Caledonian

www.caledonian-cables.co.uk

CABLES FOR OIL INDUSTRY

ADDISON

www.addison-cables.com

Cables for Oil Industry

Company Profile

Caledonian, established in 1978, offers one of the most complete lines of fiber and copper cabling system solutions with over hundreds of different cabling system products. Our superior products provide leading edge within every cable series and for every application.

Among the national and international standards with which our cables could comply are: BS - British Standard; LPCB Fire Performance Standard. ISO Standard etc. Caledonian Cables offers a comprehensive stock of cables and cabling products through its nationwide network of resellers and distributors. Caledonian Cables has continually expanded its global presence in Europe and Asia.

Caledonian & Addison. produces a wide range of cables for communication, power and electronics in its primary plants in UK, Italy and Spain. To stay in front, we continually keep expanding our manufacturing capabilities in more low cost region such as Romania, Taiwan, Malaysia etc. This low-cost manufacturing facilities enable us provide a flexible, scalable global system that delivers superior operational performance and optimal results for our customers.

Our extensive global network of manufacturing facilities gives us significant scale and the flexibility to fulfill our customer requirements. This global presence provides design and consultancy solutions that are combined with core cable manufacturing, logistic services, and vertically integrated with our E commerce technologies, to optimize customer operations by lowering costs and reducing time to market.

Caledonian & Addison has been respected for its high standards of quality, excellent service level, competitive pricing and a unique and innovative spirit. With our latest technologies, we are both inspired and well-positioned to meet the changing needs of our customers. We have the resources to diversify and to enhance our product lines and services. We understand the need for change and with our accurate planning. We are ready for the future and the promise of new marketing opportunities. Our tradition of growth through excellence is assured.


ISO 9001
REGISTERED FIRM

Registration Certificate

This document certifies that the administration systems of

Caledonian Cables Limited/Addison Technology Limited
Marchants Industrial Centre, Mill Lane, Laughton, Lewes, Sussex, BN8 6AJ, United Kingdom

have been assessed and approved by QAS International to the following management systems, standards and guidelines:

ISO 9001 : 2008
With the permitted exclusion of clauses 7.3 Design and Development

The approved administration systems apply to the following:

The manufacture and supply of electrical cables and ancillary power equipment to customers internationally.

Original Approval 6th September 1997
Current Certificate 7th February 2011
Certificate Expiry 7th February 2012
Certificate Number A6211

On behalf of QAS International

Our Design Centers work closely with customers to constantly improve its standard range of products and technologies and to develop customized, country and industryspecific solutions. Caledonian & Addison has established an extensive network of design, manufacturing and logistics facilities in the world's major markets to serve the growing outsourcing needs of both multinational and regional customers.

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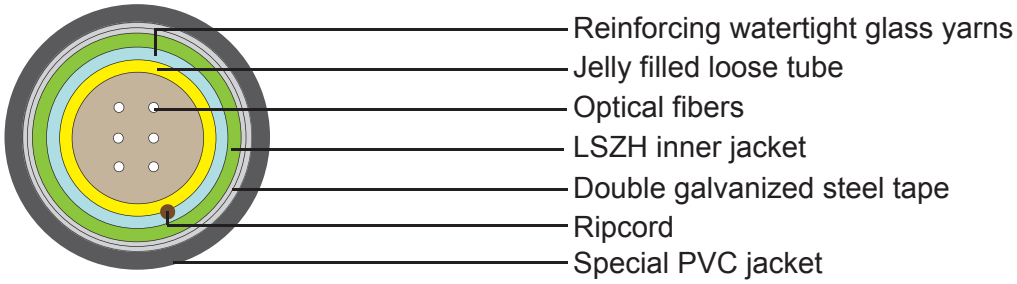
Cables for Oil Industry

Content

Double Galvanized Steel Tape Armored Optical Fiber Cable



Double Galvanized Steel Tape Armored Optical Fiber Cable

Applications

These cables are suitable for underground use in industries. The special PVC sheath resists aliphatic and aromatic hydrocarbon and U.V.

Standards

IEC 794-1-E1; IEC 794-1-E3; IEC 794-1-E4; IEC 794-1-F1; IEC 60332-3-22 Cat.A

Properties

Operating temperature: -20~60°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

No. of Optical Fiber	Fiber Optic Type	No. of Tube	Diameter over Inner Sheath (mm)	Diameter over Armor (mm)	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
4	50/125	1	6.6	7.7	9.9	11.2	178
4	62.5/125	1	6.6	7.7	9.9	11.2	178
6	50/125	1	6.6	7.7	9.9	11.2	178
6	62.5/125	1	6.6	7.7	9.9	11.2	178
8	50/125	1	6.6	7.7	9.9	11.2	178
8	62.5/125	1	6.6	7.7	9.9	11.2	178
8	9/125	1	6.6	7.7	9.9	11.2	178
12	50/125	1	6.6	7.7	9.9	11.2	178
12	62.5/125	1	6.6	7.7	9.9	11.2	178
12	9/125	1	6.6	7.7	9.9	11.2	178
16	62.5/125	1	6.6	7.7	9.9	11.2	178
24	50/125	1	6.6	7.7	9.9	11.2	178
24	62.5/125	1	6.6	7.7	9.9	11.2	178

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Cables for Oil Industry

Steel Wire Armored Optical Fiber Cable

Steel Wire Armored Optical Fiber Cable

Applications

These cables are suitable for underground use in industries. The special PVC sheath resists aliphatic and aromatic hydrocarbon and U.V.

Standards

IEC 794-1-E1; IEC 794-1-E3; IEC 794-1-E4; IEC 794-1-F1; IEC 60332-3-22 Cat.A

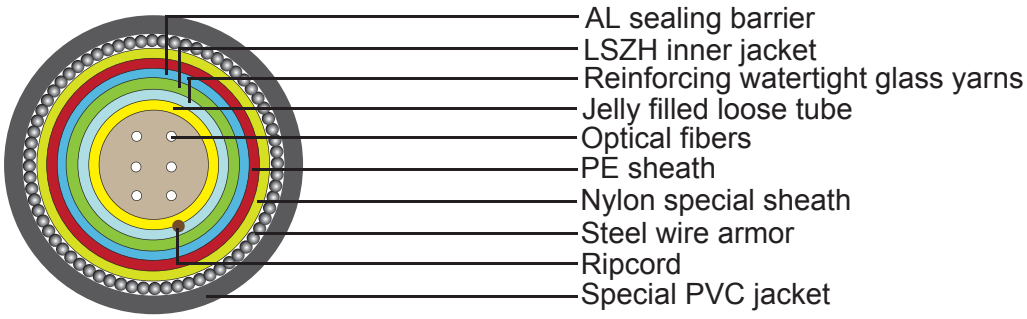
Properties

Operating temperature: -20~60°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

No. of Optical Fiber	Fiber Optic Type	No. of Tube	Diameter over Inner Sheath (mm)	Diameter over Armor (mm)	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
4	50/125	1	6.6	8.4	10.8	12	235
4	62.5/125	1	6.6	8.4	10.8	12	235
6	50/125	1	6.6	8.4	10.8	12	235
6	62.5/125	1	6.6	8.4	10.8	12	235
8	50/125	1	6.6	8.4	10.8	12	235
8	62.5/125	1	6.6	8.4	10.8	12	235
8	9/125	1	6.6	8.4	10.8	12	235
12	50/125	1	6.6	8.4	10.8	12	235
12	62.5/125	1	6.6	8.4	10.8	12	235
12	9/125	1	6.6	8.4	10.8	12	235
16	62.5/125	1	6.6	8.4	10.8	12	235
24	50/125	1	6.6	8.4	10.8	12	235
24	62.5/125	1	6.6	8.4	10.8	12	235

Steel Wire Armored Optical Fiber Cable with Special Sheath



Steel Wire Armored Optical Fiber Cable with Special Sheath

Applications

These cables are suitable for underground use in all refineries while bringing an environmental friendly solution. The special design can resists aliphatic and aromatic hydrocarbon and U.V.

Standards

IEC 794-1-E1; IEC 794-1-E3; IEC 794-1-E4; IEC 794-1-F1; IEC 60332-3-22 Cat.A

Properties

Operating temperature: -20~60°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

No. of Optical Fiber	Fiber Optic Type	No. of Tube	Diameter over Inner Sheath (mm)	Diameter over Sheath (mm)	Diameter over Armor (mm)	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
4	50/125	1	6.6	10.23	12.03	14.5	16.2	397
4	62.5/125	1	6.6	10.23	12.03	14.5	16.2	397
6	50/125	1	6.6	10.23	12.03	14.5	16.2	397
6	62.5/125	1	6.6	10.23	12.03	14.5	16.2	397
8	50/125	1	6.6	10.23	12.03	14.5	16.2	397
8	62.5/125	1	6.6	10.23	12.03	14.5	16.2	397
8	9/125	1	6.6	10.23	12.03	14.5	16.2	397
12	50/125	1	6.6	10.23	12.03	14.5	16.2	397
12	62.5/125	1	6.6	10.23	12.03	14.5	16.2	397
12	9/125	1	6.6	10.23	12.03	14.5	16.2	397
16	62.5/125	1	6.6	10.23	12.03	14.5	16.2	397
24	50/125	1	6.6	10.23	12.03	14.5	16.2	397
24	62.5/125	1	6.6	10.23	12.03	14.5	16.2	397

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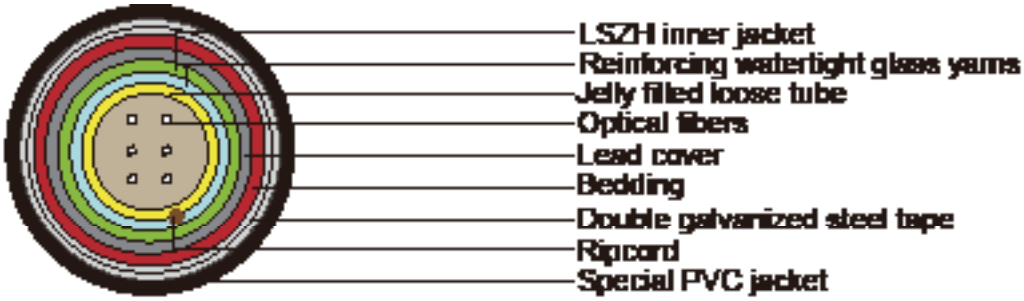
Cables for Oil Industry

Double Galvanized Steel Tape Armored Optical Fiber Cable with Lead Cover



Double Galvanized Steel Tape Armored Optical Fiber Cable with Lead Cover

Applications

These cables are suitable for underground use in all refineries. The special design can resists aliphatic and aromatic hydrocarbon and U.V.

Standards

IEC 794-1-E1; IEC 794-1-E3; IEC 794-1-E4; IEC 794-1-F1; IEC 60332-3-22 Cat.A

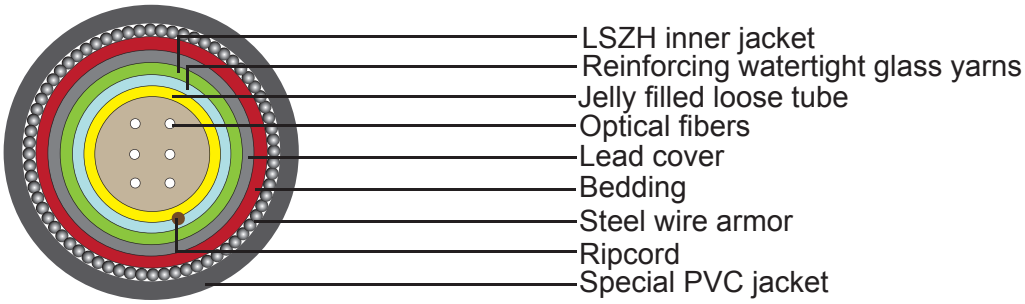
Properties

Operating temperature: -20~60°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

No. of Optical Fiber	Fiber Optic Type	No. of Tube	Diameter over Inner Sheath (mm)	Diameter over Lead Sheath (mm)	Diameter over Armor (mm)	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
4	50/125	1	6.6	8.4	10.04	12.6	14	448
4	62.5/125	1	6.6	8.4	10.04	12.6	14	448
6	50/125	1	6.6	8.4	10.04	12.6	14	448
6	62.5/125	1	6.6	8.4	10.04	12.6	14	448
8	50/125	1	6.6	8.4	10.04	12.6	14	448
8	62.5/125	1	6.6	8.4	10.04	12.6	14	448
8	9/125	1	6.6	8.4	10.04	12.6	14	448
12	50/125	1	6.6	8.4	10.04	12.6	14	448
12	62.5/125	1	6.6	8.4	10.04	12.6	14	448
12	9/125	1	6.6	8.4	10.04	12.6	14	448
16	62.5/125	1	6.6	8.4	10.04	12.6	14	448
24	50/125	1	6.6	8.4	10.04	12.6	14	448
24	62.5/125	1	6.6	8.4	10.04	12.6	14	448

Steel Wire Armored Optical Fiber Cable with Lead Cover



Steel Wire Armored Optical Fiber Cable with Lead Cover

Applications

These cables are suitable for underground use in all refineries. The special design can resists aliphatic and aromatic hydrocarbon and U.V.

Standards

IEC 794-1-E1; IEC 794-1-E3; IEC 794-1-E4; IEC 794-1-F1; IEC 60332-3-22 Cat.A

Properties

Operating temperature: -20~60°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

No. of Optical Fiber	Fiber Optic Type	No. of Tube	Diameter over Inner Sheath (mm)	Diameter over Lead Sheath (mm)	Diameter over Sheath (mm)	Diameter over Armor (mm)	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
4	50/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
4	62.5/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
6	50/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
6	62.5/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
8	50/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
8	62.5/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
8	9/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
12	50/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
12	62.5/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
12	9/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
16	62.5/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
24	50/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625
24	62.5/125	1	6.6	8.4	10.4	12.2	14.7	16.4	625

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Steel Wire Armored Optical Fiber Cable with LSZH Sheath

Steel Wire Armored Optical Fiber Cable with LSZH Sheath

Applications

All materials are halogen free. This ensures that non corrosive and low toxic gases are emitted in case of fire. This cable is recommended for use inside buildings where require mechanical protection.

Standards

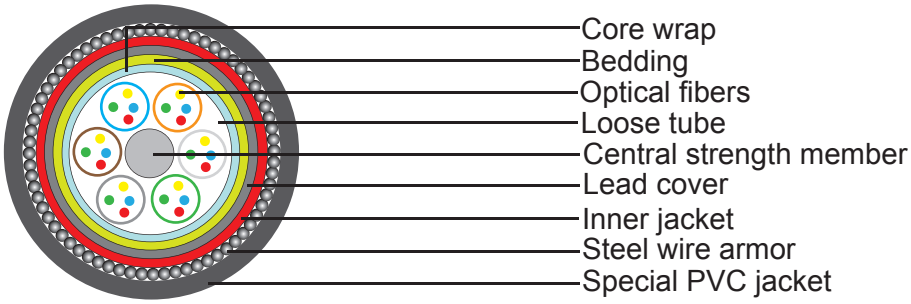
IEC 794-1-E1; IEC 794-1-E3; IEC 794-1-E4; IEC 794-1-F1; IEC 60332-3-22 Cat.A

Properties

Operating temperature: -20~60°C

No. of Optical Fiber	Fiber Optic Type	No. of Tube	Diameter over Inner Sheath (mm)	Diameter over Armor (mm)	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
4	50/125	1	6.6	8.4	10.8	12	232
4	62.5/125	1	6.6	8.4	10.8	12	232
6	50/125	1	6.6	8.4	10.8	12	232
6	62.5/125	1	6.6	8.4	10.8	12	232
8	50/125	1	6.6	8.4	10.8	12	232
8	62.5/125	1	6.6	8.4	10.8	12	232
8	9/125	1	6.6	8.4	10.8	12	232
12	50/125	1	6.6	8.4	10.8	12	232
12	62.5/125	1	6.6	8.4	10.8	12	232
12	9/125	1	6.6	8.4	10.8	12	232
16	62.5/125	1	6.6	8.4	10.8	12	232
24	50/125	1	6.6	8.4	10.8	12	232
24	62.5/125	1	6.6	8.4	10.8	12	232

Steel Wire Armored Optical Fiber Cable with Lead Cover (Multi Loose Tube)



Armored Optical Fiber Cable with Lead Cover(Multi Loose Tube)

Applications

These cables are suitable for underground use in all refineries. The special design can resists aliphatic and aromatic hydrocarbon and U.V.

Standards

IEC 794-1-E1; IEC 794-1-E3; IEC 794-1-E4; IEC 794-1-F1; IEC 60332-3-22 Cat.A

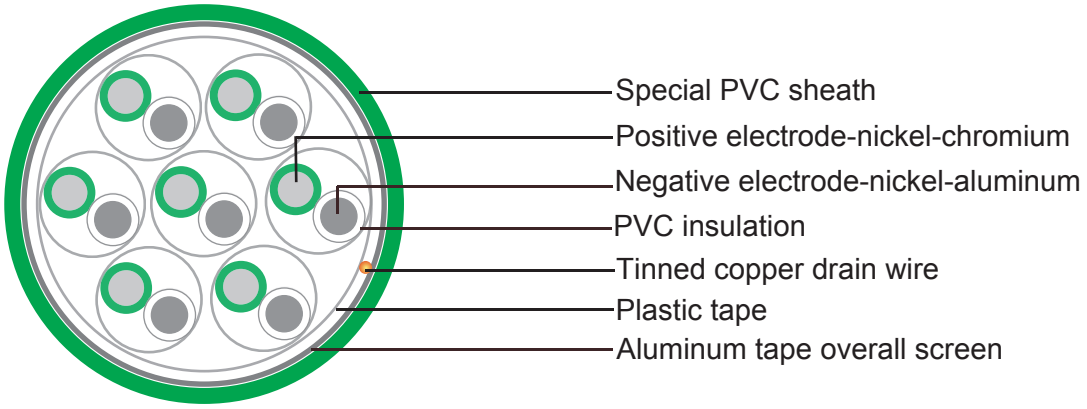
Properties

Operating temperature: -20~60°C
Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

No. of Optical Fiber	Fibers Per Loose Tube	No. of Loose Tubes	Outer Diameter (mm)	Approx. Weight (kg/km)
4	4	1	19.2	1017
8	4	2	19.2	1018
12	4	3	19.2	1018
24	4	6	19.2	1019

Cables for Oil Industry

Overall Screened Thermocouple Cable



KX Overall Screened Thermocouple Cable

Applications

These cables are used with thermocouples for temperature measurements where hydrocarbon may be present.

