Category A)	Oil resistance
IEC 60332-3-24 (Category C)	UV resistance
Anti-termite	Low smoke halogen free
Anti-rodent	

CORE IDENTIFICATION

2-cores	Brown, Blue
3-cores	Brown, Black, Blue
4-cores	Brown, Black, Grey, Blue
Multi-cores	Black with core numbering

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	12 x OD
Bending radius (fixed installed)	10 x OD

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
2 x 1.5	1.6	3.0	7.5	0.9	12.3	290	123	2000
2 x 2.5	2.0	3.4	8.3	0.9	13.2	334	132	2000
2 x 4	2.5	3.9	9.4	0.9	14.2	401	142	2000
2 x 6	3.1	4.5	10.5	0.9	15.4	484	154	2000
2 x 10	3.9	5.3	12.4	1.25	17.9	661	179	1800
2 x 16	5.0	6.4	14.5	1.25	20.1	842	201	1800
2 x 25	6.3	8.1	18.0	1.6	24.2	1269	242	1800
2 x 35	7.4	9.2	20.3	1.6	26.4	1522	264	2300
2 x 50	8.7	10.7	23.4	1.6	29.5	1885	295	1200
2 x 70	10.5	12.7	27.4	1.6	33.8	2477	338	1700
2 x 95	12.4	14.6	31.8	2.0	39.2	3450	392	1200
2 x 120	13.9	16.3	35.2	2.0	42.9	4103	429	1000
2 x 150	15.6	18.4	39.5	2.0	47.4	4963	474	800
2 x 185	17.4	20.6	44.2	2.5	53.4	6309	534	600
2 x 240	19.8	23.2	49.5	2.5	59.1	7793	591	500
2 x 300	22.5	26.1	55.7	2.5	65.5	9506	655	400
2 x 400	25.4	29.4	62.2	2.5	72.6	11059	726	300
2 x 16cc	4.7	6.1	13.9	1.25	19.4	798	194	2000
2 x 25cc	6.0	7.8	17.1	1.6	23.3	1196	233	1800
2 x 35cc	7.0	8.8	19.4	1.6	25.5	1471	255	1800
2 x 50cc	8.0	10.0	22.4	1.6	28.5	1851	285	1400
2 x 70cc	9.8	12.0	25.8	1.6	32.2	2374	322	1400
2 x 95cc	11.5	13.7	29.8	2.0	37.2	3285	372	1200
2 x 120cc	12.8	15.2	33.1	2.0	40.7	3986	407	1000
2 x 150cc	14.3	17.1	36.9	2.0	44.7	4810	447	1000
2 x 185cc	16.0	19.2	41.5	2.5	50.7	6120	507	600
2 x 240cc	19.0	22.4	47.9	2.5	57.5	7622	575	500
2 x 300cc	20.4	24.0	51.5	2.5	61.3	9041	613	400
2 x 400cc	23.1	27.1	57.6	2.5	68.0	11009	680	300

cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
2 x 1.5	12.1	15.43	2000	21	17
2 x 2.5	7.41	9.45	2000	35	27
2 x 4	4.61	5.88	2000	56	39
2 x 6	3.08	3.93	2000	84	55
2 x 10	1.83	2.33	2000	140	78
2 x 16	1.15	1.47	2000	224	111
2 x 25	0.727	0.927	2000	350	145
2 x 35	0.524	0.668	2000	490	186
2 x 50	0.387	0.493	2000	700	237
2 x 70	0.268	0.342	2000	980	290
2 x 95	0.193	0.246	2000	1330	339
2 x 120	0.153	0.196	2000	1680	392
2 x 150	0.124	0.159	2000	2100	443
2 x 185	0.0991	0.128	2000	2590	485
2 x 240	0.0754	0.098	2000	3360	569
2 x 300	0.0601	0.08	2000	4200	641
2 x 400	0.047	0.064	2000	5600	771
2 x 16cc	1.15	1.47	2000	224	115
2 x 25cc	0.727	0.927	2000	350	150
2 x 35cc	0.524	0.668	2000	490	192
2 x 50cc	0.387	0.493	2000	700	246
2 x 70cc	0.268	0.342	2000	980	304
2 x 95cc	0.193	0.246	2000	1330	358
2 x 120cc	0.153	0.196	2000	1680	413
2 x 150cc	0.124	0.159	2000	2100	470
2 x 185cc	0.0991	0.128	2000	2590	511
2 x 240cc	0.0754	0.098	2000	3360	584
2 x 300cc	0.0601	0.08	2000	4200	685
2 x 400cc	0.047	0.064	2000	5600	824

cc – Circular compacted conductor

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
3 x 1.5	1.6	3.0	8.0	0.9	12.8	315	128	2000
3 x 2.5	2.0	3.4	8.9	0.9	13.7	373	137	2000
3 x 4	2.5	3.9	10.0	0.9	14.8	453	148	2000
3 x 6	3.1	4.5	11.2	0.9	16.1	554	161	2000
3 x 10	3.9	5.3	13.2	1.25	18.8	788	188	1800
3 x 16	5.0	6.4	15.5	1.25	21.1	1027	211	1800
3 x 25	6.3	8.1	19.3	1.6	25.5	1563	255	1500
3 x 35sh	15.1	16.9	18.8	1.6	24.9	1777	249	2300
3 x 50sh	17.9	19.9	21.7	1.6	28.0	2244	280	2300
3 x 70sh	21.0	23.2	25.5	2.0	32.8	3207	328	1800
3 x 95sh	24.1	26.3	28.6	2.0	36.3	4092	363	1400
3 x 120sh	27.2	29.6	32.0	2.0	39.9	4985	399	1200
3 x 150sh	30.5	33.3	36.1	2.5	45.4	6392	454	800
3 x 185sh	33.9	37.1	40.0	2.5	49.4	7684	494	800
3 x 240sh	38.3	41.7	45.0	2.5	54.8	9633	548	600
3 x 300sh	42.7	46.3	49.5	2.5	59.7	11604	597	500
3 x 400sh	49.1	53.1	56.3	2.5	66.9	14459	669	300
3 x 16cc	4.7	6.1	14.9	1.25	20.4	988	204	1000
3 x 25cc	6.0	7.8	18.5	1.6	24.8	1499	248	1000
3 x 35cc	7.0	8.8	20.9	1.6	27.0	1834	270	1000
3 x 50cc	8.0	10.0	23.5	1.6	29.8	2334	298	1000
3 x 70cc	9.8	12.0	28.2	2.0	35.5	3334	355	1000
3 x 95cc	11.5	13.7	32.1	2.0	39.7	4259	397	1000
3 x 120cc	12.8	15.2	35.4	2.0	43.3	5143	433	1000
3 x 150cc	14.3	17.1	39.9	2.5	49.2	6651	492	800
3 x 185cc	16.0	19.2	44.5	2.5	53.9	7965	539	600
3 x 240cc	19.0	22.4	51.8	2.5	61.6	10009	616	500
3 x 300cc	20.4	24.0	55.2	2.5	65.4	12057	654	400
3 x 400cc	23.1	27.1	61.8	2.5	72.4	14694	724	300

sh – Shaped conductor
cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
3 x 1.5	12.1	15.43	2000	31	24
3 x 2.5	7.41	9.45	2000	52	38
3 x 4	4.61	5.88	2000	84	57
3 x 6	3.08	3.93	2000	126	78
3 x 10	1.83	2.33	2000	210	112
3 x 16	1.15	1.47	2000	336	159
3 x 25	0.727	0.927	2000	525	206
3 x 35sh	0.524	0.668	2000	735	295
3 x 50sh	0.387	0.493	2000	1050	375
3 x 70sh	0.268	0.342	2000	1470	448
3 x 95sh	0.193	0.246	2000	1995	550
3 x 120sh	0.153	0.196	2000	2520	632
3 x 150sh	0.124	0.159	2000	3150	694
3 x 185sh	0.0991	0.128	2000	3885	786
3 x 240sh	0.0754	0.098	2000	5040	920
3 x 300sh	0.0601	0.08	2000	6300	1055
3 x 400sh	0.047	0.064	2000	8400	1256
3 x 16cc	1.15	1.47	2000	336	165
3 x 25cc	0.727	0.927	2000	525	212
3 x 35cc	0.524	0.668	2000	735	272
3 x 50cc	0.387	0.493	2000	1050	352
3 x 70cc	0.268	0.342	2000	1470	414
3 x 95cc	0.193	0.246	2000	1995	503
3 x 120cc	0.153	0.196	2000	2520	582
3 x 150cc	0.124	0.159	2000	3150	640
3 x 185cc	0.0991	0.128	2000	3885	721
3 x 240cc	0.0754	0.098	2000	5040	818
3 x 300cc	0.0601	0.08	2000	6300	963
3 x 400cc	0.047	0.064	2000	8400	1160

sh – Shaped conductor
cc – Circular compacted conductor

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
4 x 1.5	1.6	3.0	8.7	0.9	13.5	353	135	2000
4 x 2.5	2.0	3.4	9.7	0.9	14.6	422	146	2000
4 x 4	2.5	3.9	11.0	0.9	15.8	523	158	2000
4 x 6	3.1	4.5	12.4	1.25	17.9	740	179	2000
4 x 10	3.9	5.3	14.6	1.25	20.1	918	201	1500
4 x 16	5.0	6.4	17.2	1.6	23.4	1364	234	1500
4 x 25	6.3	8.1	21.4	1.6	27.6	1898	276	1000
4 x 35sh	18.0	19.8	21.6	1.6	27.9	2220	279	2300
4 x 50sh	21.3	23.3	25.2	1.6	31.6	2827	316	2000
4 x 70sh	24.9	27.1	29.4	2.0	37.1	4054	371	1500
4 x 95sh	28.5	30.7	33.2	2.0	41.1	5219	411	1200
4 x 120sh	32.1	34.5	37.4	2.5	46.6	6758	466	800
4 x 150sh	36.0	38.8	41.7	2.5	51.1	8061	511	700
4 x 185sh	40.1	43.3	46.2	2.5	56.0	9758	560	600
4 x 240sh	45.3	48.7	52.0	2.5	62.1	12299	621	400
4 x 300sh	50.3	53.9	57.2	2.5	67.7	14896	677	300
4 x 400sh	57.8	61.8	65.5	3.15	77.9	19478	779	250
4 x 16cc	4.7	6.1	16.4	1.6	22.7	1295	227	2000
4 x 25cc	6.0	7.8	20.3	1.6	26.5	1785	265	1800
4 x 35cc	7.0	8.8	23.1	1.6	29.4	2267	294	2000
4 x 50cc	8.0	10.0	26.6	1.6	33.1	2895	331	1800
4 x 70cc	9.8	12.0	31.1	2.0	38.8	4149	388	1200
4 x 95cc	11.5	13.7	35.6	2.0	43.5	5261	435	1000
4 x 120cc	12.8	15.2	39.8	2.5	49.0	6850	490	800
4 x 150cc	14.3	17.1	44.4	2.5	53.8	8213	538	600
4 x 185cc	16.0	19.2	49.5	2.5	59.3	9995	593	500
4 x 240cc	19.0	22.4	57.6	2.5	67.8	12744	678	300
4 x 300cc	20.4	24.0	61.4	2.5	72.0	15142	720	300
4 x 400cc	23.1	27.1	69.3	3.15	81.7	19550	817	250

sh – Shaped conductor
cc – Circular compacted conductor

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
4 x 1.5	12.1	15.43	2000	42	31
4 x 2.5	7.41	9.45	2000	70	48
4 x 4	4.61	5.88	2000	112	71
4 x 6	3.08	3.93	2000	168	94
4 x 10	1.83	2.33	2000	280	139
4 x 16	1.15	1.47	2000	448	191
4 x 25	0.727	0.927	2000	700	254
4 x 35sh	0.524	0.668	2000	980	351
4 x 50sh	0.387	0.493	2000	1400	443
4 x 70sh	0.268	0.342	2000	1960	528
4 x 95sh	0.193	0.246	2000	2660	647
4 x 120sh	0.153	0.196	2000	3360	721
4 x 150sh	0.124	0.159	2000	4200	822
4 x 185sh	0.0991	0.128	2000	5180	925
4 x 240sh	0.0754	0.098	2000	6720	1082
4 x 300sh	0.0601	0.08	2000	8400	1241
4 x 400sh	0.047	0.064	2000	11200	1438
4 x 16cc	1.15	1.47	2000	448	197
4 x 25cc	0.727	0.927	2000	700	264
4 x 35cc	0.524	0.668	2000	980	333
4 x 50cc	0.387	0.493	2000	1400	423
4 x 70cc	0.268	0.342	2000	1960	505
4 x 95cc	0.193	0.246	2000	2660	611
4 x 120cc	0.153	0.196	2000	3360	686
4 x 150cc	0.124	0.159	2000	4200	781
4 x 185cc	0.0991	0.128	2000	5180	874
4 x 240cc	0.0754	0.098	2000	6720	991
4 x 300cc	0.0601	0.08	2000	8400	1167
4 x 400cc	0.047	0.064	2000	11200	1371

sh – Shaped conductor
cc – Circular compacted conductor

Product Dimensional Data

Cross Section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
5 x 1.5	1.6	3.0	9.7	0.9	14.5	378	145	2000
6 x 1.5	1.6	3.0	10.5	0.9	15.4	410	154	2000
7 x 1.5	1.6	3.0	10.5	0.9	15.4	437	154	2000
12 x 1.5	1.6	3.0	13.9	1.25	19.4	718	194	2000
19 x 1.5	1.6	3.0	16.3	1.25	21.9	917	219	2000
21 x 1.5	1.6	3.0	17.5	1.6	23.5	1109	235	1800
27 x 1.5	1.6	3.0	19.7	1.6	25.9	1305	259	1600
30 x 1.5	1.6	3.0	20.4	1.6	26.6	1381	266	1600
37 x 1.5	1.6	3.0	22.1	1.6	28.3	1573	283	1500
40 x 1.5	1.6	3.0	23.1	1.6	29.5	1685	295	1400
48 x 1.5	1.6	3.0	25.5	1.6	31.9	1923	319	1200
5 x 2.5	2.0	3.4	10.8	0.9	15.6	457	156	2000
6 x 2.5	2.0	3.4	11.8	1.25	17.3	595	173	1800
7 x 2.5	2.0	3.4	11.8	1.25	17.3	616	173	2000
12 x 2.5	2.0	3.4	15.6	1.25	21.2	887	212	2000
19 x 2.5	2.0	3.4	18.4	1.6	24.6	1286	246	1800
21 x 2.5	2.0	3.4	19.6	1.6	25.7	1381	257	1600
27 x 2.5	2.0	3.4	22.2	1.6	28.5	1646	285	1400
30 x 2.5	2.0	3.4	23.1	1.6	29.5	1780	295	1300
37 x 2.5	2.0	3.4	25.1	1.6	31.5	2041	315	1100
40 x 2.5	2.0	3.4	26.2	1.6	32.8	2184	328	1000
48 x 2.5	2.0	3.4	29.3	2.0	36.9	2791	369	800
5 x 4	2.5	3.9	12.2	1.25	17.8	655	178	2000
6 x 4	2.5	3.9	13.4	1.25	18.9	752	189	2000
7 x 4	2.5	3.9	13.4	1.25	18.9	777	189	2000
12 x 4	2.5	3.9	17.8	1.6	24.1	1255	241	1800
19 x 4	2.5	3.9	21.1	1.6	27.3	1663	273	1400
21 x 4	2.5	3.9	22.3	1.6	28.6	1895	286	1200
27 x 4	2.5	3.9	25.5	1.6	31.9	2195	319	1000
30 x 4	2.5	3.9	26.5	1.6	33.1	2378	331	1000
37 x 4	2.5	3.9	29.2	2.0	36.8	3038	368	700
40 x 4	2.5	3.9	30.4	2.0	38.1	3239	381	700
48 x 4	2.5	3.9	33.6	2.0	41.4	3744	414	600

Product Technical Data

Cross Section (mm²)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
5 x 1.5	12.1	15.43	2000	52	36
6 x 1.5	12.1	15.43	2000	63	41
7 x 1.5	12.1	15.43	2000	73	47
12 x 1.5	12.1	15.43	2000	126	65
19 x 1.5	12.1	15.43	2000	199	91
21 x 1.5	12.1	15.43	2000	220	94
27 x 1.5	12.1	15.43	2000	283	109
30 x 1.5	12.1	15.43	2000	315	118
37 x 1.5	12.1	15.43	2000	388	137
40 x 1.5	12.1	15.43	2000	420	142
48 x 1.5	12.1	15.43	2000	504	158
5 x 2.5	7.41	9.45	2000	87	56
6 x 2.5	7.41	9.45	2000	105	61
7 x 2.5	7.41	9.45	2000	122	71
12 x 2.5	7.41	9.45	2000	210	99
19 x 2.5	7.41	9.45	2000	332	135
21 x 2.5	7.41	9.45	2000	367	143
27 x 2.5	7.41	9.45	2000	472	166
30 x 2.5	7.41	9.45	2000	525	178
37 x 2.5	7.41	9.45	2000	647	205
40 x 2.5	7.41	9.45	2000	700	213
48 x 2.5	7.41	9.45	2000	840	228
5 x 4	4.61	5.88	2000	140	79
6 x 4	4.61	5.88	2000	168	89
7 x 4	4.61	5.88	2000	196	104
12 x 4	4.61	5.88	2000	336	139
19 x 4	4.61	5.88	2000	532	195
21 x 4	4.61	5.88	2000	588	205
27 x 4	4.61	5.88	2000	756	237
30 x 4	4.61	5.88	2000	840	254
37 x 4	4.61	5.88	2000	1036	282
40 x 4	4.61	5.88	2000	1120	294
48 x 4	4.61	5.88	2000	1344	325

Cable Gland Selection Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
2 x 1.5	7.5	0.9	12.3	M16	KAA413-51	KCA472-51
2 x 2.5	8.3	0.9	13.2	M20S	KAA413-52	KCA472-52
2 x 4	9.4	0.9	14.2	M20S	KAA413-52	KCA472-52
2 x 6	10.5	0.9	15.4	M20	KAA413-53	KCA472-53
2 x 10	12.4	1.25	17.9	M20	KAA413-53	KCA472-53
2 x 16	14.5	1.25	20.1	M20	KAA413-53	KCA472-53
2 x 25	18.0	1.6	24.2	M25	KAA413-55	KCA472-55
2 x 35	20.3	1.6	26.4	M25	KAA413-55	KCA472-55
2 x 50	23.4	1.6	29.5	M32	KAA413-56	KCA472-56
2 x 70	27.4	1.6	33.8	M40	KAA413-57	KCA472-57
2 x 95	31.8	2.0	39.2	M40	KAA413-57	KCA472-57
2 x 120	35.2	2.0	42.9	M50S	KAA413-58	KCA472-58
2 x 150	39.5	2.0	47.4	M50	KAA413-59	KCA472-59
2 x 185	44.2	2.5	53.4	M63S	KAA413-60	KCA472-60
2 x 240	49.5	2.5	59.1	M63	KAA413-61	KCA472-61
2 x 300	55.7	2.5	65.5	M75S	KAA413-62	KCA472-62
2 x 400	62.2	2.5	72.6	M75	KAA413-63	KCA472-63
2 x 16cc	13.9	1.25	19.4	M20	KAA413-53	KCA472-53
2 x 25cc	17.1	1.6	23.3	M25	KAA413-55	KCA472-55
2 x 35cc	19.4	1.6	25.5	M25	KAA413-55	KCA472-55
2 x 50cc	22.4	1.6	28.5	M32	KAA413-56	KCA472-56
2 x 70cc	25.8	1.6	32.2	M40	KAA413-57	KCA472-57
2 x 95cc	29.8	2.0	37.2	M40	KAA413-57	KCA472-57
2 x 120cc	33.1	2.0	40.7	M50S	KAA413-58	KCA472-58
2 x 150cc	36.9	2.0	44.7	M50S	KAA413-58	KCA472-58
2 x 185cc	41.5	2.5	50.7	M50	KAA413-59	KCA472-59
2 x 240cc	47.9	2.5	57.5	M63S	KAA413-60	KCA472-60
2 x 300cc	51.5	2.5	61.3	M63	KAA413-61	KCA472-61
2 x 400cc	57.6	2.5	68.0	M75S	KAA413-62	KCA472-62

cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
3 x 1.5	8.0	0.9	12.8	M16	KAA413-51	KCA472-51
3 x 2.5	8.9	0.9	13.7	M20S	KAA413-52	KCA472-52
3 x 4	10.0	0.9	14.8	M20S	KAA413-52	KCA472-52
3 x 6	11.2	0.9	16.1	M20	KAA413-53	KCA472-53
3 x 10	13.2	1.25	18.8	M20	KAA413-53	KCA472-53
3 x 16	15.5	1.25	21.1	M25	KAA413-55	KCA472-55
3 x 25	19.3	1.6	25.5	M25	KAA413-55	KCA472-55
3 x 35sh	18.8	1.6	24.9	M25	KAA413-55	KCA472-55
3 x 50sh	21.7	1.6	28.0	M32	KAA413-56	KCA472-56
3 x 70sh	25.5	2.0	32.8	M32	KAA413-56	KCA472-56
3 x 95sh	28.6	2.0	36.3	M40	KAA413-57	KCA472-57
3 x 120sh	32.0	2.0	39.9	M40	KAA413-57	KCA472-57
3 x 150sh	36.1	2.5	45.4	M50S	KAA413-58	KCA472-58
3 x 185sh	40.0	2.5	49.4	M50	KAA413-59	KCA472-59
3 x 240sh	45.0	2.5	54.8	M63S	KAA413-60	KCA472-60
3 x 300sh	49.5	2.5	59.7	M63	KAA413-61	KCA472-61
3 x 400sh	56.3	2.5	66.9	M75	KAA413-63	KCA472-63
3 x 16cc	14.9	1.25	20.4	M25	KAA413-55	KCA472-55
3 x 25cc	18.5	1.6	24.8	M25	KAA413-55	KCA472-55
3 x 35cc	20.9	1.6	27.0	M32	KAA413-56	KCA472-56
3 x 50cc	23.5	1.6	29.8	M32	KAA413-56	KCA472-56
3 x 70cc	28.2	2.0	35.5	M40	KAA413-57	KCA472-57
3 x 95cc	32.1	2.0	39.7	M50S	KAA413-58	KCA472-58
3 x 120cc	35.4	2.0	43.3	M50S	KAA413-58	KCA472-58
3 x 150cc	39.9	2.5	49.2	M50	KAA413-59	KCA472-59
3 x 185cc	44.5	2.5	53.9	M63S	KAA413-60	KCA472-60
3 x 240cc	51.8	2.5	61.6	M63	KAA413-61	KCA472-61
3 x 300cc	55.2	2.5	65.4	M75S	KAA413-62	KCA472-62
3 x 400cc	61.8	2.5	72.4	M75	KAA413-63	KCA472-63

sh – Shaped conductor
cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
4 x 1.5	8.7	0.9	13.5	M20S	KAA413-52	KCA472-52
4 x 2.5	9.7	0.9	14.6	M20S	KAA413-52	KCA472-52
4 x 4	11.0	0.9	15.8	M20	KAA413-53	KCA472-53
4 x 6	12.4	1.25	17.9	M20	KAA413-53	KCA472-53
4 x 10	14.6	1.25	20.1	M25	KAA413-55	KCA472-55
4 x 16	17.2	1.6	23.4	M25	KAA413-55	KCA472-55
4 x 25	21.4	1.6	27.6	M32	KAA413-56	KCA472-56
4 x 35sh	21.6	1.6	27.9	M32	KAA413-56	KCA472-56
4 x 50sh	25.2	1.6	31.6	M32	KAA413-56	KCA472-56
4 x 70sh	29.4	2.0	37.1	M40	KAA413-57	KCA472-57
4 x 95sh	33.2	2.0	41.1	M50S	KAA413-58	KCA472-58
4 x 120sh	37.4	2.5	46.6	M50	KAA413-59	KCA472-59
4 x 150sh	41.7	2.5	51.1	M50	KAA413-59	KCA472-59
4 x 185sh	46.2	2.5	56.0	M63S	KAA413-60	KCA472-60
4 x 240sh	52.0	2.5	62.1	M63	KAA413-61	KCA472-61
4 x 300sh	57.2	2.5	67.7	M75S	KAA413-62	KCA472-62
4 x 400sh	65.5	3.15	77.9	M85	KAA413-64	KCA472-64
4 x 16cc	16.4	1.6	22.7	M25	KAA413-55	KCA472-55
4 x 25cc	20.3	1.6	26.5	M25	KAA413-55	KCA472-55
4 x 35cc	23.1	1.6	29.4	M32	KAA413-56	KCA472-56
4 x 50cc	26.6	1.6	33.1	M32	KAA413-56	KCA472-56
4 x 70cc	31.1	2.0	38.8	M40	KAA413-57	KCA472-57
4 x 95cc	35.6	2.0	43.5	M50S	KAA413-58	KCA472-58
4 x 120cc	39.8	2.5	49.0	M50	KAA413-59	KCA472-59
4 x 150cc	44.4	2.5	53.8	M63S	KAA413-60	KCA472-60
4 x 185cc	49.5	2.5	59.3	M63	KAA413-61	KCA472-61
4 x 240cc	57.6	2.5	67.8	M75S	KAA413-62	KCA472-62
4 x 300cc	61.4	2.5	72.0	M75	KAA413-63	KCA472-63
4 x 400cc	69.3	3.15	81.7	M85	KAA413-64	KCA472-64

sh – Shaped conductor
cc – Circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
5 x 1.5	9.7	0.9	14.5	M20S	KAA413-52	KCA472-52
6 x 1.5	10.5	0.9	15.4	M20	KAA413-53	KCA472-53
7 x 1.5	10.5	0.9	15.4	M20	KAA413-53	KCA472-53
12 x 1.5	13.9	1.25	19.4	M20	KAA413-53	KCA472-53
19 x 1.5	16.3	1.25	21.9	M25	KAA413-55	KCA472-55
21 x 1.5	17.5	1.6	23.5	M25	KAA413-55	KCA472-55
27 x 1.5	19.7	1.6	25.9	M25	KAA413-55	KCA472-55
30 x 1.5	20.4	1.6	26.6	M32	KAA413-56	KCA472-56
37 x 1.5	22.1	1.6	28.3	M32	KAA413-56	KCA472-56
40 x 1.5	23.1	1.6	29.5	M32	KAA413-56	KCA472-56
48 x 1.5	25.5	1.6	31.9	M32	KAA413-56	KCA472-56
5 x 2.5	10.8	0.9	15.6	M20	KAA413-53	KCA472-53
6 x 2.5	11.8	1.25	17.3	M20	KAA413-53	KCA472-53
7 x 2.5	11.8	1.25	17.3	M20	KAA413-53	KCA472-53
12 x 2.5	15.6	1.25	21.2	M25	KAA413-55	KCA472-55
19 x 2.5	18.4	1.6	24.6	M25	KAA413-55	KCA472-55
21 x 2.5	19.6	1.6	25.7	M25	KAA413-55	KCA472-55
27 x 2.5	22.2	1.6	28.5	M32	KAA413-56	KCA472-56
30 x 2.5	23.1	1.6	29.5	M32	KAA413-56	KCA472-56
37 x 2.5	25.1	1.6	31.5	M32	KAA413-56	KCA472-56
40 x 2.5	26.2	1.6	32.8	M32	KAA413-56	KCA472-56
48 x 2.5	29.3	2.0	36.9	M40	KAA413-57	KCA472-57
5 x 4	12.2	1.25	17.8	M20	KAA413-53	KCA472-53
6 x 4	13.4	1.25	18.9	M20	KAA413-53	KCA472-53
7 x 4	13.4	1.25	18.9	M20	KAA413-53	KCA472-53
12 x 4	17.8	1.6	24.1	M25	KAA413-55	KCA472-55
19 x 4	21.1	1.6	27.3	M32	KAA413-56	KCA472-56
21 x 4	22.3	1.6	28.6	M32	KAA413-56	KCA472-56
27 x 4	25.5	1.6	31.9	M32	KAA413-56	KCA472-56
30 x 4	26.5	1.6	33.1	M40	KAA413-57	KCA472-57
37 x 4	29.2	2.0	36.8	M40	KAA413-57	KCA472-57
40 x 4	30.4	2.0	38.1	M40	KAA413-57	KCA472-57
48 x 4	33.6	2.0	41.4	M50S	KAA413-58	KCA472-58

FLAME RETARDANT CABLES

CU/PVC-FR 450/750 V, 600/1000 V
Flame Retardant Lighting and Earthing Cables

E Path

GENERAL INFO

Used in covered, dry places, in fixed plants, in distribution panels, on and under plaster as laid in conduit or on insulating support. When this cable is used in fixed installations with mechanically protected switchgear and control panels, the rated voltage is 600/1000 V. Increased safety with flame-retardant PVC sheath material complying to IEC 60332-3.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Flame Retardant Polyvinyl Chloride (PVC-FR)

STANDARDS APPLIED

BSEN 50525-2-31, SS 358-3	Construction
IEC 60228 Class 2	Conductors
BSEN 50525-2-31	Insulation
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

1-core	Green/Yellow

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	450, 600
Nominal voltage U [V]	750, 1000
Test voltage [kV / min]	2.5 kV for 5mins [for 450/750V], 3.5 kV for 5mins [for 600/1000V]
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	70
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	8 x OD
Bending radius (fixed installed)	6 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1x1.5	1.5	0.7	2.9	21	17	3000
1x2.5	1.9	0.8	3.5	32	21	3000
1x4	2.4	0.8	4.0	48	24	3000
1x6	3.0	0.8	4.6	68	28	3000
1x10	3.9	1.0	5.9	111	35	3000
1x16	5.0	1.0	7.0	172	42	3000
1x25	6.3	1.2	8.7	271	52	3000
1x35	7.3	1.2	9.7	351	58	3000
1x50	8.7	1.4	11.5	476	69	3000
1x70	10.4	1.4	13.2	664	79	3000
1x95	12.3	1.6	15.5	919	93	3000
1x120	13.8	1.6	17.0	1142	102	3000
1x150	15.5	1.8	19.1	1424	115	3000
1x185	17.3	2.0	21.3	1750	128	1900
1x240	19.7	2.2	24.1	2318	145	1400
1x300	22.4	2.4	27.2	2917	163	1100
1x400	25.3	2.6	30.5	3698	183	900
1x500	28.6	2.8	34.2	4682	205	700
1x630	32.4	2.8	38.0	5882	228	500
1x16cc	4.7	1.0	6.8	168	41	3000
1x25cc	5.9	1.2	8.3	262	50	3000
1x35cc	6.9	1.2	9.3	342	56	2000
1x50cc	7.9	1.4	10.7	463	64	2000
1x70cc	9.7	1.4	12.5	654	75	2000
1x95cc	11.4	1.6	14.6	892	88	2000
1x120cc	12.7	1.6	15.9	1125	95	2000
1x150cc	14.2	1.8	17.8	1391	107	2000
1x185cc	15.9	2.0	19.9	1740	119	2000
1x240cc	18.9	2.2	23.3	2253	140	1500
1x300cc	20.3	2.4	25.1	2817	151	1200
1x400cc	23.0	2.6	28.2	3628	169	900
1x500cc	26.0	2.8	31.6	4574	190	700
1x630cc	29.8	2.8	35.4	5739	212	500

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. Conductor Resistance at 20°C (Ω/km)	Max. Conductor AC Resistance at 70°C (Ω/km)	Min. Insulation Resistance at 70°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1x1.5	12.1	14.484	0.01	11	60
1x2.5	7.41	8.87	0.009	18	83
1x4	4.61	5.518	0.0077	28	117
1x6	3.08	3.687	0.0065	42	152
1x10	1.83	2.191	0.0065	70	198
1x16	1.15	1.377	0.005	112	267
1x25	0.727	0.87	0.005	175	335
1x35	0.524	0.627	0.0043	245	421
1x50	0.387	0.463	0.0043	350	507
1x70	0.268	0.321	0.0035	490	619
1x95	0.193	0.231	0.0035	665	715
1x120	0.153	0.184	0.0032	840	824
1x150	0.124	0.149	0.0032	1050	916
1x185	0.0991	0.119	0.0032	1295	1013
1x240	0.0754	0.091	0.0032	1680	1162
1x300	0.0601	0.073	0.003	2100	1287
1x400	0.0470	0.058	0.0028	2800	1530
1x500	0.0366	0.046	0.0028	3500	1706
1x630	0.0283	0.036	0.0025	4410	1934
1x16cc	1.15	1.377	0.005	112	273
1x25cc	0.727	0.87	0.005	175	360
1x35cc	0.524	0.627	0.0043	245	439
1x50cc	0.387	0.463	0.0043	350	545
1x70cc	0.268	0.321	0.0035	490	653
1x95cc	0.193	0.231	0.0035	665	759
1x120cc	0.153	0.184	0.0032	840	881
1x150cc	0.124	0.149	0.0032	1050	983
1x185cc	0.0991	0.119	0.0032	1295	1085
1x240cc	0.0754	0.91	0.0032	1680	1202
1x300cc	0.0601	0.073	0.003	2100	1394
1x400cc	0.0470	0.058	0.0028	2800	1655
1x500cc	0.0366	0.046	0.0028	3500	1846
1x630cc	0.0283	0.036	0.0025	4410	2076

cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1x1.5	2.9	-	-	-
1x2.5	3.5	-	-	-
1x4	4.0	M16	KM409-51	KM494-51
1x6	4.6	M16	KM409-51	KM494-51
1x10	5.9	M16	KM409-51	KM494-51
1x16	7.0	M16	KM409-51	KM494-51
1x25	8.7	M20S	KM409-52	KM494-52
1x35	9.7	M20S	KM409-52	KM494-52
1x50	11.5	M20	KM409-53	KM494-53
1x70	13.2	M20	KM409-53	KM494-53
1x95	15.5	M25	KM409-55	KM494-55
1x120	17.0	M25	KM409-55	KM494-55
1x150	19.1	M25	KM409-55	KM494-55
1x185	21.3	M32	KM409-56	KM494-56
1x240	24.1	M32	KM409-56	KM494-56
1x300	27.2	M40	KM409-57	KM494-57
1x400	30.5	M40	KM409-57	KM494-57
1x500	34.2	M50S / M50	KM409-58	KM494-59
1x630	38.0	M50	KM409-59	KM494-59
1x16cc	6.8	M16	KM409-51	KM494-51
1x25cc	8.3	M16	KM409-51	KM494-51
1x35cc	9.3	M20S	KM409-52	KM494-52
1x50cc	10.7	M20S	KM409-52	KM494-52
1x70cc	12.5	M20	KM409-53	KM494-53
1x95cc	14.6	M25	KM409-55	KM494-55
1x120cc	15.9	M25	KM409-55	KM494-55
1x150cc	17.8	M25	KM409-55	KM494-55
1x185cc	19.9	M32	KM409-56	KM494-56
1x240cc	23.3	M32	KM409-56	KM494-56
1x300cc	25.1	M32	KM409-56	KM494-56
1x400cc	28.2	M40	KM409-57	KM494-57
1x500cc	31.6	M40	KM409-57	KM494-57
1x630cc	35.4	M50S / M50	KM409-58	KM494-59

cc – circular compacted conductor

CU/XLPE/PVC-FR 0.6/1 kV
Flame Retardant Power Cables

E Path

GENERAL INFO

Used as energy, utility and lighting cables, for outdoor installations, in cable ducts, underground in normal and salty water if specially produced. Increased safety with flame-retardant PVC sheath material complying to IEC 60332-3.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Sheath material	: Flame Retardant Polyvinyl Chloride (PVC-FR)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

1-core	Natural

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	10 x OD
Bending radius (fixed installed)	8 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1x1.5	1.6	3.0	5.8	48	46	3000
1x2.5	2.0	3.4	6.2	60	50	2000
1x4	2.5	3.9	6.8	79	54	1000
1x6	3.1	4.5	7.3	102	58	1000
1x10	3.9	5.3	8.2	144	66	3000
1x16	5.0	6.4	9.3	208	74	3000
1x25	6.3	8.1	11.0	313	88	1000
1x35	7.4	9.2	12.2	399	98	1000
1x50	8.7	10.7	13.7	525	110	1000
1x70	10.5	12.7	15.7	723	126	3000
1x95	12.4	14.6	17.8	978	142	2800
1x120	13.9	16.3	19.5	1215	156	1000
1x150	15.6	18.4	21.9	1509	175	2800
1x185	17.4	20.6	24.0	1836	192	2800
1x240	19.8	23.2	26.8	2412	214	2500
1x300	22.5	26.1	29.9	3017	239	1000
1x400	25.4	29.4	33.4	3813	267	1000
1x500	28.6	33.0	37.3	4813	298	800
1x630	32.5	37.3	41.9	6109	335	550
1x16cc	4.7	6.1	8.9	199	71	2000
1x25cc	6.0	7.8	10.6	297	85	2000
1x35cc	7.0	8.8	11.8	393	94	2000
1x50cc	8.0	10.0	13.0	512	104	2000
1x70cc	9.8	12.0	15.0	715	120	1000
1x95cc	11.5	13.7	16.9	955	135	1000
1x120cc	12.8	15.2	18.4	1201	147	1000
1x150cc	14.3	17.1	20.5	1479	164	1000
1x185cc	16.0	19.2	22.6	1830	181	2000
1x240cc	19.0	22.4	26.0	2354	208	800
1x300cc	20.4	24.0	27.8	2922	222	1000
1x400cc	23.1	27.1	31.1	3694	249	1000
1x500cc	26.1	30.5	34.7	4710	278	1000
1x630cc	29.9	34.7	39.3	6014	314	550

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. Conductor AC Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1x1.5	12.1	15.428	2000	11	23
1x2.5	7.41	9.448	2000	18	35
1x4	4.61	5.878	2000	28	51
1x6	3.08	3.927	2000	42	72
1x10	1.83	2.333	2000	70	107
1x16	1.15	1.466	2000	112	151
1x25	0.727	0.927	2000	175	199
1x35	0.524	0.668	2000	245	251
1x50	0.387	0.493	2000	350	319
1x70	0.268	0.342	2000	490	390
1x95	0.193	0.246	2000	665	467
1x120	0.153	0.195	2000	840	538
1x150	0.124	0.159	2000	1050	599
1x185	0.0991	0.127	2000	1295	674
1x240	0.0754	0.097	2000	1680	784
1x300	0.0601	0.078	2000	2100	878
1x400	0.047	0.061	2000	2800	1048
1x500	0.0366	0.048	2000	3500	1173
1x630	0.0283	0.038	2000	4410	1316
1x16cc	1.15	1.466	2000	199	279
1x25cc	0.727	0.927	2000	175	206
1x35cc	0.524	0.668	2000	245	260
1x50cc	0.387	0.493	2000	350	337
1x70cc	0.268	0.342	2000	490	408
1x95cc	0.193	0.246	2000	665	492
1x120cc	0.153	0.195	2000	840	571
1x150cc	0.124	0.159	2000	1050	640
1x185cc	0.0991	0.127	2000	1295	716
1x240cc	0.0754	0.097	2000	1680	808
1x300cc	0.0601	0.078	2000	2100	944
1x400cc	0.047	0.061	2000	2800	1125
1x500cc	0.0366	0.048	2000	3500	1261
1x630cc	0.0283	0.038	2000	4410	1403

cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1x1.5	5.8	M16	KM409-51	KM494-51
1x2.5	6.2	M16	KM409-51	KM494-51
1x4	6.8	M16	KM409-51	KM494-51
1x6	7.3	M16	KM409-51	KM494-51
1x10	8.2	M20SS	KM409-71	KM494-71
1x16	9.3	M20S	KM409-52	KM494-52
1x25	11.0	M20S	KM409-52	KM494-52
1x35	12.2	M20	KM409-53	KM494-53
1x50	13.7	M25	KM409-55	KM494-55
1x70	15.7	M25	KM409-55	KM494-55
1x95	17.8	M25	KM409-55	KM494-55
1x120	19.5	M32	KM409-56	KM494-56
1x150	21.9	M32	KM409-56	KM494-56
1x185	24.0	M32	KM409-56	KM494-56
1x240	26.8	M40	KM409-57	KM494-57
1x300	29.9	M40	KM409-57	KM494-57
1x400	33.4	M50S / M50	KM409-58	KM494-59
1x500	37.3	M50	KM409-59	KM494-59
1x630	41.9	M50 / M63	KM409-59	KM494-61
1x16cc	8.9	M20S	KM409-52	KM494-52
1x25cc	10.6	M20S	KM409-52	KM494-52
1x35cc	11.8	M20	KM409-53	KM494-53
1x50cc	13.0	M20	KM409-53	KM494-53
1x70cc	15.0	M25	KM409-55	KM494-55
1x95cc	16.9	M25	KM409-55	KM494-55
1x120cc	18.4	M25	KM409-55	KM494-55
1x150cc	20.5	M32	KM409-56	KM494-56
1x185cc	22.6	M32	KM409-56	KM494-56
1x240cc	26.0	M40	KM409-57	KM494-57
1x300cc	27.8	M40	KM409-57	KM494-57
1x400cc	31.1	M40	KM409-57	KM494-57
1x500cc	34.7	M50S / M50	KM409-58	KM494-59
1x630cc	39.3	M50	KM409-59	KM494-59

cc – circular compacted conductor

CU/XLPE/PVC-FR 0.6/1 kV
Flame Retardant Power and Control Cables

E Path

GENERAL INFO

Used as energy, utility and lighting cables, for outdoor installations, in cable ducts, underground in normal and salty water if specially produced. Increased safety with flame-retardant PVC sheath material complying to IEC 60332-3.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Filler material	: Non-hygroscopic filler
Binder material	: Polyester tape
Sheath material	: Flame Retardant Polyvinyl Chloride (PVC-FR)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

2-cores	Brown, blue
3-cores	Brown, black, blue
4-cores	Brown, black, grey, blue
Multi-cores	Black with core numbering

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	10 x OD
Bending radius (fixed installed)	8 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
2x1.5	1.6	3.0	8.9	110	71	2000
2x2.5	2.0	3.4	9.7	141	78	2000
2x4	2.5	3.9	10.8	187	86	2000
2x6	3.1	4.5	11.9	245	95	2000
2x10	3.9	5.3	13.8	301	110	1500
2x16	5.0	6.4	15.9	436	127	1500
2x25	6.3	8.1	19.4	657	155	1500
2x35	7.4	9.2	21.6	851	173	2300
2x50	8.7	10.7	24.7	1125	198	2300
2x70	10.5	12.7	28.6	1566	229	2300
2x95	12.4	14.6	33.0	2151	264	1800
2x120	13.9	16.3	36.7	2661	294	1500
2x150	15.6	18.4	41.1	3371	329	1200
2x185	17.4	20.6	45.6	4059	365	1000
2x240	19.8	23.2	51.3	5307	410	800
2x300	22.5	26.1	57.5	6677	460	500
2x400	25.4	29.4	64.4	7873	515	400
2x16cc	4.7	6.1	15.3	420	122	1500
2x25cc	5.9	7.7	18.5	628	148	1500
2x35cc	6.9	8.7	20.7	833	166	1000
2x50cc	8.2	10.2	23.6	1126	189	1000
2x70cc	9.7	11.9	27.0	1532	216	1000
2x95cc	11.5	13.7	31.0	2076	248	1000
2x120cc	12.8	15.2	34.5	2629	276	1000
2x150cc	14.3	17.1	38.5	3306	308	1000
2x185cc	16.0	19.2	42.9	4042	343	1000
2x240cc	19.0	22.4	49.7	5262	398	800
2x300cc	20.4	24.0	53.3	6474	426	700
2x400cc	23.1	27.1	59.8	8128	478	500

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
2x1.5	12.1	15.43	2000	21	29
2x2.5	7.41	9.45	2000	35	45
2x4	4.61	5.88	2000	56	65
2x6	3.08	3.93	2000	84	88
2x10	1.83	2.33	2000	140	127
2x16	1.15	1.47	2000	224	176
2x25	0.727	0.927	2000	350	226
2x35	0.524	0.668	2000	490	284
2x50	0.387	0.493	2000	700	354
2x70	0.268	0.342	2000	980	428
2x95	0.193	0.246	2000	1330	504
2x120	0.153	0.196	2000	1680	572
2x150	0.124	0.159	2000	2100	639
2x185	0.0991	0.128	2000	2590	710
2x240	0.0754	0.098	2000	3360	819
2x300	0.0601	0.08	2000	4200	913
2x400	0.047	0.064	2000	5600	1087
2x16cc	1.15	1.47	2000	224	183
2x25cc	0.727	0.927	2000	350	236
2x35cc	0.524	0.668	2000	490	296
2x50cc	0.387	0.493	2000	700	371
2x70cc	0.268	0.342	2000	980	454
2x95cc	0.193	0.246	2000	1330	536
2x120cc	0.153	0.196	2000	1680	609
2x150cc	0.124	0.159	2000	2100	682
2x185cc	0.0991	0.128	2000	2590	755
2x240cc	0.0754	0.098	2000	3360	845
2x300cc	0.0601	0.08	2000	4200	985
2x400cc	0.047	0.064	2000	5600	1171

cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
3x1.5	1.6	3.0	9.3	129	74	2000
3x2.5	2.0	3.4	10.3	168	82	2000
3x4	2.5	3.9	11.4	229	91	2000
3x6	3.1	4.5	12.6	304	101	2000
3x10	3.9	5.3	14.6	406	117	2000
3x16	5.0	6.4	16.9	597	135	2000
3x25	6.3	8.1	20.7	915	166	2000
3x35sh	15.1	16.9	20.0	1133	160	2300
3x50sh	17.9	19.9	23.0	1499	184	2300
3x70sh	21.0	23.2	26.6	2127	213	2300
3x95sh	24.1	26.3	29.9	2879	239	1800
3x120sh	27.2	29.6	33.5	3620	268	1600
3x150sh	30.5	33.3	37.6	4476	301	1400
3x185sh	33.9	37.1	41.6	5580	333	1100
3x240sh	38.3	41.7	46.6	7246	373	800
3x300sh	42.7	46.3	51.5	9017	412	700
3x400sh	49.1	53.1	58.9	11526	471	400
3x16cc	4.7	6.1	16.3	571	130	2000
3x25cc	6.0	7.8	19.9	869	159	1800
3x35cc	6.9	8.7	22.0	1155	176	2300
3x50cc	8.2	10.2	25.2	1584	202	2000
3x70cc	9.7	11.9	29.1	2177	233	1800
3x95cc	11.5	13.7	33.3	2921	266	1600
3x120cc	12.8	15.2	36.9	3680	295	1500
3x150cc	14.3	17.1	41.4	4583	331	1200
3x185cc	16.0	19.2	46.1	5707	369	1000
3x240cc	19.0	22.4	53.4	7455	427	600
3x300cc	20.4	24.0	57.2	9239	458	500
3x400cc	23.1	27.1	64.4	11617	515	400

sh – shaped conductor
cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
3x1.5	12.1	15.43	2000	31	42
3x2.5	7.41	9.45	2000	52	63
3x4	4.61	5.88	2000	84	92
3x6	3.08	3.93	2000	126	125
3x10	1.83	2.33	2000	210	180
3x16	1.15	1.47	2000	336	249
3x25	0.727	0.927	2000	525	317
3x35sh	0.524	0.668	2000	735	459
3x50sh	0.387	0.493	2000	1050	571
3x70sh	0.268	0.342	2000	1470	691
3x95sh	0.193	0.246	2000	1995	834
3x120sh	0.153	0.196	2000	2520	940
3x150sh	0.124	0.159	2000	3150	1047
3x185sh	0.0991	0.128	2000	3885	1167
3x240sh	0.0754	0.098	2000	5040	1352
3x300sh	0.0601	0.08	2000	6300	1529
3x400sh	0.047	0.064	2000	8400	1783
3x16cc	1.15	1.47	2000	336	258
3x25cc	0.727	0.927	2000	525	330
3x35cc	0.524	0.668	2000	735	418
3x50cc	0.387	0.493	2000	1050	521
3x70cc	0.268	0.342	2000	1470	631
3x95cc	0.193	0.246	2000	1995	749
3x120cc	0.153	0.196	2000	2520	854
3x150cc	0.124	0.159	2000	3150	951
3x185cc	0.0991	0.128	2000	3885	1053
3x240cc	0.0754	0.098	2000	5040	1180
3x300cc	0.0601	0.08	2000	6300	1377
3x400cc	0.047	0.064	2000	8400	1630

sh – shaped conductor
cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
4x1.5	1.6	3.0	10.1	155	81	2000
4x2.5	2.0	3.4	11.1	204	89	2000
4x4	2.5	3.9	12.4	280	99	2000
4x6	3.1	4.5	13.8	376	110	2000
4x10	3.9	5.3	16.0	512	128	1500
4x16	5.0	6.4	18.6	771	149	1500
4x25	6.3	8.1	22.8	1180	182	1000
4x35sh	18.0	19.8	22.9	1502	183	2300
4x50sh	21.3	23.3	26.6	1999	213	2300
4x70sh	24.9	27.1	30.7	2831	246	2000
4x95sh	28.5	30.7	34.7	3843	278	1600
4x120sh	32.1	34.5	38.8	4823	310	1300
4x150sh	36.0	38.8	43.3	5937	346	1000
4x185sh	40.1	43.3	48.2	7407	386	800
4x240sh	45.3	48.7	54.0	9622	432	600
4x300sh	50.3	53.9	59.6	11980	477	500
4x400sh	57.8	61.8	68.1	15301	545	300
4x16cc	4.7	6.1	17.8	736	142	900
4x25cc	6.0	7.8	22.0	1120	176	900
4x35cc	6.9	8.7	24.4	1512	195	2300
4x50cc	8.2	10.2	28.1	2030	225	2000
4x70cc	9.7	11.9	32.4	2887	259	1800
4x95cc	11.5	13.7	37.1	3822	297	1500
4x120cc	12.8	15.2	41.2	4860	330	1200
4x150cc	14.3	17.1	46.0	5994	368	1000
4x185cc	16.0	19.2	51.5	7545	412	800
4x240cc	19.0	22.4	59.6	9870	477	500
4x300cc	20.4	24.0	63.8	12077	510	400
4x400cc	23.1	27.1	71.8	15218	574	300

sh – shaped conductor
cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
4x1.5	12.1	15.43	2000	42	52
4x2.5	7.41	9.45	2000	70	79
4x4	4.61	5.88	2000	112	113
4x6	3.08	3.93	2000	168	152
4x10	1.83	2.33	2000	280	219
4x16	1.15	1.47	2000	448	301
4x25	0.727	0.927	2000	700	384
4x35	0.524	0.668	2000	980	535
4x50	0.387	0.493	2000	1400	658
4x70	0.268	0.342	2000	1960	798
4x95	0.193	0.246	2000	2660	958
4x120	0.153	0.196	2000	3360	1082
4x150	0.124	0.159	2000	4200	1212
4x185	0.0991	0.128	2000	5180	1343
4x240	0.0754	0.098	2000	6720	1556
4x300	0.0601	0.08	2000	8400	1762
4x400	0.047	0.064	2000	11200	2056
4x16cc	1.15	1.47	2000	448	315
4x25cc	0.727	0.927	2000	700	398
4x35cc	0.524	0.668	2000	980	502
4x50cc	0.387	0.493	2000	1400	623
4x70cc	0.268	0.342	2000	1960	756
4x95cc	0.193	0.246	2000	2660	896
4x120cc	0.153	0.196	2000	3360	1019
4x150cc	0.124	0.159	2000	4200	1141
4x185cc	0.0991	0.128	2000	5180	1257
4x240cc	0.0754	0.098	2000	6720	1409
4x300cc	0.0601	0.08	2000	8400	1646
4x400cc	0.047	0.064	2000	11200	1950

cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
5x1.5	1.6	3.0	11.1	163	89	2000
6x1.5	1.6	3.0	11.9	192	95	2000
7x1.5	1.6	3.0	11.9	204	95	2000
12x1.5	1.6	3.0	15.3	324	122	1800
19x1.5	1.6	3.0	17.7	466	142	1600
21x1.5	1.6	3.0	18.7	510	150	1500
27x1.5	1.6	3.0	21.1	640	169	1500
30x1.5	1.6	3.0	21.8	698	174	1500
37x1.5	1.6	3.0	23.5	837	188	1500
40x1.5	1.6	3.0	24.5	900	196	1500
48x1.5	1.6	3.0	26.9	1066	215	1000
5x2.5	2.0	3.4	12.2	218	98	2000
6x2.5	2.0	3.4	13.2	258	106	1500
7x2.5	2.0	3.4	13.2	278	106	1500
12x2.5	2.0	3.4	17.0	448	136	1500
19x2.5	2.0	3.4	19.8	657	158	1500
21x2.5	2.0	3.4	20.9	721	167	1500
27x2.5	2.0	3.4	23.6	909	189	1500
30x2.5	2.0	3.4	24.5	995	196	1500
37x2.5	2.0	3.4	26.5	1201	212	1500
40x2.5	2.0	3.4	27.8	1305	222	1500
48x2.5	2.0	3.4	30.5	1549	244	1000
5x4	2.5	3.9	13.6	306	109	2000
6x4	2.5	3.9	14.8	395	118	1500
7x4	2.5	3.9	14.8	624	118	1500
12x4	2.5	3.9	19.2	644	154	1500
19x4	2.5	3.9	22.5	961	180	1500
21x4	2.5	3.9	23.7	1057	190	1500
27x4	2.5	3.9	26.9	1338	215	1500
30x4	2.5	3.9	28.1	1483	225	1500
37x4	2.5	3.9	30.4	1797	243	1300
40x4	2.5	3.9	31.8	1950	254	1200
48x4	2.5	3.9	35.2	2335	282	1000

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. Conductor AC Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
5x1.5	12.1	15.43	2000	52	59
6x1.5	12.1	15.43	2000	63	66
7x1.5	12.1	15.43	2000	73	77
12x1.5	12.1	15.43	2000	126	103
19x1.5	12.1	15.43	2000	199	141
21x1.5	12.1	15.43	2000	220	147
27x1.5	12.1	15.43	2000	283	168
30x1.5	12.1	15.43	2000	315	181
37x1.5	12.1	15.43	2000	388	206
40x1.5	12.1	15.43	2000	420	214
48x1.5	12.1	15.43	2000	504	234
5x2.5	7.41	9.45	2000	87	89
6x2.5	7.41	9.45	2000	105	99
7x2.5	7.41	9.45	2000	122	116
12x2.5	7.41	9.45	2000	210	154
19x2.5	7.41	9.45	2000	332	210
21x2.5	7.41	9.45	2000	367	219
27x2.5	7.41	9.45	2000	472	250
30x2.5	7.41	9.45	2000	525	268
37x2.5	7.41	9.45	2000	647	305
40x2.5	7.41	9.45	2000	700	315
48x2.5	7.41	9.45	2000	840	344
5x4	4.61	5.88	2000	140	129
6x4	4.61	5.88	2000	168	142
7x4	4.61	5.88	2000	196	166
12x4	4.61	5.88	2000	336	219
19x4	4.61	5.88	2000	532	296
21x4	4.61	5.88	2000	588	310
27x4	4.61	5.88	2000	756	351
30x4	4.61	5.88	2000	840	374
37x4	4.61	5.88	2000	1036	426
40x4	4.61	5.88	2000	1120	440
48x4	4.61	5.88	2000	1344	477