Standards

IEC 60584-3; NF C 42-324

Construction

Conductor: Metal according to thermocouple type

Insulation: PVC

Overall screen: Aluminum/polyester tape with tinned copper drain wire

Sheath: Special PVC. Color depends on thermocouple type

Properties

Flame retardance: NFC 32070 C2, IEC 60332-1-2

Operating voltage: 250V

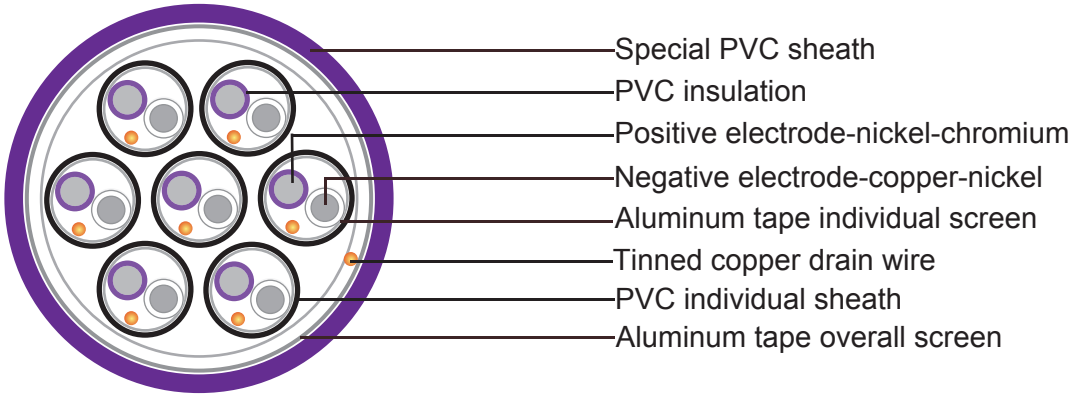
Operating temperature: -20~60°C

Max. conductor temperature in service: 70°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Conductor Size		No. of Pairs	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
mm^2	Solid or Stranding				
1	14 x 0.30 mm	1	6.3	7.4	70
1.34	1 x 1.30 mm	1	6.3	7.4	75
0.5	1 x 0.8 mm	3	8.0	9.3	95
0.5	1 x 0.8 mm	7	10.5	12.1	165
0.5	1 x 0.8 mm	12	13.3	15.3	255
0.5	1 x 0.8 mm	19	16.5	19.0	380
0.5	1 x 0.8 mm	27	19.2	22.0	510

Individual & Overall Screened Thermocouple Cable



EX Individual & Overall Screened Thermocouple Cable

Applications

These cables are used with thermocouples for temperature measurements where hydrocarbon may be present.

Standards

IEC 60584-3; NF C 42-324

Construction

Conductor: Metal according to thermocouple type

Insulation: PVC

Individual screen: Aluminum/polyester tape with tinned copper drain wire

Individual sheath: PVC

Overall screen: Aluminum/polyester tape with tinned copper drain wire

Sheath: Special PVC. Color depends on thermocouple type

Properties

Flame retardance: NFC 32070 C2, IEC 60332-1-2

Operating voltage: 250V

Operating temperature: -20~60°C

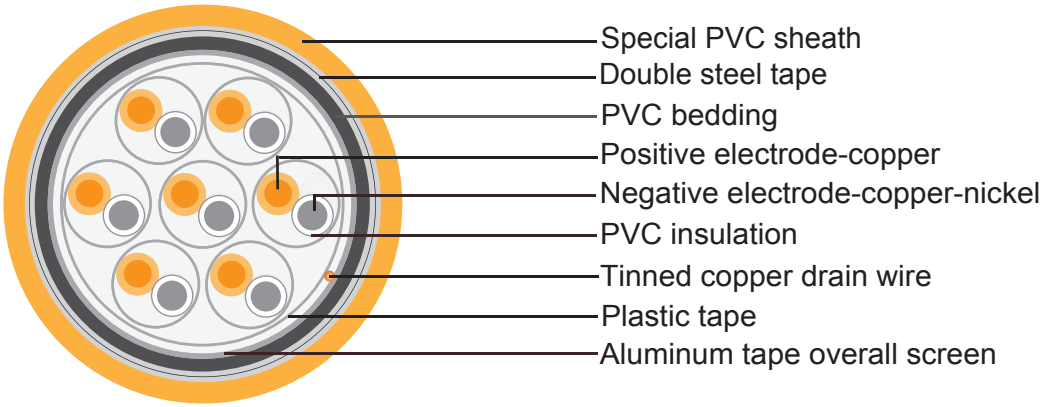
Max. conductor temperature in service: 70°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Conductor Size mm^2	No. of Pairs	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
0.5 solid	3	11.1	12.8	180
0.5 solid	7	15.4	17.7	335
0.5 solid	12	19.8	22.8	545
0.5 solid	19	24.6	28.1	825
0.5 solid	27	28.9	33.2	1135

Cables for Oil Industry

Overall Screened & Armored Thermocouple Cable



SCB Overall Screened & Armored Thermocouple Cable

Applications

These cables are suitable for underground use in industries where hydrocarbon may be present and mechanical protections are required.

Standards

IEC 60584-3; NF C 42-324

Construction

Conductor: Metal according to thermocouple type

Insulation: PVC

Overall screen: Aluminum/polyester tape with tinned copper drain wire

Inner sheath: PVC

Armour: Double steel tape

Sheath: Special PVC. Color depends on thermocouple type

Properties

Flame retardance: NFC 32070 C2, IEC 60332-1-2

Operating voltage: 250V

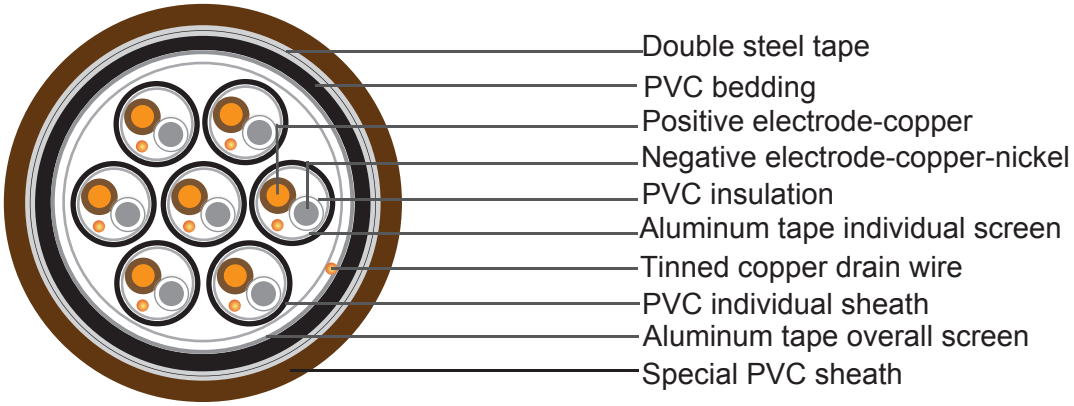
Operating temperature: -20~60°C

Max. conductor temperature in service: 70°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Conductor Size		No. of Pairs	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
mm^2	Solid or Stranding				
1	14 x 0.30 mm	1	9.8	11.3	180
1.34	1 x 1.30 mm	1	9.8	11.3	185
0.5	1 x 0.8 mm	3	11.4	13.1	225
0.5	1 x 0.8 mm	7	14.1	16.2	330
0.5	1 x 0.8 mm	12	17.3	19.8	470
0.5	1 x 0.8 mm	19	20.6	23.7	650
0.5	1 x 0.8 mm	27	23.2	26.6	830

Individual & Overall Screened & Armored Thermocouple Cable



TX Individual & Overall Screened & Armored Thermocouple Cable

Applications

These cables are suitable for underground use in industries where hydrocarbon may be present and where chemical and mechanical protections are required.

Standards

IEC 60584-3; NF C 42-324

Construction

Conductor: Metal according to thermocouple type

Insulation: PVC

Individual screen: Aluminum/polyester tape with tinned copper drain wire

Individual sheath: PVC

Overall screen: Aluminum/polyester tape with tinned copper drain wire

Inner sheath: PVC

Armor: Double steel tape

Sheath: Special PVC. Color depends on thermocouple type

Properties

Flame retardance: NFC 32070 C2, IEC 60332-1-2

Operating voltage: 250V

Operating temperature: -20~60°C

Max. conductor temperature in service: 70°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Conductor Size mm^2	No. of Pairs	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
0.5 solid	3	14.6	16.8	370
0.5 solid	7	19.1	22.0	590
0.5 solid	12	23.9	27.5	865
0.5 solid	19	28.8	33.0	1225
0.5 solid	27	33.2	38.2	1700

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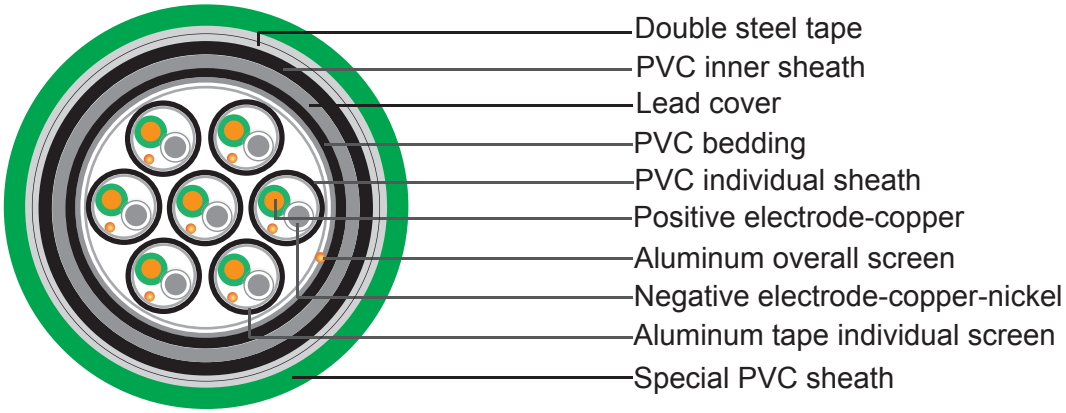
Individual & Overall Screened & Armored Thermocouple Cable with Lead Cover



KCB Individual & Overall Screened & Armored Thermocouple Cable with Lead Cover

Applications

These cables are suitable for underground use in industries, in moist areas, where require chemical and mechanical protections. The lead sheath brings an enhanced resistance to aliphatic and aromatic and aromatic hydrocarbon.

Standards

IEC 60584-3; NF C 42-324

Construction

Conductor: Metal according to thermocouple type

Insulation: PVC

Individual screen: Aluminum/polyester tape with tinned copper drain wire

Individual sheath: PVC

Overall screen: Aluminum/polyester tape with tinned copper drain wire

Inner sheath: PVC

Lead cover

Armour: Double steel tape

Sheath: Special PVC. Color depends on thermocouple type

Properties

Flame retardance: NFC 32070 C2, IEC 60332-1-2

Operating voltage: 250V

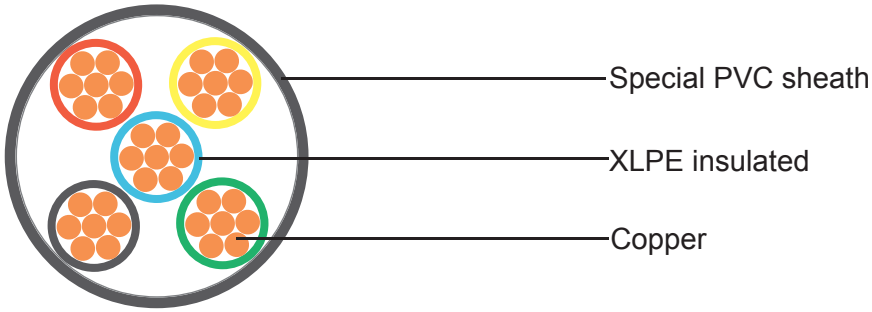
Operating temperature: -20~60°C

Max. conductor temperature in service: 70°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Conductor Size mm^2	No. of Pairs	Diameter over Lead Sheath (mm)	Min. O.D. (mm)	Max. O.D. (mm)	Approx. Weight (kg/km)
0.5 solid	3	14.1	17.1	19.6	950
0.5 solid	7	18.8	21.8	25.0	1450
0.5 solid	12	23.7	26.6	30.5	1960
0.5 solid	19	28.8	31.6	36.3	2660
0.5 solid	27	33.7	36.3	41.6	3390

600V/1000V XLPE Insulated Unarmored Cable to IEC 60502-1



XLPE Insulated Unarmored Cable to IEC 60502-1

Applications

These cables are used for electricity supply in low voltage installation system. They are suitable for installation in indoors and outdoors, in cable ducts, under ground, in power and switching stations, local energy distributions, industrial plants, where chemicals may be present.

Construction

Conductor: Solid or stranded copper

Insulation: XLPE

Core identification

1 Core: Red or Black

2 Cores: Red, Black

3 Cores: Red, Yellow, Blue

4 Cores: Red, Yellow, Blue, Black

5 Cores: Red, Yellow, Blue, Black, Green

Above 5 cores: Black core printed with white numbers

Sheath: Special PVC. Color: black

Properties

Rated voltage: 600V/1000V

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

No. of Cores	Conductor		Diameter over Insulation	Min. O.D.	Max. O.D.	Approx. Weight
	Corss-section (mm^2)	Type	(mm)	(mm)	(mm)	(kg/km)
1	25	Stranded, Class 2	7.9	10.6	11.9	325
1	35	Stranded, Class 2	8.9	11.6	13.0	422
1	50	Stranded, Class 2	10.2	13.3	14.8	562

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Cables for Oil Industry

1	70	Stranded, Class 2	12.0	16.1	17.8	807
1	95	Stranded, Class 2	13.55	17.61	19.4	1057
1	120	Stranded, Class 2	15.26	19.26	21.2	1296
1	150	Stranded, Class 2	16.97	21.12	23.3	1585
1	185	Stranded, Class 2	19.05	23.13	25.5	1962
1	240	Stranded, Class 2	21.6	26.0	28.7	2547
1	300	Stranded, Class 2	24.2	28.71	31.7	3162
1	400	Stranded, Class 2	27.7	32.3	35.6	4010
1	500	Stranded, Class 2	31.4	36.28	40.0	5111
1	630	Stranded, Class 2	36.2	41.32	45.6	6560
2	1.5	Solid, Class 1	2.79	9.38	10.6	143
2	1.5	Stranded, Class 2	2.9	9.7	10.9	152
2	2.5	Solid, Class 1	3.15	10.1	11.3	176
2	2.5	Stranded, Class 2	3.31	10.6	11.9	189
2	4	Solid, Class 1	3.61	11.02	12.3	224
2	4	Stranded, Class 2	3.83	11.7	13.0	244
2	6	Stranded, Class 2	4.35	12.5	13.9	297
2	10	Stranded, Class 2	5.25	14.3	15.8	419
2	16	Stranded, Class 2	6.25	16.3	18.0	586
2	25	Stranded, Class 2	7.9	19.5	21.5	873
2	35	Stranded, Class 2	8.9	21.44	23.6	1126
2	50	Stranded, Class 2	10.2	24.06	26.5	1469
2	70	Stranded, Class 2	12.0	27.55	30.4	2010
2	95	Stranded, Class 2	13.55	30.55	33.7	2632
2	120	Stranded, Class 2	15.26	33.87	37.4	3270
2	150	Stranded, Class 2	16.97	37.77	41.7	4046
2	185	Stranded, Class 2	19.05	42.0	46.3	5051
2	240	Stranded, Class 2	21.6	47.34	52.2	6543
2	300	Stranded, Class 2	24.2	52.77	58.2	8175

3	1.5	Solid, Class 1	2.79	9.83	11.0	161
3	1.5	Stranded, Class 2	2.9	10.17	11.4	170
3	2.5	Solid, Class 1	3.15	10.6	11.9	202
3	2.5	Stranded, Class 2	3.31	11.14	12.4	215
3	4	Solid, Class 1	3.61	11.6	13.0	263
3	4	Stranded, Class 2	3.83	12.33	13.7	284
3	6	Stranded, Class 2	4.35	13.2	14.7	353
3	10	Stranded, Class 2	5.25	15.14	16.7	508
3	16	Stranded, Class 2	6.25	17.27	19.0	724
3	25	Stranded, Class 2	7.9	20.72	22.9	1088
3	35	Stranded, Class 2	8.9	22.81	25.2	1420
3	50	Stranded, Class 2	10.2	25.64	28.3	1864
3	70	Stranded, Class 2	12.0	29.41	32.4	2568
3	95	Stranded, Class 2	13.55	32.66	36.0	3400
3	120	Stranded, Class 2	15.26	36.43	40.2	4247
3	150	Stranded, Class 2	16.97	40.41	44.6	5231
3	185	Stranded, Class 2	19.05	45.15	49.8	6561
3	240	Stranded, Class 2	21.6	50.69	55.9	8496
3	300	Stranded, Class 2	24.2	56.91	62.8	10681
4	1.5	Solid, Class 1	2.79	10.55	11.8	187
4	1.5	Stranded, Class 2	2.9	10.94	12.2	197
4	2.5	Solid, Class 1	3.15	11.42	12.8	238
4	2.5	Stranded, Class 2	3.31	12.03	13.4	252
4	4	Solid, Class 1	3.61	12.5	14.0	314
4	4	Stranded, Class 2	3.83	13.36	14.8	337.2
4	6	Stranded, Class 2	4.35	14.33	15.9	424
4	10	Stranded, Class 2	5.25	16.5	18.2	625
4	16	Stranded, Class 2	6.25	18.85	20.8	901
4	25	Stranded, Class 2	7.9	22.72	25.1	1359

Cables for Oil Industry

4	35	Stranded, Class 2	8.9	25.16	27.8	1791
4	50	Stranded, Class 2	10.2	28.21	31.1	2348
4	70	Stranded, Class 2	12.0	32.44	35.8	3250
4	95	Stranded, Class 2	13.55	36.27	40.0	4334
4	120	Stranded, Class 2	15.26	40.67	44.9	5447
4	150	Stranded, Class 2	16.97	44.88	49.5	6688
4	185	Stranded, Class 2	19.05	50.34	55.5	8400
4	240	Stranded, Class 2	21.6	56.72	62.6	10917
4	300	Stranded, Class 2	24.2	63.4	69.9	13658
5	1.5	Solid, Class 1	2.79	11.3	12.7	220
5	1.5	Stranded, Class 2	2.9	11.77	13.1	232
5	2.5	Solid, Class 1	3.15	12.3	13.7	281
5	2.5	Stranded, Class 2	3.31	12.98	14.4	297
5	4	Solid, Class 1	3.61	13.6	15.0	377
5	4	Stranded, Class 2	3.83	14.47	16.0	403
5	6	Stranded, Class 2	4.35	15.55	17.2	511
5	10	Stranded, Class 2	5.25	17.93	19.8	747
5	16	Stranded, Class 2	6.25	20.54	22.7	1082
5	25	Stranded, Class 2	7.9	24.96	27.5	1650
5	35	Stranded, Class 2	8.9	27.58	30.4	2185
5	50	Stranded, Class 2	10.2	30.98	34.2	2873
5	70	Stranded, Class 2	12.0	36.08	39.8	4017
5	95	Stranded, Class 2	13.55	40.54	44.7	5364
5	120	Stranded, Class 2	15.26	45.2	49.9	6678
5	150	Stranded, Class 2	16.97	50.07	55.2	8197
5	185	Stranded, Class 2	19.05	55.91	61.7	10257
5	240	Stranded, Class 2	21.6	62.97	69.5	13310
5	300	Stranded, Class 2	24.2	70.36	77.6	16650
7	1.5	Stranded, Class 2	2.9	12.35	13.8	258