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
2x1.5	8.9	M20S	KM409-52	KM494-52
2x2.5	9.7	M20S	KM409-52	KM494-52
2x4	10.8	M20S	KM409-52	KM494-52
2x6	11.9	M20	KM409-53	KM494-53
2x10	13.8	M25	KM409-55	KM494-55
2x16	15.9	M25	KM409-55	KM494-55
2x25	19.4	M32	KM409-56	KM494-56
2x35	21.6	M32	KM409-56	KM494-56
2x50	24.7	M32	KM409-56	KM494-56
2x70	28.6	M40	KM409-57	KM494-57
2x95	33.0	M50S / M50	KM409-58	KM494-59
2x120	36.7	M50	KM409-59	KM494-59
2x150	41.1	M50	KM409-59	KM494-59
2x185	45.6	M63S / M63	KM409-60	KM494-61
2x240	51.3	M63	KM409-61	KM494-61
2x300	57.5	M75S	KM409-62	KM494-62
2x400	64.4	M75	KM409-63	KM494-63
2x16cc	15.3	M25	KM409-55	KM494-55
2x25cc	18.5	M25	KM409-55	KM494-55
2x35cc	20.7	M32	KM409-56	KM494-56
2x50cc	23.6	M32	KM409-56	KM494-56
2x70cc	27.0	M40	KM409-57	KM494-57
2x95cc	31.0	M40	KM409-57	KM494-57
2x120cc	34.5	M50S / M50	KM409-58	KM494-59
2x150cc	38.5	M50	KM409-59	KM494-59
2x185cc	42.9	M63S / M63	KM409-60	KM494-61
2x240cc	49.7	M63S / M63	KM409-60	KM494-61
2x300cc	53.3	M63	KM409-61	KM494-61
2x400cc	59.8	M75S	KM409-62	KM494-62

cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
3x1.5	9.3	M20S	KM409-52	KM494-52
3x2.5	10.3	M20S	KM409-52	KM494-52
3x4	11.4	M20	KM409-53	KM494-53
3x6	12.6	M20	KM409-53	KM494-53
3x10	14.6	M25	KM409-55	KM494-55
3x16	16.9	M25	KM409-55	KM494-55
3x25	20.7	M32	KM409-56	KM494-56
3x35sh	20.0	M32	KM409-56	KM494-56
3x50sh	23.0	M32	KM409-56	KM494-56
3x70sh	26.6	M40	KM409-57	KM494-57
3x95sh	29.9	M40	KM409-57	KM494-57
3x120sh	33.5	M50S / M50	KM409-58	KM494-59
3x150sh	37.6	M50	KM409-59	KM494-59
3x185sh	41.6	M50	KM409-59	KM494-59
3x240sh	46.6	M63S / M63	KM409-60	KM494-61
3x300sh	51.5	M63	KM409-61	KM494-61
3x400sh	58.9	M75S	KM409-62	KM494-62
3x16cc	16.3	M25	KM409-55	KM494-55
3x25cc	19.9	M32	KM409-56	KM494-56
3x35cc	22.0	M32	KM409-56	KM494-56
3x50cc	25.2	M32	KM409-56	KM494-56
3x70cc	29.1	M40	KM409-57	KM494-57
3x95cc	33.3	M50S / M50	KM409-58	KM494-59
3x120cc	36.9	M50S / M50	KM409-58	KM494-59
3x150cc	41.4	M50	KM409-59	KM494-59
3x185cc	46.1	M63S / M63	KM409-60	KM494-61
3x240cc	53.4	M63	KM409-61	KM494-61
3x300cc	57.2	M75S	KM409-62	KM494-62
3x400cc	64.4	M75	KM409-63	KM494-63

sh – shaped conductor
cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
4x1.5	10.1	M20S	KM409-52	KM494-52
4x2.5	11.1	M20S	KM409-52	KM494-52
4x4	12.4	M20	KM409-53	KM494-53
4x6	13.8	M25	KM409-55	KM494-55
4x10	16.0	M25	KM409-55	KM494-55
4x16	18.6	M25	KM409-55	KM494-55
4x25	22.8	M32	KM409-56	KM494-56
4x35sh	22.9	M32	KM409-56	KM494-56
4x50sh	26.6	M40	KM409-57	KM494-57
4x70sh	30.7	M40	KM409-57	KM494-57
4x95sh	34.7	M50S / M50	KM409-58	KM494-59
4x120sh	38.8	M50	KM409-59	KM494-59
4x150sh	43.3	M63S / M63	KM409-60	KM494-61
4x185sh	48.2	M63S / M63	KM409-60	KM494-61
4x240sh	54.0	M63	KM409-61	KM494-61
4x300sh	59.6	M75S / M75	KM409-62	KM494-63
4x400sh	68.1	M90	KM409-65	-
4x16cc	17.8	M25	KM409-55	KM494-55
4x25cc	22.0	M32	KM409-56	KM494-56
4x35cc	24.4	M32	KM409-56	KM494-56
4x50cc	28.1	M40	KM409-57	KM494-57
4x70cc	32.4	M50S / M50	KM409-58	KM494-59
4x95cc	37.1	M50	KM409-59	KM494-59
4x120cc	41.2	M50 / M63	KM409-59	KM494-61
4x150cc	46.0	M63	KM409-61	KM494-61
4x185cc	51.5	M63	KM409-61	KM494-61
4x240cc	59.6	M75S / M75	KM409-62	KM494-63
4x300cc	63.8	M75	KM409-63	KM494-63
4x400cc	71.8	M90	KM409-65	-

sh – shaped conductor
cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
5x1.5	11.1	M20S	KM409-52	KM494-52
6x1.5	11.9	M20	KM409-53	KM494-53
7x1.5	11.9	M20	KM409-53	KM494-53
12x1.5	15.3	M25	KM409-55	KM494-55
19x1.5	17.7	M25	KM409-55	KM494-55
21x1.5	18.7	M25	KM409-55	KM494-55
27x1.5	21.1	M32	KM409-56	KM494-56
30x1.5	21.8	M32	KM409-56	KM494-56
37x1.5	23.5	M32	KM409-56	KM494-56
40x1.5	24.5	M32	KM409-56	KM494-56
48x1.5	26.9	M40	KM409-57	KM494-57
5x2.5	12.2	M20	KM409-53	KM494-53
6x2.5	13.2	M25	KM409-55	KM494-55
7x2.5	13.2	M25	KM409-55	KM494-55
12x2.5	17.0	M25	KM409-55	KM494-55
19x2.5	19.8	M32	KM409-56	KM494-56
21x2.5	20.9	M32	KM409-56	KM494-56
27x2.5	23.6	M32	KM409-56	KM494-56
30x2.5	24.5	M32	KM409-56	KM494-56
37x2.5	26.5	M40	KM409-57	KM494-57
40x2.5	27.8	M40	KM409-57	KM494-57
48x2.5	30.5	M40	KM409-57	KM494-57
5x4	13.6	M25	KM409-55	KM494-55
6x4	14.8	M25	KM409-55	KM494-55
7x4	14.8	M25	KM409-55	KM494-55
12x4	19.2	M32	KM409-56	KM494-56
19x4	22.5	M32	KM409-56	KM494-56
21x4	23.7	M32	KM409-56	KM494-56
27x4	26.9	M40	KM409-57	KM494-57
30x4	28.1	M40	KM409-57	KM494-57
37x4	30.4	M40	KM409-57	KM494-57
40x4	31.8	M50S / M50	KM409-58	KM494-59
48x4	35.2	M50	KM409-59	KM494-59

CU/XLPE/PVC/AWA/PVC-FR 0.6/1 kV Flame Retardant Power Cables

prysmian E Path

GENERAL INFO

Suitable for heavy operating conditions, laying and installation. Used underground and under normal and salty water if specially produced. Increased safety with flame-retardant PVC sheath material complying to IEC 60332-3

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Inner sheath material	: Polyvinyl Chloride (PVC)
Armour material	: Alumunium Wires
Sheath material	: Flame Retardant Polyvinyl Chloride (PVC-FR)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Armour
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

1-core	Natural

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	12 x OD
Bending radius (fixed installed)	10 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1x50	8.7	1.0	12.9	1.6	19.3	764	193	2000
1x70	10.5	1.1	14.8	1.6	21.3	991	213	1800
1x95	12.4	1.1	16.7	1.6	23.4	1280	234	1600
1x120	13.9	1.2	18.5	1.6	25.4	1553	254	1400
1x150	15.6	1.4	20.6	1.6	27.5	1872	275	1200
1x185	17.4	1.6	22.8	1.6	29.9	2242	299	1000
1x240	19.8	1.7	25.4	1.6	32.7	2865	327	1000
1x300	22.5	1.8	28.3	1.6	35.8	3511	358	800
1x400	25.4	2.0	32.0	2.0	40.7	4510	407	600
1x500	28.6	2.2	35.6	2.0	44.5	5576	445	600
1x630	32.5	2.4	39.9	2.0	49.0	6942	490	500
1x50cc	8.2	1.0	12.3	1.6	18.8	756	188	2000
1x70cc	9.7	1.1	14.0	1.6	20.5	978	205	1800
1x95cc	11.5	1.1	15.8	1.6	22.5	1242	225	1600
1x120cc	12.8	1.2	17.0	1.6	23.2	1461	232	1400
1x150cc	14.3	1.4	18.9	1.6	25.1	1753	251	1200
1x185cc	16.0	1.6	21.4	1.6	28.5	2217	285	1000
1x240cc	18.4	1.7	24.0	1.6	31.3	2841	313	1000
1x300cc	20.4	1.8	26.2	1.6	33.7	3386	337	800
1x400cc	23.1	2.0	29.7	2.0	38.4	4345	384	600
1x500cc	26.1	2.2	33.1	2.0	42.0	5428	420	600
1x630cc	29.9	2.4	37.3	2.0	46.4	6938	464	500

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. AC Conductor Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1x50	0.387	0.493	2000	350	181
1x70	0.268	0.342	2000	490	230
1x95	0.193	0.246	2000	665	284
1x120	0.153	0.195	2000	840	331
1x150	0.124	0.159	2000	1050	382
1x185	0.0991	0.127	2000	1295	433
1x240	0.0754	0.097	2000	1680	514
1x300	0.0601	0.078	2000	2100	587
1x400	0.047	0.061	2000	2800	688
1x500	0.0366	0.048	2000	3500	787
1x630	0.0283	0.038	2000	4410	900
1x50cc	0.387	0.493	2000	350	186
1x70cc	0.268	0.342	2000	490	239
1x95cc	0.193	0.246	2000	665	296
1x120cc	0.153	0.195	2000	840	362
1x150cc	0.124	0.159	2000	1050	418
1x185cc	0.0991	0.127	2000	1295	454
1x240cc	0.0754	0.097	2000	1680	537
1x300cc	0.0601	0.078	2000	2100	623
1x400cc	0.047	0.061	2000	2800	729
1x500cc	0.0366	0.048	2000	3500	833
1x630cc	0.0283	0.038	2000	4410	950

cc – circular compacted conductor

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1x50	12.9	1.6	19.3	M25	KA422-55	KCA455-55
1x70	14.8	1.6	21.3	M25	KA422-55	KCA455-55
1x95	16.7	1.6	23.4	M25	KA422-55	KCA455-55
1x120	18.5	1.6	25.4	M25	KA422-55	KCA455-55
1x150	20.6	1.6	27.5	M32	KA422-56	KCA455-56
1x185	22.8	1.6	29.9	M32	KA422-56	KCA455-56
1x240	25.4	1.6	32.7	M32	KA422-56	KCA455-56
1x300	28.3	1.6	35.8	M40	KA422-57	KCA455-57
1x400	32.0	2.0	40.7	M50S	KA422-58	KCA455-58
1x500	35.6	2.0	44.5	M50S	KA422-58	KCA455-58
1x630	39.9	2.0	49.0	M50	KA422-59	KCA455-59
1x50cc	12.3	1.6	18.8	M25	KA422-55	KCA455-55
1x70cc	14.0	1.6	20.5	M25	KA422-55	KCA455-55
1x95cc	15.8	1.6	22.5	M25	KA422-55	KCA455-55
1x120cc	17.0	1.6	23.2	M25	KA422-55	KCA455-55
1x150cc	18.9	1.6	25.1	M25	KA422-55	KCA455-55
1x185cc	21.4	1.6	28.5	M32	KA422-56	KCA455-56
1x240cc	24.0	1.6	31.3	M32	KA422-56	KCA455-56
1x300cc	26.2	1.6	33.7	M40	KA422-57	KCA455-57
1x400cc	29.7	2.0	38.4	M40	KA422-57	KCA455-57
1x500cc	33.1	2.0	42.0	M50S	KA422-58	KCA455-58
1x630cc	37.3	2.0	46.4	M50	KA422-59	KCA455-59

cc – circular compacted conductor

CU/XLPE/PVC/SWA/PVC-FR 0.6/1 kV
Flame Retardant Power and Control Cables

prysmian E Path

GENERAL INFO

High resistant against outer mechanical reactions with introduction of galvanized steel wires. Suitable for heavy operating conditions, laying and installation. Used underground and under normal and salty water if specially produced. Increased safety with flameretardant PVC sheath material complying to IEC 60332-3.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Filler material	: Non-hygroscopic filler
Binder material	: Polyester tape
Inner sheath material	: Polyvinyl Chloride (PVC)
Armour material	: Aluminium Wires
Sheath material	: Flame Retardant Polyvinyl Chloride (PVC-FR)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Armour
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance
Low smoke halogen free

CORE IDENTIFICATION

2-cores	Brown, blue
3-cores	Brown, black, blue
4-cores	Brown, black, grey, blue
Multi-cores	Black with core numbering

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	No
Low smoke	No
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	12 x OD
Bending radius (fixed installed)	10 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
2x1.5	1.6	3.0	7.5	0.9	12.3	290	123	2000
2x2.5	2.0	3.4	8.3	0.9	13.2	334	132	2000
2x4	2.5	3.9	9.4	0.9	14.2	401	142	2000
2x6	3.1	4.5	10.5	0.9	15.4	484	154	2000
2x10	3.9	5.3	12.4	1.25	17.9	661	179	1800
2x16	5.0	6.4	14.5	1.25	20.1	842	201	1800
2x25	6.3	8.1	18.0	1.6	24.2	1269	242	1800
2x35	7.4	9.2	20.3	1.6	26.4	1522	264	2300
2x50	8.7	10.7	23.4	1.6	29.5	1885	295	1200
2x70	10.5	12.7	27.4	1.6	33.8	2477	338	1700
2x95	12.4	14.6	31.8	2.0	39.2	3450	392	1200
2x120	13.9	16.3	35.2	2.0	42.9	4103	429	1000
2x150	15.6	18.4	39.5	2.0	47.4	4963	474	800
2x185	17.4	20.6	44.2	2.5	53.4	6309	534	600
2x240	19.8	23.2	49.5	2.5	59.1	7793	591	500
2x300	22.5	26.1	55.7	2.5	65.5	9506	655	400
2x400	25.4	29.4	62.2	2.5	72.6	11059	726	300
2x16cc	4.7	6.1	13.9	1.25	19.4	798	194	2000
2x25cc	6.0	7.8	17.1	1.6	23.3	1196	233	1800
2x35cc	7.0	8.8	19.4	1.6	25.5	1471	255	1800
2x50cc	8.0	10.0	22.4	1.6	28.5	1851	285	1400
2x70cc	9.8	12.0	25.8	1.6	32.2	2374	322	1400
2x95cc	11.5	13.7	29.8	2.0	37.2	3285	372	1200
2x120cc	12.8	15.2	33.1	2.0	40.7	3986	407	1000
2x150cc	14.3	17.1	36.9	2.0	44.7	4810	447	1000
2x185cc	16.0	19.2	41.5	2.5	50.7	6120	507	600
2x240cc	19.0	22.4	47.9	2.5	57.5	7622	575	500
2x300cc	20.4	24.0	51.5	2.5	61.3	9041	613	400
2x400cc	23.1	27.1	57.6	2.5	68.0	11009	680	300

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
2x1.5	12.1	15.43	2000	21	17
2x2.5	7.41	9.45	2000	35	27
2x4	4.61	5.88	2000	56	39
2x6	3.08	3.93	2000	84	55
2x10	1.83	2.33	2000	140	78
2x16	1.15	1.47	2000	224	111
2x25	0.727	0.927	2000	350	145
2x35	0.524	0.668	2000	490	186
2x50	0.387	0.493	2000	700	237
2x70	0.268	0.342	2000	980	290
2x95	0.193	0.246	2000	1330	339
2x120	0.153	0.196	2000	1680	392
2x150	0.124	0.159	2000	2100	443
2x185	0.0991	0.128	2000	2590	485
2x240	0.0754	0.098	2000	3360	569
2x300	0.0601	0.08	2000	4200	641
2x400	0.047	0.064	2000	5600	771
2x16cc	1.15	1.47	2000	224	115
2x25cc	0.727	0.927	2000	350	150
2x35cc	0.524	0.668	2000	490	192
2x50cc	0.387	0.493	2000	700	246
2x70cc	0.268	0.342	2000	980	304
2x95cc	0.193	0.246	2000	1330	358
2x120cc	0.153	0.196	2000	1680	413
2x150cc	0.124	0.159	2000	2100	470
2x185cc	0.0991	0.128	2000	2590	511
2x240cc	0.0754	0.098	2000	3360	584
2x300cc	0.0601	0.08	2000	4200	685
2x400cc	0.047	0.064	2000	5600	824

cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
3x1.5	1.6	3.0	8.0	0.9	12.8	315	128	2000
3x2.5	2.0	3.4	8.9	0.9	13.7	373	137	2000
3x4	2.5	3.9	10.0	0.9	14.8	453	148	2000
3x6	3.1	4.5	11.2	0.9	16.1	554	161	2000
3x10	3.9	5.3	13.2	1.25	18.8	788	188	1800
3x16	5.0	6.4	15.5	1.25	21.1	1027	211	1800
3x25	6.3	8.1	19.3	1.6	25.5	1563	255	1500
3x35sh	15.1	16.9	18.8	1.6	24.9	1777	249	2300
3x50sh	17.9	19.9	21.7	1.6	28.0	2244	280	2300
3x70sh	21.0	23.2	25.5	2.0	32.8	3207	328	1800
3x95sh	24.1	26.3	28.6	2.0	36.3	4092	363	1400
3x120sh	27.2	29.6	32.0	2.0	39.9	4985	399	1200
3x150sh	30.5	33.3	36.1	2.5	45.4	6392	454	800
3x185sh	33.9	37.1	40.0	2.5	49.4	7684	494	800
3x240sh	38.3	41.7	45.0	2.5	54.8	9633	548	600
3x300sh	42.7	46.3	49.5	2.5	59.7	11604	597	500
3x400sh	49.1	53.1	56.3	2.5	66.9	14459	669	300
3x16cc	4.7	6.1	14.9	1.25	20.4	988	204	1000
3x25cc	6.0	7.8	18.5	1.6	24.8	1499	248	1000
3x35cc	7.0	8.8	20.9	1.6	27.0	1834	270	1000
3x50cc	8.0	10.0	23.5	1.6	29.8	2334	298	1000
3x70cc	9.8	12.0	28.2	2.0	35.5	3334	355	1000
3x95cc	11.5	13.7	32.1	2.0	39.7	4259	397	1000
3x120cc	12.8	15.2	35.4	2.0	43.3	5143	433	1000
3x150cc	14.3	17.1	39.9	2.5	49.2	6651	492	800
3x185cc	16.0	19.2	44.5	2.5	53.9	7965	539	600
3x240cc	19.0	22.4	51.8	2.5	61.6	10009	616	500
3x300cc	20.4	24.0	55.2	2.5	65.4	12057	654	400
3x400cc	23.1	27.1	61.8	2.5	72.4	14694	724	300

sh – shaped conductor
cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
3x1.5	12.1	15.43	2000	31	24
3x2.5	7.41	9.45	2000	52	38
3x4	4.61	5.88	2000	84	57
3x6	3.08	3.93	2000	126	78
3x10	1.83	2.33	2000	210	112
3x16	1.15	1.47	2000	336	159
3x25	0.727	0.927	2000	525	206
3x35sh	0.524	0.668	2000	735	295
3x50sh	0.387	0.493	2000	1050	375
3x70sh	0.268	0.342	2000	1470	448
3x95sh	0.193	0.246	2000	1995	550
3x120sh	0.153	0.196	2000	2520	632
3x150sh	0.124	0.159	2000	3150	694
3x185sh	0.0991	0.128	2000	3885	786
3x240sh	0.0754	0.098	2000	5040	920
3x300sh	0.0601	0.08	2000	6300	1055
3x400sh	0.047	0.064	2000	8400	1256
3x16cc	1.15	1.47	2000	336	165
3x25cc	0.727	0.927	2000	525	212
3x35cc	0.524	0.668	2000	735	272
3x50cc	0.387	0.493	2000	1050	352
3x70cc	0.268	0.342	2000	1470	414
3x95cc	0.193	0.246	2000	1995	503
3x120cc	0.153	0.196	2000	2520	582
3x150cc	0.124	0.159	2000	3150	640
3x185cc	0.0991	0.128	2000	3885	721
3x240cc	0.0754	0.098	2000	5040	818
3x300cc	0.0601	0.08	2000	6300	963
3x400cc	0.047	0.064	2000	8400	1160

sh – shaped conductor
cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
4x1.5	1.6	3.0	8.7	0.9	13.5	353	135	2000
4x2.5	2.0	3.4	9.7	0.9	14.6	422	146	2000
4x4	2.5	3.9	11.0	0.9	15.8	523	158	2000
4x6	3.1	4.5	12.4	1.25	17.9	740	179	2000
4x10	3.9	5.3	14.6	1.25	20.1	918	201	1500
4x16	5.0	6.4	17.2	1.6	23.4	1364	234	1500
4x25	6.3	8.1	21.4	1.6	27.6	1898	276	1000
4x35sh	18.0	19.8	21.6	1.6	27.9	2220	279	2300
4x50sh	21.3	23.3	25.2	1.6	31.6	2827	316	2000
4x70sh	24.9	27.1	29.4	2.0	37.1	4054	371	1500
4x95sh	28.5	30.7	33.2	2.0	41.1	5219	411	1200
4x120sh	32.1	34.5	37.4	2.5	46.6	6758	466	800
4x150sh	36.0	38.8	41.7	2.5	51.1	8061	511	700
4x185sh	40.1	43.3	46.2	2.5	56.0	9758	560	600
4x240sh	45.3	48.7	52.0	2.5	62.1	12299	621	400
4x300sh	50.3	53.9	57.2	2.5	67.7	14896	677	300
4x400sh	57.8	61.8	65.5	3.15	77.9	19478	779	250
4x16cc	4.7	6.1	16.4	1.6	22.7	1295	227	2000
4x25cc	6.0	7.8	20.3	1.6	26.5	1785	265	1800
4x35cc	7.0	8.8	23.1	1.6	29.4	2267	294	2000
4x50cc	8.0	10.0	26.6	1.6	33.1	2895	331	1800
4x70cc	9.8	12.0	31.1	2.0	38.8	4149	388	1200
4x95cc	11.5	13.7	35.6	2.0	43.5	5261	435	1000
4x120cc	12.8	15.2	39.8	2.5	49.0	6850	490	800
4x150cc	14.3	17.1	44.4	2.5	53.8	8213	538	600
4x185cc	16.0	19.2	49.5	2.5	59.3	9995	593	500
4x240cc	19.0	22.4	57.6	2.5	67.8	12744	678	300
4x300cc	20.4	24.0	61.4	2.5	72.0	15142	720	300
4x400cc	23.1	27.1	69.3	3.15	81.7	19550	817	250

sh – shaped conductor
cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. AC Conductor Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
4x1.5	12.1	15.43	2000	42	31
4x2.5	7.41	9.45	2000	70	48
4x4	4.61	5.88	2000	112	71
4x6	3.08	3.93	2000	168	94
4x10	1.83	2.33	2000	280	139
4x16	1.15	1.47	2000	448	191
4x25	0.727	0.927	2000	700	254
4x35sh	0.524	0.668	2000	980	351
4x50sh	0.387	0.493	2000	1400	443
4x70sh	0.268	0.342	2000	1960	528
4x95sh	0.193	0.246	2000	2660	647
4x120sh	0.153	0.196	2000	3360	721
4x150sh	0.124	0.159	2000	4200	822
4x185sh	0.0991	0.128	2000	5180	925
4x240sh	0.0754	0.098	2000	6720	1082
4x300sh	0.0601	0.08	2000	8400	1241
4x400sh	0.047	0.064	2000	11200	1438
4x16cc	1.15	1.47	2000	448	197
4x25cc	0.727	0.927	2000	700	264
4x35cc	0.524	0.668	2000	980	333
4x50cc	0.387	0.493	2000	1400	423
4x70cc	0.268	0.342	2000	1960	505
4x95cc	0.193	0.246	2000	2660	611
4x120cc	0.153	0.196	2000	3360	686
4x150cc	0.124	0.159	2000	4200	781
4x185cc	0.0991	0.128	2000	5180	874
4x240cc	0.0754	0.098	2000	6720	991
4x300cc	0.0601	0.08	2000	8400	1167
4x400cc	0.047	0.064	2000	11200	1371

sh – shaped conductor
cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
5x1.5	1.6	3.0	9.7	0.9	14.5	378	145	2000
6x1.5	1.6	3.0	10.5	0.9	15.4	410	154	2000
7x1.5	1.6	3.0	10.5	0.9	15.4	437	154	2000
12x1.5	1.6	3.0	13.9	1.25	19.4	718	194	2000
19x1.5	1.6	3.0	16.3	1.25	21.9	917	219	2000
21x1.5	1.6	3.0	17.5	1.6	23.5	1109	235	1800
27x1.5	1.6	3.0	19.7	1.6	25.9	1305	259	1600
30x1.5	1.6	3.0	20.4	1.6	26.6	1381	266	1600
37x1.5	1.6	3.0	22.1	1.6	28.3	1573	283	1500
40x1.5	1.6	3.0	23.1	1.6	29.5	1685	295	1400
48x1.5	1.6	3.0	25.5	1.6	31.9	1923	319	1200
5x2.5	2.0	3.4	10.8	0.9	15.6	457	156	2000
6x2.5	2.0	3.4	11.8	1.25	17.3	595	173	1800
7x2.5	2.0	3.4	11.8	1.25	17.3	616	173	2000
12x2.5	2.0	3.4	15.6	1.25	21.2	887	212	2000
19x2.5	2.0	3.4	18.4	1.6	24.6	1286	246	1800
21x2.5	2.0	3.4	19.6	1.6	25.7	1381	257	1600
27x2.5	2.0	3.4	22.2	1.6	28.5	1646	285	1400
30x2.5	2.0	3.4	23.1	1.6	29.5	1780	295	1300
37x2.5	2.0	3.4	25.1	1.6	31.5	2041	315	1100
40x2.5	2.0	3.4	26.2	1.6	32.8	2184	328	1000
48x2.5	2.0	3.4	29.3	2.0	36.9	2791	369	800
5x4	2.5	3.9	12.2	1.25	17.8	655	178	2000
6x4	2.5	3.9	13.4	1.25	18.9	752	189	2000
7x4	2.5	3.9	13.4	1.25	18.9	777	189	2000
12x4	2.5	3.9	17.8	1.6	24.1	1255	241	1800
19x4	2.5	3.9	21.1	1.6	27.3	1663	273	1400
21x4	2.5	3.9	22.3	1.6	28.6	1895	286	1200
27x4	2.5	3.9	25.5	1.6	31.9	2195	319	1000
30x4	2.5	3.9	26.5	1.6	33.1	2378	331	1000
37x4	2.5	3.9	29.2	2.0	36.8	3038	368	700
40x4	2.5	3.9	33.6	2.0	38.1	3239	381	700
48x4	2.5	3.9	33.6	2.0	41.4	3744	414	600

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
5x1.5	12.1	15.43	2000	52	36
6x1.5	12.1	15.43	2000	63	41
7x1.5	12.1	15.43	2000	73	47
12x1.5	12.1	15.43	2000	126	65
19x1.5	12.1	15.43	2000	199	91
21x1.5	12.1	15.43	2000	220	94
27x1.5	12.1	15.43	2000	283	109
30x1.5	12.1	15.43	2000	315	118
37x1.5	12.1	15.43	2000	388	137
40x1.5	12.1	15.43	2000	420	142
48x1.5	12.1	15.43	2000	504	158
5x2.5	7.41	9.45	2000	87	56
6x2.5	7.41	9.45	2000	105	61
7x2.5	7.41	9.45	2000	122	71
12x2.5	7.41	9.45	2000	210	99
19x2.5	7.41	9.45	2000	332	135
21x2.5	7.41	9.45	2000	367	143
27x2.5	7.41	9.45	2000	472	166
30x2.5	7.41	9.45	2000	525	178
37x2.5	7.41	9.45	2000	647	205
40x2.5	7.41	9.45	2000	700	213
48x2.5	7.41	9.45	2000	840	228
5x4	4.61	5.88	2000	140	79
6x4	4.61	5.88	2000	168	89
7x4	4.61	5.88	2000	196	104
12x4	4.61	5.88	2000	336	139
19x4	4.61	5.88	2000	532	195
21x4	4.61	5.88	2000	588	205
27x4	4.61	5.88	2000	756	237
30x4	4.61	5.88	2000	840	254
37x4	4.61	5.88	2000	1036	282
40x4	4.61	5.88	2000	1120	294
48x4	4.61	5.88	2000	1344	325

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
2x1.5	7.5	0.9	12.3	M16	KAA413-51	KCA472-51
2x2.5	8.3	0.9	13.2	M20S	KAA413-52	KCA472-52
2x4	9.4	0.9	14.2	M20S	KAA413-52	KCA472-52
2x6	10.5	0.9	15.4	M20	KAA413-53	KCA472-53
2x10	12.4	1.25	17.9	M20	KAA413-53	KCA472-53
2x16	14.5	1.25	20.1	M20	KAA413-53	KCA472-53
2x25	18.0	1.6	24.2	M25	KAA413-55	KCA472-55
2x35	20.3	1.6	26.4	M25	KAA413-55	KCA472-55
2x50	23.4	1.6	29.5	M32	KAA413-56	KCA472-56
2x70	27.4	1.6	33.8	M40	KAA413-57	KCA472-57
2x95	31.8	2.0	39.2	M40	KAA413-57	KCA472-57
2x120	35.2	2.0	42.9	M50S	KAA413-58	KCA472-58
2x150	39.5	2.0	47.4	M50	KAA413-59	KCA472-59
2x185	44.2	2.5	53.4	M63S	KAA413-60	KCA472-60
2x240	49.5	2.5	59.1	M63	KAA413-61	KCA472-61
2x300	55.7	2.5	65.5	M75S	KAA413-62	KCA472-62
2x400	62.2	2.5	72.6	M75	KAA413-63	KCA472-63
2x16cc	13.9	1.25	19.4	M20	KAA413-53	KCA472-53
2x25cc	17.1	1.6	23.3	M25	KAA413-55	KCA472-55
2x35cc	19.4	1.6	25.5	M25	KAA413-55	KCA472-55
2x50cc	22.4	1.6	28.5	M32	KAA413-56	KCA472-56
2x70cc	25.8	1.6	32.3	M40	KAA413-57	KCA472-57
2x95cc	29.8	2.0	37.2	M40	KAA413-57	KCA472-57
2x120cc	33.1	2.0	40.7	M50S	KAA413-58	KCA472-58
2x150cc	36.9	2.0	44.7	M50S	KAA413-58	KCA472-58
2x185cc	41.5	2.5	50.7	M50	KAA413-59	KCA472-59
2x240cc	47.9	2.5	57.5	M63S	KAA413-60	KCA472-60
2x300cc	51.5	2.5	61.3	M63	KAA413-61	KCA472-61
2x400cc	57.6	2.5	68.0	M75S	KAA413-62	KCA472-62

cc – circular compacted conductor

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
3x1.5	8.0	0.9	12.8	M16	KAA413-51	KCA472-51
3x2.5	8.9	0.9	13.7	M20S	KAA413-52	KCA472-52
3x4	10.0	0.9	14.8	M20S	KAA413-52	KCA472-52
3x6	11.2	0.9	16.1	M20	KAA413-53	KCA472-53
3x10	13.2	1.25	18.8	M20	KAA413-53	KCA472-53
3x16	15.5	1.25	21.1	M25	KAA413-55	KCA472-55
3x25	19.3	1.6	25.5	M25	KAA413-55	KCA472-55
3x35sh	18.8	1.6	24.9	M25	KAA413-55	KCA472-55
3x50sh	21.7	1.6	28.0	M32	KAA413-56	KCA472-56
3x70sh	25.5	2.0	32.8	M32	KAA413-56	KCA472-56
3x95sh	28.6	2.0	36.3	M40	KAA413-57	KCA472-57
3x120sh	32.0	2.0	39.9	M40	KAA413-57	KCA472-57
3x150sh	36.1	2.5	45.4	M50S	KAA413-58	KCA472-58
3x185sh	40.0	2.5	49.4	M50	KAA413-59	KCA472-59
3x240sh	45.0	2.5	54.8	M63S	KAA413-60	KCA472-60
3x300sh	49.5	2.5	59.7	M63	KAA413-61	KCA472-61
3x400sh	56.3	2.5	66.9	M75	KAA413-63	KCA472-63
3x16cc	14.9	1.25	20.4	M25	KAA413-55	KCA472-55
3x25cc	18.5	1.6	24.8	M25	KAA413-55	KCA472-55
3x35cc	20.9	1.6	27.0	M32	KAA413-56	KCA472-56
3x50cc	23.5	1.6	29.8	M32	KAA413-56	KCA472-56
3x70cc	28.2	2.0	35.5	M40	KAA413-57	KCA472-57
3x95cc	32.1	2.0	39.7	M50S	KAA413-58	KCA472-58
3x120cc	35.4	2.0	43.3	M50S	KAA413-58	KCA472-58
3x150cc	39.9	2.5	49.2	M50	KAA413-59	KCA472-59
3x185cc	44.5	2.5	53.9	M63S	KAA413-60	KCA472-60
3x240cc	51.8	2.5	61.6	M63	KAA413-61	KCA472-61
3x300cc	55.2	2.5	65.4	M75S	KAA413-62	KCA472-62
3x400cc	61.8	2.5	72.4	M75	KAA413-63	KCA472-63

sh – shaped conductor
cc – circular compacted conductor

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
4x1.5	8.7	0.9	13.5	M20S	KAA413-52	KCA472-51
4x2.5	9.7	0.9	14.6	M20S	KAA413-52	KCA472-52
4x4	11.0	0.9	15.8	M20	KAA413-53	KCA472-52
4x6	12.4	1.25	17.9	M20	KAA413-53	KCA472-53
4x10	14.6	1.25	20.1	M25	KAA413-55	KCA472-53
4x16	17.2	1.6	23.4	M25	KAA413-55	KCA472-53
4x25	21.4	1.6	27.6	M32	KAA413-56	KCA472-55
4x35sh	21.6	1.6	27.9	M32	KAA413-56	KCA472-55
4x50sh	25.2	1.6	31.6	M32	KAA413-56	KCA472-56
4x70sh	29.4	2.0	37.1	M40	KAA413-57	KCA472-57
4x95sh	33.2	2.0	41.1	M50S	KAA413-58	KCA472-58
4x120sh	37.4	2.5	46.6	M50	KAA413-59	KCA472-59
4x150sh	41.7	2.5	51.1	M50	KAA413-59	KCA472-59
4x185sh	46.2	2.5	56.0	M63S	KAA413-60	KCA472-60
4x240sh	52.0	2.5	62.1	M63	KAA413-61	KCA472-61
4x300sh	57.2	2.5	67.7	M75S	KAA413-62	KCA472-62
4x400sh	65.5	3.15	77.9	M85	KAA413-64	KCA472-64
4x16cc	16.4	1.6	22.7	M25	KAA413-55	KCA472-55
4x25cc	20.3	1.6	26.5	M25	KAA413-55	KCA472-55
4x35cc	23.1	1.6	29.4	M32	KAA413-56	KCA472-56
4x50cc	26.6	1.6	33.1	M32	KAA413-56	KCA472-56
4x70cc	31.1	2.0	38.8	M40	KAA413-57	KCA472-57
4x95cc	35.6	2.0	43.5	M50S	KAA413-58	KCA472-58
4x120cc	39.8	2.5	49.0	M50	KAA413-59	KCA472-59
4x150cc	44.4	2.5	53.8	M63S	KAA413-60	KCA472-60
4x185cc	49.5	2.5	59.3	M63	KAA413-61	KCA472-61
4x240cc	57.6	2.5	67.8	M75S	KAA413-62	KCA472-62
4x300cc	61.4	2.5	72.0	M75	KAA413-63	KCA472-63
4x400cc	69.3	3.15	81.7	M85	KAA413-64	KCA472-64

sh – shaped conductor
cc – circular compacted conductor

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
5x1.5	9.7	0.9	14.5	M20S	KAA413-52	KCA472-52
6x1.5	10.5	0.9	15.4	M20	KAA413-53	KCA472-53
7x1.5	10.5	0.9	15.4	M20	KAA413-53	KCA472-53
12x1.5	13.9	1.25	19.4	M20	KAA413-53	KCA472-53
19x1.5	16.3	1.25	21.9	M25	KAA413-55	KCA472-55
21x1.5	17.5	1.6	23.5	M25	KAA413-55	KCA472-55
27x1.5	19.7	1.6	25.9	M25	KAA413-55	KCA472-55
30x1.5	20.4	1.6	26.6	M32	KAA413-56	KCA472-56
37x1.5	22.1	1.6	28.3	M32	KAA413-56	KCA472-56
40x1.5	23.1	1.6	29.5	M32	KAA413-56	KCA472-56
48x1.5	25.5	1.6	31.9	M32	KAA413-56	KCA472-56
5x2.5	10.8	0.9	15.6	M20	KAA413-53	KCA472-53
6x2.5	11.8	1.25	17.3	M20	KAA413-53	KCA472-53
7x2.5	11.8	1.25	17.3	M20	KAA413-53	KCA472-53
12x2.5	15.6	1.25	21.2	M25	KAA413-55	KCA472-55
19x2.5	18.4	1.6	24.6	M25	KAA413-55	KCA472-55
21x2.5	19.6	1.6	25.7	M25	KAA413-55	KCA472-55
27x2.5	22.2	1.6	28.5	M32	KAA413-56	KCA472-56
30x2.5	23.1	1.6	29.5	M32	KAA413-56	KCA472-56
37x2.5	25.1	1.6	31.5	M32	KAA413-56	KCA472-56
40x2.5	26.2	1.6	32.8	M32	KAA413-56	KCA472-56
48x2.5	29.3	2.0	36.9	M40	KAA413-57	KCA472-57
5x4	12.2	1.25	17.8	M20	KAA413-53	KCA472-53
6x4	13.4	1.25	18.9	M20	KAA413-53	KCA472-53
7x4	13.4	1.25	18.9	M20	KAA413-53	KCA472-53
12x4	17.8	1.6	24.1	M25	KAA413-55	KCA472-55
19x4	21.1	1.6	27.3	M32	KAA413-56	KCA472-56
21x4	22.3	1.6	28.6	M32	KAA413-56	KCA472-56
27x4	25.5	1.6	31.9	M32	KAA413-56	KCA472-56
30x4	26.5	1.6	33.1	M40	KAA413-57	KCA472-57
37x4	29.2	2.0	36.8	M40	KAA413-57	KCA472-57
40x4	30.4	2.0	38.1	M40	KAA413-57	KCA472-57
48x4	33.6	2.0	41.4	M50S	KAA413-58	KCA472-58

LOW SMOKE HALOGEN FREE (LSHF) CABLES

CU/LSHF 450/750 V, 600/1000 V
Flame Retardant, Low Smoke Halogen Free Lighting and Earthing Cables

GENERAL INFO

Used in covered, dry places, in fixed plants, in distribution panels, on and under plaster as laid in conduit or on insulating support. When this cable is used in fixed installations with mechanically protected switchgear and control panels, the rated voltage is 600/1000 V. Increased flame-retardant properties to IEC 60332-3. Low smoke and halogen free cables compliance to IEC 61034-2, IEC 60754-1, IEC 60754-2 and IEC 60684-2

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Low Smoke Halogen Free

STANDARDS APPLIED

BSEN 50525-2-31, SS 358-3	Construction
IEC 60228 Class 2	Conductors
BSEN 50525-2-31	Insulation
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)
IEC 61034-2	Low smoke emission properties
IEC 60754-1, IEC 60754-2, IEC 60684-2	Halogen free content properties

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance

CORE IDENTIFICATION

1-core	Green/Yellow

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	450, 600
Nominal voltage U [V]	750, 1000
Test voltage [kV / min]	2.5 kV for 5mins [for 450/750V], 3.5 kV for 5mins [for 600/1000V]
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	Yes
Low smoke	Yes
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	8 x OD
Bending radius (fixed installed)	6 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1x1.5	1.5	0.7	2.9	23	17	3000
1x2.5	1.9	0.8	3.5	34	21	3000
1x4	2.4	0.8	4.0	51	24	3000
1x6	3.0	0.8	4.6	71	28	3000
1x10	3.9	1.0	5.9	116	35	3000
1x16	5.0	1.0	7.0	177	42	3000
1x25	6.3	1.2	8.7	278	52	3000
1x35	7.3	1.2	9.7	361	58	3000
1x50	8.7	1.4	11.5	488	69	3000
1x70	10.4	1.4	13.2	679	79	3000
1x95	12.3	1.6	15.5	937	93	3000
1x120	13.8	1.6	17.0	1161	102	3000
1x150	15.5	1.8	19.1	1447	115	3000
1x185	17.3	2.0	21.3	1778	128	1900
1x240	19.7	2.2	24.1	2352	145	1400
1x300	22.4	2.4	27.2	2958	163	1100
1x400	25.3	2.6	30.5	3746	183	900
1x500	28.6	2.8	34.2	4739	205	700
1x630	32.4	2.8	38.0	5941	228	500
1x16cc	4.7	1.0	6.8	168	41	3000
1x25cc	5.9	1.2	8.3	262	50	3000
1x35cc	6.9	1.2	9.3	354	56	2000
1x50cc	7.9	1.4	10.7	486	64	2000
1x70cc	9.7	1.4	12.5	672	75	2000
1x95cc	11.4	1.6	14.6	909	88	2000
1x120cc	12.7	1.6	15.9	1142	95	2000
1x150cc	14.2	1.8	17.8	1411	107	2000
1x185cc	15.9	2.0	19.9	1764	119	2000
1x240cc	18.9	2.2	23.3	2321	140	1500
1x300cc	20.3	2.4	25.1	2852	151	1200
1x400cc	23.0	2.6	28.2	3631	169	900
1x500cc	26.0	2.8	31.6	4618	190	700
1x630cc	29.8	2.8	35.4	5912	212	500

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 70ºC (Ω/km)	Min. Insulation Resistance at 70ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1x1.5	12.1	15.428	0.01	11	60
1x2.5	7.41	9.448	0.009	18	83
1x4	4.61	5.878.	0.0077	28	117
1x6	3.08	3.927	0.0065	42	152
1x10	1.83	2.333	0.0065	70	198
1x16	1.15	1.466	0.005	112	267
1x25	0.727	0.927	0.005	175	335
1x35	0.524	0.668	0.0043	245	421
1x50	0.387	0.493	0.0043	350	507
1x70	0.268	0.342	0.0035	490	619
1x95	0.193	0.246	0.0035	665	715
1x120	0.153	0.195	0.0032	840	824
1x150	0.124	0.159	0.0032	1050	916
1x185	0.0991	0.127	0.0032	1295	1013
1x240	0.0754	0.097	0.0032	1680	1162
1x300	0.0601	0.078	0.003	2100	1287
1x400	0.0470	0.061	0.0028	2800	1530
1x500	0.0366	0.048	0.0028	3500	1706
1x630	0.0283	0.038	0.0025	4410	1934
1x16cc	1.15	1.466	0.005	112	273
1x25cc	0.727	0.927	0.005	175	360
1x35cc	0.524	0.668	0.0043	245	439
1x50cc	0.387	0.493	0.0043	350	545
1x70cc	0.268	0.342	0.0035	490	653
1x95cc	0.193	0.246	0.0035	665	759
1x120cc	0.153	0.195	0.0032	840	881
1x150cc	0.124	0.159	0.0032	1050	983
1x185cc	0.0991	0.127	0.0032	1295	1085
1x240cc	0.0754	0.097	0.0032	1680	1202
1x300cc	0.0601	0.078	0.003	2100	1394
1x400cc	0.0470	0.061	0.0028	2800	1655
1x500cc	0.0366	0.048	0.0028	3500	1846
1x630cc	0.0283	0.038	0.0025	4410	2076

cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1x1.5	2.9	-	-	-
1x2.5	3.5	-	-	-
1x4	4.0	M16	KM409-51	KM494-51
1x6	4.6	M16	KM409-51	KM494-51
1x10	5.9	M16	KM409-51	KM494-51
1x16	7.0	M16	KM409-51	KM494-51
1x25	8.7	M20S	KM409-52	KM494-52
1x35	9.7	M20S	KM409-52	KM494-52
1x50	11.5	M20	KM409-53	KM494-53
1x70	13.2	M20	KM409-53	KM494-53
1x95	15.5	M25	KM409-55	KM494-55
1x120	17.0	M25	KM409-55	KM494-55
1x150	19.1	M25	KM409-55	KM494-55
1x185	21.3	M32	KM409-56	KM494-56
1x240	24.1	M32	KM409-56	KM494-56
1x300	27.2	M40	KM409-57	KM494-57
1x400	30.5	M40	KM409-57	KM494-57
1x500	34.2	M50S / M50	KM409-58	KM494-59
1x630	38.0	M50	KM409-59	KM494-59
1x16cc	6.8	M16	KM409-51	KM494-51
1x25cc	8.3	M16	KM409-51	KM494-51
1x35cc	9.3	M20S	KM409-52	KM494-52
1x50cc	10.7	M20S	KM409-52	KM494-52
1x70cc	12.5	M20	KM409-53	KM494-53
1x95cc	14.6	M25	KM409-55	KM494-55
1x120cc	15.9	M25	KM409-55	KM494-55
1x150cc	17.8	M25	KM409-55	KM494-55
1x185cc	19.9	M32	KM409-56	KM494-56
1x240cc	23.3	M32	KM409-56	KM494-56
1x300cc	25.1	M32	KM409-56	KM494-56
1x400cc	28.2	M40	KM409-57	KM494-57
1x500cc	31.6	M40	KM409-57	KM494-57
1x630cc	35.4	M50S / M50	KM409-58	KM494-59

cc – circular compacted conductor

CU/XLPE/LSHF 0.6/1 kV
Flame Retardant, Low Smoke Halogen Free Power Cables

E Path

GENERAL INFO

Used as energy, utility and lighting cables, for indoor installations, in cable ducts, underground in normal and salty water if specially produced. Increased safety with flame retardant, low smoke and halogen free properties.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Sheath material	: Low Smoke Halogen Free (LSHF)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)
IEC 61034-2	Low smoke emission properties
IEC 60754-1, IEC 60754-2, IEC 60684-2	Halogen free content properties

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance

CORE IDENTIFICATION

1-core	Natural

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	Yes
Low smoke	Yes
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	10 x OD
Bending radius (fixed installed)	8 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1x1.5	1.6	3.0	5.8	48	46	3000
1x2.5	2.0	3.4	6.2	60	50	2000
1x4	2.5	3.9	6.8	79	54	1000
1x6	3.1	4.5	7.3	102	58	1000
1x10	3.9	5.3	8.2	144	66	3000
1x16	5.0	6.4	9.3	208	74	3000
1x25	6.3	8.1	11.0	313	88	1000
1x35	7.4	9.2	12.2	399	98	1000
1x50	8.7	10.7	13.7	525	110	1000
1x70	10.5	12.7	15.7	723	126	3000
1x95	12.4	14.6	17.8	978	142	2800
1x120	13.9	16.3	19.5	1215	156	1000
1x150	15.6	18.4	21.9	1509	175	2800
1x185	17.4	20.6	24.0	1836	192	2800
1x240	19.8	23.2	26.8	2412	214	2500
1x300	22.5	26.1	29.9	3017	239	1000
1x400	25.4	29.4	33.4	3813	267	1000
1x500	28.6	33.0	37.3	4813	298	800
1x630	32.5	37.3	41.9	6109	335	550
1x16cc	4.7	6.1	8.9	199	71	2000
1x25cc	6.0	7.8	10.6	297	85	2000
1x35cc	7.0	8.8	11.8	393	94	2000
1x50cc	8.0	10.0	13.0	512	104	2000
1x70cc	9.8	12.0	15.0	715	120	1000
1x95cc	11.5	13.7	16.9	955	135	1000
1x120cc	12.8	15.2	18.4	1201	147	1000
1x150cc	14.3	17.1	20.5	1479	164	1000
1x185cc	16.0	19.2	22.6	1830	181	2000
1x240cc	19.0	22.4	26.0	2354	208	800
1x300cc	20.4	24.0	27.8	2922	222	1000
1x400cc	23.1	27.1	31.1	3694	249	1000
1x500cc	26.1	30.5	34.7	4710	278	1000
1x630cc	29.9	34.7	39.3	6014	314	550

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1x1.5	12.1	15.428	2000	11	23
1x2.5	7.41	9.448	2000	18	35
1x4	4.61	5.878	2000	28	51
1x6	3.08	3.927	2000	42	72
1x10	1.83	2.333	2000	70	107
1x16	1.15	1.466	2000	112	151
1x25	0.727	0.927	2000	175	199
1x35	0.524	0.668	2000	245	251
1x50	0.387	0.493	2000	350	319
1x70	0.268	0.342	2000	490	390
1x95	0.193	0.246	2000	665	467
1x120	0.153	0.195	2000	840	538
1x150	0.124	0.159	2000	1050	599
1x185	0.0991	0.127	2000	1295	674
1x240	0.0754	0.097	2000	1680	784
1x300	0.0601	0.078	2000	2100	878
1x400	0.047	0.061	2000	2800	1048
1x500	0.0366	0.048	2000	3500	1173
1x630	0.0283	0.038	2000	4410	1316
1x16cc	1.15	1.466	2000	199	279
1x25cc	0.727	0.927	2000	175	206
1x35cc	0.524	0.668	2000	245	260
1x50cc	0.387	0.493	2000	350	337
1x70cc	0.268	0.342	2000	490	408
1x95cc	0.193	0.246	2000	665	492
1x120cc	0.153	0.195	2000	840	571
1x150cc	0.124	0.159	2000	1050	640
1x185cc	0.0991	0.127	2000	1295	716
1x240cc	0.0754	0.097	2000	1680	808
1x300cc	0.0601	0.078	2000	2100	944
1x400cc	0.047	0.061	2000	2800	1125
1x500cc	0.0366	0.048	2000	3500	1261
1x630cc	0.0283	0.038	2000	4410	1403

cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1x1.5	5.8	M16	KM409-51	KM494-51
1x2.5	6.2	M16	KM409-51	KM494-51
1x4	6.8	M16	KM409-51	KM494-51
1x6	7.3	M16	KM409-51	KM494-51
1x10	8.2	M20SS	KM409-71	KM494-71
1x16	9.3	M20S	KM409-52	KM494-52
1x25	11.0	M20S	KM409-52	KM494-52
1x35	12.2	M20	KM409-53	KM494-53
1x50	13.7	M25	KM409-55	KM494-55
1x70	15.7	M25	KM409-55	KM494-55
1x95	17.8	M25	KM409-55	KM494-55
1x120	19.5	M32	KM409-56	KM494-56
1x150	21.9	M32	KM409-56	KM494-56
1x185	24.0	M32	KM409-56	KM494-56
1x240	26.8	M40	KM409-57	KM494-57
1x300	29.9	M40	KM409-57	KM494-57
1x400	33.4	M50S / M50	KM409-58	KM494-59
1x500	37.3	M50	KM409-59	KM494-59
1x630	41.9	M50 / M63	KM409-59	KM494-61
1x16cc	8.9	M20S	KM409-52	KM494-52
1x25cc	10.6	M20S	KM409-52	KM494-52
1x35cc	11.8	M20	KM409-53	KM494-53
1x50cc	13.0	M20	KM409-53	KM494-53
1x70cc	15.0	M25	KM409-55	KM494-55
1x95cc	16.9	M25	KM409-55	KM494-55
1x120cc	18.4	M25	KM409-55	KM494-55
1x150cc	20.5	M32	KM409-56	KM494-56
1x185cc	22.6	M32	KM409-56	KM494-56
1x240cc	26.0	M40	KM409-57	KM494-57
1x300cc	27.8	M40	KM409-57	KM494-57
1x400cc	31.1	M40	KM409-57	KM494-57
1x500cc	34.7	M50S / M50	KM409-58	KM494-59
1x630cc	39.3	M50	KM409-59	KM494-59

cc – circular compacted conductor

CU/XLPE/LSHF 0.6/1 kV
Flame Retardant, Low Smoke Halogen Free Power and Control Cables

E Path

GENERAL INFO

Used as energy, utility and lighting cables, for indoor installations, in cable ducts, underground in normal and salty water if specially produced. Increased safety with flame retardant, low smoke and halogen free properties.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Filler material	: Non-hygroscopic filler
Binder material	: Polyester tape
Sheath material	: Low Smoke Halogen Free (LSHF)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)
IEC 61034-2	Low smoke emission properties
IEC 60754-1, IEC 60754-2, IEC 60684-2	Halogen free content properties

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance

CORE IDENTIFICATION

2-cores	Brown, blue
3-cores	Brown, black, blue
4-cores	Brown, black, grey, blue
Multi-cores	Black with core numbering

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	Yes
Low smoke	Yes
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	10 x OD
Bending radius (fixed installed)	8 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
2x1.5	1.6	3.0	8.9	110	71	2000
2x2.5	2.0	3.4	9.7	141	78	2000
2x4	2.5	3.9	10.8	187	86	2000
2x6	3.1	4.5	11.9	245	95	2000
2x10	3.9	5.3	13.8	301	110	1500
2x16	5.0	6.4	15.9	436	127	1500
2x25	6.3	8.1	19.4	657	155	1500
2x35	7.4	9.2	21.6	851	173	2300
2x50	8.7	10.7	24.7	1125	198	2300
2x70	10.5	12.7	28.6	1566	229	2300
2x95	12.4	14.6	33.0	2151	264	1800
2x120	13.9	16.3	36.7	2661	294	1500
2x150	15.6	18.4	41.1	3371	329	1200
2x185	17.4	20.6	45.6	4059	365	1000
2x240	19.8	23.2	51.3	5307	410	800
2x300	22.5	26.1	57.5	6677	460	500
2x400	25.4	29.4	64.4	7873	515	400
2x16cc	4.7	6.1	15.3	420	122	1500
2x25cc	5.9	7.7	18.5	628	148	1500
2x35cc	6.9	8.7	20.7	833	166	1000
2x50cc	8.2	10.2	23.6	1126	189	1000
2x70cc	9.7	11.9	27.0	1532	216	1000
2x95cc	11.5	13.7	31.0	2076	248	1000
2x120cc	12.8	15.2	34.5	2629	276	1000
2x150cc	14.3	17.1	38.5	3306	308	1000
2x185cc	16.0	19.2	42.9	4042	343	1000
2x240cc	19.0	22.4	49.7	5262	398	800
2x300cc	20.4	24.0	53.3	6474	426	700
2x400cc	23.1	27.1	59.8	8128	478	500