7	2.5	Stranded, Class 2	3.31	13.7	15.2	341
10	1.5	Stranded, Class 2	2.9	15.4	17.0	360
10	2.5	Stranded, Class 2	3.31	17.17	18.9	479
12	1.5	Stranded, Class 2	2.9	15.9	17.6	431
12	2.5	Stranded, Class 2	3.31	17.65	19.5	581
14	1.5	Stranded, Class 2	2.9	17.17	18.9	507
14	2.5	Stranded, Class 2	3.31	19.11	21.1	683
19	1.5	Stranded, Class 2	2.9	18.82	20.8	633
19	2.5	Stranded, Class 2	3.31	21.05	23.2	863
24	1.5	Stranded, Class 2	2.9	21.73	24.0	815
24	2.5	Stranded, Class 2	3.31	24.35	26.9	1115
27	1.5	Stranded, Class 2	2.9	22.12	24.4	872
27	2.5	Stranded, Class 2	3.31	24.83	27.4	1201
30	1.5	Stranded, Class 2	2.9	22.89	25.2	946
30	2.5	Stranded, Class 2	3.31	25.7	28.4	1306
37	1.5	Stranded, Class 2	2.9	24.64	27.2	1118
37	2.5	Stranded, Class 2	3.31	27.64	30.5	1550

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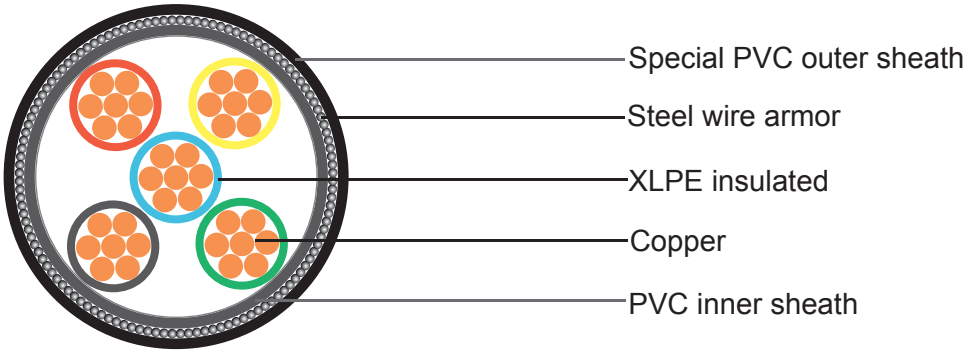
600V/1000V XLPE Insulated Steel Wire Armored Cable to IEC 60502-1



XLPE Insulated Steel Wire Armored Cable to IEC 60502-1

Applications

These cables are used for electricity supply in low voltage installation system. They are suitable for installation in indoors and outdoors, in cable ducts, under ground, in power and switching stations, local energy distributions, industrial plants, where require chemical and mechanical protections.

Construction

Conductor: Solid or stranded copper

Insulation: XLPE

Core identification

- 1 Core: Red or Black
- 2 Cores: Red, Black
- 3 Cores: Red, Yellow, Blue
- 4 Cores: Red, Yellow, Blue, Black
- 5 Cores: Red, Yellow, Blue, Black, Green
- Above 5 cores: Black core printed with white numbers

Inner sheath: PVC. Color: black

Armor: Galvanized steel wires or aluminium wires for 1 core cable

Sheath: Special PVC. Color: black

Properties

Rated voltage: 600V/1000V

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

No. of Cores	Conductor		Diameter over Insulation	Diameter over Inner Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight
	Corss-section (mm^2)	Type	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)
1	25	Stranded, Class 2	7.9	9.9	13.7	16.8	18.6	560
1	35	Stranded, Class 2	8.9	10.9	14.7	17.75	19.6	669
1	50	Stranded, Class 2	10.2	12.2	16.0	19.01	21.0	823
1	70	Stranded, Class 2	12.0	14.0	17.8	20.76	22.9	1047
1	95	Stranded, Class 2	13.55	15.6	19.4	22.31	24.6	1321
1	120	Stranded, Class 2	15.26	17.3	21.1	23.96	26.4	1586
1	150	Stranded, Class 2	16.97	19.0	22.8	25.61	28.2	1875
1	185	Stranded, Class 2	19.05	21.0	24.9	27.64	30.5	2277
1	240	Stranded, Class 2	21.6	23.6	27.4	30.26	33.4	2875
1	300	Stranded, Class 2	24.2	26.2	30.0	32.98	36.4	3514
1	400	Stranded, Class 2	27.7	30.1	33.9	36.96	40.8	4430
1	500	Stranded, Class 2	31.4	33.8	37.6	40.74	44.9	5546
1	630	Stranded, Class 2	36.2	38.6	42.4	45.59	50.3	7018
2	1.5	Solid, Class 1	2.79	7.9	9.68	12.88	14.2	343
2	1.5	Stranded, Class 2	2.9	8.2	10.0	13.19	14.6	358
2	2.5	Solid, Class 1	3.15	8.6	10.4	13.58	15.0	388
2	2.5	Stranded, Class 2	3.31	9.1	10.9	14.06	15.5	413
2	4	Solid, Class 1	3.61	9.5	11.32	14.47	16.0	454
2	4	Stranded, Class 2	3.83	10.2	12.0	15.13	16.7	491
2	6	Stranded, Class 2	4.35	11.0	12.8	15.91	17.5	562
2	10	Stranded, Class 2	5.25	12.8	15.3	18.33	20.2	831
2	16	Stranded, Class 2	6.25	14.8	17.3	20.27	22.4	1044
2	25	Stranded, Class 2	7.9	18.1	21.3	24.15	26.6	1576
2	35	Stranded, Class 2	8.9	20.1	23.3	26.09	28.8	1899
2	50	Stranded, Class 2	10.2	22.8	26.0	28.71	31.7	2331

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Cables for Oil Industry

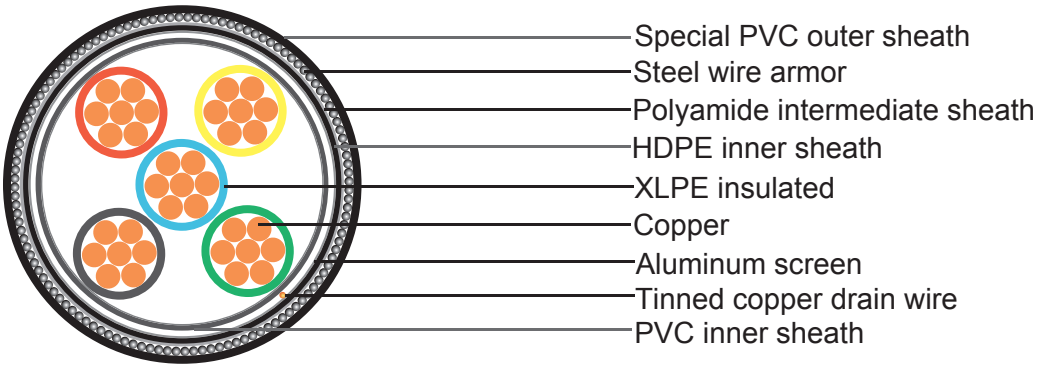
2	70	Stranded, Class 2	12.0	26.4	29.6	32.59	36.0	3025
2	95	Stranded, Class 2	13.55	29.9	33.9	36.96	40.8	4086
2	120	Stranded, Class 2	15.26	33.3	37.3	40.45	44.6	4886
2	150	Stranded, Class 2	16.97	36.7	40.7	43.94	48.5	5772
2	185	Stranded, Class 2	19.05	41.3	46.3	49.76	54.9	7515
2	240	Stranded, Class 2	21.6	46.4	51.4	55.1	60.8	9278
2	300	Stranded, Class 2	24.2	52.0	57.0	60.72	67.0	11248
3	1.5	Solid, Class 1	2.79	8.3	10.13	13.32	14.7	368
3	1.5	Stranded, Class 2	2.9	8.7	10.47	13.65	15.1	388
3	2.5	Solid, Class 1	3.15	9.1	10.9	14.06	15.5	426
3	2.5	Stranded, Class 2	3.31	9.6	11.44	14.59	16.1	451
3	4	Solid, Class 1	3.61	10.1	11.9	15.04	16.6	506
3	4	Stranded, Class 2	3.83	10.8	12.6	15.71	17.3	543
3	6	Stranded, Class 2	4.35	11.7	13.5	16.59	18.3	631
3	10	Stranded, Class 2	5.25	13.6	16.1	19.11	21.1	942
3	16	Stranded, Class 2	6.25	15.8	18.3	21.24	23.4	1214
3	25	Stranded, Class 2	7.9	19.4	22.6	25.41	28.0	1827
3	35	Stranded, Class 2	8.9	21.5	24.7	27.45	30.3	2230
3	50	Stranded, Class 2	10.2	24.4	27.6	30.46	33.6	2792
3	70	Stranded, Class 2	12.0	28.7	32.7	35.6	39.3	3949
3	95	Stranded, Class 2	13.55	32.1	36.1	39.28	43.3	4959
3	120	Stranded, Class 2	15.26	35.8	39.8	43.07	47.5	5981
3	150	Stranded, Class 2	16.97	39.9	44.9	48.4	53.4	7628
3	185	Stranded, Class 2	19.05	44.4	49.4	52.96	58.4	9204
3	240	Stranded, Class 2	21.6	50.3	55.3	59.07	65.2	11531
3	300	Stranded, Class 2	24.2	55.9	60.9	64.89	71.6	13978
4	1.5	Solid, Class 1	2.79	9.0	10.85	14.02	15.5	411
4	1.5	Stranded, Class 2	2.9	9.4	11.24	14.4	15.9	427
4	2.5	Solid, Class 1	3.15	9.9	11.72	14.86	16.4	479

4	2.5	Stranded, Class 2	3.31	10.5	12.3	15.42	17.0	506
4	4	Solid, Class 1	3.61	11.0	12.8	15.91	17.5	579
4	4	Stranded, Class 2	3.83	11.9	13.7	16.78	18.5	621
4	6	Stranded, Class 2	4.35	12.8	15.3	18.33	20.2	837
4	10	Stranded, Class 2	5.25	15.0	17.5	20.47	22.6	1093
4	16	Stranded, Class 2	6.25	17.4	20.6	23.47	25.9	1569
4	25	Stranded, Class 2	7.9	21.4	24.6	27.35	30.2	2168
4	35	Stranded, Class 2	8.9	23.9	27.1	29.97	33.1	2702
4	50	Stranded, Class 2	10.2	27.1	30.3	33.27	36.7	3382
4	70	Stranded, Class 2	12.0	31.8	35.8	38.99	43.0	4807
4	95	Stranded, Class 2	13.55	35.6	39.6	42.87	47.3	6066
4	120	Stranded, Class 2	15.26	40.1	45.1	48.6	53.6	7845
4	150	Stranded, Class 2	16.97	44.3	49.3	52.86	58.3	9313
4	185	Stranded, Class 2	19.05	49.3	54.3	58.1	64.1	11311
4	240	Stranded, Class 2	21.6	55.9	60.9	64.89	71.6	14243
4	300	Stranded, Class 2	24.2	62.2	67.2	71.39	78.8	17273
5	1.5	Solid, Class 1	2.79	9.8	11.6	14.7	16.3	467
5	1.5	Stranded, Class 2	2.9	10.3	12.1	15.23	16.8	480
5	2.5	Solid, Class 1	3.15	10.8	12.6	15.7	17.3	546
5	2.5	Stranded, Class 2	3.31	11.5	13.3	16.39	18.1	569
5	4	Solid, Class 1	3.61	12.1	14.6	17.7	19.5	774
5	4	Stranded, Class 2	3.83	13.0	15.5	18.53	20.4	816
5	6	Stranded, Class 2	4.35	14.0	16.6	19.59	21.6	957
5	10	Stranded, Class 2	5.25	16.5	19.0	21.92	24.2	1249
5	16	Stranded, Class 2	6.25	19.2	22.4	25.22	27.8	1820
5	25	Stranded, Class 2	7.9	23.7	26.9	29.58	32.6	2530
5	35	Stranded, Class 2	8.9	26.4	29.6	32.4	35.7	3185
5	50	Stranded, Class 2	10.2	30.3	34.3	37.34	41.2	4354
5	70	Stranded, Class 2	12.0	35.2	39.2	42.49	46.9	5703

Cables for Oil Industry

5	95	Stranded, Class 2	13.55	39.8	44.8	48.11	53.1	7719
5	120	Stranded, Class 2	15.26	44.4	49.4	52.96	58.4	9320
5	150	Stranded, Class 2	16.97	49.0	54.0	57.81	63.8	11067
5	185	Stranded, Class 2	19.05	55.0	60.0	64.02	70.6	13537
5	240	Stranded, Class 2	21.6	61.9	66.9	71.1	78.4	16954
5	300	Stranded, Class 2	24.2	69.3	75.6	79.93	88.2	21739
7	1.5	Stranded, Class 2	2.9	10.8	12.7	15.81	17.4	518
7	2.5	Stranded, Class 2	3.31	12.2	14.7	17.75	19.6	732
10	1.5	Stranded, Class 2	2.9	13.9	16.4	19.4	21.4	796
10	2.5	Stranded, Class 2	3.31	15.7	18.2	21.15	23.3	969
12	1.5	Stranded, Class 2	2.9	14.4	16.9	19.88	21.9	864
12	2.5	Stranded, Class 2	3.31	16.2	18.7	21.63	23.9	1047
14	1.5	Stranded, Class 2	2.9	15.1	17.6	20.56	22.7	922
14	2.5	Stranded, Class 2	3.31	17.1	19.6	22.5	24.8	1136
19	1.5	Stranded, Class 2	2.9	16.8	19.3	22.21	24.5	1080
19	2.5	Stranded, Class 2	3.31	19.1	22.3	25.12	27.7	1512
24	1.5	Stranded, Class 2	2.9	19.8	23.0	25.8	28.5	1491
24	2.5	Stranded, Class 2	3.31	22.5	25.7	28.42	31.4	1852
27	1.5	Stranded, Class 2	2.9	20.2	23.4	26.19	28.9	1559
27	2.5	Stranded, Class 2	3.31	23.0	26.2	28.91	31.9	1946
30	1.5	Stranded, Class 2	2.9	21.0	24.2	26.97	29.7	1644
30	2.5	Stranded, Class 2	3.31	23.9	27.1	29.97	33.1	2089
37	1.5	Stranded, Class 2	2.9	22.8	26.0	28.71	31.7	1870
37	2.5	Stranded, Class 2	3.31	25.9	29.1	31.91	35.2	2381

600V/1000V XLPE Insulated Overall Screened & Steel Wire Armored Cable to IEC 60502-1



XLPE Insulated Overall Screened & Steel Wire Armored Cable to IEC 60502-1

Applications

These cables are used for electricity supply in low voltage installation system. They are suitable for installation in indoors and outdoors, in cable ducts, under ground, in power and switching stations, local energy distributions, industrial plants and where aliphatic and aromatic hydrocarbon may be present or where require chemical and mechanical protections.

Construction

Conductor: Solid or stranded copper

Insulation: XLPE

Core identification

1 Core: Red or Black

2 Cores: Red, Black

3 Cores: Red, Yellow, Blue

4 Cores: Red, Yellow, Blue, Black

5 Cores: Red, Yellow, Blue, Black, Green

Above 5 cores: Black core printed with white numbers

Inner sheath: PVC. Color: black

Screen: aluminum/polyethylene tape with tinned copper drain wire

Inner sheath: HDPE. Color: black

Intermediate sheath: Polyamide

Armor: Galvanized steel wires or aluminum wires for 1 core cable

Sheath: Speical PVC. Color: black

Properties

Rated voltage: 600V/1000V

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

No. of Cores	Conductor		Diameter over Insulation	Diameter over Intermediate Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight
	Corss-section (mm^2)	Type	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)
1	25	Stranded, Class 2	7.9	11.5	15.3	18.3	20.2	619
1	35	Stranded, Class 2	8.9	12.5	16.3	19.3	21.3	732
1	50	Stranded, Class 2	10.2	13.8	17.6	20.6	22.7	891
1	70	Stranded, Class 2	12.0	15.6	19.4	22.3	24.6	1129
1	95	Stranded, Class 2	13.55	17.1	20.9	23.8	26.2	1394
1	120	Stranded, Class 2	15.26	18.8	22.6	25.4	28.0	1665
1	150	Stranded, Class 2	16.97	20.5	24.3	27.1	29.8	1963
1	185	Stranded, Class 2	19.05	22.6	26.4	29.3	32.3	2383
1	240	Stranded, Class 2	21.6	25.2	29.0	31.8	35.1	2975
1	300	Stranded, Class 2	24.2	27.7	31.5	34.4	38.0	3613
1	400	Stranded, Class 2	27.7	31.2	35.0	38.0	41.9	4505

No. of Cores	Conductor		Diameter over Insulation	Diameter over Inner Sheath	Diameter over Intermediate Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight
	Corss-section (mm^2)	Type	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)
2	1.5	Solid, Class 1	2.79	8.0	11.5	13.3	16.4	18.1	511
2	1.5	Stranded, Class 2	2.9	8.2	11.8	13.6	16.7	18.4	525
2	2.5	Solid, Class 1	3.15	8.7	12.3	14.8	17.9	19.7	661
2	2.5	Stranded, Class 2	3.31	9.0	12.6	15.1	18.1	20.0	682
2	4	Solid, Class 1	3.61	9.6	13.2	15.7	18.7	20.6	740
2	4	Stranded, Class 2	3.83	10.1	13.7	16.2	19.2	21.2	766
2	6	Stranded, Class 2	4.35	11.1	14.7	17.2	20.1	22.3	868
2	10	Stranded, Class 2	5.25	12.9	16.5	19.0	22.0	24.2	1041
2	16	Stranded, Class 2	6.25	14.9	18.5	21.7	24.5	27.1	1410
2	25	Stranded, Class 2	7.9	18.2	21.7	24.9	27.6	30.5	1833