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
2x1.5	12.1	15.43	2000	21	29
2x2.5	7.41	9.45	2000	35	45
2x4	4.61	5.88	2000	56	65
2x6	3.08	3.93	2000	84	88
2x10	1.83	2.33	2000	140	127
2x16	1.15	1.47	2000	224	176
2x25	0.727	0.927	2000	350	226
2x35	0.524	0.668	2000	490	284
2x50	0.387	0.493	2000	700	354
2x70	0.268	0.342	2000	980	428
2x95	0.193	0.246	2000	1330	504
2x120	0.153	0.196	2000	1680	572
2x150	0.124	0.159	2000	2100	639
2x185	0.0991	0.128	2000	2590	710
2x240	0.0754	0.098	2000	3360	819
2x300	0.0601	0.08	2000	4200	913
2x400	0.047	0.064	2000	5600	1087
2x16cc	1.15	1.47	2000	224	183
2x25cc	0.727	0.927	2000	350	236
2x35cc	0.524	0.668	2000	490	296
2x50cc	0.387	0.493	2000	700	371
2x70cc	0.268	0.342	2000	980	454
2x95cc	0.193	0.246	2000	1330	536
2x120cc	0.153	0.196	2000	1680	609
2x150cc	0.124	0.159	2000	2100	682
2x185cc	0.0991	0.128	2000	2590	755
2x240cc	0.0754	0.098	2000	3360	845
2x300cc	0.0601	0.08	2000	4200	985
2x400cc	0.047	0.064	2000	5600	1171

cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
3x1.5	1.6	3.0	9.3	129	74	2000
3x2.5	2.0	3.4	10.3	168	82	2000
3x4	2.5	3.9	11.4	229	91	2000
3x6	3.1	4.5	12.6	304	101	2000
3x10	3.9	5.3	14.6	406	117	2000
3x16	5.0	6.4	16.9	597	135	2000
3x25	6.3	8.1	20.7	915	166	2000
3x35sh	15.1	16.9	20.0	1133	160	2300
3x50sh	17.9	19.9	23.0	1499	184	2300
3x70sh	21.0	23.2	26.6	2127	213	2300
3x95sh	24.1	26.3	29.9	2879	239	1800
3x120sh	27.2	29.6	33.5	3620	268	1600
3x150sh	30.5	33.3	37.6	4476	301	1400
3x185sh	33.9	37.1	41.6	5580	333	1100
3x240sh	38.3	41.7	46.6	7246	373	800
3x300sh	42.7	46.3	51.5	9017	412	700
3x400sh	49.1	53.1	58.9	11526	471	400
3x16cc	4.7	6.1	16.3	571	130	2000
3x25cc	6.0	7.8	19.9	869	159	1800
3x35cc	6.9	8.7	22.0	1155	176	2300
3x50cc	8.2	10.2	25.2	1584	202	2000
3x70cc	9.7	11.9	29.1	2177	233	1800
3x95cc	11.5	13.7	33.3	2921	266	1600
3x120cc	12.8	15.2	36.9	3680	295	1500
3x150cc	14.3	17.1	41.4	4583	331	1200
3x185cc	16.0	19.2	46.1	5707	369	1000
3x240cc	19.0	22.4	53.4	7455	427	600
3x300cc	20.4	24.0	57.2	9239	458	500
3x400cc	23.1	27.1	64.4	11617	515	400

sh – shaped conductor
cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
3x1.5	12.1	15.43	2000	31	42
3x2.5	7.41	9.45	2000	52	63
3x4	4.61	5.88	2000	84	92
3x6	3.08	3.93	2000	126	125
3x10	1.83	2.33	2000	210	180
3x16	1.15	1.47	2000	336	249
3x25	0.727	0.927	2000	525	317
3x35sh	0.524	0.668	2000	735	459
3x50sh	0.387	0.493	2000	1050	571
3x70sh	0.268	0.342	2000	1470	691
3x95sh	0.193	0.246	2000	1995	834
3x120sh	0.153	0.196	2000	2520	940
3x150sh	0.124	0.159	2000	3150	1047
3x185sh	0.0991	0.128	2000	3885	1167
3x240sh	0.0754	0.098	2000	5040	1352
3x300sh	0.0601	0.08	2000	6300	1529
3x400sh	0.047	0.064	2000	8400	1783
3x16cc	1.15	1.47	2000	336	258
3x25cc	0.727	0.927	2000	525	330
3x35cc	0.524	0.668	2000	735	418
3x50cc	0.387	0.493	2000	1050	521
3x70cc	0.268	0.342	2000	1470	631
3x95cc	0.193	0.246	2000	1995	749
3x120cc	0.153	0.196	2000	2520	854
3x150cc	0.124	0.159	2000	3150	951
3x185cc	0.0991	0.128	2000	3885	1053
3x240cc	0.0754	0.098	2000	5040	1180
3x300cc	0.0601	0.08	2000	6300	1377
3x400cc	0.047	0.064	2000	8400	1630

sh – shaped conductor
cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
4x1.5	1.6	3.0	10.1	155	81	2000
4x2.5	2.0	3.4	11.1	204	89	2000
4x4	2.5	3.9	12.4	280	99	2000
4x6	3.1	4.5	13.8	376	110	2000
4x10	3.9	5.3	16.0	512	128	1500
4x16	5.0	6.4	18.6	771	149	1500
4x25	6.3	8.1	22.8	1180	182	1000
4x35sh	18.0	19.8	22.9	1502	183	2300
4x50sh	21.3	23.3	26.6	1999	213	2300
4x70sh	24.9	27.1	30.7	2831	246	2000
4x95sh	28.5	30.7	34.7	3843	278	1600
4x120sh	32.1	34.5	38.8	4823	310	1300
4x150sh	36.0	38.8	43.3	5937	346	1000
4x185sh	40.1	43.3	48.2	7407	386	800
4x240sh	45.3	48.7	54.0	9622	432	600
4x300sh	50.3	53.9	59.6	11980	477	500
4x400sh	57.8	61.8	68.1	15301	545	300
4x16cc	4.7	6.1	17.8	736	142	900
4x25cc	6.0	7.8	22.0	1120	176	900
4x35cc	6.9	8.7	24.4	1512	195	2300
4x50cc	8.2	10.2	28.1	2030	225	2000
4x70cc	9.7	11.9	32.4	2887	259	1800
4x95cc	11.5	13.7	37.1	3822	297	1500
4x120cc	12.8	15.2	41.2	4860	330	1200
4x150cc	14.3	17.1	46.0	5994	368	1000
4x185cc	16.0	19.2	51.5	7545	412	800
4x240cc	19.0	22.4	59.6	9870	477	500
4x300cc	20.4	24.0	63.8	12077	510	400
4x400cc	23.1	27.1	71.8	15218	574	300

sh – shaped conductor
cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 90ºC (ohm/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
4x1.5	12.1	15.43	2000	42	52
4x2.5	7.41	9.45	2000	70	79
4x4	4.61	5.88	2000	112	113
4x6	3.08	3.93	2000	168	152
4x10	1.83	2.33	2000	280	219
4x16	1.15	1.47	2000	448	301
4x25	0.727	0.927	2000	700	384
4x35	0.524	0.668	2000	980	535
4x50	0.387	0.493	2000	1400	658
4x70	0.268	0.342	2000	1960	798
4x95	0.193	0.246	2000	2660	958
4x120	0.153	0.196	2000	3360	1082
4x150	0.124	0.159	2000	4200	1212
4x185	0.0991	0.128	2000	5180	1343
4x240	0.0754	0.098	2000	6720	1556
4x300	0.0601	0.08	2000	8400	1762
4x400	0.047	0.064	2000	11200	2056
4x16cc	1.15	1.47	2000	448	315
4x25cc	0.727	0.927	2000	700	398
4x35cc	0.524	0.668	2000	980	502
4x50cc	0.387	0.493	2000	1400	623
4x70cc	0.268	0.342	2000	1960	756
4x95cc	0.193	0.246	2000	2660	896
4x120cc	0.153	0.196	2000	3360	1019
4x150cc	0.124	0.159	2000	4200	1141
4x185cc	0.0991	0.128	2000	5180	1257
4x240cc	0.0754	0.098	2000	6720	1409
4x300cc	0.0601	0.08	2000	8400	1646
4x400cc	0.047	0.064	2000	11200	1950

sh – shaped conductor
cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
5x1.5	1.6	3.0	11.1	163	89	2000
6x1.5	1.6	3.0	11.9	192	95	2000
7x1.5	1.6	3.0	11.9	204	95	2000
12x1.5	1.6	3.0	15.3	324	122	1800
19x1.5	1.6	3.0	17.7	466	142	1600
21x1.5	1.6	3.0	18.7	510	150	1500
27x1.5	1.6	3.0	21.1	640	169	1500
30x1.5	1.6	3.0	21.8	698	174	1500
37x1.5	1.6	3.0	23.5	837	188	1500
40x1.5	1.6	3.0	24.5	900	196	1500
48x1.5	1.6	3.0	26.9	1066	215	1000
5x2.5	2.0	3.4	12.2	218	98	2000
6x2.5	2.0	3.4	13.2	258	106	1500
7x2.5	2.0	3.4	13.2	278	106	1500
12x2.5	2.0	3.4	17.0	448	136	1500
19x2.5	2.0	3.4	19.8	657	158	1500
21x2.5	2.0	3.4	20.9	721	167	1500
27x2.5	2.0	3.4	23.6	909	189	1500
30x2.5	2.0	3.4	24.5	995	196	1500
37x2.5	2.0	3.4	26.5	1201	212	1500
40x2.5	2.0	3.4	27.8	1305	222	1500
48x2.5	2.0	3.4	30.5	1549	244	1000
5x4	2.5	3.9	13.6	306	109	2000
6x4	2.5	3.9	14.8	395	118	1500
7x4	2.5	3.9	14.8	624	118	1500
12x4	2.5	3.9	19.2	644	154	1500
19x4	2.5	3.9	22.5	961	180	1500
21x4	2.5	3.9	23.7	1057	190	1500
27x4	2.5	3.9	26.9	1338	215	1500
30x4	2.5	3.9	28.1	1483	225	1500
37x4	2.5	3.9	30.4	1797	243	1300
40x4	2.5	3.9	31.8	1950	254	1200
48x4	2.5	3.9	35.2	2335	282	1000

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. Conductor AC Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
5x1.5	12.1	15.43	2000	52	59
6x1.5	12.1	15.43	2000	63	66
7x1.5	12.1	15.43	2000	73	77
12x1.5	12.1	15.43	2000	126	103
19x1.5	12.1	15.43	2000	199	141
21x1.5	12.1	15.43	2000	220	147
27x1.5	12.1	15.43	2000	283	168
30x1.5	12.1	15.43	2000	315	181
37x1.5	12.1	15.43	2000	388	206
40x1.5	12.1	15.43	2000	420	214
48x1.5	12.1	15.43	2000	504	234
5x2.5	7.41	9.45	2000	87	89
6x2.5	7.41	9.45	2000	105	99
7x2.5	7.41	9.45	2000	122	116
12x2.5	7.41	9.45	2000	210	154
19x2.5	7.41	9.45	2000	332	210
21x2.5	7.41	9.45	2000	367	219
27x2.5	7.41	9.45	2000	472	250
30x2.5	7.41	9.45	2000	525	268
37x2.5	7.41	9.45	2000	647	305
40x2.5	7.41	9.45	2000	700	315
48x2.5	7.41	9.45	2000	840	344
5x4	4.61	5.88	2000	140	129
6x4	4.61	5.88	2000	168	142
7x4	4.61	5.88	2000	196	166
12x4	4.61	5.88	2000	336	219
19x4	4.61	5.88	2000	532	296
21x4	4.61	5.88	2000	588	310
27x4	4.61	5.88	2000	756	351
30x4	4.61	5.88	2000	840	374
37x4	4.61	5.88	2000	1036	426
40x4	4.61	5.88	2000	1120	440
48x4	4.61	5.88	2000	1344	477

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
2x1.5	8.9	M20S	KM409-52	KM494-52
2x2.5	9.7	M20S	KM409-52	KM494-52
2x4	10.8	M20S	KM409-52	KM494-52
2x6	11.9	M20	KM409-53	KM494-53
2x10	13.8	M25	KM409-55	KM494-55
2x16	15.9	M25	KM409-55	KM494-55
2x25	19.4	M32	KM409-56	KM494-56
2x35	21.6	M32	KM409-56	KM494-56
2x50	24.7	M32	KM409-56	KM494-56
2x70	28.6	M40	KM409-57	KM494-57
2x95	33.0	M50S / M50	KM409-58	KM494-59
2x120	36.7	M50	KM409-59	KM494-59
2x150	41.1	M50	KM409-59	KM494-59
2x185	45.6	M63S / M63	KM409-60	KM494-61
2x240	51.3	M63	KM409-61	KM494-61
2x300	57.5	M75S	KM409-62	KM494-62
2x400	64.4	M75	KM409-63	KM494-63
2x16cc	15.3	M25	KM409-55	KM494-55
2x25cc	18.5	M25	KM409-55	KM494-55
2x35cc	20.7	M32	KM409-56	KM494-56
2x50cc	23.6	M32	KM409-56	KM494-56
2x70cc	27.0	M40	KM409-57	KM494-57
2x95cc	31.0	M40	KM409-57	KM494-57
2x120cc	34.5	M50S / M50	KM409-58	KM494-59
2x150cc	38.5	M50	KM409-59	KM494-59
2x185cc	42.9	M63S / M63	KM409-60	KM494-61
2x240cc	49.7	M63S / M63	KM409-60	KM494-61
2x300cc	53.3	M63	KM409-61	KM494-61
2x400cc	59.8	M75S	KM409-62	KM494-62

cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
3x1.5	9.3	M20S	KM409-52	KM494-52
3x2.5	10.3	M20S	KM409-52	KM494-52
3x4	11.4	M20	KM409-53	KM494-53
3x6	12.6	M20	KM409-53	KM494-53
3x10	14.6	M25	KM409-55	KM494-55
3x16	16.9	M25	KM409-55	KM494-55
3x25	20.7	M32	KM409-56	KM494-56
3x35sh	20.0	M32	KM409-56	KM494-56
3x50sh	23.0	M32	KM409-56	KM494-56
3x70sh	26.6	M40	KM409-57	KM494-57
3x95sh	29.9	M40	KM409-57	KM494-57
3x120sh	33.5	M50S / M50	KM409-58	KM494-59
3x150sh	37.6	M50	KM409-59	KM494-59
3x185sh	41.6	M50	KM409-59	KM494-59
3x240sh	46.6	M63S / M63	KM409-60	KM494-61
3x300sh	51.5	M63	KM409-61	KM494-61
3x400sh	58.9	M75S	KM409-62	KM494-62
3x16cc	16.3	M25	KM409-55	KM494-55
3x25cc	19.9	M32	KM409-56	KM494-56
3x35cc	22.0	M32	KM409-56	KM494-56
3x50cc	25.2	M32	KM409-56	KM494-56
3x70cc	29.1	M40	KM409-57	KM494-57
3x95cc	33.3	M50S / M50	KM409-58	KM494-59
3x120cc	36.9	M50S / M50	KM409-58	KM494-59
3x150cc	41.4	M50	KM409-59	KM494-59
3x185cc	46.1	M63S / M63	KM409-60	KM494-61
3x240cc	53.4	M63	KM409-61	KM494-61
3x300cc	57.2	M75S	KM409-62	KM494-62
3x400cc	64.4	M75	KM409-63	KM494-63

sh – shaped conductor
cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
4x1.5	10.1	M20S	KM409-52	KM494-52
4x2.5	11.1	M20S	KM409-52	KM494-52
4x4	12.4	M20	KM409-53	KM494-53
4x6	13.8	M25	KM409-55	KM494-55
4x10	16.0	M25	KM409-55	KM494-55
4x16	18.6	M25	KM409-55	KM494-55
4x25	22.8	M32	KM409-56	KM494-56
4x35sh	22.9	M32	KM409-56	KM494-56
4x50sh	26.6	M40	KM409-57	KM494-57
4x70sh	30.7	M40	KM409-57	KM494-57
4x95sh	34.7	M50S / M50	KM409-58	KM494-59
4x120sh	38.8	M50	KM409-59	KM494-59
4x150sh	43.3	M63S / M63	KM409-60	KM494-61
4x185sh	48.2	M63S / M63	KM409-60	KM494-61
4x240sh	54.0	M63	KM409-61	KM494-61
4x300sh	59.6	M75S / M75	KM409-62	KM494-63
4x400sh	68.1	M90	KM409-65	-
4x16cc	17.8	M25	KM409-55	KM494-55
4x25cc	22.0	M32	KM409-56	KM494-56
4x35cc	24.4	M32	KM409-56	KM494-56
4x50cc	28.1	M40	KM409-57	KM494-57
4x70cc	32.4	M50S / M50	KM409-58	KM494-59
4x95cc	37.1	M50	KM409-59	KM494-59
4x120cc	41.2	M50 / M63	KM409-59	KM494-61
4x150cc	46.0	M63	KM409-61	KM494-61
4x185cc	51.5	M63	KM409-61	KM494-61
4x240cc	59.6	M75S / M75	KM409-62	KM494-63
4x300cc	63.8	M75	KM409-63	KM494-63
4x400cc	71.8	M90	KM409-65	-

sh – shaped conductor
cc – circular compacted conductor

Cable Gland Selection Data

Cross Section (mm^2)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
5x1.5	11.1	M20S	KM409-52	KM494-52
6x1.5	11.9	M20	KM409-53	KM494-53
7x1.5	11.9	M20	KM409-53	KM494-53
12x1.5	15.3	M25	KM409-55	KM494-55
19x1.5	17.7	M25	KM409-55	KM494-55
21x1.5	18.7	M25	KM409-55	KM494-55
27x1.5	21.1	M32	KM409-56	KM494-56
30x1.5	21.8	M32	KM409-56	KM494-56
37x1.5	23.5	M32	KM409-56	KM494-56
40x1.5	24.5	M32	KM409-56	KM494-56
48x1.5	26.9	M40	KM409-57	KM494-57
5x2.5	12.2	M20	KM409-53	KM494-53
6x2.5	13.2	M25	KM409-55	KM494-55
7x2.5	13.2	M25	KM409-55	KM494-55
12x2.5	17.0	M25	KM409-55	KM494-55
19x2.5	19.8	M32	KM409-56	KM494-56
21x2.5	20.9	M32	KM409-56	KM494-56
27x2.5	23.6	M32	KM409-56	KM494-56
30x2.5	24.5	M32	KM409-56	KM494-56
37x2.5	26.5	M40	KM409-57	KM494-57
40x2.5	27.8	M40	KM409-57	KM494-57
48x2.5	30.5	M40	KM409-57	KM494-57
5x4	13.6	M25	KM409-55	KM494-55
6x4	14.8	M25	KM409-55	KM494-55
7x4	14.8	M25	KM409-55	KM494-55
12x4	19.2	M32	KM409-56	KM494-56
19x4	22.5	M32	KM409-56	KM494-56
21x4	23.7	M32	KM409-56	KM494-56
27x4	26.9	M40	KM409-57	KM494-57
30x4	28.1	M40	KM409-57	KM494-57
37x4	30.4	M40	KM409-57	KM494-57
40x4	31.8	M50S / M50	KM409-58	KM494-59
48x4	35.2	M50	KM409-59	KM494-59

CU/XLPE/LSHF/AWA/LSHF 0.6/1 kV
Flame Retardant, Low Smoke Halogen Free Power Cables

E Path

GENERAL INFO

Suitable for heavy operating conditions, laying and installation. Used underground and under normal and salty water if specially produced. Increased flame-retardant properties to IEC 60332-3. Low smoke and halogen free cables compliance to IEC 61034-2, IEC 60754-1, IEC 60754-2 and IEC 60684-2.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Inner sheath material	: Low Smoke Halogen Free (LSHF)
Armour Material	: Aluminium wires
Sheath material	: Low Smoke Halogen Free (LSHF)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Armour
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)
IEC 61034-2	Low smoke emission properties
IEC 60754-1, IEC 60754-2, IEC 60684-2	Halogen free content properties

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance

CORE IDENTIFICATION

1-core	Natural

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	Yes
Low smoke	Yes
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	12 x OD
Bending radius (fixed installed)	10 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
1x50	8.7	1.0	12.9	1.6	19.3	764	193	2000
1x70	10.5	1.1	14.8	1.6	21.3	991	213	1800
1x95	12.4	1.1	16.7	1.6	23.4	1280	234	1600
1x120	13.9	1.2	18.5	1.6	25.4	1553	254	1400
1x150	15.6	1.4	20.6	1.6	27.5	1872	275	1200
1x185	17.4	1.6	22.8	1.6	29.9	2242	299	1000
1x240	19.8	1.7	25.4	1.6	32.7	2865	327	1000
1x300	22.5	1.8	28.3	1.6	35.8	3511	358	800
1x400	25.4	2.0	32.0	2.0	40.7	4510	407	600
1x500	28.6	2.2	35.6	2.0	44.5	5576	445	600
1x630	32.5	2.4	39.9	2.0	49.0	6942	490	500
1x50cc	8.2	1.0	12.3	1.6	18.8	756	188	2000
1x70cc	9.7	1.1	14.0	1.6	20.5	978	205	1800
1x95cc	11.5	1.1	15.8	1.6	22.5	1242	225	1600
1x120cc	12.8	1.2	17.0	1.6	23.2	1461	232	1400
1x150cc	14.3	1.4	18.9	1.6	25.1	1753	251	1200
1x185cc	16.0	1.6	21.4	1.6	28.5	2217	285	1000
1x240cc	18.4	1.7	24.0	1.6	31.3	2841	313	1000
1x300cc	20.4	1.8	26.2	1.6	33.7	3386	337	800
1x400cc	23.1	2.0	29.7	2.0	38.4	4345	384	600
1x500cc	26.1	2.2	33.1	2.0	42.0	5428	420	600
1x630cc	29.9	2.4	37.3	2.0	46.4	6938	464	500

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. AC Conductor Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
1x50	0.387	0.493	2000	350	181
1x70	0.268	0.342	2000	490	230
1x95	0.193	0.246	2000	665	284
1x120	0.153	0.195	2000	840	331
1x150	0.124	0.159	2000	1050	382
1x185	0.0991	0.127	2000	1295	433
1x240	0.0754	0.097	2000	1680	514
1x300	0.0601	0.078	2000	2100	587
1x400	0.047	0.061	2000	2800	688
1x500	0.0366	0.048	2000	3500	787
1x630	0.0283	0.038	2000	4410	900
1x50cc	0.387	0.493	2000	350	186
1x70cc	0.268	0.342	2000	490	239
1x95cc	0.193	0.246	2000	665	296
1x120cc	0.153	0.195	2000	840	362
1x150cc	0.124	0.159	2000	1050	418
1x185cc	0.0991	0.127	2000	1295	454
1x240cc	0.0754	0.097	2000	1680	537
1x300cc	0.0601	0.078	2000	2100	623
1x400cc	0.047	0.061	2000	2800	729
1x500cc	0.0366	0.048	2000	3500	833
1x630cc	0.0283	0.038	2000	4410	950

cc – circular compacted conductor

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
1x50	12.9	1.6	19.3	M25	432LSF-55	KCA455-55
1x70	14.8	1.6	21.3	M25	432LSF-55	KCA455-55
1x95	16.7	1.6	23.4	M25	432LSF-55	KCA455-55
1x120	18.5	1.6	25.4	M25	432LSF-55	KCA455-55
1x150	20.6	1.6	27.5	M32	432LSF-56	KCA455-56
1x185	22.8	1.6	29.9	M32	432LSF-56	KCA455-56
1x240	25.4	1.6	32.7	M32	432LSF-56	KCA455-56
1x300	28.3	1.6	35.8	M40	432LSF-57	KCA455-57
1x400	32.0	2.0	40.7	M50S	432LSF-58	KCA455-58
1x500	35.6	2.0	44.5	M50S	432LSF-58	KCA455-58
1x630	39.9	2.0	49.0	M50	432LSF-59	KCA455-59
1x50cc	12.3	1.6	18.8	M25	432LSF-55	KCA455-55
1x70cc	14.0	1.6	20.5	M25	432LSF-55	KCA455-55
1x95cc	15.8	1.6	22.5	M25	432LSF-55	KCA455-55
1x120cc	17.0	1.6	23.2	M25	432LSF-55	KCA455-55
1x150cc	18.9	1.6	25.1	M25	432LSF-55	KCA455-55
1x185cc	21.4	1.6	28.5	M32	432LSF-56	KCA455-56
1x240cc	24.0	1.6	31.3	M32	432LSF-56	KCA455-56
1x300cc	26.2	1.6	33.7	M40	432LSF-57	KCA455-57
1x400cc	29.7	2.0	38.4	M40	432LSF-57	KCA455-57
1x500cc	33.1	2.0	42.0	M50S	432LSF-58	KCA455-58
1x630cc	37.3	2.0	46.4	M50	432LSF-59	KCA455-59

cc – circular compacted conductor

CU/XLPE/LSHF/SWA/LSHF 0.6/1 kV Flame Retardant, Low Smoke Halogen Free Power and Control Cables

prysmian E Path

GENERAL INFO

High resistant against outer mechanical reactions with introduction of galvanized steel wires. Suitable for heavy operating conditions, laying and installation. Used underground and under normal and salty water if specially produced. Increased flame-retardant properties to IEC 60332-3. Low smoke and halogen free cables compliance to IEC 61034-2, IEC 60754-1, IEC 60754-2 and IEC 60684-2.

CABLE CONSTRUCTION

Conductor material	: Copper
Conductor surface	: Bare
Insulation material	: Crosslinked Polyethylene (XLPE)
Filler material	: Non-hygroscopic filler
Binder material	: Polyester tape
Inner sheath material	: Low Smoke Halogen Free (LSHF)
Armour material	: Round Steel Wires
Sheath material	: Low Smoke Halogen Free (LSHF)

STANDARDS APPLIED

IEC 60502-1	Construction
IEC 60228 Class 2	Conductors
IEC 60502-1	Insulation
IEC 60502-1	Armour
IEC 60502-1	Sheath
IEC 60332-1	Flame retardant properties
IEC 60332-3	Flame retardant properties (Bunched)
IEC 61034-2	Low smoke emission properties
IEC 60754-1, IEC 60754-2, IEC 60684-2	Halogen free content properties

Special feature available on request:

Anti-termite
Anti-rodent
Oil resistance
UV resistance

CORE IDENTIFICATION

2-cores	Brown, blue
3-cores	Brown, black, blue
4-cores	Brown, black, grey, blue
Multi-cores	Black with core numbering

* Other colours available upon request

APPLICATION PROPERTIES

Nominal voltage U0 [V]	600
Nominal voltage U [V]	1000
Test voltage [kV / min]	3.5 kV for 5mins
Flame retardant	In accordance with IEC 60332-1, IEC 60332-3
Halogen free	Yes
Low smoke	Yes
Max. conductor operating temperature [°C]	90
Min. ambient temperature, fixed installation [°C]	-25
Max. ambient temperature, fixed installation [°C]	60
Outdoor installation	Yes
Bending radius (during installation)	12 x OD
Bending radius (fixed installed)	10 x OD

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
2x1.5	1.6	3.0	7.5	0.9	12.3	290	123	2000
2x2.5	2.0	3.4	8.3	0.9	13.2	334	132	2000
2x4	2.5	3.9	9.4	0.9	14.2	401	142	2000
2x6	3.1	4.5	10.5	0.9	15.4	484	154	2000
2x10	3.9	5.3	12.4	1.25	17.9	661	179	1800
2x16	5.0	6.4	14.5	1.25	20.1	842	201	1800
2x25	6.3	8.1	18.0	1.6	24.2	1269	242	1800
2x35	7.4	9.2	20.3	1.6	26.4	1522	264	2300
2x50	8.7	10.7	23.4	1.6	29.5	1885	295	1200
2x70	10.5	12.7	27.4	1.6	33.8	2477	338	1700
2x95	12.4	14.6	31.8	2.0	39.2	3450	392	1200
2x120	13.9	16.3	35.2	2.0	42.9	4103	429	1000
2x150	15.6	18.4	39.5	2.0	47.4	4963	474	800
2x185	17.4	20.6	44.2	2.5	53.4	6309	534	600
2x240	19.8	23.2	49.5	2.5	59.1	7793	591	500
2x300	22.5	26.1	55.7	2.5	65.5	9506	655	400
2x400	25.4	29.4	62.2	2.5	72.6	11059	726	300
2x16cc	4.7	6.1	13.9	1.25	19.4	798	194	2000
2x25cc	6.0	7.8	17.1	1.6	23.3	1196	233	1800
2x35cc	7.0	8.8	19.4	1.6	25.5	1471	255	1800
2x50cc	8.0	10.0	22.4	1.6	28.5	1851	285	1400
2x70cc	9.8	12.0	25.8	1.6	32.2	2374	322	1400
2x95cc	11.5	13.7	29.8	2.0	37.2	3285	372	1200
2x120cc	12.8	15.2	33.1	2.0	40.7	3986	407	1000
2x150cc	14.3	17.1	36.9	2.0	44.7	4810	447	1000
2x185cc	16.0	19.2	41.5	2.5	50.7	6120	507	600
2x240cc	19.0	22.4	47.9	2.5	57.5	7622	575	500
2x300cc	20.4	24.0	51.5	2.5	61.3	9041	613	400
2x400cc	23.1	27.1	57.6	2.5	68.0	11009	680	300

cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
2x1.5	12.1	15.43	2000	21	17
2x2.5	7.41	9.45	2000	35	27
2x4	4.61	5.88	2000	56	39
2x6	3.08	3.93	2000	84	55
2x10	1.83	2.33	2000	140	78
2x16	1.15	1.47	2000	224	111
2x25	0.727	0.927	2000	350	145
2x35	0.524	0.668	2000	490	186
2x50	0.387	0.493	2000	700	237
2x70	0.268	0.342	2000	980	290
2x95	0.193	0.246	2000	1330	339
2x120	0.153	0.196	2000	1680	392
2x150	0.124	0.159	2000	2100	443
2x185	0.0991	0.128	2000	2590	485
2x240	0.0754	0.098	2000	3360	569
2x300	0.0601	0.08	2000	4200	641
2x400	0.047	0.064	2000	5600	771
2x16cc	1.15	1.47	2000	224	115
2x25cc	0.727	0.927	2000	350	150
2x35cc	0.524	0.668	2000	490	192
2x50cc	0.387	0.493	2000	700	246
2x70cc	0.268	0.342	2000	980	304
2x95cc	0.193	0.246	2000	1330	358
2x120cc	0.153	0.196	2000	1680	413
2x150cc	0.124	0.159	2000	2100	470
2x185cc	0.0991	0.128	2000	2590	511
2x240cc	0.0754	0.098	2000	3360	584
2x300cc	0.0601	0.08	2000	4200	685
2x400cc	0.047	0.064	2000	5600	824

cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
3x1.5	1.6	3.0	8.0	0.9	12.8	315	128	2000
3x2.5	2.0	3.4	8.9	0.9	13.7	373	137	2000
3x4	2.5	3.9	10.0	0.9	14.8	453	148	2000
3x6	3.1	4.5	11.2	0.9	16.1	554	161	2000
3x10	3.9	5.3	13.2	1.25	18.8	788	188	1800
3x16	5.0	6.4	15.5	1.25	21.1	1027	211	1800
3x25	6.3	8.1	19.3	1.6	25.5	1563	255	1500
3x35sh	15.1	16.9	18.8	1.6	24.9	1777	249	2300
3x50sh	17.9	19.9	21.7	1.6	28.0	2244	280	2300
3x70sh	21.0	23.2	25.5	2.0	32.8	3207	328	1800
3x95sh	24.1	26.3	28.6	2.0	36.3	4092	363	1400
3x120sh	27.2	29.6	32.0	2.0	39.9	4985	399	1200
3x150sh	30.5	33.3	36.1	2.5	45.4	6392	454	800
3x185sh	33.9	37.1	40.0	2.5	49.4	7684	494	800
3x240sh	38.3	41.7	45.0	2.5	54.8	9633	548	600
3x300sh	42.7	46.3	49.5	2.5	59.7	11604	597	500
3x400sh	49.1	53.1	56.3	2.5	66.9	14459	669	300
3x16cc	4.7	6.1	14.9	1.25	20.4	988	204	1000
3x25cc	6.0	7.8	18.5	1.6	24.8	1499	248	1000
3x35cc	7.0	8.8	20.9	1.6	27.0	1834	270	1000
3x50cc	8.0	10.0	23.5	1.6	29.8	2334	298	1000
3x70cc	9.8	12.0	28.2	2.0	35.5	3334	355	1000
3x95cc	11.5	13.7	32.1	2.0	39.7	4259	397	1000
3x120cc	12.8	15.2	35.4	2.0	43.3	5143	433	1000
3x150cc	14.3	17.1	39.9	2.5	49.2	6651	492	800
3x185cc	16.0	19.2	44.5	2.5	53.9	7965	539	600
3x240cc	19.0	22.4	51.8	2.5	61.6	10009	616	500
3x300cc	20.4	24.0	55.2	2.5	65.4	12057	654	400
3x400cc	23.1	27.1	61.8	2.5	72.4	14694	724	300