2	35	Stranded, Class 2	8.9	20.2	23.7	26.9	29.8	32.8	2176
2	50	Stranded, Class 2	10.2	22.8	26.3	29.5	32.5	35.8	2628
2	70	Stranded, Class 2	12.0	26.4	29.9	33.9	37.0	40.8	3569
2	95	Stranded, Class 2	13.55	29.5	33.0	37.0	40.2	44.3	4354
2	120	Stranded, Class 2	15.26	32.9	36.4	40.4	43.7	48.2	5165
3	1.5	Solid, Class 1	2.79	8.4	12.0	14.5	17.6	19.4	636
3	1.5	Stranded, Class 2	2.9	8.7	12.2	14.7	17.8	19.6	654
3	2.5	Solid, Class 1	3.15	9.2	12.8	15.3	18.3	20.2	703
3	2.5	Stranded, Class 2	3.31	9.6	13.1	15.7	18.7	20.6	729
3	4	Solid, Class 1	3.61	10.2	13.8	16.3	19.3	21.3	805
3	4	Stranded, Class 2	3.83	10.6	14.2	16.7	19.7	21.7	830
3	6	Stranded, Class 2	4.35	11.8	15.4	17.9	20.9	23.0	951
3	10	Stranded, Class 2	5.25	13.7	17.3	20.5	23.4	25.8	1291
3	16	Stranded, Class 2	6.25	15.8	19.4	22.6	25.4	28.0	1590
3	25	Stranded, Class 2	7.9	19.5	23.0	26.2	29.0	31.9	2097
3	35	Stranded, Class 2	8.9	21.7	25.2	28.4	31.2	34.4	2533
3	50	Stranded, Class 2	10.2	24.4	27.9	31.9	35.0	38.6	3347
3	70	Stranded, Class 2	12.0	28.3	31.8	35.8	39.0	43.0	4255
3	95	Stranded, Class 2	13.55	31.6	35.1	39.1	42.4	46.8	5265
4	1.5	Solid, Class 1	2.79	9.2	12.8	15.3	18.3	20.2	688
4	1.5	Stranded, Class 2	2.9	9.4	13.0	15.5	18.5	20.4	712
4	2.5	Solid, Class 1	3.15	10.0	13.7	16.2	19.2	21.2	770
4	2.5	Stranded, Class 2	3.31	10.4	14.1	16.6	19.6	21.6	799
4	4	Solid, Class 1	3.61	11.1	14.7	17.2	20.2	22.3	888
4	4	Stranded, Class 2	3.83	11.7	15.3	17.8	20.8	22.9	917
4	6	Stranded, Class 2	4.35	12.9	16.5	19.0	21.9	24.2	1052
4	10	Stranded, Class 2	5.25	15.0	18.6	21.8	24.6	27.2	1467
4	16	Stranded, Class 2	6.25	17.5	21.1	24.3	27.0	29.8	1836
4	25	Stranded, Class 2	7.9	21.6	25.1	28.3	31.1	34.4	2477

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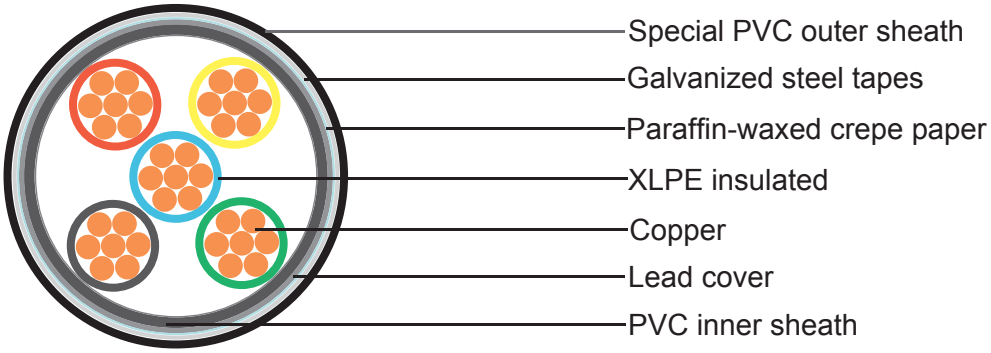
4	35	Stranded, Class 2	8.9	23.9	27.4	30.6	33.6	37.0	3010
4	50	Stranded, Class 2	10.2	27.0	30.5	34.5	37.5	41.4	3964
4	70	Stranded, Class 2	12.0	31.4	34.9	38.9	42.2	46.6	5123
5	1.5	Solid, Class 1	2.79	9.9	13.5	16.0	19.0	21.0	751
5	1.5	Stranded, Class 2	2.9	10.2	13.9	16.4	19.4	21.4	774
5	2.5	Solid, Class 1	3.15	10.9	14.5	17.0	20.0	22.0	840
5	2.5	Stranded, Class 2	3.31	11.3	14.9	17.4	20.4	22.5	870
5	4	Solid, Class 1	3.61	12.2	15.7	18.2	21.2	23.3	979
5	4	Stranded, Class 2	3.83	12.7	16.3	18.8	21.7	24.0	1019
5	6	Stranded, Class 2	4.35	14.1	17.7	20.9	23.9	26.2	1317
5	10	Stranded, Class 2	5.25	16.5	20.1	23.3	26.1	28.8	1640
5	16	Stranded, Class 2	6.25	19.2	22.8	26.0	28.7	31.7	2096
5	25	Stranded, Class 2	7.9	23.7	27.2	30.4	33.4	36.8	2855
5	35	Stranded, Class 2	8.9	26.4	29.9	33.9	37.0	40.8	3777
5	50	Stranded, Class 2	10.2	29.9	33.4	37.4	40.6	44.7	4645
7	1.5	Stranded, Class 2	2.9	10.8	14.3	16.8	19.8	21.8	797
7	2.5	Stranded, Class 2	3.31	12.1	15.6	18.1	21.1	23.2	919
10	1.5	Stranded, Class 2	2.9	13.7	17.2	20.4	23.3	25.7	1114
10	2.5	Stranded, Class 2	3.31	15.3	18.8	22.0	24.8	27.4	1287
12	1.5	Stranded, Class 2	2.9	14.3	17.8	21.0	23.9	26.3	1179
12	2.5	Stranded, Class 2	3.31	15.9	19.4	22.6	25.4	28.0	1371
14	1.5	Stranded, Class 2	2.9	15.0	18.5	21.7	24.5	27.1	1251
14	2.5	Stranded, Class 2	3.31	16.7	20.2	23.4	26.2	28.9	1475
19	1.5	Stranded, Class 2	2.9	16.6	20.1	23.3	26.1	28.8	1427
19	2.5	Stranded, Class 2	3.31	18.7	22.2	25.4	28.1	31.0	1724
24	1.5	Stranded, Class 2	2.9	19.5	23.0	26.2	28.9	31.9	1678
24	2.5	Stranded, Class 2	3.31	22.1	25.6	28.8	31.6	34.9	2050
27	1.5	Stranded, Class 2	2.9	20.0	23.5	26.7	29.6	32.6	1776
27	2.5	Stranded, Class 2	3.31	22.5	26.0	29.2	32.0	35.3	2154

30	1.5	Stranded, Class 2	2.9	20.7	24.2	27.4	30.3	33.4	1884
30	2.5	Stranded, Class 2	3.31	23.4	26.9	30.1	33.1	36.5	2305
37	1.5	Stranded, Class 2	2.9	22.4	25.9	29.1	31.9	35.2	2099
37	2.5	Stranded, Class 2	3.31	25.3	28.8	32.8	35.9	39.6	2851

600V/1000V XLPE Insulated Galvanized Steel Tape Armored Cable with Lead Cover to IEC 60502-1



XLPE Insulated Galvanized Steel Tape Armored Cable to IEC 60502-1 with Lead Cover

Applications

These cables are used for electricity supply in low voltage installation system. They are suitable for installation in indoors and outdoors, in cable ducts, under ground, in power and switching stations, local energy distributions, industrial plants, where require hydrocarbon and mechanical protections. The lead sheath brings an enhanced resistance to aliphatic and aromatic hydrocarbon.

Construction

Conductor: Solid or stranded copper

Insulation: XLPE

Core identification

1 Core: Red or Black

2 Cores: Red, Black

3 Cores: Red, Yellow, Blue

4 Cores: Red, Yellow, Blue, Black

5 Cores: Red, Yellow, Blue, Black, Green

Above 5 cores: Black core printed with white numbers

Inner sheath: PVC

Lead cover

Bedding: Paraffin-waxed crepe paper

Armor: Galvanized steel tapes or aluminum tapes for 1 core cable

Sheath: Special PVC. Color: black

Properties

Rated voltage: 600V/1000V

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

No. of Cores	Conductor		Diameter over Insulation	Diameter over Inner Sheath	Diameter over Lead Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight
	Corss-section (mm^2)	Type	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)
1	25	Stranded, Class 2	7.9	9.9	12.3	15.8	18.8	20.8	1003
1	35	Stranded, Class 2	8.9	10.9	13.3	16.8	19.79	21.8	1155
1	50	Stranded, Class 2	10.2	12.2	14.6	18.1	21.05	23.2	1341
1	70	Stranded, Class 2	12.0	14.0	16.4	19.9	22.8	25.2	1639
1	95	Stranded, Class 2	13.55	15.6	18.0	21.5	24.35	26.9	1966
1	120	Stranded, Class 2	15.26	17.3	19.9	23.4	26.19	28.9	2371
1	150	Stranded, Class 2	16.97	19.0	21.6	25.1	27.84	30.7	2736
1	185	Stranded, Class 2	19.05	21.0	23.8	27.4	30.07	33.2	3305
1	240	Stranded, Class 2	21.6	23.6	26.6	30.1	32.88	36.3	4115
1	300	Stranded, Class 2	24.2	26.2	29.2	32.7	35.6	39.3	4882
1	400	Stranded, Class 2	27.7	30.1	33.3	36.8	39.77	43.9	6108
1	500	Stranded, Class 2	31.4	33.8	37.2	40.7	43.94	48.5	7570
1	630	Stranded, Class 2	36.2	38.6	42.2	45.7	48.98	54.0	9461
2	1.5	Solid, Class 1	2.79	7.9	10.3	12.4	15.52	17.1	701
2	1.5	Stranded, Class 2	2.9	8.2	10.6	12.7	15.81	17.4	727
2	2.5	Solid, Class 1	3.15	8.6	11.0	13.1	16.2	17.9	773
2	2.5	Stranded, Class 2	3.31	9.1	11.5	13.6	16.68	18.4	813
2	4	Solid, Class 1	3.61	9.5	11.9	14.0	17.07	18.8	871
2	4	Stranded, Class 2	3.83	10.2	12.6	14.7	17.75	19.6	928
2	6	Stranded, Class 2	4.35	11.0	13.4	15.5	18.53	20.4	1022
2	10	Stranded, Class 2	5.25	12.8	15.2	17.3	20.27	22.4	1234
2	16	Stranded, Class 2	6.25	14.8	17.2	19.3	22.21	24.5	1508
2	25	Stranded, Class 2	7.9	18.1	20.5	22.6	25.41	28.0	1980
2	35	Stranded, Class 2	8.9	20.1	22.5	24.6	27.35	30.2	2341
2	50	Stranded, Class 2	10.2	22.8	25.4	27.5	30.17	33.3	2924

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2	70	Stranded, Class 2	12.0	26.4	29.2	31.3	34.24	37.8	3809
2	95	Stranded, Class 2	13.55	29.9	32.9	36.4	39.38	43.4	5202
2	120	Stranded, Class 2	15.26	33.3	36.5	40.0	43.07	47.5	6258
2	150	Stranded, Class 2	16.97	36.7	40.1	43.7	47.04	51.9	7450
2	185	Stranded, Class 2	19.05	41.3	44.9	48.4	51.8	57.1	9051
2	240	Stranded, Class 2	21.6	46.4	50.4	53.9	57.52	63.4	11373
2	300	Stranded, Class 2	24.2	52.0	56.2	59.7	63.54	70.1	13803
3	1.5	Solid, Class 1	2.79	8.3	10.7	12.9	16.0	17.7	745
3	1.5	Stranded, Class 2	2.9	8.7	11.1	13.2	16.3	18.0	772
3	2.5	Solid, Class 1	3.15	9.1	11.5	13.6	16.68	18.4	826
3	2.5	Stranded, Class 2	3.31	9.6	12.0	14.2	17.27	19.0	870
3	4	Solid, Class 1	3.61	10.1	12.5	14.6	17.65	19.5	942
3	4	Stranded, Class 2	3.83	10.8	13.2	15.4	18.43	20.3	1003
3	6	Stranded, Class 2	4.35	11.7	14.1	16.2	19.21	21.2	1111
3	10	Stranded, Class 2	5.25	13.6	16.0	18.2	21.15	23.3	1369
3	16	Stranded, Class 2	6.25	15.8	18.2	20.3	23.18	25.6	1700
3	25	Stranded, Class 2	7.9	19.4	21.8	23.9	26.68	29.4	2263
3	35	Stranded, Class 2	8.9	21.5	24.1	26.2	28.91	31.9	2800
3	50	Stranded, Class 2	10.2	24.4	27.2	29.4	32.2	35.5	3528
3	70	Stranded, Class 2	12.0	28.7	31.7	33.8	36.67	40.4	4658
3	95	Stranded, Class 2	13.55	32.1	35.3	38.8	41.9	46.2	6288
3	120	Stranded, Class 2	15.26	35.8	39.2	42.7	45.88	50.6	7585
3	150	Stranded, Class 2	16.97	39.9	43.5	47.0	50.44	55.6	9123
3	185	Stranded, Class 2	19.05	44.4	48.2	51.7	55.19	60.9	11013
3	240	Stranded, Class 2	21.6	50.3	54.5	58.0	61.69	68.0	13976
3	300	Stranded, Class 2	24.2	55.9	60.3	63.8	67.71	74.7	16888
4	1.5	Solid, Class 1	2.79	9.0	11.4	13.6	16.68	18.4	809
4	1.5	Stranded, Class 2	2.9	9.4	11.8	14.0	17.07	18.8	841
4	2.5	Solid, Class 1	3.15	9.9	12.3	14.4	17.46	19.3	906

4	2.5	Stranded, Class 2	3.31	10.5	12.9	15.1	18.14	20.0	950
4	4	Solid, Class 1	3.61	11.0	13.4	15.6	18.62	20.5	1041
4	4	Stranded, Class 2	3.83	11.9	14.3	16.4	19.4	21.4	1103
4	6	Stranded, Class 2	4.35	12.8	15.2	17.4	20.37	22.5	1242
4	10	Stranded, Class 2	5.25	15.0	17.4	19.5	22.41	24.7	1558
4	16	Stranded, Class 2	6.25	17.4	19.8	22.0	24.83	27.4	1972
4	25	Stranded, Class 2	7.9	21.4	24.0	26.1	28.81	31.8	2734
4	35	Stranded, Class 2	8.9	23.9	26.5	28.7	31.52	34.8	3326
4	50	Stranded, Class 2	10.2	27.1	30.1	32.2	35.11	38.7	4301
4	70	Stranded, Class 2	12.0	31.8	35.0	38.6	41.71	46.0	6120
4	95	Stranded, Class 2	13.55	35.6	39.0	42.5	45.69	50.4	7656
4	120	Stranded, Class 2	15.26	40.1	43.7	47.3	50.73	56.0	9364
4	150	Stranded, Class 2	16.97	44.3	48.1	51.6	55.29	61.0	11181
4	185	Stranded, Class 2	19.05	49.3	53.5	57.0	60.72	67.0	13707
4	240	Stranded, Class 2	21.6	55.9	60.5	64.0	67.9	74.9	17374
4	300	Stranded, Class 2	24.2	62.2	67.0	70.5	74.59	82.3	21002
5	1.5	Solid, Class 1	2.79	9.8	12.2	14.4	17.46	19.3	885
5	1.5	Stranded, Class 2	2.9	10.3	12.7	14.8	17.85	19.7	915
5	2.5	Solid, Class 1	3.15	10.8	13.2	15.3	18.33	20.2	993
5	2.5	Stranded, Class 2	3.31	11.5	13.9	16.0	19.01	21.0	1045
5	4	Solid, Class 1	3.61	12.1	14.4	16.6	19.59	21.6	1152
5	4	Stranded, Class 2	3.83	13.0	15.4	17.5	20.47	22.6	1227
5	6	Stranded, Class 2	4.35	14.0	16.4	18.6	21.53	23.8	1394
5	10	Stranded, Class 2	5.25	16.5	18.9	21.0	23.86	26.3	1761
5	16	Stranded, Class 2	6.25	19.2	21.6	23.7	26.48	29.2	2247
5	25	Stranded, Class 2	7.9	23.7	26.3	28.5	31.14	34.4	3159
5	35	Stranded, Class 2	8.9	26.4	29.2	31.4	34.34	37.9	3988
5	50	Stranded, Class 2	10.2	30.3	33.3	36.9	39.87	44.0	5479
5	70	Stranded, Class 2	12.0	35.2	38.6	42.1	45.3	50.0	7287

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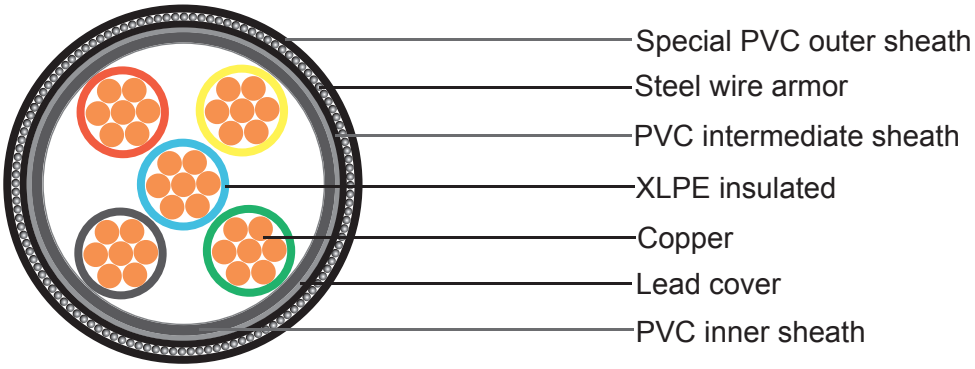
5	95	Stranded, Class 2	13.55	39.8	43.4	46.9	50.34	55.5	9228
5	120	Stranded, Class 2	15.26	44.4	48.2	51.7	55.19	60.9	11133
5	150	Stranded, Class 2	16.97	49.0	53.2	56.7	60.43	66.7	13475
5	185	Stranded, Class 2	19.05	55.0	59.4	63.0	66.93	73.8	16409
5	240	Stranded, Class 2	21.6	61.9	66.7	70.2	74.5	82.2	20691
5	300	Stranded, Class 2	24.2	69.3	74.5	78.1	82.55	91.1	25436
7	1.5	Stranded, Class 2	2.9	10.8	13.2	15.4	18.43	20.3	979
7	2.5	Stranded, Class 2	3.31	12.2	14.6	16.7	19.69	21.7	1123
10	1.5	Stranded, Class 2	2.9	13.9	16.3	18.4	21.34	23.5	1245
10	2.5	Stranded, Class 2	3.31	15.7	18.1	20.2	23.09	25.5	1464
12	1.5	Stranded, Class 2	2.9	14.4	16.8	18.9	21.82	24.1	1302
12	2.5	Stranded, Class 2	3.31	16.2	18.6	20.7	23.57	26.0	1538
14	1.5	Stranded, Class 2	2.9	15.1	17.5	19.6	22.5	24.8	1386
14	2.5	Stranded, Class 2	3.31	17.1	19.5	21.6	24.44	27.0	1657
19	1.5	Stranded, Class 2	2.9	16.8	19.2	21.3	24.15	26.6	1598
19	2.5	Stranded, Class 2	3.31	19.1	21.5	23.6	26.38	29.1	1935
24	1.5	Stranded, Class 2	2.9	19.8	22.2	24.3	27.06	29.9	1914
24	2.5	Stranded, Class 2	3.31	22.5	25.1	27.2	29.88	33.0	2419
27	1.5	Stranded, Class 2	2.9	20.2	22.6	24.7	27.45	30.3	1995
27	2.5	Stranded, Class 2	3.31	23.0	25.6	27.7	30.36	33.5	2534
30	1.5	Stranded, Class 2	2.9	21.0	23.6	25.7	28.42	31.4	2217
30	2.5	Stranded, Class 2	3.31	23.9	26.5	28.6	31.43	34.7	2728
37	1.5	Stranded, Class 2	2.9	22.8	25.4	27.5	30.17	33.3	2463
37	2.5	Stranded, Class 2	3.31	25.9	28.7	30.8	33.56	37.0	3152

600V/1000V XLPE Insulated Steel Wire Armored Cable to IEC 60502-1 with Lead Cover



XLPE Insulated Steel Wire Armored Cable to IEC 60502-1 with Lead Cover

Applications

These cables are used for electricity supply in low voltage installation system. They are suitable for installation in indoors and outdoors, in cable ducts, under ground, in power and switching stations, local energy distributions, industrial plants, where require hydrocarbon and mechanical protections. The lead sheath brings an enhanced resistance to aliphatic and aromatic hydrocarbon.

Construction

Conductor: Solid or stranded copper

Insulation: XLPE

Core identification

- 1 Core: Red or Black
- 2 Cores: Red, Black
- 3 Cores: Red, Yellow, Blue
- 4 Cores: Red, Yellow, Blue, Black
- 5 Cores: Red, Yellow, Blue, Black, Green
- Above 5 cores: Black core printed with white numbers

Inner sheath: PVC

Lead cover

Intermediate sheath: PVC

Armor: Galvanized steel wires or aluminium wires for 1 core cable

Sheath: Special PVC. Color: black

Properties

Rated voltage: 600V/1000V

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

No. of Cores	Conductor		Diameter over Insulation	Diameter over Inner Sheath	Diameter over Lead Sheath	Diameter over Intermediate Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight
	Corss-section (mm^2)	Type	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)
1	25	Stranded, Class 2	7.9	9.9	12.3	14.7	18.5	21.4	23.7	1192
1	35	Stranded, Class 2	8.9	10.9	13.3	15.7	19.5	22.41	24.7	1358
1	50	Stranded, Class 2	10.2	12.2	14.6	17.0	20.8	23.67	26.1	1567
1	70	Stranded, Class 2	12.0	14.0	16.4	18.8	22.6	25.41	28.0	1888
1	95	Stranded, Class 2	13.55	15.6	18.0	20.4	24.2	26.97	29.8	2228
1	120	Stranded, Class 2	15.26	17.3	19.9	22.3	26.1	29.0	32.0	2663
1	150	Stranded, Class 2	16.97	19.0	21.6	24.0	27.8	30.65	33.8	3050
1	185	Stranded, Class 2	19.05	21.0	23.8	26.2	30.1	33.08	36.5	3665
1	240	Stranded, Class 2	21.6	23.6	26.6	29.0	32.8	35.89	39.6	4506
1	300	Stranded, Class 2	24.2	26.2	29.2	31.6	35.4	38.61	42.6	5314
1	400	Stranded, Class 2	27.7	30.1	33.3	35.7	39.5	42.78	47.2	6588
1	500	Stranded, Class 2	31.4	33.8	37.2	39.8	44.8	48.11	53.1	8281
1	630	Stranded, Class 2	36.2	38.6	42.2	45.0	50.0	53.54	59.1	10316
2	1.5	Solid, Class 1	2.79	7.9	10.3	12.7	15.2	18.24	20.1	1005
2	1.5	Stranded, Class 2	2.9	8.2	10.6	12.9	15.4	18.43	20.3	1023
2	2.5	Solid, Class 1	3.15	8.6	11.0	13.4	15.9	18.92	20.9	1095
2	2.5	Stranded, Class 2	3.31	9.1	11.5	13.7	16.2	19.21	21.2	1120
2	4	Solid, Class 1	3.61	9.5	11.9	14.3	16.8	19.79	21.8	1210
2	4	Stranded, Class 2	3.83	10.2	12.6	14.8	17.3	20.27	22.4	1255
2	6	Stranded, Class 2	4.35	11.0	13.4	15.8	18.3	21.24	23.4	1399
2	10	Stranded, Class 2	5.25	12.8	15.2	17.6	20.8	23.67	26.1	1790
2	16	Stranded, Class 2	6.25	14.8	17.2	19.6	22.8	25.61	28.2	2109
2	25	Stranded, Class 2	7.9	18.1	20.5	22.9	26.1	28.81	31.8	2680
2	35	Stranded, Class 2	8.9	20.1	22.5	24.9	28.1	30.94	34.1	3115
2	50	Stranded, Class 2	10.2	22.8	25.4	27.8	31.8	34.73	38.3	4037

2	70	Stranded, Class 2	12.0	26.4	29.2	31.6	35.6	38.8	42.8	5074
2	95	Stranded, Class 2	13.55	29.9	32.9	35.3	39.3	42.58	47.0	6206
2	120	Stranded, Class 2	15.26	33.3	36.5	39.1	44.1	47.43	52.3	7796
2	150	Stranded, Class 2	16.97	36.7	40.1	42.7	47.7	51.31	56.6	9145
2	185	Stranded, Class 2	19.05	41.3	44.9	47.7	52.7	56.36	62.2	10957
2	240	Stranded, Class 2	21.6	46.4	50.4	53.4	58.4	62.27	68.7	13526
2	300	Stranded, Class 2	24.2	52.0	56.2	59.4	64.4	68.48	75.5	16251
3	1.5	Solid, Class 1	2.79	8.3	10.7	13.1	15.6	18.62	20.5	1056
3	1.5	Stranded, Class 2	2.9	8.7	11.1	13.4	15.9	18.92	20.9	1085
3	2.5	Solid, Class 1	3.15	9.1	11.5	13.9	16.4	19.4	21.4	1157
3	2.5	Stranded, Class 2	3.31	9.6	12.0	14.2	16.8	19.79	21.8	1194
3	4	Solid, Class 1	3.61	10.1	12.5	14.9	17.4	20.37	22.5	1289
3	4	Stranded, Class 2	3.83	10.8	13.2	15.4	17.9	20.86	23.0	1345
3	6	Stranded, Class 2	4.35	11.7	14.1	16.5	19.0	21.92	24.2	1501
3	10	Stranded, Class 2	5.25	13.6	16.0	18.4	21.6	24.44	27.0	1938
3	16	Stranded, Class 2	6.25	15.8	18.2	20.6	23.8	26.58	29.3	2331
3	25	Stranded, Class 2	7.9	19.4	21.8	24.2	27.4	30.26	33.4	3006
3	35	Stranded, Class 2	8.9	21.5	24.1	26.5	29.7	32.69	36.1	3634
3	50	Stranded, Class 2	10.2	24.4	27.2	29.6	33.6	36.67	40.4	4715
3	70	Stranded, Class 2	12.0	28.7	31.7	34.1	38.1	41.22	45.5	6020
3	95	Stranded, Class 2	13.55	32.1	35.3	37.9	42.9	46.27	51.0	7799
3	120	Stranded, Class 2	15.26	35.8	39.2	41.8	46.8	50.25	55.4	9211
3	150	Stranded, Class 2	16.97	39.9	43.5	46.3	51.3	55.0	60.7	10965
3	185	Stranded, Class 2	19.05	44.4	48.2	51.2	56.2	59.95	66.1	13070
3	240	Stranded, Class 2	21.6	50.3	54.5	57.7	62.7	66.83	73.7	16348
3	300	Stranded, Class 2	24.2	55.9	60.3	63.7	68.7	73.04	81.9	19774
4	1.5	Solid, Class 1	2.79	9.0	11.4	13.8	16.4	19.4	21.4	1139
4	1.5	Stranded, Class 2	2.9	9.4	11.8	14.1	16.6	19.59	21.6	1161
4	2.5	Solid, Class 1	3.15	9.9	12.3	14.7	17.2	20.18	22.3	1254

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4	2.5	Stranded, Class 2	3.31	10.5	12.9	15.1	17.6	20.56	22.7	1295
4	4	Solid, Class 1	3.61	11.0	13.4	15.8	18.3	21.24	23.4	1417
4	4	Stranded, Class 2	3.83	11.9	14.3	16.4	18.9	21.82	24.1	1469
4	6	Stranded, Class 2	4.35	12.8	15.2	17.6	20.8	23.67	26.1	1797
4	10	Stranded, Class 2	5.25	15.0	17.4	19.8	23.0	25.8	28.5	2175
4	16	Stranded, Class 2	6.25	17.4	19.8	22.2	25.4	28.13	31.0	2657
4	25	Stranded, Class 2	7.9	21.4	24.0	26.4	29.6	32.4	35.7	3553
4	35	Stranded, Class 2	8.9	23.9	26.5	28.9	32.9	35.99	39.7	4465
4	50	Stranded, Class 2	10.2	27.1	30.1	32.5	36.5	39.67	43.8	5588
4	70	Stranded, Class 2	12.0	31.8	35.0	37.4	41.4	44.62	49.2	7179
4	95	Stranded, Class 2	13.55	35.6	39.0	41.6	46.6	50.05	55.2	9284
4	120	Stranded, Class 2	15.26	40.1	43.7	46.5	51.5	55.19	60.9	11202
4	150	Stranded, Class 2	16.97	44.3	48.1	51.1	56.1	60.04	66.2	13239
4	185	Stranded, Class 2	19.05	49.3	53.5	56.7	61.7	65.67	72.4	16017
4	240	Stranded, Class 2	21.6	55.9	60.5	63.9	68.9	73.24	80.8	20050
4	300	Stranded, Class 2	24.2	62.2	67.0	70.6	76.9	81.38	91.1	25156
5	1.5	Solid, Class 1	2.79	9.8	12.2	14.6	17.1	20.08	22.2	1231
5	1.5	Stranded, Class 2	2.9	10.3	12.7	14.9	17.4	20.37	22.5	1266
5	2.5	Solid, Class 1	3.15	10.8	13.2	15.6	18.1	21.05	23.2	1363
5	2.5	Stranded, Class 2	3.31	11.5	13.9	16.0	18.5	21.44	23.6	1407
5	4	Solid, Class 1	3.61	12.1	14.4	16.8	20.1	22.99	25.4	1677
5	4	Stranded, Class 2	3.83	13.0	15.4	17.4	20.6	23.47	25.9	1739
5	6	Stranded, Class 2	4.35	14.0	16.4	18.8	22.1	24.93	27.5	1980
5	10	Stranded, Class 2	5.25	16.5	18.9	21.3	24.5	27.26	30.1	2421
5	16	Stranded, Class 2	6.25	19.2	21.6	24.0	27.2	30.07	33.2	2990
5	25	Stranded, Class 2	7.9	23.7	26.3	28.7	32.7	35.6	39.3	4295
5	35	Stranded, Class 2	8.9	26.4	29.2	31.6	35.6	38.8	42.8	5250
5	50	Stranded, Class 2	10.2	30.3	33.3	35.7	39.7	42.97	47.4	6500
5	70	Stranded, Class 2	12.0	35.2	38.6	41.2	46.2	49.66	54.8	8920

5	95	Stranded, Class 2	13.55	39.8	43.4	46.2	51.2	54.9	60.6	11073
5	120	Stranded, Class 2	15.26	44.4	48.2	51.2	56.2	59.95	66.1	13190
5	150	Stranded, Class 2	16.97	49.0	53.2	56.4	61.4	65.38	72.1	15790
5	185	Stranded, Class 2	19.05	55.0	59.4	62.8	67.8	71.97	79.4	19019
5	240	Stranded, Class 2	21.6	61.9	66.7	70.3	76.6	81.09	89.4	24583
5	300	Stranded, Class 2	24.2	69.3	74.5	78.5	84.8	89.63	98.9	29895
7	1.5	Stranded, Class 2	2.9	10.8	13.2	15.5	18.0	20.95	23.1	1333
7	2.5	Stranded, Class 2	3.31	12.2	14.6	16.7	19.9	22.8	25.2	1631
10	1.5	Stranded, Class 2	2.9	13.9	16.3	18.5	21.7	24.54	27.1	1802
10	2.5	Stranded, Class 2	3.31	15.7	18.1	20.1	23.3	26.09	28.8	2052
12	1.5	Stranded, Class 2	2.9	14.4	16.8	19.0	22.2	25.03	27.6	1874
12	2.5	Stranded, Class 2	3.31	16.2	18.6	20.7	23.9	26.68	29.4	2161
14	1.5	Stranded, Class 2	2.9	15.1	17.5	19.7	22.9	25.7	28.4	1989
14	2.5	Stranded, Class 2	3.31	17.1	19.5	21.5	24.7	27.45	30.3	2285
19	1.5	Stranded, Class 2	2.9	16.8	19.2	21.4	24.6	27.35	30.2	2245
19	2.5	Stranded, Class 2	3.31	19.1	21.5	23.4	26.6	29.49	32.5	2630
24	1.5	Stranded, Class 2	2.9	19.8	22.2	24.3	27.5	30.36	33.5	2652
24	2.5	Stranded, Class 2	3.31	22.5	25.1	27.0	30.2	33.17	36.6	3228
27	1.5	Stranded, Class 2	2.9	20.2	22.6	24.7	27.9	30.75	33.9	2732
27	2.5	Stranded, Class 2	3.31	23.0	25.6	27.5	31.5	34.44	38.0	3586
30	1.5	Stranded, Class 2	2.9	21.0	23.6	25.7	28.9	31.72	35.0	2982
30	2.5	Stranded, Class 2	3.31	23.9	26.5	28.4	32.4	35.5	39.2	3829
37	1.5	Stranded, Class 2	2.9	22.8	25.4	27.4	31.4	34.34	37.9	3522
37	2.5	Stranded, Class 2	3.31	25.9	28.7	30.5	34.5	37.54	41.4	4317

Cables for Oil Industry

Medium Voltage XLPE Insulated Cable to IEC 60502-2

XLPE Insulated Cable to IEC 60502-2

Applications

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

Standards

IEC 60228; IEC 60502-2

Construction

Conductor: Stranded bare copper (class 2)

Conductor screen: This will be an extruded layer of semi-conducting crosslinkable compound applied under simultaneous triple extrusion process over the conductor along with the insulation and the insulation screen.

Insulation: XLPE

Insulation screen: This will be a layer of semi-conducting crosslinkable compound which will be applied by triple extrusion process over the insulation.

Core identification:

1 Core: Natural

3 Cores: Black, Green, Brown

Outer sheath: Special PVC. Color: red. U.V resistance can be offered upon request.

Properties

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

1 Core

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	24.0	26.4	972	3.6 / 6 (7.2)

35	13.3	14.7	24.9	27.5	1105	3.6 / 6 (7.2)
50	14.4	15.8	26.0	28.7	1257	3.6 / 6 (7.2)
70	16.0	17.4	27.5	30.4	1509	3.6 / 6 (7.2)
95	17.55	19.0	29.1	32.1	1808	3.6 / 6 (7.2)
120	19.06	20.5	30.6	33.7	2092	3.6 / 6 (7.2)
150	20.37	21.8	31.8	35.1	2391	3.6 / 6 (7.2)
185	22.05	23.5	33.5	36.9	2796	3.6 / 6 (7.2)
240	24.6	26.0	35.9	39.6	3420	3.6 / 6 (7.2)
300	27.4	28.8	38.6	42.6	4104	3.6 / 6 (7.2)
400	30.9	32.3	42.0	46.3	5079	3.6 / 6 (7.2)
500	35.4	36.8	46.4	51.1	6284	3.6 / 6 (7.2)
630	39.8	41.2	50.9	56.2	7796	3.6 / 6 (7.2)
25	14.1	15.5	25.7	28.4	1071	6 / 10 (12)
35	15.1	16.5	26.7	29.4	1204	6 / 10 (12)
50	16.2	17.6	27.7	30.6	1367	6 / 10 (12)
70	17.8	19.2	29.3	32.3	1622	6 / 10 (12)
95	19.35	20.8	30.8	34.0	1924	6 / 10 (12)
120	20.86	22.3	32.3	35.6	2217	6 / 10 (12)
150	22.17	23.6	33.6	37.0	2519	6 / 10 (12)
185	23.85	25.3	35.2	38.8	2924	6 / 10 (12)
240	26.2	27.6	37.4	41.3	3543	6 / 10 (12)
300	28.6	30.0	39.8	43.9	4202	6 / 10 (12)
400	31.7	33.1	42.8	47.2	5146	6 / 10 (12)
500	35.8	37.2	46.8	51.6	6321	6 / 10 (12)
630	40.2	41.6	51.3	56.6	7837	6 / 10 (12)
25	16.3	17.7	27.8	30.7	1205	8.7 / 15 (17.5)
35	17.3	18.7	28.8	31.8	1343	8.7 / 15 (17.5)
50	18.4	19.8	29.9	33.0	1509	8.7 / 15 (17.5)
70	20.0	21.4	31.4	34.7	1770	8.7 / 15 (17.5)
95	21.55	23.0	33.0	36.4	2078	8.7 / 15 (17.5)
120	23.06	24.5	34.4	38.0	2375	8.7 / 15 (17.5)
150	24.37	25.8	35.7	39.4	2680	8.7 / 15 (17.5)
185	26.05	27.5	37.3	41.2	3094	8.7 / 15 (17.5)
240	28.4	29.8	39.6	43.7	3720	8.7 / 15 (17.5)
300	30.8	32.2	41.9	46.2	4383	8.7 / 15 (17.5)
400	33.9	35.3	44.9	49.5	5332	8.7 / 15 (17.5)
500	38.0	39.4	48.9	53.9	6523	8.7 / 15 (17.5)