sh – shaped conductor
cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
3x1.5	12.1	15.43	2000	31	24
3x2.5	7.41	9.45	2000	52	38
3x4	4.61	5.88	2000	84	57
3x6	3.08	3.93	2000	126	78
3x10	1.83	2.33	2000	210	112
3x16	1.15	1.47	2000	336	159
3x25	0.727	0.927	2000	525	206
3x35sh	0.524	0.668	2000	735	295
3x50sh	0.387	0.493	2000	1050	375
3x70sh	0.268	0.342	2000	1470	448
3x95sh	0.193	0.246	2000	1995	550
3x120sh	0.153	0.196	2000	2520	632
3x150sh	0.124	0.159	2000	3150	694
3x185sh	0.0991	0.128	2000	3885	786
3x240sh	0.0754	0.098	2000	5040	920
3x300sh	0.0601	0.08	2000	6300	1055
3x400sh	0.047	0.064	2000	8400	1256
3x16cc	1.15	1.47	2000	336	165
3x25cc	0.727	0.927	2000	525	212
3x35cc	0.524	0.668	2000	735	272
3x50cc	0.387	0.493	2000	1050	352
3x70cc	0.268	0.342	2000	1470	414
3x95cc	0.193	0.246	2000	1995	503
3x120cc	0.153	0.196	2000	2520	582
3x150cc	0.124	0.159	2000	3150	640
3x185cc	0.0991	0.128	2000	3885	721
3x240cc	0.0754	0.098	2000	5040	818
3x300cc	0.0601	0.08	2000	6300	963
3x400cc	0.047	0.064	2000	8400	1160

sh – shaped conductor
cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
4x1.5	1.6	3.0	8.7	0.9	13.5	353	135	2000
4x2.5	2.0	3.4	9.7	0.9	14.6	422	146	2000
4x4	2.5	3.9	11.0	0.9	15.8	523	158	2000
4x6	3.1	4.5	12.4	1.25	17.9	740	179	2000
4x10	3.9	5.3	14.6	1.25	20.1	918	201	1500
4x16	5.0	6.4	17.2	1.6	23.4	1364	234	1500
4x25	6.3	8.1	21.4	1.6	27.6	1898	276	1000
4x35sh	18.0	19.8	21.6	1.6	27.9	2220	279	2300
4x50sh	21.3	23.3	25.2	1.6	31.6	2827	316	2000
4x70sh	24.9	27.1	29.4	2.0	37.1	4054	371	1500
4x95sh	28.5	30.7	33.2	2.0	41.1	5219	411	1200
4x120sh	32.1	34.5	37.4	2.5	46.6	6758	466	800
4x150sh	36.0	38.8	41.7	2.5	51.1	8061	511	700
4x185sh	40.1	43.3	46.2	2.5	56.0	9758	560	600
4x240sh	45.3	48.7	52.0	2.5	62.1	12299	621	400
4x300sh	50.3	53.9	57.2	2.5	67.7	14896	677	300
4x400sh	57.8	61.8	65.5	3.15	77.9	19478	779	250
4x16cc	4.7	6.1	16.4	1.6	22.7	1295	227	2000
4x25cc	6.0	7.8	20.3	1.6	26.5	1785	265	1800
4x35cc	7.0	8.8	23.1	1.6	29.4	2267	294	2000
4x50cc	8.0	10.0	26.6	1.6	33.1	2895	331	1800
4x70cc	9.8	12.0	31.1	2.0	38.8	4149	388	1200
4x95cc	11.5	13.7	35.6	2.0	43.5	5261	435	1000
4x120cc	12.8	15.2	39.8	2.5	49.0	6850	490	800
4x150cc	14.3	17.1	44.4	2.5	53.8	8213	538	600
4x185cc	16.0	19.2	49.5	2.5	59.3	9995	593	500
4x240cc	19.0	22.4	57.6	2.5	67.8	12744	678	300
4x300cc	20.4	24.0	61.4	2.5	72.0	15142	720	300
4x400cc	23.1	27.1	69.3	3.15	81.7	19550	817	250

sh – shaped conductor
cc – circular compacted conductor

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20ºC (Ω/km)	Max. AC Conductor Resistance at 90ºC (Ω/km)	Min. Insulation Resistance at 20ºC (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
4x1.5	12.1	15.43	2000	42	31
4x2.5	7.41	9.45	2000	70	48
4x4	4.61	5.88	2000	112	71
4x6	3.08	3.93	2000	168	94
4x10	1.83	2.33	2000	280	139
4x16	1.15	1.47	2000	448	191
4x25	0.727	0.927	2000	700	254
4x35sh	0.524	0.668	2000	980	351
4x50sh	0.387	0.493	2000	1400	443
4x70sh	0.268	0.342	2000	1960	528
4x95sh	0.193	0.246	2000	2660	647
4x120sh	0.153	0.196	2000	3360	721
4x150sh	0.124	0.159	2000	4200	822
4x185sh	0.0991	0.128	2000	5180	925
4x240sh	0.0754	0.098	2000	6720	1082
4x300sh	0.0601	0.08	2000	8400	1241
4x400sh	0.047	0.064	2000	11200	1438
4x16cc	1.15	1.47	2000	448	197
4x25cc	0.727	0.927	2000	700	264
4x35cc	0.524	0.668	2000	980	333
4x50cc	0.387	0.493	2000	1400	423
4x70cc	0.268	0.342	2000	1960	505
4x95cc	0.193	0.246	2000	2660	611
4x120cc	0.153	0.196	2000	3360	686
4x150cc	0.124	0.159	2000	4200	781
4x185cc	0.0991	0.128	2000	5180	874
4x240cc	0.0754	0.098	2000	6720	991
4x300cc	0.0601	0.08	2000	8400	1167
4x400cc	0.047	0.064	2000	11200	1371

sh – shaped conductor
cc – circular compacted conductor

Product Dimensional Data

Cross Section (mm^2)	Conductor Diameter (mm)	Insulation Diameter (mm)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Cable Weight (kg/km)	Min. Bending Radius During Installation (mm)	Standard Packing Length (m)
5x1.5	1.6	3.0	9.7	0.9	14.5	378	145	2000
6x1.5	1.6	3.0	10.5	0.9	15.4	410	154	2000
7x1.5	1.6	3.0	10.5	0.9	15.4	437	154	2000
12x1.5	1.6	3.0	13.9	1.25	19.4	718	194	2000
19x1.5	1.6	3.0	16.3	1.25	21.9	917	219	2000
21x1.5	1.6	3.0	17.5	1.6	23.5	1109	235	1800
27x1.5	1.6	3.0	19.7	1.6	25.9	1305	259	1600
30x1.5	1.6	3.0	20.4	1.6	26.6	1381	266	1600
37x1.5	1.6	3.0	22.1	1.6	28.3	1573	283	1500
40x1.5	1.6	3.0	23.1	1.6	29.5	1685	295	1400
48x1.5	1.6	3.0	25.5	1.6	31.9	1923	319	1200
5x2.5	2.0	3.4	10.8	0.9	15.6	457	156	2000
6x2.5	2.0	3.4	11.8	1.25	17.3	595	173	1800
7x2.5	2.0	3.4	11.8	1.25	17.3	616	173	2000
12x2.5	2.0	3.4	15.6	1.25	21.2	887	212	2000
19x2.5	2.0	3.4	18.4	1.6	24.6	1286	246	1800
21x2.5	2.0	3.4	19.6	1.6	25.7	1381	257	1600
27x2.5	2.0	3.4	22.2	1.6	28.5	1646	285	1400
30x2.5	2.0	3.4	23.1	1.6	29.5	1780	295	1300
37x2.5	2.0	3.4	25.1	1.6	31.5	2041	315	1100
40x2.5	2.0	3.4	26.2	1.6	32.8	2184	328	1000
48x2.5	2.0	3.4	29.3	2.0	36.9	2791	369	800
5x4	2.5	3.9	12.2	1.25	17.8	655	178	2000
6x4	2.5	3.9	13.4	1.25	18.9	752	189	2000
7x4	2.5	3.9	13.4	1.25	18.9	777	189	2000
12x4	2.5	3.9	17.8	1.6	24.1	1255	241	1800
19x4	2.5	3.9	21.1	1.6	27.3	1663	273	1400
21x4	2.5	3.9	22.3	1.6	28.6	1895	286	1200
27x4	2.5	3.9	25.5	1.6	31.9	2195	319	1000
30x4	2.5	3.9	26.5	1.6	33.1	2378	331	1000
37x4	2.5	3.9	29.2	2.0	36.8	3038	368	700
40x4	2.5	3.9	33.6	2.0	38.1	3239	381	700
48x4	2.5	3.9	33.6	2.0	41.4	3744	414	600

Product Technical Data

Cross Section (mm^2)	Max. DC Conductor Resistance at 20°C (Ω/km)	Max. AC Conductor Resistance at 90°C (Ω/km)	Min. Insulation Resistance at 20°C (MΩ.km)	Max. Cable Pulling Tension (kgf)	Max. Sidewall Pressure to Cable (kgf/m)
5x1.5	12.1	15.43	2000	52	36
6x1.5	12.1	15.43	2000	63	41
7x1.5	12.1	15.43	2000	73	47
12x1.5	12.1	15.43	2000	126	65
19x1.5	12.1	15.43	2000	199	91
21x1.5	12.1	15.43	2000	220	94
27x1.5	12.1	15.43	2000	283	109
30x1.5	12.1	15.43	2000	315	118
37x1.5	12.1	15.43	2000	388	137
40x1.5	12.1	15.43	2000	420	142
48x1.5	12.1	15.43	2000	504	158
5x2.5	7.41	9.45	2000	87	56
6x2.5	7.41	9.45	2000	105	61
7x2.5	7.41	9.45	2000	122	71
12x2.5	7.41	9.45	2000	210	99
19x2.5	7.41	9.45	2000	332	135
21x2.5	7.41	9.45	2000	367	143
27x2.5	7.41	9.45	2000	472	166
30x2.5	7.41	9.45	2000	525	178
37x2.5	7.41	9.45	2000	647	205
40x2.5	7.41	9.45	2000	700	213
48x2.5	7.41	9.45	2000	840	228
5x4	4.61	5.88	2000	140	79
6x4	4.61	5.88	2000	168	89
7x4	4.61	5.88	2000	196	104
12x4	4.61	5.88	2000	336	139
19x4	4.61	5.88	2000	532	195
21x4	4.61	5.88	2000	588	205
27x4	4.61	5.88	2000	756	237
30x4	4.61	5.88	2000	840	254
37x4	4.61	5.88	2000	1036	282
40x4	4.61	5.88	2000	1120	294
48x4	4.61	5.88	2000	1344	325

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
2x1.5	7.5	0.9	12.3	M20S	421LSF-52	KCA472-52
2x2.5	8.3	0.9	13.2	M20S	421LSF-52	KCA472-52
2x4	9.4	0.9	14.2	M20S	421LSF-52	KCA472-52
2x6	10.5	0.9	15.4	M20	421LSF-53	KCA472-53
2x10	12.4	1.25	17.9	M20	421LSF-53	KCA472-53
2x16	14.5	1.25	20.1	M20	421LSF-53	KCA472-53
2x25	18.0	1.6	24.2	M25	421LSF-55	KCA472-55
2x35	20.3	1.6	26.4	M25	421LSF-55	KCA472-55
2x50	23.4	1.6	29.5	M32	421LSF-56	KCA472-56
2x70	27.4	1.6	33.8	M40	421LSF-57	KCA472-57
2x95	31.8	2.0	39.2	M40	421LSF-57	KCA472-57
2x120	35.2	2.0	42.9	M50S	421LSF-58	KCA472-58
2x150	39.5	2.0	47.4	M50	421LSF-59	KCA472-59
2x185	44.2	2.5	53.4	M63S	421LSF-60	KCA472-60
2x240	49.5	2.5	59.1	M63	421LSF-61	KCA472-61
2x300	55.7	2.5	65.5	M75S	421LSF-62	KCA472-62
2x400	62.2	2.5	72.6	M75	421LSF-63	KCA472-63
2x16cc	13.9	1.25	19.4	M20	421LSF-53	KCA472-53
2x25cc	17.1	1.6	23.3	M25	421LSF-55	KCA472-55
2x35cc	19.4	1.6	25.5	M25	421LSF-55	KCA472-55
2x50cc	22.4	1.6	28.5	M32	421LSF-56	KCA472-56
2x70cc	25.8	1.6	32.3	M40	421LSF-57	KCA472-57
2x95cc	29.8	2.0	37.2	M40	421LSF-57	KCA472-57
2x120cc	33.1	2.0	40.7	M50S	421LSF-58	KCA472-58
2x150cc	36.9	2.0	44.7	M50S	421LSF-58	KCA472-58
2x185cc	41.5	2.5	50.7	M50	421LSF-59	KCA472-59
2x240cc	47.9	2.5	57.5	M63S	421LSF-60	KCA472-60
2x300cc	51.5	2.5	61.3	M63	421LSF-61	KCA472-61
2x400cc	57.6	2.5	68.0	M75S	421LSF-62	KCA472-62

cc – circular compacted conductor

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
3x1.5	8.0	0.9	12.8	M16	421LSF-51	KCA472-51
3x2.5	8.9	0.9	13.7	M20S	421LSF-52	KCA472-52
3x4	10.0	0.9	14.8	M20S	421LSF-52	KCA472-52
3x6	11.2	0.9	16.1	M20	421LSF-53	KCA472-53
3x10	13.2	1.25	18.8	M20	421LSF-53	KCA472-53
3x16	15.5	1.25	21.1	M25	421LSF-55	KCA472-55
3x25	19.3	1.6	25.5	M25	421LSF-55	KCA472-55
3x35sh	18.8	1.6	24.9	M25	421LSF-55	KCA472-55
3x50sh	21.7	1.6	28.0	M32	421LSF-56	KCA472-56
3x70sh	25.5	2.0	32.8	M32	421LSF-56	KCA472-56
3x95sh	28.6	2.0	36.3	M40	421LSF-57	KCA472-57
3x120sh	32.0	2.0	39.9	M40	421LSF-57	KCA472-57
3x150sh	36.1	2.5	45.4	M50S	421LSF-58	KCA472-58
3x185sh	40.0	2.5	49.4	M50	421LSF-59	KCA472-59
3x240sh	45.0	2.5	54.8	M63S	421LSF-60	KCA472-60
3x300sh	49.5	2.5	59.7	M63	421LSF-61	KCA472-61
3x400sh	56.3	2.5	66.9	M75	421LSF-63	KCA472-63
3x16cc	14.9	1.25	20.4	M25	421LSF-55	KCA472-53
3x25cc	18.5	1.6	24.8	M25	421LSF-55	KCA472-55
3x35cc	20.9	1.6	27.0	M32	421LSF-56	KCA472-56
3x50cc	23.5	1.6	29.8	M32	421LSF-56	KCA472-56
3x70cc	28.2	2.0	35.5	M40	421LSF-57	KCA472-57
3x95cc	32.1	2.0	39.7	M50S	421LSF-58	KCA472-58
3x120cc	35.4	2.0	43.3	M50S	421LSF-58	KCA472-58
3x150cc	39.9	2.5	49.2	M50	421LSF-59	KCA472-59
3x185cc	44.5	2.5	53.9	M63S	421LSF-60	KCA472-60
3x240cc	51.8	2.5	61.6	M63	421LSF-61	KCA472-61
3x300cc	55.2	2.5	65.4	M75S	421LSF-62	KCA472-62
3x400cc	61.8	2.5	72.4	M75	421LSF-63	KCA472-63

sh – shaped conductor
cc – circular compacted conductor

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
4x1.5	8.7	0.9	13.5	M20S	421LSF-52	KCA472-52
4x2.5	9.7	0.9	14.6	M20S	421LSF-52	KCA472-52
4x4	11.0	0.9	15.8	M20	421LSF-53	KCA472-53
4x6	12.4	1.25	17.9	M20	421LSF-53	KCA472-53
4x10	14.6	1.25	20.1	M25	421LSF-55	KCA472-55
4x16	17.2	1.6	23.4	M25	421LSF-55	KCA472-55
4x25	21.4	1.6	27.6	M32	421LSF-56	KCA472-56
4x35sh	21.6	1.6	27.9	M32	421LSF-56	KCA472-56
4x50sh	25.2	1.6	31.6	M32	421LSF-56	KCA472-56
4x70sh	29.4	2.0	37.1	M40	421LSF-57	KCA472-57
4x95sh	33.2	2.0	41.1	M50S	421LSF-58	KCA472-58
4x120sh	37.4	2.5	46.6	M50	421LSF-59	KCA472-59
4x150sh	41.7	2.5	51.1	M50	421LSF-59	KCA472-59
4x185sh	46.2	2.5	56.0	M63S	421LSF-60	KCA472-60
4x240sh	52.0	2.5	62.1	M63	421LSF-61	KCA472-61
4x300sh	57.2	2.5	67.7	M75S	421LSF-62	KCA472-62
4x400sh	65.5	3.15	77.9	M85	-	KCA472-64
4x16cc	16.4	1.6	22.7	M25	421LSF-55	KCA472-55
4x25cc	20.3	1.6	26.5	M25	421LSF-55	KCA472-55
4x35cc	23.1	1.6	29.4	M32	421LSF-56	KCA472-56
4x50cc	26.6	1.6	33.1	M32	421LSF-56	KCA472-56
4x70cc	31.1	2.0	38.8	M40	421LSF-57	KCA472-57
4x95cc	35.6	2.0	43.5	M50S	421LSF-58	KCA472-58
4x120cc	39.8	2.5	49.0	M50	421LSF-59	KCA472-59
4x150cc	44.4	2.5	53.8	M63S	421LSF-60	KCA472-60
4x185cc	49.5	2.5	59.3	M63	421LSF-61	KCA472-61
4x240cc	57.6	2.5	67.8	M75S	421LSF-62	KCA472-62
4x300cc	61.4	2.5	72.0	M75	421LSF-63	KCA472-63
4x400cc	69.3	3.15	81.7	M85	-	KCA472-64

sh – shaped conductor
cc – circular compacted conductor

Cable Gland Section Data

Cross Section (mm^2)	Inner Covering Diameter (mm)	Armour Wire Diameter (mm)	Overall Cable Diameter (mm)	Recommended Cable Gland Size	BICON Cable Gland Part Number	BICON Ex-Proof Cable Gland Part Number
5x1.5	9.7	0.9	14.5	M20S	421LSF-52	KCA472-52
6x1.5	10.5	0.9	15.4	M20	421LSF-53	KCA472-53
7x1.5	10.5	0.9	15.4	M20	421LSF-53	KCA472-53
12x1.5	13.9	1.25	19.4	M20	421LSF-53	KCA472-53
19x1.5	16.3	1.25	21.9	M25	421LSF-55	KCA472-55
21x1.5	17.5	1.6	23.5	M25	421LSF-55	KCA472-55
27x1.5	19.7	1.6	25.9	M25	421LSF-55	KCA472-55
30x1.5	20.4	1.6	26.6	M32	421LSF-56	KCA472-56
37x1.5	22.1	1.6	28.3	M32	421LSF-56	KCA472-56
40x1.5	23.1	1.6	29.5	M32	421LSF-56	KCA472-56
48x1.5	25.5	1.6	31.9	M32	421LSF-56	KCA472-56
5x2.5	10.8	0.9	15.6	M20	421LSF-53	KCA472-53
6x2.5	11.8	1.25	17.3	M20	421LSF-53	KCA472-53
7x2.5	11.8	1.25	17.3	M20	421LSF-53	KCA472-53
12x2.5	15.6	1.25	21.2	M25	421LSF-55	KCA472-55
19x2.5	18.4	1.6	24.6	M25	421LSF-55	KCA472-55
21x2.5	19.6	1.6	25.7	M25	421LSF-55	KCA472-55
27x2.5	22.2	1.6	28.5	M32	421LSF-56	KCA472-56
30x2.5	23.1	1.6	29.5	M32	421LSF-56	KCA472-56
37x2.5	25.1	1.6	31.5	M32	421LSF-56	KCA472-56
40x2.5	26.2	1.6	32.8	M32	421LSF-56	KCA472-56
48x2.5	29.3	2.0	36.9	M40	421LSF-57	KCA472-57
5x4	12.2	1.25	17.8	M20	421LSF-53	KCA472-53
6x4	13.4	1.25	18.9	M20	421LSF-53	KCA472-53
7x4	13.4	1.25	18.9	M20	421LSF-53	KCA472-53
12x4	17.8	1.6	24.1	M25	421LSF-55	KCA472-55
19x4	21.1	1.6	27.3	M32	421LSF-56	KCA472-56
21x4	22.3	1.6	28.6	M32	421LSF-56	KCA472-56
27x4	25.5	1.6	31.9	M32	421LSF-56	KCA472-56
30x4	26.5	1.6	33.1	M40	421LSF-57	KCA472-57
37x4	29.2	2.0	36.8	M40	421LSF-57	KCA472-57
40x4	30.4	2.0	38.1	M40	421LSF-57	KCA472-57
48x4	33.6	2.0	41.4	M50S	421LSF-58	KCA472-58

APPENDIX

Content

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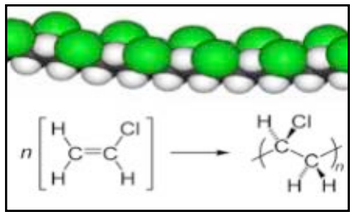
Appendix A: Materials Introduction

Insulation

In the manufacture of electric cables, the two most important factors to be considered are safety and reliability. The materials that are selected must be stable, reliable, durable, able to withstand the environment and safe to use. Materials used as insulation for the cables must meet the following;

1. Providing safe insulation of the line conductors with minimum loss in electrical energy.
2. Exhibiting good stable mechanical properties under normal conditions.
3. Possessing consistent electrical and mechanical properties over long period of use and over wide temperature ranges.
4. Exhibiting inert chemical properties which make it resistant to most chemicals.

Extruded insulations used for wire and cable can be classified into two categories, namely Thermoplastic materials and Thermoset materials.



Thermoplastic materials tend to lose their form upon subsequent heating, while thermosetting materials tend to maintain their form. Generally, cables produced with thermoset materials can operate at higher temperature than cables produced with thermoplastic materials. The insulation range includes the beside:

Thermoplastic

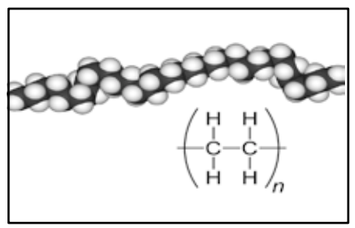
a) Polyvinyl Chloride (PVC)

PVC has high electrical strength and good insulation resistance. It is inherently tough and resistant to flame, moisture and abrasion. Resistance to ozone, acids, alkalies, alcohols, and most solvents is also adequate. Compounding can impart resistance to oils and gasoline. Based on the specific formulation, temperature ratings range from 60°C to 105°C. PVC with 70°C temperature rating is most commonly used.

PVC materials are known to emit smoke and form hydrochloride acid (highly toxicated and corrossive chemical) when come in contact with water. Frequently in applications where smoke is a major hazard (notably in tunnels and rapid transit areas) PVC-free cable insulation such as low smoke halogen free (LSHF, XLEVA) is preferred.

b) Polyethylene (PE)

Research has shown that PE exhibits excellent electrical insulating properties, stable mechanical characteristic and resistant to chemicals and moisture.

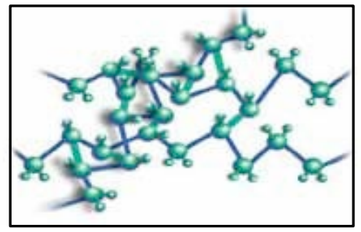


Polyethylene is however not suitable for use under high temperatures. This is mainly due to the molecular structure of the PE polymer which is made up of linear chains of independent PE molecules loosely held together by weak molecular bonds.

These weak molecular bonds break when subjected to temperature above 70°C, causing the individual molecules to slide over one another. The resultant PE polymer starts to change its shape and consistency and become soft plastic-like in nature. For application that required operating temperature higher than 70°C, cross-linked polyethylene (XLPE) is preferred.

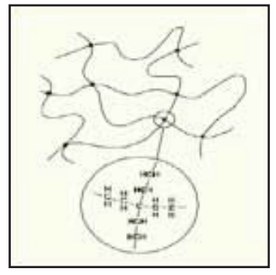
Thermoset

c) Cross-linked Polythylene (XLPE)



The thermoplastic nature of the PE can be converted into a thermally stable thermosetting compound by the process of cross-linking. In the process of cross-linking perpendicular chemical bonds are formed between parallel chains of the PE molecules. The parallel loose two- dimensional molecular structure is converted into a cellular three- dimensional polymeric structure.

The resultant XLPE compound exhibits a durable and excellent insulating material which exhibits the following advantages over the conventional PE material.

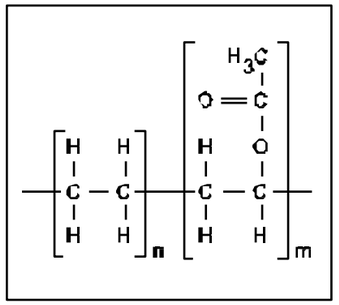


- Suitable for continuous operating temperature up to 90°C.
- High thermal short circuit rating (250°C).
- Excellent electrical properties maintained over the full temperature range.
- Excellent water resistance and low permeability to water.
- Excellent chemical resistance to inorganic salts, oils, alkaline, acids ad organic solvents.
- High durability and long operation life.
- Halogen Free

All these properties have resulted in the rapid growth of preference of XLPE cables in the electrical industry.

d) Cross-linked Polyolefin (XLEVA)

EVA compound is a polymer that approaches elastomeric materials in softness and flexibility, yet can be processed like other thermoplastic. The properties is further enhanced to achieve thermal stability by the process of cross-linking to form a cellular three-dimensional polymeric structure.



The resultant XLEVA compound exhibits a more durable and excellent insulating material while maintaining its flexibility. Based on the specific formulation, XLEVA compound can withstand a temperature rating up to 110°C and display an excellent flame retardant capability. It contains no halogen and has a temperature index of more than 250°C which is currently the highest among most insulation materials.

Table A1
Comparison for Insulation Materials

Property		Unit	Insulation Materials			
			PVC	PE	XLPE	XLEVA[A]
Chemical Name			Polyvinyl Chloride	Polyethylene	Cross-linked Polyethylene	Cross-linked Ethylene-vinyl Acetate
Max. Rated Temperature	Normal	°C	70	70	90	110[B]
	Short Circuit	°C	160	200	250	250
Density			1.2 - 1.4	0.92 - 0.94	0.92 - 0.95	1.5 - 1.55
Volume Resistivity		Ohm-cm	10E15	10E16	10E16	10E14
Dielectric Constant			3 - 5	2.0 - 2.3	2.3 - 2.5	4 - 6
Tensile Strength		N/mm2	12 - 14	12 - 14	13 - 18	10 - 14
Elongation-at-break		%	200 - 450	500 - 650	200 - 350	110 - 200
Flame Retardant Property			++	+	+	+++
Water resistance			++	+++	+++	+++
Weather resistance			++	++	++	++
Ozone resistance			++	++	++	++
Solvent resistance			---	++	+	+
Resistance to oil			++	+++	+++	++
Resistance to heat deformation			---	+	+++	+++

Note:
[A] Named as LSHF for all non-sheathed cables.
[B] Normal type, high temperature rating available upon request.
--- Poor + Fair ++ Good +++ Excellent

Bedding and Sheathing

Jacket, also called sheaths, serve several purposes. For examples, they provide mechanical, thermal, chemical, and environmental protection to the insulated conductors they enclose. They may act as electrical insulation when used over shields or armour. They ease installation and routing concerns by enclosing multiple insulated conductors.

Commonly used jacket materials for low voltage power cables include extrusions of Polyvinyl Chloride (PVC), High Density Polyethylene (HDPE), and Low Smoke Halogen Free (LSHF) materials. These materials are applied using plastic extrusion lines that heat the compound to melting point and form it over the core. The material is then cooled in water trough and wound onto a reel.

Table A2
Comparison for Bedding/Sheathing Materials

Property	Unit	Insulation Materials		
		PVC	HDPE	LSHF
Chemical Name		Polyvinyl Chloride	High Density Polyethylene	Low Smoke Halogen Free
Density		1.35 - 1.5	0.94 - 0.95	1.4 - 1.6
Halogen Content		>20%	<0.5%	<0.5%
Halogen Free		No	Yes	Yes
Limiting Oxygen Index (LOI)		>22	≤22	>30
Smoke Generation		Dark and dense	Less Smoke	Least Smoke
Tensile Strength	N/mm2	12 - 14	12 - 14	13 - 18
Elongation-at-break	%	200 - 450	500 - 650	200 - 350
Flame Retardant Property		++	---	+++
Water resistance		++	+++	+++
Weather resistance		++	++	++
Ozone resistance		++	++	++
Chemical resistance		++	+++	++
Solvent resistance		++	++	++
Resistance to crude oil		+++	++	+++
Resistance to heat deformation		---	+	+++

Note: Refer to normal PVC that comply with IEC60332-1-2.
Higher grade PVC available upon request. Higher grade of PVC can achieve higher LOI reading.
--- Poor + Fair ++ Good +++ Excellent

Appendix B: Selection of Cross-Sectional Area of Conductor

In order to choose the right power cable, one has to consider:

- The current
- The voltage drop
- The short circuit rating
- The installation methods
- The ambient temperature
- The frequency and harmonic current
- Maximum safe length at short circuit

Current Rating

When electric current flows through the conductor of a cable, the electrical resistance of the conductor generates heat. When a temperature greater than that allowed is reached by the cable due to heat generation, a larger conductor size (with lower electrical resistance) has to be selected. Other important considerations are methods of installation of the cable and ambient temperature. Calculation which takes into account all criteria are described in IEC 60287 and are rather complex. In general, preferences is given to standard current rating tables which are issued by national standardization bureaus.

The current rating given in Table 4 to 14 are based on the following standard conditions of the installation.

1. Maximum operating temperature of conductor = 90°C
2. Ambient air temperature = 30°C
3. Ground temperature = 1°C
4. Soil thermal resistivity = 1.2°C m/w
5. Depth of laying (For cable laid direct in the ground) = 0.5m

Voltage Drop

Another important factor for the determination of the conductor size is the voltage drop. The voltage drop of the cable at a given current is caused by losses in the cable. In case of a too high voltage drop, it is necessary to choose a bigger conductor size. The voltage drop in a cable demotes the difference in voltage at the beginning and at the end of the cable. It depends on:

- The current carried
- The power factor
- The length of the cable
- The resistance of the cable
- Reactance of the cable

The permissible voltage drop is usually stated as a percentage of the circuit voltage.

According to CP5:1998 regulation 525-01-01, it is stipulated that the total voltage drop for any particular cable run must be such that the voltage drop in the circuit of which the cable forms a part does not exceed 4% of the nominal voltage of the supply.

Selection of Cable based on Voltage Drop and Current using Tables

Since the actual power factor of the load is usually not known, the most practical approach to the question of the voltage drop is to assume the worst conditions, i.e. power factor equal to one and the conductor is at maximum operating temperature. The voltage drop values given in the tables are based on these assumptions.

The values of the voltage drop (Vd) are tabulated for a current of one Ampere for a 1 metre run, the value of voltage drop needs to be multiplied by the length of the run, in metre, and by the current, in Ampere that the cables are to carry.

$$V = V_{drop} \times I \times L$$

Where

V	Voltage (V)
V_{drop}	Approx. Voltage drop (V/Am)
I	Current (A)
L	Route Length (m)

Example:

Given that the supply voltage is 415V, 3 phase 50Hz and that the cable used is a 4C Cu/mica/XLPE/ SWA/PVC fire resistant cable. Required cable is to be installed in ground and to carry a 250 Amp load per phase over a route length of 100m. Cable installation is to be in compliance with CP5: 1998 Regulation 522.08 regulation.

Maximum permissible voltage drop

Vmax = 4% of 415V

Vmax = 16.65V

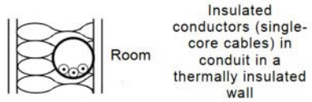
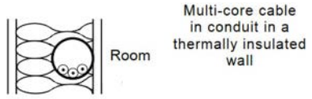
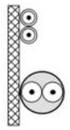
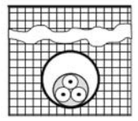
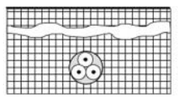
Voltage drop/ampere/metre

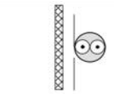
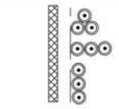
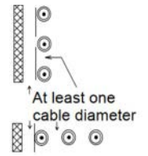
$$V_{drop} = \frac{Vmax.}{I \times L} = \frac{16.6V}{250x100} = \mathbf{0.66mV/Am}$$

Select from Table 10 (pg 43) such that the Vd value is equal to, or less than the calculated 0.66mV, at the same time ensuring that it will carry the current. It will be seen that this value is 0.61 giving a cable size of 70mm2.

Appendix C: Current Ratings and Voltage Drops

C1: Reference method of installation

Installation Method		
A1	 Insulated conductors (single-core cables) in conduit in a thermally insulated wall	The wall consists of an outer weatherproof skin, thermal insulation and an inner skin of wood or wood-like material having a thermal conductance of at least 10 W/m².K. The conduit is fixed to be close to, but not necessary touching the inner skin. Heat from the cables is assumed to escape through the inner skin only. The conduit can be metal or plastic.
A2	 Multi-core cable in conduit in a thermally insulated wall	
B1	 Insulated conductors (single-core cables) in conduit on a wooden wall	Conduit mounted on a wooden wall so that the gap between the conduit and the surface is less than 0.3 times the conduit diameter. The conduit can be metal or plastic. Where the conduit is fixed to a masonry wall the current carrying capacity of the cable or insulated conductors may be higher. (This subject is under consideration)
B2	 Multi-core cable in conduit on a wooden wall	
C	 Single-core or multi-core cable on a wooden wall	Cable mounted on a wooden wall so that the gap between the cable and the surface is less than 0.3 times the cable diameter. Where the cable is fixed to or embedded in a masonry wall the current carrying capacity of the cable or insulated conductors may be higher. (This subject is under consideration)
D1	 Multi-core cable in ducts in the ground	Cables drawn into 100mm diameter plastic, earthenware or metallic ducts laid in direct contact with soil having a thermal resistivity of 2.5 K.m/W and a depth of 0.8m.
D2	 Sheathed single-core or multi-core cables direct in the ground.	Cables laid in direct contact with soil having a thermal resistivity of 2.5 K.m/W and a depth of 0.8m

Installation Method		
E	 Multi-core cable in free air Clearance to wall not less than 0,3 times cable diameter	A cable so supported that the total heat dissipation is not impeded. Heating due to solar radiation and other sources shall be considered. Care shall be taken that natural air convection is not impeded. In practice, a clearance between a cable and any adjacent surface of at least 0.3 times the cable external diameter for multicore cables and 1 time the cable diameter for single core cables is sufficient to permit the use of current carrying capacities appropriate to free air conditions.
F	 Single-core cables, touching in free air Clearance to wall not less than one cable diameter	
G	 Single-core cables, spaced in free air At least one cable diameter	

C 1.1 Method of installation by cable type

Cable Type	Method of installation							
	Thermal insulated wall	Conduit system on wall	Clipped direct on wall	Ducts in the ground	Direct buried in the ground	Free air	Free air (Touching, Trefoil)	Free air (Spaced; Horizontal, Vertical)
Single core non-armoured	A1	B1	C	-	D2	G	F	G
Multicore	A2	B2	C	D1	D2	E	-	-
non-armoured	-	-	-	-	D2	-	-	-
Single core armoured	-	-	-	-	D2	-	-	-
Multicore armoured								

C2: Correction and Reduction Factors for Current Carrying Capacity (Current Rating)

Correction and reduction factors reference as defined in the tables IEC 60364-5-52. This allows the user to tailor a circuit rating for their given prescribed installation. These correction factors cover the following parameters: ambient temperature (air, and ground where appropriate), soil resistivity, depth, proximity of multiple circuits for ladder, tray, direct in ground and in ducts in the ground.

Description	Correction Table Reference in IEC 60364-5-52	Applicable Installation Method & Ratings Table(s)
Rating factors for ambient air temperatures other than 30°C Ambient.	Table B.52.14	Installation method A1, A2, B1, B2, C, F, G Tables: All
Rating factors for ambient ground temperatures other than 20°C Ambient.	Table B.52.15	Installation method D, Tables B.52.2 to B.52.5
Rating factors for cable buried direct in the ground or in buried ducts for soil resistivities.	Table B.52.16	Installation method D, Table B.52.2 to B.52.5
Rating factors for one circuit or one multicore cable or for a group of circuits of multicore cables, to be used with current-carrying capacities of Tables B.52.2 to B.52.13.	Table B.52.17	Installation method A, B, C, E or F (appropriately) Tables B.52.2 to B.52.13
Rating factors for more than one circuit, cables buried directly in the ground.	Table B.52.18	Installation Method D2, Tables B.52.2 to B.52.5
Rating factors for more than one circuit, cables in ducts buried directly in the ground.	Table B.52.19	Installation method D1, Tables B.52.2 to B.52.5
Rating Factors for groups of more than one multicore cable, to be applied to reference current-carrying capacities for multicore cables in free air.	Table B.52.20	Installation method E, Tables B.52.8 to B.52.13
Rating Factors for groups of more than one single- core cable, to be applied to reference current- carrying capacities of single-core cables in free air.	Table B.52.21	Installation Method F, Tables B.52.8 to B.52.13

C 2.1 Correction factors for ambient air temperatures

Correction factors for ambient air temperatures other than 30°C to be applied to the current-carrying capacities for cables in air

Types of insulation	Ground temperature (°C)	Correction factor
PVC	10	1.22
	15	1.17
	20	1.12
	25	1.06
	30	1.00
	35	0.94
	40	0.87
	45	0.79
	50	0.71
	55	0.61
	60	0.50
XLPE, EPR	10	1.15
	15	1.12
	20	1.08
	25	1.04
	30	1.00
	35	0.96
	40	0.91
	45	0.87
	50	0.82
	55	0.76
	60	0.71
	65	0.65
	70	0.58
	75	0.50
	80	0.41

C 2.2 Correction factors for ambient ground temperatures

Correction factors for ambient ground temperatures other than 20°C to be applied to the current- carrying capacities for cables in ducts in the ground.

Types of insulation	Ground temperature (°C)	Correction factor
PVC	10	1.10
	15	1.05
	20	1.00
	25	0.95
	30	0.89
	35	0.84
	40	0.77
	45	0.71
	50	0.63
	55	0.55
	60	0.45
XLPE, EPR	10	1.07
	15	1.04
	20	1.00
	25	0.96
	30	0.93
	35	0.89
	40	0.85
	45	0.80
	50	0.76
	55	0.71
	60	0.65
	65	0.60
	70	0.53
	75	0.46
	80	0.38

C 2.3 Correction factors for soil thermal resistivity

Correction factors for soil thermal resistivity other than 2.5 K.m/W to be applied to the current-carrying capacities for cables in ducts in the ground. For installation Method D1 & D2.

Installation Method	Soil Thermal Resistivity, K.m/W						
	0.5	0.7	1.0	1.5	2.0	2.5	3.0
D1: Multi-core cable in ducts in the ground	1.28	1.20	1.18	1.10	1.05	1.00	0.96
D2: Sheathed single-core or multi- core cables direct in the ground	1.88	1.62	1.50	1.28	1.12	1.00	0.90

Note:

Thermal Resistivity K.m/W	Soil Conditions	Weather Conditions
0.5	Very moist	Continuously moist
1.0	Moist	Regular rainfall
2.0	Dry	Seldom rains
3.0	Very dry	Little or no rain

C 2.4 Correction factors for depth of installation in the ground

Correction factors for depth of installation other than 0.8m to be applied to the current-carrying capacities for cables in ducts in the ground. For installation Method D1 & D2.

Installation Method	Depth of installation (m)							
	0.8	1.0	1.25	1.50	1.75	2.0	2.5	3.0
D1: Multi-core cable in ducts in the ground	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92
D2: Sheathed single-core or multi- core cables direct in the ground	1.00	0.98	0.96	0.95	0.94	0.93	0.91	0.90

Note:
The presence of mechanical barriers (such as bricks or slabs) not generating air spaces, thus is does not change the value of current carrying capacities.

C 2.5 Reduction factors for installation Method A to F (except D)

Reduction factors for one circuit or one multicore cable, or for a group of more than one circuit or more than one multicore cables, to be used with current-carrying capacities for installation method A to F (except for installation method D)

Grouping factors description	No. of cables											
	1	2	3	4	5	6	7	8	9	12	16	>=20
For methods A to F (except D), cables multipolar or more than one circuit in contact, bunched in air, on a surface, embedded or enclosed	1.00	0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50	0.45	0.41	0.38
For method C, cables multipolar or more than one circuit single layer on wall, floor or unperforated cable tray systems	1.00	0.85	0.79	0.75	0.73	0.72	0.72	0.71	0.70	0.70	0.70	0.70
For method C, cables multipolar or more than one circuit single layer fixed directly under a wooden ceiling	0.95	0.81	0.72	0.68	0.66	0.64	0.63	0.62	0.61	0.61	0.61	0.61
For methods E and F, cables multipolar or more than one circuit single layer on a perforated horizontal or vertical cable tray systems	1.00	0.88	0.82	0.77	0.75	0.73	0.73	0.72	0.72	0.72	0.72	0.72
For methods E and F, cables multipolar or more than one circuit single layer on cable ladder systems or cleats etc.	1.00	0.87	0.82	0.8	0.8	0.79	0.79	0.78	0.78	0.78	0.78	0.78

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

Note 2:
Where horizontal clearances between adjacent cables exceeds twice their overall diameter, no reduction applied.

Note 3:
The same factors are applied to groups of two or three single core cables and multicore cables.

C 2.6 Reduction factors for installation Method D2

Reduction factors for more than one circuit, cables laid directly in the ground – For installation method D2, applicable for single-core or multicore cables.

(Installation Method D2) Grouping factors description	No. of cables										
	2	3	4	5	6	7	8	9	12	16	>=20
For more than one circuit, cable laid directly in the ground, with cables touching	0.75	0.65	0.6	0.55	0.5	0.45	0.43	0.41	0.36	0.32	0.29
For more than one circuit, cable laid directly in the ground, with cable-to- cable clearance = one cable diameter	0.80	0.70	0.60	0.55	0.55	0.51	0.48	0.46	0.42	0.38	0.35
For more than one circuit, cable laid directly in the ground, with cable-to- cable clearance = 0.125m	0.85	0.75	0.7	0.65	0.6	0.59	0.57	0.55	0.51	0.47	0.44
For more than one circuit, cable laid directly in the ground, with cable-to- cable clearance = 0.25m	0.90	0.80	0.75	0.70	0.70	0.67	0.65	0.63	0.59	0.56	0.53
For more than one circuit, cable laid directly in the ground, with cable-to- cable clearance = 0.5m	0.90	0.85	0.80	0.80	0.80	0.76	0.75	0.74	0.71	0.68	0.66

C 2.7 Reduction factors for installation Method D1

Reduction factors for more than one circuit, cables laid in ducts in the ground – For installation method D1, applicable for single-core or multicore cables.

(Installation Method D1) Grouping factors description	No. of cables																		
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	>=20
For more than one circuit, cable laid directly ducts in the ground, multi- core cables in single-way ducts, with ducts touching	0.85	0.75	0.70	0.65	0.60	0.57	0.54	0.52	0.49	0.47	0.45	0.44	0.42	0.41	0.39	0.38	0.37	0.35	0.34
For more than one circuit, cable laid directly ducts in the ground, multi- core cables in single-way ducts, with duct-to-duct clearance = 0.25m	0.90	0.85	0.80	0.80	0.80	0.76	0.74	0.73	0.72	0.70	0.69	0.68	0.68	0.67	0.66	0.65	0.65	0.64	0.63
For more than one circuit, cable laid directly ducts in the ground, multi- core cables in single-way ducts, with duct-to-duct clearance = 0.5m	0.95	0.90	0.85	0.85	0.80	0.80	0.78	0.77	0.76	0.75	0.74	0.73	0.72	0.72	0.71	0.70	0.70	0.69	0.68
For more than one circuit, cable laid directly ducts in the ground, multi- core cables in single-way ducts, with duct-to-duct clearance = 1.0m	0.95	0.95	0.90	0.90	0.90	0.88	0.88	0.87	0.86	0.86	0.85	0.85	0.84	0.84	0.83	0.83	0.83	0.82	0.82
For more than one circuit, cable laid directly ducts in the ground, single- core cables in non-magnetic single- way ducts, with ducts touching	0.80	0.70	0.65	0.60	0.60	0.53	0.50	0.47	0.45	0.43	0.41	0.39	0.37	0.35	0.34	0.33	0.31	0.30	0.29
For more than one circuit, cable laid directly ducts in the ground, single- core cables in non-magnetic single- way ducts, with duct-to-duct clearance = 0.25m	0.90	0.80	0.75	0.70	0.70	0.66	0.63	0.61	0.59	0.57	0.56	0.54	0.53	0.52	0.51	0.50	0.49	0.48	0.47
For more than one circuit, cable laid directly ducts in the ground, single- core cables in non-magnetic single- way ducts, with duct-to-duct clearance = 0.5m	0.90	0.85	0.80	0.80	0.80	0.76	0.74	0.73	0.72	0.70	0.69	0.68	0.68	0.67	0.66	0.65	0.65	0.64	0.63
For more than one circuit, cable laid directly ducts in the ground, single- core cables in non-magnetic single- way ducts, with duct-to-duct clearance = 1.0m	0.95	0.90	0.90	0.90	0.90	0.87	0.87	0.86	0.85	0.85	0.84	0.84	0.83	0.83	0.83	0.82	0.82	0.82	0.81

C 2.8 Reduction factors for installation method E

Reduction factors for group of more than one multicore cable to be applied to reference current- carrying capacities for multicore cables in free air – For installation Method E.

(Installation Method E) Grouping factors description	No. of trays or ladders	No. of cables per tray or ladder					
		1	2	3	4	6	9
For group of more than one multi- core cable in free air, perforated cable tray system, touching	1	1.00	0.88	0.82	0.79	0.76	0.73
	2	1.00	0.87	0.80	0.77	0.73	0.68
	3	1.00	0.86	0.79	0.76	0.71	0.66
	6	1.00	0.84	0.77	0.73	0.68	0.64
For group of more than one multi- core cable in free air, perforated cable tray system, spaced	1	1.00	1.00	0.98	0.95	0.91	-
	2	1.00	0.99	0.96	0.92	0.87	-
	3	1.00	0.98	0.95	0.91	0.85	-
For group of more than one multi- core cable in free air, vertical perforated cable tray systems, touching	1	1.00	0.88	0.82	0.78	0.73	0.72
	2	1.00	0.88	0.81	0.76	0.71	0.70
For group of more than one multi- core cable in free air, vertical perforated cable tray systems, spaced	1	1.00	0.91	0.89	0.88	0.87	-
	2	1.00	0.91	0.88	0.87	0.85	-
For group of more than one multi- core cable in free air, unperforated cable tray system, touching	1	0.97	0.84	0.78	0.75	0.71	0.68
	2	0.97	0.83	0.76	0.72	0.68	0.63
	3	0.97	0.82	0.75	0.71	0.66	0.61
	6	0.97	0.81	0.73	0.69	0.63	0.58
For group of more than one multi- core cable in free air, cable ladder systems, cleats & etc., touching	1	1.00	0.87	0.82	0.80	0.79	0.78
	2	1.00	0.86	0.80	0.78	0.76	0.73
	3	1.00	0.85	0.79	0.76	0.73	0.70
	6	1.00	0.84	0.77	0.73	0.68	0.64
For group of more than one multi- core cable in free air, cable ladder systems, cleats & etc., spaced	1	1.00	1.00	1.00	1.00	1.00	-
	2	1.00	0.99	0.98	0.97	0.96	-
	3	1.00	0.98	0.97	0.96	0.93	-

C 2.9 Reduction factors for installation method F

Reduction factors for groups of one or more circuits of single-core cables to be applied to reference current-carrying capacity for one circuit of single-core cables in free air – For installation Method F.

(Installation Method E) Grouping factors description	No. of trays or ladders	No. of cables per tray or ladder		
		1	2	3
For groups of one or more circuits of single-core cables in free air, perforated cable tray system, touching, three cables in horizontal formation	1	0.98	0.91	0.87
	2	0.96	0.87	0.81
	3	0.95	0.85	0.78
For groups of one or more circuits of single-core cables in free air, vertical perforated cable tray system, touching, three cables in horizontal formation	1	0.96	0.86	-
	2	0.95	0.84	-
For groups of one or more circuits of single-core cables in free air, cable ladder systems, cleats & etc., touching, three cables in horizontal formation	1	1.00	0.97	0.96
	2	0.98	0.93	0.89
	3	0.97	0.90	0.86
For groups of one or more circuits of single-core cables in free air, perforated cable tray systems, three cables in trefoil formation	1	1.00	0.98	0.96
	2	0.97	0.93	0.89
	3	0.96	0.92	0.86
For groups of one or more circuits of single-core cables in free air, vertical perforated cable tray systems, three cables in trefoil formation	1	1.00	0.91	0.89
	2	1.00	0.90	0.86
For groups of one or more circuits of single-core cables in free air, cable ladder systems, cleats & etc., three cables in trefoil formation	1	1.00	1.00	1.00
	2	0.97	0.95	0.93
	3	0.96	0.94	0.90

Note 1:
Factors are given for single layers of cables (or trefoil groups) as shown in table and do not apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and should be determined by an appropriate method.

Note 2:
Values are given for vertical spacing between cables trays of 300mm and at least 20mm between cable trays and wall. For closer spacing the factors should be reduced.

Note 3:
Values are given for horizontal spacing between cables trays of 225mm with cable trays mounted back- to-back. For closer spacing the factors should be reduced.

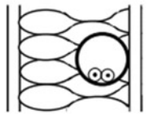
Note 4:
For circuits having more than one cable in parallel per phase, each three-phase set of conductors should be considered as a circuit for the purpose of this table.

C3: Current Carrying Capacities (Current Ratings)

C 3.1 Current Ratings for installation Method A1 (Non-armoured cables)

Current ratings for single-core non-armoured cables in conduit in a thermally insulated wall.

Method A1



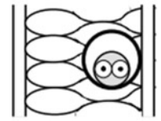
Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	13.5	-	14.5	-	14.5	-	17	-	19	-	19	-
2.5	18	-	19.5	-	19.5	-	23	-	26	-	26	-
4	24	-	26	-	26	-	31	-	35	-	35	-
6	31	-	34	-	34	-	40	-	45	-	45	-
10	42	-	46	-	46	-	54	-	61	-	61	-
16	56	-	61	-	61	-	73	-	81	-	81	-
25	73	57	80	63	80	63	95	76	106	84	106	84
35	89	70	99	77	99	77	117	94	131	103	131	103
50	108	84	119	93	119	93	141	113	158	125	158	125
70	136	107	151	118	151	118	179	142	200	158	200	158
95	164	129	182	142	182	142	216	171	241	191	241	191
120	188	149	210	164	210	164	249	197	278	220	278	220
150	216	170	240	189	240	189	285	226	318	253	318	253
185	245	194	273	215	273	215	324	256	362	288	362	288
240	286	227	321	252	321	252	380	300	424	338	424	338
300	328	261	367	289	367	289	435	344	486	387	486	387

Ambient temperature: 30°C in air

C 3.2 Current Ratings for installation Method A2 (Non-armoured cables)

Current ratings for multi-core non-armoured cables in conduit in a thermally insulated wall.

Method A2



Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	13	-	14	-	14	-	16.5	-	18.5	-	18.5	-
2.5	17.5	-	18.5	-	18.5	-	22	-	25	-	25	-
4	23	-	25	-	25	-	30	-	33	-	33	-
6	29	-	32	-	32	-	38	-	42	-	42	-
10	39	-	43	-	43	-	51	-	57	-	57	-
16	52	-	57	-	57	-	68	-	76	-	76	-
25	68	53	75	58	75	58	89	71	99	78	99	78
35	83	65	92	71	92	71	109	87	121	96	121	96
50	99	78	110	86	110	86	130	104	145	115	145	115
70	125	98	139	108	139	108	164	131	183	145	183	145
95	150	118	167	130	167	130	197	157	220	175	220	175
120	172	135	192	150	192	150	227	180	253	201	253	201
150	196	155	219	172	219	172	259	206	290	230	290	230
185	223	176	248	195	248	195	295	233	329	262	329	262
240	261	207	291	229	291	229	346	273	386	307	386	307
300	298	237	334	263	334	263	396	313	442	352	442	352

Ambient temperature: 30°C in air

C 3.3 Current Ratings for installation Method B1 (Non-armoured cables)

Current ratings for single-core non-armoured cables in conduit on a wooden wall.

Method B1

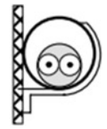
Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	15.5	-	17.5	-	17.5	-	20	-	23	-	23	-
2.5	21	-	24	-	24	-	28	-	31	-	31	-
4	28	-	32	-	32	-	37	-	42	-	42	-
6	36	-	41	-	41	-	48	-	54	-	54	-
10	50	-	57	-	57	-	66	-	75	-	75	-
16	68	-	76	-	76	-	88	-	100	-	100	-
25	89	70	101	79	101	79	117	93	133	105	133	105
35	110	86	125	97	125	97	144	116	164	130	164	130
50	134	104	151	118	151	118	175	140	198	157	198	157
70	171	133	192	150	192	150	222	179	253	200	253	200
95	207	161	232	181	232	181	269	217	306	242	306	242
120	239	186	269	210	269	210	312	251	354	281	354	281
150	262	204	300	234	300	234	342	267	393	307	393	307
185	296	230	341	266	341	266	384	300	449	351	449	351
240	346	269	400	312	400	312	450	351	528	412	528	412
300	394	306	458	358	458	358	514	402	603	471	603	471

Ambient temperature: 30°C in air

C 3.4 Current Ratings for installation Method B2 (Non-armoured cables)

Current ratings for multi-core non-armoured cables in conduit on a wooden wall.

Method B2

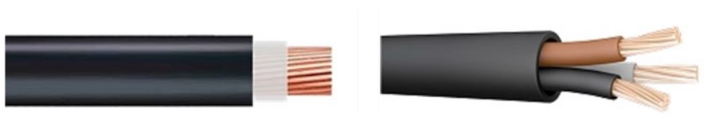


Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	15	-	16.5	-	16.5	-	19.5	-	22	-	22	-
2.5	20	-	23	-	23	-	26	-	30	-	30	-
4	27	-	30	-	30	-	35	-	40	-	40	-
6	34	-	38	-	38	-	44	-	51	-	51	-
10	46	-	52	-	52	-	60	-	69	-	69	-
16	62	-	69	-	69	-	80	-	91	-	91	-
25	80	62	90	71	90	71	105	84	119	94	119	94
35	99	77	111	86	111	86	128	103	146	115	146	115
50	118	92	133	104	133	104	154	124	175	138	175	138
70	149	116	168	131	168	131	194	156	221	175	221	175
95	179	139	201	157	201	157	233	188	265	210	265	210
120	206	160	232	181	232	181	268	216	305	242	305	242
150	225	176	258	201	258	201	300	240	334	261	334	261
185	255	199	294	230	294	230	340	272	384	300	384	300
240	297	232	344	269	344	269	398	318	459	358	459	358
300	339	265	394	308	394	308	455	364	532	415	532	415

Ambient temperature: 30°C in air

C 3.5 Current Ratings for installation Method C (Non-armoured cables)

Current ratings for single-core or multi-core non-armoured cables on a wooden wall.



Method C

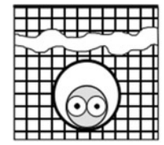
Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	17.5	-	19.5	-	19.5	-	22	-	24	-	24	-
2.5	24	-	27	-	27	-	30	-	33	-	33	-
4	32	-	36	-	36	-	40	-	45	-	45	-
6	41	-	46	-	46	-	52	-	58	-	58	-
10	57	-	63	-	63	-	71	-	80	-	80	-
16	76	-	85	-	85	-	96	-	107	-	107	-
25	96	73	112	83	112	83	119	90	138	101	138	101
35	119	90	138	103	138	103	147	112	171	126	171	126
50	144	110	168	125	168	125	179	136	209	154	209	154
70	184	140	213	160	213	160	229	174	269	198	269	198
95	223	170	258	195	258	195	278	211	328	241	328	241
120	259	197	299	226	299	226	322	245	382	280	382	280
150	299	227	344	261	344	261	371	283	441	324	441	324
185	341	259	392	298	392	298	424	323	506	371	506	371
240	403	305	461	352	461	352	500	382	599	439	599	439
300	464	351	530	406	530	406	576	440	693	508	693	508

Ambient temperature: 30°C in air

C 3.6 Current Ratings for installation Method D1 (Non-armoured cables)

Current ratings for multi-core non-armoured cables in ducts in the ground.