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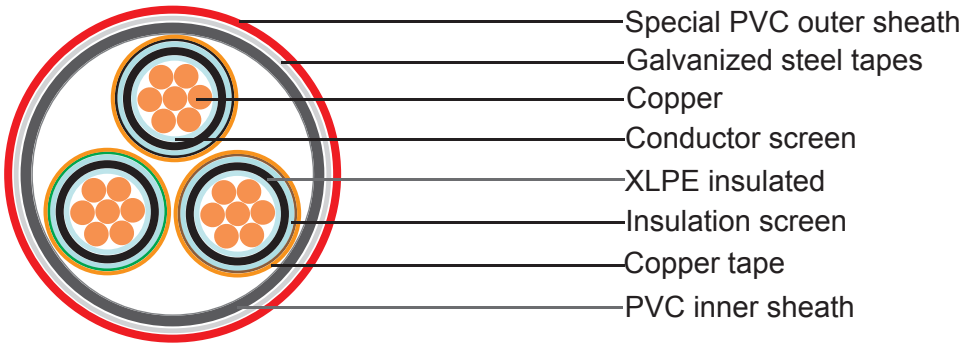
630	42.4	43.8	53.4	59.0	8064	8.7 / 15 (17.5)
35	19.3	20.7	30.7	33.9	1473	12 / 20 (24)
50	20.4	21.8	31.8	35.1	1643	12 / 20 (24)
70	22.0	23.4	33.4	36.8	1910	12 / 20 (24)
95	23.55	25.0	34.9	38.5	2221	12 / 20 (24)
120	25.06	26.5	36.4	40.1	2523	12 / 20 (24)
150	26.37	27.8	37.6	41.5	2834	12 / 20 (24)
185	28.05	29.5	39.3	43.3	3254	12 / 20 (24)
240	30.4	31.8	41.5	45.8	3883	12 / 20 (24)
300	32.8	34.2	43.8	48.4	4558	12 / 20 (24)
400	35.9	37.3	46.9	51.7	5494	12 / 20 (24)
500	40.0	41.4	51.1	56.4	6767	12 / 20 (24)
630	44.4	45.8	55.6	61.3	8318	12 / 20 (24)
25	26.3	27.7	37.5	41.4	1910	18 / 30 (36)
50	25.4	26.8	36.7	40.4	2007	18 / 30 (36)
70	27.0	28.4	38.2	42.2	2305	18 / 30 (36)
95	28.55	30.0	39.8	43.9	2613	18 / 30 (36)
120	30.06	31.5	41.2	45.5	2928	18 / 30 (36)
150	31.37	32.8	42.5	46.9	3245	18 / 30 (36)
185	33.05	34.5	44.1	48.7	3678	18 / 30 (36)
240	35.4	36.8	46.4	51.1	4322	18 / 30 (36)
300	37.8	39.2	48.9	53.9	5066	18 / 30 (36)
400	40.9	42.3	52.2	57.6	6046	18 / 30 (36)
500	45.0	46.4	56.4	62.2	7351	18 / 30 (36)

3 Cores

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	34.9	38.5	2135	3.6 / 6 (7.2)
35	13.3	14.7	37.0	40.8	2544	3.6 / 6 (7.2)
50	14.4	15.8	39.3	43.4	3021	3.6 / 6 (7.2)
70	16.0	17.4	43.0	47.4	3837	3.6 / 6 (7.2)
95	17.55	19.0	46.6	51.4	4815	3.6 / 6 (7.2)
120	19.06	20.5	50.0	55.1	5755	3.6 / 6 (7.2)
150	20.37	21.8	52.9	58.4	6745	3.6 / 6 (7.2)
185	22.05	23.5	56.7	62.6	8090	3.6 / 6 (7.2)
240	24.6	26.0	62.5	68.9	10206	3.6 / 6 (7.2)

300	27.4	28.8	68.8	75.9	12485	3.6 / 6 (7.2)
25	14.1	15.5	38.7	42.7	2452	6 / 10 (12)
35	15.1	16.5	40.8	45.0	2873	6 / 10 (12)
50	16.2	17.6	43.4	47.9	3412	6 / 10 (12)
70	17.8	19.2	47.0	51.8	4255	6 / 10 (12)
95	19.35	20.8	50.6	55.8	5259	6 / 10 (12)
120	20.86	22.3	54.0	59.6	6243	6 / 10 (12)
150	22.17	23.6	57.0	62.8	7257	6 / 10 (12)
185	23.85	25.3	60.8	67.0	8624	6 / 10 (12)
240	26.2	27.6	66.1	72.9	10736	6 / 10 (12)
300	28.6	30.0	71.4	78.8	12978	6 / 10 (12)
25	16.3	17.7	43.6	48.1	2924	8.7 / 15 (17.5)
35	17.3	18.7	45.9	50.7	3395	8.7 / 15 (17.5)
50	18.4	19.8	48.3	53.2	3935	8.7 / 15 (17.5)
70	20.0	21.4	51.9	57.2	4817	8.7 / 15 (17.5)
95	21.55	23.0	55.7	61.4	5889	8.7 / 15 (17.5)
120	23.06	24.5	59.1	65.2	6907	8.7 / 15 (17.5)
150	24.37	25.8	62.0	68.4	7949	8.7 / 15 (17.5)
185	26.05	27.5	65.9	72.7	9367	8.7 / 15 (17.5)
240	28.4	29.8	71.2	78.5	11535	8.7 / 15 (17.5)
300	30.8	32.2	76.5	84.4	13822	8.7 / 15 (17.5)
35	19.3	20.7	50.4	55.6	3888	12 / 20 (24)
50	20.4	21.8	52.9	58.4	4479	12 / 20 (24)
70	22.0	23.4	56.5	62.4	5403	12 / 20 (24)
95	23.55	25.0	60.1	66.3	6474	12 / 20 (24)
120	25.06	26.5	63.5	70.1	7525	12 / 20 (24)
150	26.37	27.8	66.5	73.4	8604	12 / 20 (24)
185	28.05	29.5	70.3	77.6	10059	12 / 20 (24)
240	30.4	31.8	75.6	83.4	12264	12 / 20 (24)
50	25.4	26.8	64.4	71.0	6018	18 / 30 (36)
70	27.0	28.4	68.0	75.0	7084	18 / 30 (36)
95	28.55	30.0	71.6	79.0	8200	18 / 30 (36)
120	30.06	31.5	75.0	82.7	9339	18 / 30 (36)
150	31.37	32.8	77.9	86.0	10476	18 / 30 (36)
185	33.05	34.5	81.8	90.2	12024	18 / 30 (36)
240	35.4	36.8	87.1	96.0	14351	18 / 30 (36)

Medium Voltage XLPE Insulated Galvanized Steel Tape Armored Cable to IEC 60502-2



XLPE Insulated Galvanized Steel Tape Armored Cable to IEC 60502-2

Applications

These cables are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations, where require chemical and mechanical protection.

Standards

IEC 60228; IEC 60502-2

Construction

Conductor: Stranded bare copper (class 2)

Conductor screen: This will be an extruded layer of semi-conducting crosslinkable compound applied under simultaneous triple extrusion process over the conductor along with the insulation and the insulation screen.

Insulation: XLPE

Insulation screen: This will be a layer of semi-conducting crosslinkable compound which will be applied by triple extrusion process over the insulation.

Core identification:

1 Core: Natural

3 Cores: Black, Green, Brown

Inner sheath: PVC

Armor: Galvanized steel tapes or aluminum tapes for 1 core cable

Outer sheath: Special PVC. Color: red. U.V. resistance can be offered upon request.

Properties

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

1 Core

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	17.7	20.0	30.1	33.2	1419	3.6 / 6 (7.2)
35	13.3	14.7	18.7	21.0	31.0	34.2	1562	3.6 / 6 (7.2)
50	14.4	15.8	19.8	22.1	32.1	35.4	1737	3.6 / 6 (7.2)
70	16.0	17.4	21.4	23.7	33.7	37.1	2018	3.6 / 6 (7.2)
95	17.55	19.0	23.0	25.3	35.2	38.8	2343	3.6 / 6 (7.2)
120	19.06	20.5	24.5	26.8	36.7	40.4	2650	3.6 / 6 (7.2)
150	20.37	21.8	25.8	28.1	37.9	41.8	2968	3.6 / 6 (7.2)
185	22.05	23.5	27.5	29.8	39.6	43.7	3400	3.6 / 6 (7.2)
240	24.6	26.0	30.0	32.3	42.0	46.3	4053	3.6 / 6 (7.2)
300	27.4	28.8	32.8	35.1	44.7	49.3	4790	3.6 / 6 (7.2)
400	30.9	32.3	36.3	38.6	48.1	53.1	5819	3.6 / 6 (7.2)
500	35.4	36.8	40.8	43.1	52.5	57.9	7094	3.6 / 6 (7.2)
630	39.8	41.2	45.3	47.6	57.2	63.1	8709	3.6 / 6 (7.2)
25	14.1	15.5	19.5	21.8	31.8	35.1	1553	6 / 10 (12)
35	15.1	16.5	20.5	22.8	32.8	36.2	1694	6 / 10 (12)
50	16.2	17.6	21.6	23.9	33.9	37.3	1879	6 / 10 (12)
70	17.8	19.2	23.2	25.5	35.4	39.1	2159	6 / 10 (12)
95	19.35	20.8	24.8	27.1	37.0	40.8	2487	6 / 10 (12)
120	20.86	22.3	26.3	28.6	38.4	42.4	2802	6 / 10 (12)
150	22.17	23.6	27.6	29.9	39.7	43.8	3124	6 / 10 (12)
185	23.85	25.3	29.3	31.6	41.3	45.6	3557	6 / 10 (12)
240	26.2	27.6	31.6	33.9	43.6	48.0	4212	6 / 10 (12)
300	28.6	30.0	34.0	36.3	45.9	50.6	4908	6 / 10 (12)
400	31.7	33.1	37.1	39.4	48.9	53.9	5899	6 / 10 (12)
500	35.8	37.2	41.2	43.5	52.9	58.3	7138	6 / 10 (12)
630	40.2	41.6	45.7	48.0	57.6	63.6	8757	6 / 10 (12)
25	16.3	17.7	21.7	24.0	34.0	37.5	1719	8.7 / 15 (17.5)
35	17.3	18.7	22.7	25.0	34.9	38.5	1873	8.7 / 15 (17.5)
50	18.4	19.8	23.8	26.1	36.0	39.7	2055	8.7 / 15 (17.5)
70	20.0	21.4	25.4	27.7	37.5	41.4	2341	8.7 / 15 (17.5)
95	21.55	23.0	27.0	29.3	39.1	43.1	2675	8.7 / 15 (17.5)
120	23.06	24.5	28.5	30.8	40.5	44.7	2995	8.7 / 15 (17.5)
150	24.37	25.8	29.8	32.1	41.8	46.1	3320	8.7 / 15 (17.5)

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Cables for Oil Industry

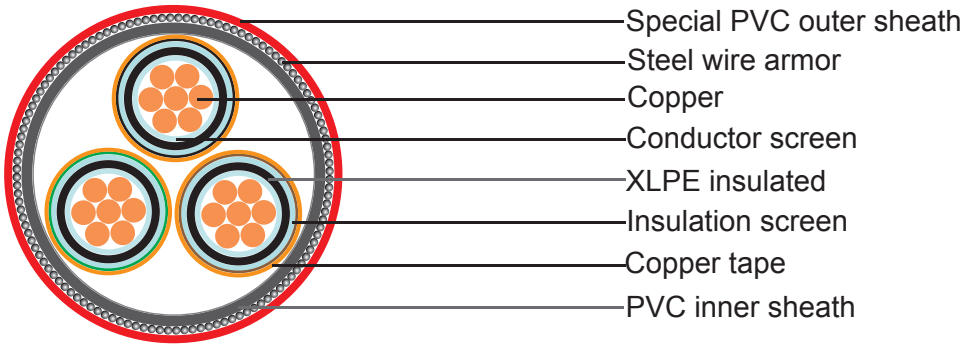
185	26.05	27.5	31.5	33.8	43.5	47.9	3761	8.7 / 15 (17.5)
240	28.4	29.8	33.8	36.1	45.7	50.4	4423	8.7 / 15 (17.5)
300	30.8	32.2	36.2	38.5	48.0	53.0	5123	8.7 / 15 (17.5)
400	33.9	35.3	39.3	41.6	51.0	56.3	6119	8.7 / 15 (17.5)
500	38.0	39.4	43.4	45.7	55.2	60.9	7403	8.7 / 15 (17.5)
630	42.4	43.8	47.9	50.2	59.9	66.1	9050	8.7 / 15 (17.5)
35	19.3	20.7	24.7	27.0	36.9	40.7	2034	12 / 20 (24)
50	20.4	21.8	25.8	28.1	37.9	41.8	2220	12 / 20 (24)
70	22.0	23.4	27.4	29.7	39.5	43.5	2513	12 / 20 (24)
95	23.55	25.0	29.0	31.3	41.0	45.3	2849	12 / 20 (24)
120	25.06	26.5	30.5	32.8	42.5	46.9	3174	12 / 20 (24)
150	26.37	27.8	31.8	34.1	43.7	48.3	3506	12 / 20 (24)
185	28.05	29.5	33.5	35.8	45.4	50.1	3952	12 / 20 (24)
240	30.4	31.8	35.8	38.1	47.6	52.5	4617	12 / 20 (24)
300	32.8	34.2	38.2	40.5	50.0	55.1	5329	12 / 20 (24)
400	35.9	37.3	41.3	43.6	53.2	58.6	6340	12 / 20 (24)
500	40.0	41.4	45.5	47.8	57.4	63.3	7684	12 / 20 (24)
630	44.4	45.8	49.9	52.2	61.9	68.3	9308	12 / 20 (24)
50	25.4	26.8	30.8	33.1	42.8	47.2	2663	18 / 30 (36)
70	27.0	28.4	32.4	34.7	44.3	48.9	2985	18 / 30 (36)
95	28.8	30.2	34.0	36.3	45.9	50.6	3319	18 / 30 (36)
120	30.06	31.5	35.5	37.8	47.3	52.2	3657	18 / 30 (36)
150	31.37	32.8	36.8	39.1	48.6	53.6	3994	18 / 30 (36)
185	33.05	34.5	38.5	40.8	50.2	55.4	4453	18 / 30 (36)
240	35.4	36.8	40.8	43.1	52.7	58.1	5159	18 / 30 (36)
300	37.8	39.2	43.2	45.5	55.2	60.9	5945	18 / 30 (36)
400	40.9	42.3	46.4	48.7	58.5	64.5	6981	18 / 30 (36)
500	45.0	46.4	50.5	52.8	62.7	69.1	8354	18 / 30 (36)

3 Cores

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	36.7	39.0	44.6	49.2	3534	3.6 / 6 (7.2)
35	13.3	14.7	38.9	41.2	46.8	51.6	4006	3.6 / 6 (7.2)
50	14.4	15.8	41.4	43.7	49.2	54.2	4584	3.6 / 6 (7.2)
70	16.0	17.4	44.9	47.2	52.6	58.0	5502	3.6 / 6 (7.2)
95	17.55	19.0	48.4	50.7	56.0	61.7	6575	3.6 / 6 (7.2)

120	19.06	20.5	51.7	54.0	59.2	65.3	7604	3.6 / 6 (7.2)
150	20.37	21.8	54.6	56.9	62.0	68.4	8663	3.6 / 6 (7.2)
185	22.05	23.5	58.3	60.6	65.6	72.3	10103	3.6 / 6 (7.2)
240	24.6	26.0	63.8	66.1	70.9	78.2	12332	3.6 / 6 (7.2)
25	14.1	15.5	40.7	43.0	48.5	53.5	3991	6 / 10 (12)
35	15.1	16.5	42.9	45.2	50.6	55.9	4489	6 / 10 (12)
50	16.2	17.6	45.3	47.6	53.0	58.4	5090	6 / 10 (12)
70	17.8	19.2	48.8	51.1	56.4	62.2	6032	6 / 10 (12)
95	19.35	20.8	52.4	54.7	59.8	66.0	7130	6 / 10 (12)
120	20.86	22.3	53.7	58.0	63.1	69.6	8136	6 / 10 (12)
150	22.17	23.6	58.5	60.8	65.8	72.5	9276	6 / 10 (12)
185	23.85	25.3	62.3	64.6	69.5	76.6	10736	6 / 10 (12)
240	26.2	27.6	67.3	69.6	74.3	82.0	12940	6 / 10 (12)
25	16.3	17.7	45.5	47.8	53.2	58.6	4609	8.7 / 15 (17.5)
35	17.3	18.7	47.7	50.0	55.3	61.0	5133	8.7 / 15 (17.5)
50	18.4	19.8	50.2	52.5	57.7	63.7	5757	8.7 / 15 (17.5)
70	20.0	21.4	53.7	56.0	61.1	67.4	6731	8.7 / 15 (17.5)
95	21.55	23.0	57.2	59.5	64.5	71.2	7866	8.7 / 15 (17.5)
120	23.06	24.5	60.5	62.8	67.7	74.7	8960	8.7 / 15 (17.5)
150	24.37	25.8	63.4	65.7	70.5	77.8	10063	8.7 / 15 (17.5)
185	26.05	27.5	67.1	69.4	74.1	81.7	11565	8.7 / 15 (17.5)
240	28.4	29.8	72.2	74.5	79.2	87.4	13856	8.7 / 15 (17.5)
300	30.8	32.2	77.4	81.1	86.0	94.9	17304	8.7 / 15 (17.5)
35	19.3	20.7	52.1	54.4	59.6	65.7	5751	12 / 20 (24)
50	20.4	21.8	54.6	56.9	62.0	68.4	6397	12 / 20 (24)
70	22.0	23.4	58.1	60.4	65.4	72.1	7409	12 / 20 (24)
95	23.55	25.0	61.6	63.9	68.8	75.9	8563	12 / 20 (24)
120	25.06	26.5	64.9	67.2	72.0	79.4	9687	12 / 20 (24)
150	26.37	27.8	67.8	70.1	74.8	82.5	10823	12 / 20 (24)
185	28.05	29.5	71.5	73.8	78.6	86.7	12398	12 / 20 (24)
240	30.4	31.8	76.6	80.2	85.2	93.9	15715	12 / 20 (24)
50	25.4	26.8	65.6	67.9	72.7	80.1	8167	18 / 30 (36)
70	27.0	28.4	69.1	71.4	76.0	83.9	9308	18 / 30 (36)
95	28.55	30.0	72.6	74.9	79.6	87.8	10535	18 / 30 (36)
120	30.06	31.5	75.9	79.6	84.6	93.3	12756	18 / 30 (36)
150	31.37	32.8	78.8	82.4	87.5	96.5	14027	18 / 30 (36)
185	33.05	34.5	82.5	86.2	91.4	100.8	15732	18 / 30 (36)

Medium Voltage XLPE Insulated Steel Wire Armored Cable to IEC 60502-2



XLPE Insulated Steel Wire Armored Cable to IEC 60502-2

Applications

These cables are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations, where require chemical and mechanical protection.

Standards

IEC 60228; IEC 60502-2

Construction

Conductor: Stranded bare copper (class 2)

Condutor screen: This will be an extruded layer of semi-conducting crosslinkable compound applied under simultaneous triple extrusion process over the conductor along with the insulation and the insulation screen.

Insulation: XLPE

Insulation screen: This will be a layer of semi-conducting crosslinkable compound which will be applied by triple extrusion process over the insulation.

Core identification:

1 Core: Natural

3 Cores: Black, Green, Brown

Inner sheath: PVC

Armor: Galvanized steel wires or aluminum wires for 1 core cable

Outer sheath: Special PVC. Color: red. U.V resistance can be offered upon request.

Properties

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

1 Core

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	17.7	21.5	31.5	34.8	1621	3.6 / 6 (7.2)
35	13.3	14.7	18.7	22.5	32.5	35.8	1781	3.6 / 6 (7.2)
50	14.4	15.8	19.8	23.6	33.6	37.0	1953	3.6 / 6 (7.2)
70	16.0	17.4	21.4	25.2	35.1	38.7	2247	3.6 / 6 (7.2)
95	17.55	19.0	23.0	26.8	36.7	40.4	2589	3.6 / 6 (7.2)
120	19.06	20.5	24.5	28.3	38.1	42.1	2904	3.6 / 6 (7.2)
150	20.37	21.8	25.8	29.6	39.4	43.4	3233	3.6 / 6 (7.2)
185	22.05	23.5	27.5	31.3	41.0	45.3	3681	3.6 / 6 (7.2)
240	24.6	26.0	30.0	33.8	43.5	47.9	4365	3.6 / 6 (7.2)
300	27.4	28.8	32.8	36.6	46.2	50.9	5121	3.6 / 6 (7.2)
400	30.9	32.3	36.3	40.1	49.6	54.7	6174	3.6 / 6 (7.2)
500	35.4	36.8	40.8	45.8	55.3	61.0	7735	3.6 / 6 (7.2)
630	39.8	41.2	45.3	50.3	60.0	66.2	9419	3.6 / 6 (7.2)
25	14.1	15.5	19.5	23.3	33.3	36.7	1764	6 / 10 (12)
35	15.1	16.5	20.5	24.3	34.2	37.8	1925	6 / 10 (12)
50	16.2	17.6	21.6	25.4	35.3	38.9	2107	6 / 10 (12)
70	17.8	19.2	23.2	27.0	36.9	40.7	2404	6 / 10 (12)
95	19.35	20.8	24.8	28.6	38.4	42.4	2748	6 / 10 (12)
120	20.86	22.3	26.3	30.1	39.9	44.0	3073	6 / 10 (12)
150	22.17	23.6	27.6	31.4	41.1	45.4	3405	6 / 10 (12)
185	23.85	25.3	29.3	33.1	42.8	47.2	3854	6 / 10 (12)
240	26.2	27.6	31.6	35.4	45.0	49.6	4531	6 / 10 (12)
300	28.6	30.0	34.0	37.8	47.3	52.2	5249	6 / 10 (12)
400	31.7	33.1	37.1	40.9	50.3	55.5	6267	6 / 10 (12)
500	35.8	37.2	41.2	46.2	55.7	61.4	7791	6 / 10 (12)
630	40.2	41.6	45.7	50.7	60.4	66.7	9464	6 / 10 (12)
25	16.3	17.7	21.7	25.5	35.4	39.1	1955	8.7 / 15 (17.5)
35	17.3	18.7	22.7	26.5	36.4	40.1	2112	8.7 / 15 (17.5)
50	18.4	19.8	23.8	27.6	37.4	41.3	2305	8.7 / 15 (17.5)
70	20.0	21.4	25.4	29.2	39.0	43.0	2608	8.7 / 15 (17.5)

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Cables for Oil Industry

95	21.55	23.0	27.0	30.8	40.5	44.7	2950	8.7 / 15 (17.5)
120	23.06	24.5	28.5	32.3	42.0	46.3	3288	8.7 / 15 (17.5)
150	24.37	25.8	29.8	33.6	43.3	47.7	3623	8.7 / 15 (17.5)
185	26.05	27.5	31.5	35.3	44.9	49.5	4081	8.7 / 15 (17.5)
240	28.4	29.8	33.8	37.6	47.1	52.0	4756	8.7 / 15 (17.5)
300	30.8	32.2	36.2	40.0	49.5	54.6	5478	8.7 / 15 (17.5)
400	33.9	35.3	39.3	44.3	53.8	59.4	6738	8.7 / 15 (17.5)
500	38.0	39.4	43.4	48.4	58.0	64.0	8091	8.7 / 15 (17.5)
630	42.4	43.8	47.9	52.9	62.8	69.2	9793	8.7 / 15 (17.5)
35	19.3	20.7	24.7	28.5	38.3	42.3	2287	12 / 20 (24)
50	20.4	21.8	25.8	29.6	39.4	43.4	2485	12 / 20 (24)
70	22.0	23.4	27.4	31.2	40.9	45.2	2795	12 / 20 (24)
95	23.55	25.0	29.0	32.8	42.5	46.9	3139	12 / 20 (24)
120	25.06	26.5	30.5	34.3	43.9	48.5	3482	12 / 20 (24)
150	26.37	27.8	31.8	35.6	45.2	49.9	3824	12 / 20 (24)
185	28.05	29.5	33.5	37.3	46.9	51.7	4287	12 / 20 (24)
240	30.4	31.8	35.8	39.6	49.1	54.1	4974	12 / 20 (24)
300	32.8	34.2	38.2	42.0	51.6	56.9	5734	12 / 20 (24)
400	35.9	37.3	41.3	46.3	56.0	61.7	6994	12 / 20 (24)
500	40.0	41.4	45.5	50.5	60.2	66.4	8392	12 / 20 (24)
630	44.4	45.8	49.9	54.9	64.9	71.6	10119	12 / 20 (24)
25	26.3	27.7	31.7	35.5	45.1	49.8	2866	18 / 30 (36)
50	25.4	26.8	30.8	34.6	44.2	48.8	2969	18 / 30 (36)
70	27.0	28.4	32.4	36.2	45.8	50.5	3309	18 / 30 (36)
95	28.8	30.2	34.0	37.8	47.3	52.2	3660	18 / 30 (36)
120	30.06	31.5	35.5	39.3	48.8	53.8	4007	18 / 30 (36)
150	31.37	32.8	36.8	40.6	50.1	55.2	4354	18 / 30 (36)
185	33.05	34.5	38.5	43.5	53.1	58.5	5060	18 / 30 (36)
240	35.4	36.8	40.8	45.8	55.5	61.2	5801	18 / 30 (36)
300	37.8	39.2	43.2	48.2	58.0	64.0	6621	18 / 30 (36)
400	40.9	42.3	46.4	51.4	61.3	67.6	7701	18 / 30 (36)
500	45.0	46.4	50.5	55.5	65.5	72.2	9130	18 / 30 (36)

3 Cores

Cables for Oil Industry

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	36.7	40.7	46.3	51.0	4418	3.6 / 6 (7.2)
35	13.3	14.7	38.9	42.9	48.4	53.4	4944	3.6 / 6 (7.2)
50	14.4	15.8	41.4	46.4	51.8	57.1	5995	3.6 / 6 (7.2)
70	16.0	17.4	44.9	49.9	55.2	60.9	7012	3.6 / 6 (7.2)
95	17.55	19.0	48.4	53.4	58.6	64.6	8226	3.6 / 6 (7.2)
120	19.06	20.5	51.7	56.7	61.8	68.2	9357	3.6 / 6 (7.2)
150	20.37	21.8	54.6	59.6	64.6	71.3	10528	3.6 / 6 (7.2)
185	22.05	23.5	58.3	63.3	68.2	75.2	12064	3.6 / 6 (7.2)
240	24.6	26.0	63.8	68.8	73.5	81.1	14480	3.6 / 6 (7.2)
300	27.4	28.8	70.0	77.5	82.4	90.8	18262	3.6 / 6 (7.2)
25	14.1	15.5	40.7	44.7	50.1	55.3	4961	6 / 10 (12)
35	15.1	16.5	42.9	47.9	53.3	58.7	5954	6 / 10 (12)
50	16.2	17.6	45.3	50.3	55.6	61.3	6634	6 / 10 (12)
70	17.8	19.2	48.8	53.8	59.0	65.1	7674	6 / 10 (12)
95	19.35	20.8	52.4	57.4	62.5	68.9	8913	6 / 10 (12)
120	20.86	22.3	55.7	60.7	65.7	72.4	10084	6 / 10 (12)
150	22.17	23.6	58.5	63.5	68.4	75.4	11273	6 / 10 (12)
185	23.85	25.3	62.3	67.3	72.1	79.5	12828	6 / 10 (12)
240	26.2	27.6	67.3	73.6	79.5	87.7	16365	6 / 10 (12)
300	28.6	30.0	72.6	80.1	84.9	93.6	18919	6 / 10 (12)
25	16.3	17.7	45.5	50.5	55.8	61.5	6149	8.7 / 15 (17.5)
35	17.3	18.7	47.7	52.7	57.9	63.9	6755	8.7 / 15 (17.5)
50	18.4	19.8	50.2	55.2	60.3	66.6	7457	8.7 / 15 (17.5)
70	20.0	21.4	53.7	58.7	63.7	70.3	8532	8.7 / 15 (17.5)
95	21.55	23.0	57.2	62.2	67.1	74.0	9805	8.7 / 15 (17.5)
120	23.06	24.5	60.5	65.5	70.3	77.6	11004	8.7 / 15 (17.5)
150	24.37	25.8	63.4	68.4	73.1	80.7	12217	8.7 / 15 (17.5)
185	26.05	27.5	67.1	73.4	79.3	87.5	14993	8.7 / 15 (17.5)
240	28.4	29.8	72.2	78.5	84.7	93.4	17580	8.7 / 15 (17.5)
300	30.8	32.2	77.4	83.7	89.9	99.2	20280	8.7 / 15 (17.5)
35	19.3	20.7	52.1	57.1	62.2	68.6	7537	12 / 20 (24)

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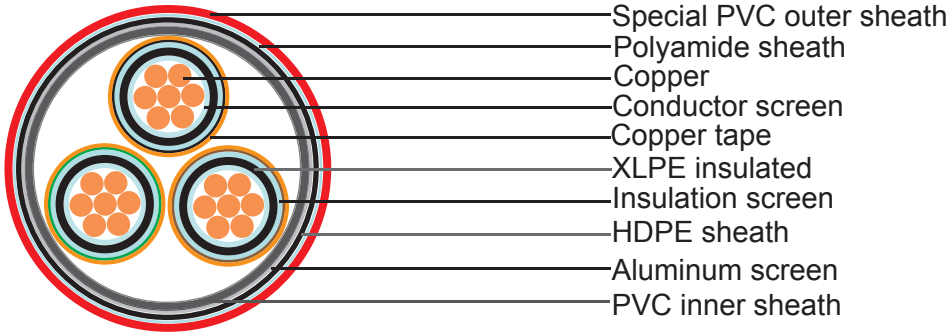
Cables for Oil Industry

50	20.4	21.8	54.6	59.6	64.6	71.3	8261	12 / 20 (24)
70	22.0	23.4	58.1	63.1	68.0	75.0	9373	12 / 20 (24)
95	23.55	25.0	61.6	66.6	71.4	78.8	10627	12 / 20 (24)
120	25.06	26.5	64.9	69.9	74.6	82.3	11895	12 / 20 (24)
150	26.37	27.8	67.8	74.1	80.0	88.3	14306	12 / 20 (24)
185	28.05	29.5	71.5	77.8	83.8	92.4	16021	12 / 20 (24)
240	30.4	31.8	76.6	82.9	89.1	98.3	18645	12 / 20 (24)
50	25.4	26.8	65.6	71.9	77.9	85.9	11491	18 / 30 (36)
70	27.0	28.4	69.1	75.4	81.5	89.9	12878	18 / 30 (36)
95	28.55	30.0	72.6	78.9	85.1	93.8	14252	18 / 30 (36)
120	30.06	31.5	75.9	82.2	88.5	97.6	15708	18 / 30 (36)
150	31.37	32.8	78.8	85.1	91.5	100.9	17092	18 / 30 (36)
185	33.05	34.5	82.5	88.8	95.3	105.1	18901	18 / 30 (36)
240	35.4	36.8	87.6	95.1	101.0	111.0	21499	18 / 30 (36)

Medium Voltage XLPE Insulated Overall Screened Cable to IEC 60502-2



XLPE Insulated Overall Screened Cable to IEC 60502-2

Applications

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

Standards

IEC 60228; IEC 60502-2

Construction

Conductor: Stranded bare copper (class 2)

Conductor screen: This will be an extruded layer of semi-conducting crosslinkable compound applied under simultaneous triple extrusion process over the conductor along with the insulation and the insulation screen.

Insulation: XLPE

Insulation screen: This will be a layer of semi-conducting crosslinkable compound which will be applied by triple extrusion process over the insulation.

Core identification:

1 Core: Natural

3 Cores: Black, Green, Brown

Inner sheath: PVC Color black

Overall screen: Aluminum/polyethylene tape

Sheath: HDPE Color: black

Special sheath (intermediate sheath): Polyamide

Outer sheath: Special PVC. Color: red. U.V resistance can be offered upon request.

Properties

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

1 Core

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Intermediate Sheath	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	15.6	19.9	22.6	24.9	778	3.6 / 6 (7.2)
35	13.3	14.7	16.6	20.9	23.6	26.0	892	3.6 / 6 (7.2)
50	14.4	15.8	17.7	22.1	24.7	27.3	1037	3.6 / 6 (7.2)
70	16.0	17.4	19.4	23.7	26.5	29.2	1285	3.6 / 6 (7.2)
95	17.55	19.0	20.9	25.2	27.9	30.8	1567	3.6 / 6 (7.2)
120	19.06	20.5	22.4	26.7	29.6	32.6	1849	3.6 / 6 (7.2)
150	20.37	21.8	23.7	28.0	30.8	34.0	2130	3.6 / 6 (7.2)
185	22.05	23.5	25.4	29.7	32.7	36.1	2532	3.6 / 6 (7.2)
240	24.6	26.0	28.5	32.8	35.9	39.6	3194	3.6 / 6 (7.2)
300	27.4	28.8	31.2	35.5	38.7	42.7	3871	3.6 / 6 (7.2)
400	30.9	32.3	34.7	39.0	42.3	46.7	4773	3.6 / 6 (7.2)
500	35.4	36.8	39.6	43.9	47.2	52.1	5997	3.6 / 6 (7.2)
630	39.8	41.2	42.8	47.1	50.5	55.7	7455	3.6 / 6 (7.2)
25	14.1	15.5	17.4	21.7	24.3	26.9	850	6 / 10 (12)
35	15.1	16.5	18.4	22.7	25.5	28.1	984	6 / 10 (12)
50	16.2	17.6	19.5	23.8	26.6	29.3	1132	6 / 10 (12)
70	17.8	19.2	21.3	25.6	28.5	31.5	1397	6 / 10 (12)
95	19.35	20.8	22.7	27.0	29.9	33.0	1675	6 / 10 (12)
120	20.86	22.3	24.2	28.5	31.5	34.8	1965	6 / 10 (12)
150	22.17	23.6	25.5	29.8	32.8	36.2	2254	6 / 10 (12)
185	23.85	25.3	27.6	31.9	35.0	38.6	2692	6 / 10 (12)
240	26.2	27.6	30.1	34.4	37.4	41.3	3298	6 / 10 (12)
300	28.6	30.0	32.4	36.7	39.9	44.0	3954	6 / 10 (12)
400	31.7	33.1	35.5	39.8	43.1	47.5	4831	6 / 10 (12)
500	35.8	37.2	40.0	44.3	47.6	52.5	6030	6 / 10 (12)
630	40.2	41.6	43.2	47.5	50.9	56.2	7491	6 / 10 (12)
25	16.3	17.7	19.6	23.9	26.7	29.4	968	8.7 / 15 (17.5)
35	17.3	18.7	20.6	24.9	27.6	30.5	1097	8.7 / 15 (17.5)
50	18.4	19.8	21.8	26.1	29.0	32.0	1269	8.7 / 15 (17.5)
70	20.0	21.4	23.4	27.7	30.6	33.7	1510	8.7 / 15 (17.5)

95	21.55	23.0	24.9	29.2	32.2	35.5	1814	8.7 / 15 (17.5)
120	23.06	24.5	26.4	30.7	33.7	37.1	2097	8.7 / 15 (17.5)
150	24.37	25.8	28.1	32.4	35.5	39.2	2439	8.7 / 15 (17.5)
185	26.05	27.5	29.8	34.1	37.2	41.0	2839	8.7 / 15 (17.5)
240	28.4	29.8	32.3	36.6	39.8	43.9	3472	8.7 / 15 (17.5)
300	30.8	32.2	34.6	38.9	42.2	46.5	4133	8.7 / 15 (17.5)
400	33.9	35.3	38.1	42.4	45.8	50.5	5068	8.7 / 15 (17.5)
500	38.0	39.4	42.2	46.5	50.0	55.1	6242	8.7 / 15 (17.5)
630	42.4	43.8	45.4	49.7	53.3	58.7	7714	8.7 / 15 (17.5)
35	19.3	20.7	22.6	26.9	29.8	32.8	1214	12 / 20 (24)
50	20.4	21.8	23.7	28.0	30.8	34.0	1369	12 / 20 (24)
70	22.0	23.4	25.4	29.7	32.7	36.1	1640	12 / 20 (24)
95	23.55	25.0	27.3	31.6	34.7	38.3	1987	12 / 20 (24)
120	25.06	26.5	28.8	33.1	36.2	39.9	2276	12 / 20 (24)
150	26.37	27.8	30.1	34.4	37.6	41.5	2592	12 / 20 (24)
185	28.05	29.5	31.8	36.1	39.3	43.3	2999	12 / 20 (24)
240	30.4	31.8	34.3	38.6	41.9	46.2	3638	12 / 20 (24)
300	32.8	34.2	36.6	40.9	44.3	48.9	4314	12 / 20 (24)
400	35.9	37.3	40.1	44.4	47.9	52.9	5257	12 / 20 (24)
500	40.0	41.4	44.3	48.6	52.2	57.6	6483	12 / 20 (24)
630	44.4	45.8	47.4	51.7	55.4	61.1	7930	12 / 20 (24)
25	26.3	27.7	30.0	34.3	37.3	41.2	1636	18 / 30 (36)
50	25.4	26.8	29.1	33.4	36.5	40.2	1740	18 / 30 (36)
70	27.0	28.4	30.8	35.1	38.3	42.3	2034	18 / 30 (36)
95	28.55	30.0	32.3	36.6	39.8	43.9	2346	18 / 30 (36)
120	30.06	31.5	33.8	38.1	41.4	45.7	2669	18 / 30 (36)
150	31.37	32.8	35.1	39.4	42.7	47.1	2971	18 / 30 (36)
185	33.05	34.5	36.8	41.1	44.5	49.1	3416	18 / 30 (36)
240	35.4	36.8	39.7	44.0	47.5	52.4	4115	18 / 30 (36)