Method D1



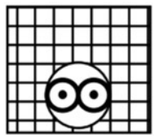
Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	18	-	22	-	22	-	21	-	25	-	25	-
2.5	24	-	29	-	29	-	28	-	33	-	33	-
4	30	-	37	-	37	-	36	-	43	-	43	-
6	38	-	46	-	46	-	44	-	53	-	53	-
10	50	-	60	-	60	-	58	-	71	-	71	-
16	64	-	78	-	78	-	75	-	91	-	91	-
25	82	64	99	77	99	77	96	75	116	90	116	90
35	98	77	119	93	119	93	115	90	139	108	139	108
50	116	91	140	109	140	109	135	106	164	128	164	128
70	143	112	173	135	173	135	167	130	203	158	203	158
95	169	132	204	159	204	159	197	154	239	186	239	186
120	192	150	231	180	231	180	223	174	271	211	271	211
150	217	169	261	204	261	204	251	197	306	238	306	238
185	243	190	292	228	292	228	281	220	343	267	343	267
240	280	218	336	262	336	262	324	253	395	307	395	307
300	316	247	379	296	379	296	365	286	446	346	446	346

Ambient temperature: 20°C in ground

C 3.7 Current Ratings for installation Method D2 (Non-armoured cables)

Current ratings for sheathed single-core or multi-core non-armoured cables direct in the ground.

Method D2



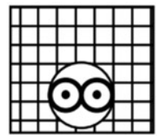
Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	19	-	22	-	22	-	23	-	27	-	27	-
2.5	24	-	28	-	28	-	30	-	35	-	35	-
4	33	-	38	-	38	-	39	-	46	-	46	-
6	41	-	48	-	48	-	49	-	58	-	58	-
10	54	-	64	-	64	-	65	-	77	-	77	-
16	70	-	83	-	83	-	84	-	100	-	100	-
25	92	69	110	82	110	82	107	82	129	98	129	98
35	110	83	132	98	132	98	129	98	155	117	155	117
50	130	99	156	117	156	117	153	117	183	139	183	139
70	162	122	192	145	192	145	188	144	225	170	225	170
95	193	148	230	173	230	173	226	172	270	204	270	204
120	220	169	261	200	261	200	257	197	306	233	306	233
150	246	189	293	224	293	224	287	220	343	261	343	261
185	278	214	331	255	331	255	324	250	387	296	387	296
240	320	250	382	298	382	298	375	290	448	343	448	343
300	359	282	427	336	427	336	419	326	502	386	502	386

Ambient temperature: 20°C in ground

C 3.8 Current Ratings for installation Method D2 (Armoured cables)

Current ratings for sheathed single-core or multi-core armoured cables direct in the ground.

Method D2



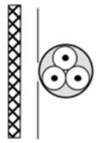
Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	18	-	22	-	22	-	21	-	25	-	25	-
2.5	24	-	29	-	29	-	28	-	33	-	33	-
4	30	-	37	-	37	-	36	-	43	-	43	-
6	38	-	46	-	46	-	44	-	53	-	53	-
10	50	-	60	-	60	-	58	-	71	-	71	-
16	64	-	78	-	78	-	75	59	91	-	91	-
25	82	64	99	77	99	77	96	75	116	90	116	90
35	98	77	119	93	119	93	115	90	139	108	139	108
50	116	91	140	109	140	109	135	106	164	128	164	128
70	143	112	173	135	173	135	167	130	203	158	203	158
95	169	132	204	159	204	159	197	154	239	186	239	186
120	192	150	231	-	231	-	223	174	271	-	271	-
150	217	169	261	-	261	-	251	197	306	-	306	-
185	243	190	292	-	292	-	281	220	343	-	343	-
240	280	218	336	-	336	-	324	253	395	-	395	-
300	316	247	379	-	379	-	365	286	446	-	446	-

Ambient temperature: 20°C in ground

C 3.9 Current Ratings for installation Method E (Non-armoured cables)

Current ratings for multi-core non-armoured cables in free air.

Method E



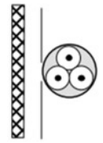
Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
1.5	18.5	-	22	-	22	-	23	-	26	-	26	-
2.5	25	-	30	-	30	-	32	-	36	-	36	-
4	34	-	40	-	40	-	42	-	49	-	49	-
6	43	-	51	-	51	-	54	-	63	-	63	-
10	60	-	70	-	70	-	75	-	86	-	86	-
16	80	-	94	-	94	-	100	-	115	-	115	-
25	101	78	119	89	119	89	127	97	149	108	149	108
35	126	96	148	111	148	111	158	120	185	135	185	135
50	153	117	180	135	180	135	192	146	225	164	225	164
70	196	150	232	173	232	173	246	187	289	211	289	211
95	238	183	282	210	282	210	298	227	352	257	352	257
120	276	212	328	244	328	244	346	263	410	300	410	300
150	319	245	379	282	379	282	399	304	473	346	473	346
185	364	280	434	322	434	322	456	347	542	397	542	397
240	430	330	514	380	514	380	538	409	641	470	641	470
300	497	381	593	439	593	439	621	471	741	543	741	543

Ambient temperature: 30°C in air

C 3.10 Current Ratings for installation Method F (Non-armoured cables)

Current ratings for single-core non-armoured cables, touching in free air.

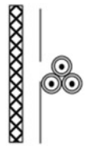
Method F (Touching)



Max work temp	70°C (PVC)						90°C (XLPE, EPR)					
Cond size (mm²)	3ph		1ph		DC		3ph		1ph		DC	
	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al
25	114	87	131	98	131	98	141	107	161	121	161	121
35	143	109	162	122	162	122	176	135	200	150	200	150
50	174	133	196	149	196	149	216	165	242	184	242	184
70	225	173	251	192	251	192	279	215	310	237	310	237
95	275	212	304	235	304	235	342	264	377	289	377	289
120	321	247	352	273	352	273	400	308	437	337	437	337
150	372	287	406	316	406	316	464	358	504	389	504	389
185	427	330	463	363	463	363	533	413	575	447	575	447
240	507	392	546	430	546	430	634	492	679	530	679	530
300	587	455	629	497	629	497	736	571	783	613	783	613
400	689	552	754	600	754	600	868	694	940	740	940	740
500	789	640	868	694	868	694	998	806	1083	856	1083	856
630	905	746	1005	808	1005	808	1151	942	1254	996	1254	996

Ambient temperature: 30°C in air

Current ratings for single-core non-armoured cables, trefoil in free air.



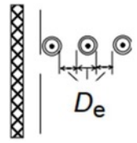
Method F (Trefoil)

Max work temp	70°C (PVC)		90°C (XLPE, EPR)	
Cond size (mm²)	3ph		3ph	
	Cu	Al	Cu	Al
25	110	84	135	103
35	137	105	169	129
50	167	128	207	159
70	216	166	268	206
95	264	203	328	253
120	308	237	383	296
150	356	274	444	343
185	409	315	510	395
240	485	375	607	471
300	561	434	703	547
400	656	526	823	663
500	749	610	946	770
630	855	711	1088	899

Ambient temperature: 30°C in air

C 3.11 Current Ratings for installation Method G (Non-armoured cables)

Current ratings for single-core non-armoured cables, spaced in free air (horizontal).



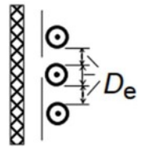
Method G (Spaced)

Max work temp	70°C (PVC)		90°C (XLPE, EPR)	
Cond size (mm²)	3ph		3ph	
	Cu	Al	Cu	Al
25	146	112	182	138
35	181	139	226	172
50	219	169	275	210
70	281	217	353	271
95	341	265	430	332
120	396	308	500	387
150	456	356	577	448
185	521	407	661	515
240	615	482	781	611
300	709	557	902	708
400	852	671	1085	856
500	982	775	1253	991
630	1138	900	1454	1154

Ambient temperature: 30°C in air

Current ratings for single-core non-armoured cables, spaced in free air (vertical).

Method F (Trefoil)



Max work temp	70°C (PVC)		90°C (XLPE, EPR)	
Cond size (mm²)	3ph		3ph	
	Cu	Al	Cu	Al
25	130	99	161	122
35	162	124	201	153
50	197	152	246	188
70	254	196	318	244
95	311	241	389	300
120	362	282	454	351
150	419	327	527	408
185	480	376	605	470
240	569	447	719	561
300	659	519	833	652
400	795	629	1008	792
500	920	730	1169	921
630	1070	852	1362	1077

Ambient temperature: 30°C in air

C4: Conductor Resistance and Reactance

For copper conductor,

Cross section area (mm2)	DC resistance at 20°C (Ω/km)	AC resistance at 70°C (Ω/km)	AC resistance at 90°C (Ω/km)	Reactance at 50Hz (Ω/km)
1.5	12.1	14.5	15.4	0.113
2.5	7.41	8.87	9.45	0.106
4	4.61	5.52	5.88	0.100
6	3.08	3.69	3.93	0.093
10	1.83	2.19	2.33	0.087
16	1.15	1.38	1.47	0.084
25	0.727	0.870	0.927	0.081
35	0.524	0.627	0.668	0.078
50	0.387	0.464	0.494	0.078
70	0.268	0.321	0.342	0.078
95	0.193	0.232	0.247	0.076
120	0.153	0.185	0.197	0.073
150	0.124	0.149	0.160	0.075
185	0.0991	0.120	0.128	0.075
240	0.0754	0.0926	0.0989	0.073
300	0.0601	0.0750	0.0802	0.072
400	0.0470	0.0600	0.0640	0.073
500	0.0366	0.0484	0.0515	0.072
630	0.0283	0.0398	0.0420	0.071

For aluminium conductor,

Cross section area (mm2)	DC resistance at 20°C (Ω/km)	AC resistance at 70°C (Ω/km)	AC resistance at 90°C (Ω/km)	Reactance at 50Hz (Ω/km)
25	1.20	1.44	1.54	0.081
35	0.868	1.04	1.11	0.078
50	0.641	0.771	0.822	0.078
70	0.443	0.533	0.568	0.078
95	0.320	0.385	0.411	0.076
120	0.253	0.305	0.325	0.073
150	0.206	0.248	0.265	0.075
185	0.164	0.198	0.211	0.075
240	0.125	0.152	0.162	0.073
300	0.100	0.122	0.130	0.072
400	0.0778	0.0935	0.0997	0.073
500	0.0605	0.0727	0.0776	0.072
630	0.0469	0.0564	0.0601	0.071

C5: Voltage Drop

Voltage drops may be determined using the following formula:

$$u = b \left(\rho_1 \frac{L}{S} \cos\theta + \lambda L \sin\theta \right) I_B$$

where,

u is the voltage drop in volts;

b is the coefficient equal to 1 for three-phases circuits, and equal to 2 for single-phase circuits;

ρ_1 is the resistivity of conductors in normal service, taken equal to the resistivity at the temperature in normal service, i.e. 1.25 times the resistivity at 20°C, or 0.0225 Ωmm²/m for copper and 0.036 Ωmm²/m for aluminium;

L is the straight length of the wiring systems, in meters;

S is the cross-sectional area of conductors, in mm²

cosθ is the power factor; in the absence of precise details, the power factor is taken as equal to 0.8 (sin**θ** = 0.6);

λ is the reactance per unit length of conductors, which is taken to be 0.08 mΩ/m in the absence of details;

I_B is the design current (in amps);

U_0 is the voltage between line and neutral, in volts.

Appendix D. Short Circuit Ratings

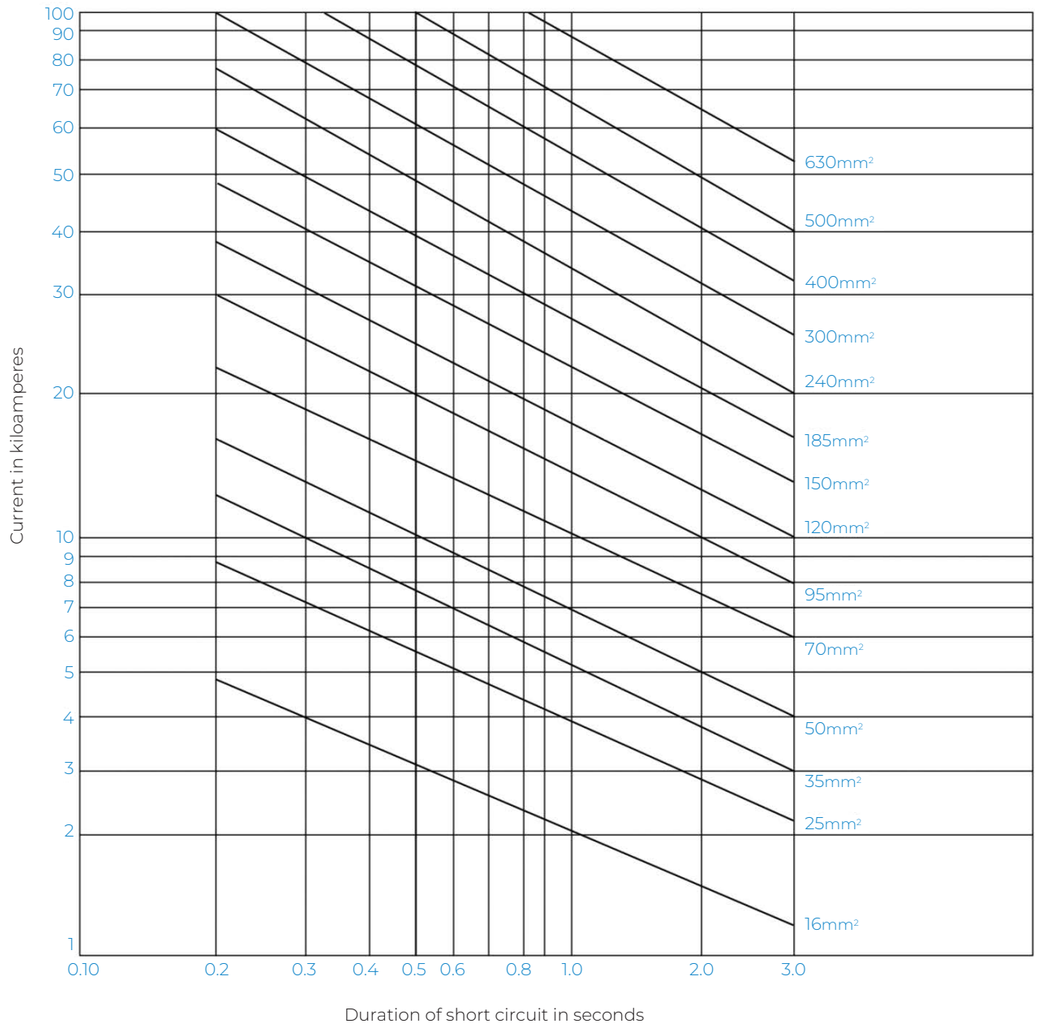
Another important factor for the determination of the conductor size is the maximum allowable current during a short circuit when the maximum allowable conductor temperature is higher than during normal operation.

The maximum permissible short circuit current of XLPE cables up to 1 kV with copper conductors can be calculated with following formula:

$$1k = \frac{S}{\sqrt{t}} \cdot K$$

1k	Maximum permissible short circuit current
(A) S	Conductor area (mm2)
t	Duration of short circuit process (s). Maximum value for t is 5 seconds
K	Constant of 143 for copper conductors and temperature rising 90°C to 250°C

Cooper Conductors



Appendix E. Cables Drum Handling and Storage Procedure

Minimum bending radius

Types of cable	Unarmoured		Environment
Number of cores	Single core	Multicore	
300 / 500V and 600 / 1000V cable	8ø	6ø	10ø

Calculating side wall pressure to cable

Permissible maximum side wall pressure to the cable at bending point during installation is 500kgf/m.

$$\text{Side wall pressure to cable} = \frac{\text{Pulling tension (kgf)}}{\text{Bending radius (m)}} = \frac{T}{R}$$

Permissable maximum pulling tension **T** for copper conductor cables:

T = 7 x (# of cores) x (conductor cross-sectional area)

Drum handling

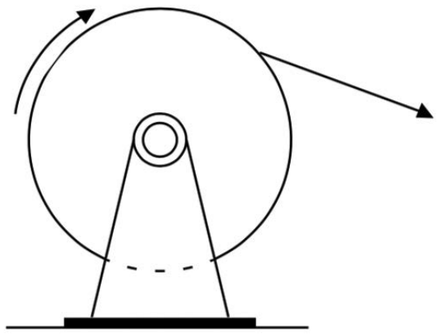
Always handle the drums with care. Here are two points how:

1. Always use a fork-lift truck or crane when removing drums from the vehicle.
2. Always take care to lower the drums into an upright position on their flanges.

Unwinding Cables

DO:

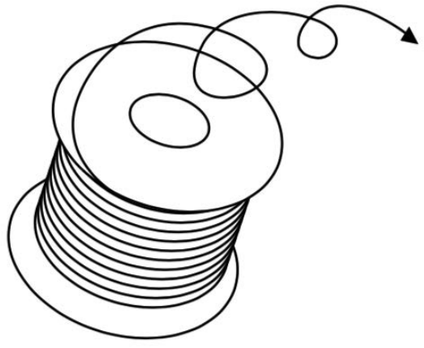
Unwind from the top of the drum.



Right!

DON'T:

Pulling like this causes kinking and possible damage to drum and cable.



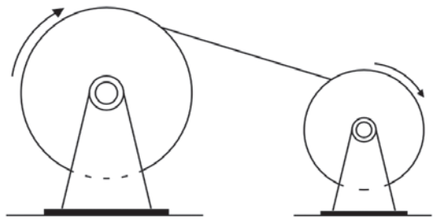
Wrong!

Rewinding Cables/Changing Drums

Rewinding

DO:

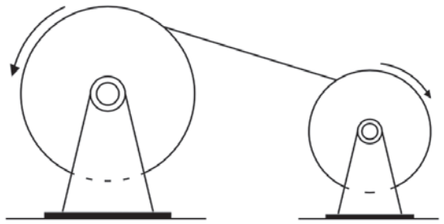
Wind the top part between drums.



Right!

DON'T:

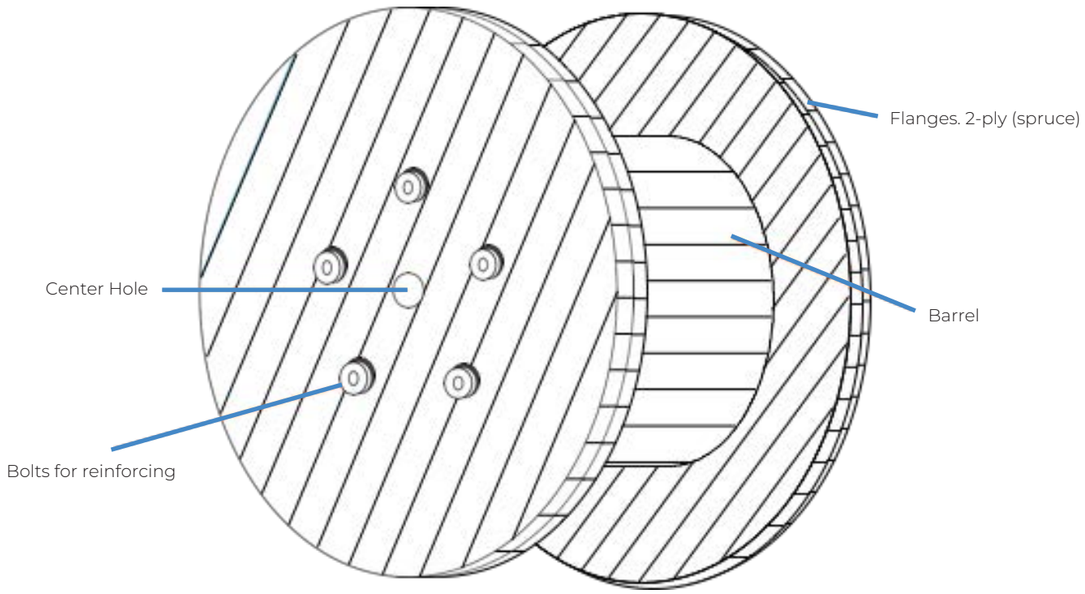
Wind from top to bottom between drums.



Wrong!

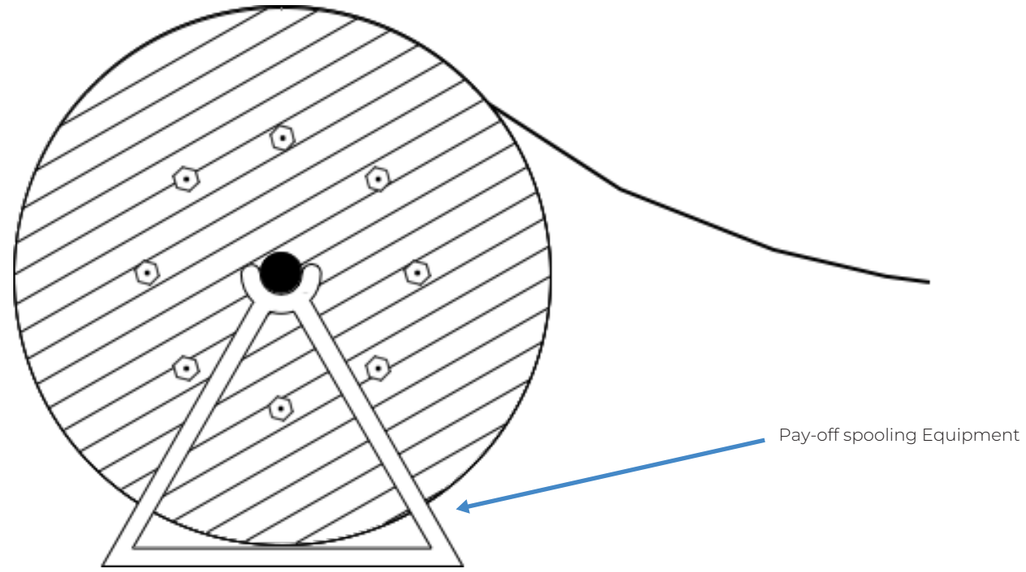
Tightening Drum Flanges

Due to changing weather conditions, wooden drums may slightly shrink or loosen, which requires retightening on the flange bolts, show in diagram.



Proper Spooling Equipment

Although cables are generally tough, they can still be damaged by impact, pinching or abrasion. Pay-off spooling makes for an easy operation. Through faulty handling, cables may slide or "crawl". This can result in pinching or locking, which causes damage.



Handling with a forklift

DO:

Face the fork towards the drum front view and across both flanges.

Picture 1a

DON'T:

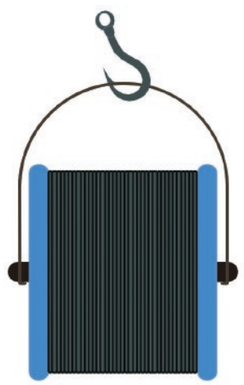
Fork the drum from the side, as it will cause damage to the cables.

Picture 1b

Handling with a hoist

DO:

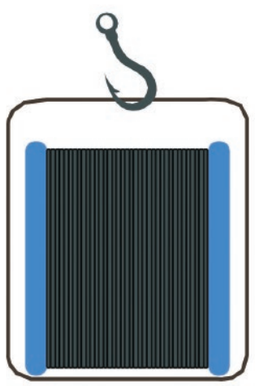
Use a hoist to lift the cable drums, with a steel pipe across the drum centre and a certified sling belt or wire rope.



Picture 2a

DON'T:

Lay the sling belts over the wood battens, causing damage to both wood battens and cable.



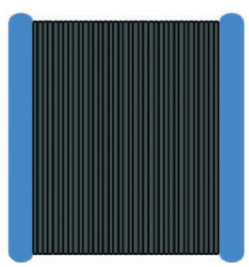
Picture 2b

Storage

1. Cables coiled in the drum must have a minimum 2 inch gap from the flange edge,
2. For open storage, black PVC sheet must be used to wrap and protect the cables.
3. Cable drums must be stored in an upright position.

DO:

Cable drum in upright position, with 2 inch gap from crum flange edge.



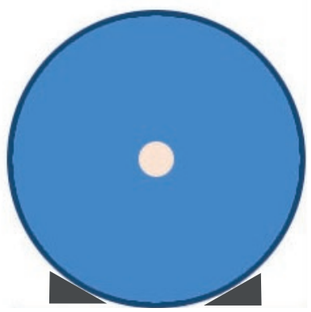
Picture 3a

DON'T:

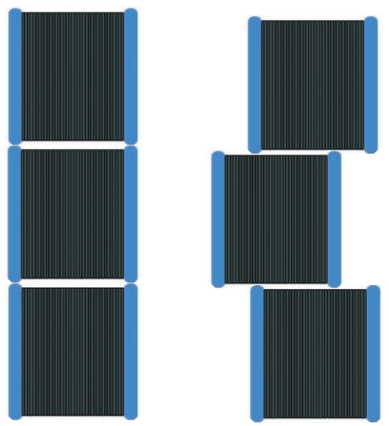
Cable drum laid on one flange side, causing cable sag

Picture 3b

4. Wood chokes should be placed under the flanges to prevent accidental rolling.



5. In vertical storage, drum flanges must be aligned. Misaligned flanges will come into contact with cables, causing damage.

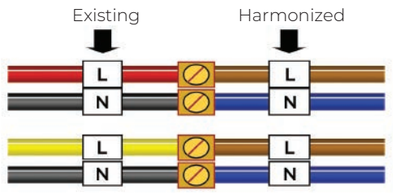


Appendix F. Identification of Cores in Cables

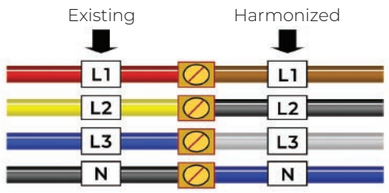
In March 2004, the Amendment No.2: AMD 14905 to BS7671: 2001 (IEE Wiring Rgulations Sixteenth Edition) has been harmonized with the CENELEC Standard HD 384.5.514: Identification including 514.3: Identification of conductor and with CENELEC Harmonization Document HD 308 S2: 2001 Identification of cores in cables and flexible cords.

The change in cable core colours is a major development that will affect the way wiring cable colours are distinguished and installed. Currently, for three phase fixed electrical installations, the wiring cable colours for “line” connections are red, yellow and blue respectively. The new three phase harmonized cable core colours will be brown, black and grey, following that of the new BS 7671: 2008 Requirements for electrical installations, IEE Wiring Regulations, 17th edition. A number of countries in the European Union as well as Hong Kong and Singapore are implementing these harmonized cable core colours.

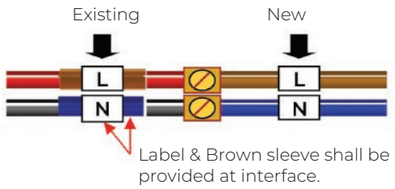
SINGLE-PHASE CIRCUITS



THREE-PHASE CIRCUITS



For any new electrical installation that involved extension from existing wiring system, BS7671 has been modified to align with these cable core colours where suitable marking/ labelling method eg. colour tapes, sleeves, discs, or by alphanumerics (letters and/or numbers) is allowed. See below figure:



Cable Cores Colour Code

Function	Alpha-numeric	Existing Core Colour	New Harmonized Core Colour
Protective conductor		Green / Yellow	Green / Yellow
Functional earthing conductor		Cream	Cream
AC Power Circuit			
- Phase	L	Red	Brown
- Neutral	N	Black	Blue
Three Phase Circuit			
- Phase 1	L1	Red	Brown
- Phase 2	L2	Yellow	Black
- Phase 3	L3	Blue	Grey
- Neutral	N	Black	Blue
DC Two-Wire Unearthed Circuit			
- Positive	L+	Red	Brown
- Negative	L-	Black	Grey
DC Two-Wire Earthed Circuit			
- Positive (of negative earth)	L+	Red	Brown
- Negative (of negative earth)	M	Black	Blue
- Positive (of positive earth)	M	Black	Blue
- Negative (of positive earth)	L-	Blue	Grey
DC Three-Wire Circuit			
- Positive	L+	Red	Brown
- Mid-wire (may be earthed)	M	Black	Blue
- Negative	L-	Blue	Grey

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