3 Cores

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Intermediate Sheath	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	33.1	37.4	40.5	44.7	2760	3.6 / 6 (7.2)

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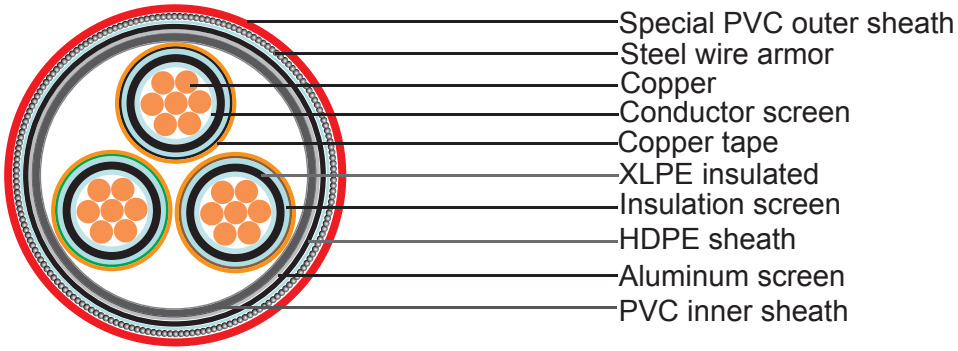
35	13.3	14.7	35.3	39.6	42.9	47.3	3228	3.6 / 6 (7.2)
50	14.4	15.8	38.1	42.4	45.8	50.5	3835	3.6 / 6 (7.2)
70	16.0	17.4	41.8	46.1	49.6	54.7	4788	3.6 / 6 (7.2)
95	17.55	19.0	45.1	49.4	53.0	58.4	5856	3.6 / 6 (7.2)
120	19.06	20.5	48.8	53.1	56.9	62.8	6998	3.6 / 6 (7.2)
150	20.37	21.8	51.7	56.0	59.9	66.1	8092	3.6 / 6 (7.2)
185	22.05	23.5	55.4	59.7	63.7	70.3	9585	3.6 / 6 (7.2)
25	14.1	15.5	37.1	41.4	44.8	49.4	3213	6 / 10 (12)
35	15.1	16.5	39.6	43.9	47.2	52.1	3723	6 / 10 (12)
50	16.2	17.6	42.1	46.4	49.9	55.0	4333	6 / 10 (12)
70	17.8	19.2	45.8	50.1	53.8	59.4	5343	6 / 10 (12)
95	19.35	20.8	49.5	53.8	57.6	63.6	6516	6 / 10 (12)
120	20.86	22.3	52.8	57.1	61.0	67.3	7619	6 / 10 (12)
150	22.17	23.6	55.7	60.0	64.0	70.6	8741	6 / 10 (12)
185	23.85	25.3	59.4	63.7	67.8	74.8	10259	6 / 10 (12)
25	16.3	17.7	42.3	46.6	50.1	55.2	3843	8.7 / 15 (17.5)
35	17.3	18.7	44.5	48.8	52.4	57.8	4380	8.7 / 15 (17.5)
50	18.4	19.8	46.9	51.2	54.9	60.6	5022	8.7 / 15 (17.5)
70	20.0	21.4	51.8	55.3	59.1	65.2	6117	8.7 / 15 (17.5)
35	19.3	20.7	49.3	53.6	57.4	63.3	5086	12 / 20 (24)
50	20.4	21.8	51.7	56.0	59.9	66.1	5763	12 / 20 (24)
70	22.0	23.4	55.4	59.7	63.7	70.3	6856	12 / 20 (24)

Medium Voltage XLPE Insulated Overall Screened & Steel Wire Armored Cable to IEC 60502-2



XLPE Insulated Overall Screened Steel Wire Armored Cable to IEC 60502-2

Applications

These cables are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations, where require chemical and mechanical protection.

Standards

IEC 60228; IEC 60502-2

Construction

Conductor: Stranded bare copper (class 2)

Conductor screen: This will be an extruded layer of semi-conducting crosslinkable compound applied under simultaneous triple extrusion process over the conductor along with the insulation and the insulation screen.

Insulation: Cross-linked polyethylene (XLPE)

Insulation screen: This will be a layer of semi-conducting crosslinkable compound which will be applied by triple extrusion process over the insulation.

Core identification:

1 Core: Natural

3 Cores: Black, Green, Brown

Inner sheath: PVC

Overall screen: Aluminum/polyethylene tape

Sheath: HDPE Color: black

Special sheath (intermediate sheath): Polyamide

Armor: Galvanized steel wires or aluminium wires for 1 core cable

Outer sheath: Special PVC. Color: red. U.V resistance can be offered upon request.

Properties

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

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Cables for Oil Industry

1 Core

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Intermediate Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	15.6	19.9	23.7	29.0	32.0	1240	3.6 / 6 (7.2)
35	13.3	14.7	16.6	20.9	24.7	30.0	33.1	1366	3.6 / 6 (7.2)
50	14.4	15.8	17.7	22.1	25.9	31.1	34.3	1534	3.6 / 6 (7.2)
70	16.0	17.4	19.4	23.7	27.5	32.7	36.1	1802	3.6 / 6 (7.2)
95	17.55	19.0	20.9	25.2	29.0	34.1	37.7	2107	3.6 / 6 (7.2)
120	19.06	20.5	22.4	26.7	30.5	35.6	39.3	2406	3.6 / 6 (7.2)
150	20.37	21.8	23.7	28.0	31.8	36.9	40.7	2710	3.6 / 6 (7.2)
185	22.05	23.5	25.4	29.7	33.5	38.5	42.5	3126	3.6 / 6 (7.2)
240	24.6	26.0	28.5	32.8	36.6	41.5	45.8	3822	3.6 / 6 (7.2)
300	27.4	28.8	31.2	35.5	39.3	44.1	48.7	4521	3.6 / 6 (7.2)
400	30.9	32.3	34.7	39.0	44.0	49.1	54.1	5682	3.6 / 6 (7.2)
500	35.4	36.8	39.6	43.9	48.9	54.0	59.6	6993	3.6 / 6 (7.2)
630	39.8	41.2	42.8	47.1	52.1	57.3	63.2	8521	3.6 / 6 (7.2)
25	14.1	15.5	17.5	21.8	26.8	30.8	34.0	1354	6 / 10 (12)
35	15.1	16.5	18.5	22.8	27.8	31.8	35.1	1494	6 / 10 (12)
50	16.2	17.6	19.6	23.9	28.9	32.9	36.3	1666	6 / 10 (12)
70	17.8	19.2	21.2	25.6	30.6	34.5	38.1	1946	6 / 10 (12)
95	19.35	20.8	22.8	27.1	32.1	36.0	39.7	2248	6 / 10 (12)
120	20.86	22.3	24.3	28.6	33.6	37.4	41.3	2555	6 / 10 (12)
150	22.17	23.6	25.6	29.9	34.9	38.7	42.7	2869	6 / 10 (12)
185	23.85	25.3	27.7	32.0	37.0	40.7	44.9	3323	6 / 10 (12)
240	26.2	27.6	30.0	34.3	39.3	43.0	47.4	3967	6 / 10 (12)
300	28.6	30.0	32.4	36.7	41.7	45.5	50.2	4672	6 / 10 (12)
400	31.7	33.1	35.5	39.8	46.0	49.9	55.0	5848	6 / 10 (12)
500	35.8	37.2	40.0	44.3	50.5	54.4	60.0	7152	6 / 10 (12)
630	40.2	41.6	44.5	48.8	55.0	59.0	65.1	8732	6 / 10 (12)

25	16.3	17.7	21.6	26.0	29.8	34.9	38.5	1670	8.7 / 15 (17.5)
35	17.3	18.7	22.6	26.9	30.7	35.8	39.5	1805	8.7 / 15 (17.5)
50	18.4	19.8	23.7	28.0	31.8	36.9	40.7	1984	8.7 / 15 (17.5)
70	20.0	21.4	25.4	29.7	33.5	38.5	42.5	2271	8.7 / 15 (17.5)
95	21.55	23.0	26.9	31.2	35.0	40.0	44.1	2598	8.7 / 15 (17.5)
120	23.06	24.5	28.4	32.7	36.5	41.4	45.7	2914	8.7 / 15 (17.5)
150	24.37	25.8	29.7	34.0	37.8	42.7	47.1	3231	8.7 / 15 (17.5)
185	26.05	27.5	31.4	35.7	39.5	44.3	48.9	3660	8.7 / 15 (17.5)
240	28.4	29.8	33.9	38.2	42.0	46.9	51.8	4356	8.7 / 15 (17.5)
300	30.8	32.2	36.2	40.5	45.5	50.5	55.7	5234	8.7 / 15 (17.5)
400	33.9	35.3	39.3	43.6	48.6	53.7	59.3	6205	8.7 / 15 (17.5)
500	38.0	39.4	43.4	47.7	52.7	57.9	63.9	7474	8.7 / 15 (17.5)
630	42.4	43.8	46.6	50.9	55.9	61.2	67.5	9025	8.7 / 15 (17.5)
35	19.3	20.7	24.7	29.0	34.0	37.8	41.7	1975	12 / 20 (24)
50	20.4	21.8	25.8	30.1	35.1	38.9	42.9	2165	12 / 20 (24)
70	22.0	23.4	27.4	31.7	36.7	40.4	44.6	2454	12 / 20 (24)
95	23.55	25.0	29.0	33.3	38.3	42.0	46.3	2783	12 / 20 (24)
120	25.06	26.5	30.5	34.8	39.8	43.5	47.9	3107	12 / 20 (24)
150	26.37	27.8	31.8	36.1	41.1	44.7	49.3	3437	12 / 20 (24)
185	28.05	29.5	33.5	37.8	42.8	46.6	51.4	3906	12 / 20 (24)
240	30.4	31.8	35.8	40.1	46.3	50.1	55.3	4746	12 / 20 (24)
300	32.8	34.2	38.2	42.5	48.7	52.7	58.1	5486	12 / 20 (24)
400	35.9	37.3	41.3	45.6	51.8	55.9	61.6	6512	12 / 20 (24)
500	40.0	41.4	45.5	49.8	56.0	60.1	66.3	7876	12 / 20 (24)
630	44.4	45.8	49.9	54.2	60.4	64.6	71.3	9508	12 / 20 (24)
25	26.3	27.7	30.7	36.0	41.0	44.6	49.2	2513	18 / 30 (36)
50	25.4	26.8	30.8	35.1	40.1	43.7	48.3	2590	18 / 30 (36)
70	27.0	28.4	32.4	36.7	41.7	45.3	50.0	2915	18 / 30 (36)
95	28.55	30.0	34.0	38.3	44.5	48.2	53.2	3439	18 / 30 (36)
120	30.06	31.5	35.5	39.8	46.0	49.9	55.0	3804	18 / 30 (36)

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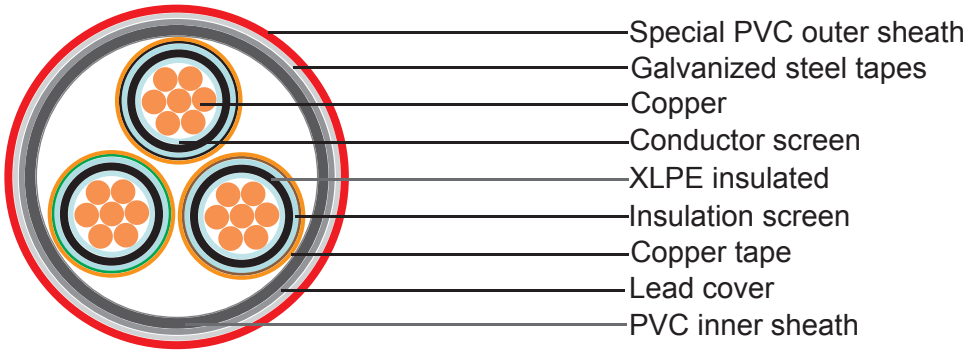
Cables for Oil Industry

150	31.37	32.8	36.8	41.1	47.3	51.1	56.4	4141	18 / 30 (36)
185	33.05	34.5	38.5	42.8	49.0	53.0	58.4	4619	18 / 30 (36)
240	35.4	36.8	40.8	45.1	51.3	55.4	61.1	5340	18 / 30 (36)

3 Cores

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Intermediate Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	33.3	37.6	42.6	47.5	52.4	3703	3.6 / 6 (7.2)
35	13.3	14.7	35.5	39.8	44.8	49.9	55.0	4226	3.6 / 6 (7.2)
50	14.4	15.8	38.3	42.6	47.6	52.8	58.2	4894	3.6 / 6 (7.2)
70	16.0	17.4	42.1	46.3	51.3	56.6	62.4	5932	3.6 / 6 (7.2)
95	17.55	19.0	45.4	49.6	54.6	60.1	66.3	7115	3.6 / 6 (7.2)
120	19.06	20.5	49.1	53.3	58.3	63.9	70.5	8326	3.6 / 6 (7.2)
150	20.37	21.8	51.9	56.2	61.2	66.9	73.8	9501	3.6 / 6 (7.2)
185	22.05	23.5	55.7	59.9	64.9	70.7	78.0	11084	3.6 / 6 (7.2)
25	14.1	15.5	37.5	41.8	48.0	52.0	57.4	5768	6 / 10 (12)
35	15.1	16.5	40.1	44.4	50.6	54.7	60.3	6460	6 / 10 (12)
50	16.2	17.6	42.5	46.8	53.0	57.2	63.1	7220	6 / 10 (12)
70	17.8	19.2	46.0	50.3	56.5	60.8	67.1	8370	6 / 10 (12)
95	19.35	20.8	50.0	54.2	60.4	64.8	71.5	9790	6 / 10 (12)
120	20.86	22.3	53.3	57.5	63.7	68.2	75.2	11091	6 / 10 (12)
150	22.17	23.6	56.1	60.4	66.6	71.2	78.5	12406	6 / 10 (12)
185	23.85	25.3	59.9	64.1	71.6	76.4	84.3	15045	6 / 10 (12)
25	16.3	17.7	45.5	49.8	54.8	59.9	66.1	5467	8.7 / 15 (17.5)
35	17.3	18.7	44.7	52.0	57.0	62.3	68.7	6070	8.7 / 15 (17.5)
50	18.4	19.8	50.1	54.4	59.4	64.8	71.5	6796	8.7 / 15 (17.5)
70	20.0	21.4	53.9	58.1	63.1	68.6	75.6	7964	8.7 / 15 (17.5)
35	19.3	20.7	52.3	56.6	62.8	67.1	74.0	8929	12 / 20 (24)
50	20.4	21.8	54.8	59.0	65.2	69.6	76.8	9773	12 / 20 (24)
70	22.0	23.4	58.3	62.5	68.7	73.2	80.8	11096	12 / 20 (24)

Medium Voltage XLPE Insulated Galvanized Steel Tape Armored Cable with Lead Cover to IEC 60502-2



XLPE Insulated Galvanized Steel Tape Armored Cable with Lead Cover to IEC 60502-2

Applications

These cables are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations, where require chemical and mechanical protection. The lead cover brings an enhanced resistance to aromatic hydrocarbon.

Standards

IEC 60228; IEC 60502-2

Construction

Conductor: Stranded bare copper (class 2)

Conductor screen: This will be an extruded layer of semi-conducting crosslinkable compound applied under simultaneous triple extrusion process over the conductor along with the insulation and the insulation screen.

Insulation: XLPE

Insulation screen: This will be a layer of semi-conducting crosslinkable compound which will be applied by triple extrusion process over the insulation.

Core identification

1 Core: Natural

3 cores: Black, Green, Brown

Inner sheath: PVC

Lead cover

Armor: Galvanized steel tapes for 3 cores or aluminium tapes for 1 core cable

Sheath: Special PVC. Color: red. U.V resistance can be offered upon request.

Properties

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

1 Core

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Lead Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	15.7	18.1	21.9	31.9	35.2	2163	3.6 / 6 (7.2)
35	13.3	14.7	16.7	19.1	22.9	32.9	36.3	2353	3.6 / 6 (7.2)
50	14.4	15.8	17.8	20.2	24.0	34.0	37.5	2569	3.6 / 6 (7.2)
70	16.0	17.4	19.4	22.0	25.8	35.7	39.4	2993	3.6 / 6 (7.2)
95	17.55	19.0	21.0	23.6	27.4	37.2	41.1	3387	3.6 / 6 (7.2)
120	19.06	20.5	22.5	25.3	29.1	38.9	42.9	3856	3.6 / 6 (7.2)
150	20.37	21.8	23.8	26.6	30.4	40.2	44.3	4236	3.6 / 6 (7.2)
185	22.05	23.5	25.5	28.3	32.1	41.8	46.1	4747	3.6 / 6 (7.2)
240	24.6	26.0	28.4	31.4	35.2	44.8	49.4	5707	3.6 / 6 (7.2)
300	27.4	28.8	31.2	34.4	38.2	47.7	52.6	6708	3.6 / 6 (7.2)
400	30.9	32.3	34.7	38.1	41.9	51.5	56.8	8099	3.6 / 6 (7.2)
500	35.4	36.8	39.6	43.2	47.0	56.6	62.5	9906	3.6 / 6 (7.2)
630	39.8	41.2	44.1	47.9	51.7	61.4	67.7	11953	3.6 / 6 (7.2)
25	14.1	15.5	17.5	19.9	23.7	33.7	37.1	2367	6 / 10 (12)
35	15.1	16.5	18.5	20.9	24.7	34.6	38.2	2554	6 / 10 (12)
50	16.2	17.6	19.6	22.2	26.0	35.9	39.6	2863	6 / 10 (12)
70	17.8	19.2	21.2	23.8	27.6	37.4	41.3	3212	6 / 10 (12)
95	19.35	20.8	22.8	25.6	29.4	39.2	43.2	3707	6 / 10 (12)
120	20.86	22.3	24.3	27.1	30.9	40.6	44.8	4093	6 / 10 (12)
150	22.17	23.6	25.6	28.4	32.2	41.9	46.2	4476	6 / 10 (12)
185	23.85	25.3	27.7	30.7	34.5	44.1	48.7	5166	6 / 10 (12)
240	26.2	27.6	30.0	33.2	37.0	46.6	51.4	6063	6 / 10 (12)
300	28.6	30.0	32.4	35.6	39.4	48.9	53.9	6891	6 / 10 (12)
400	31.7	33.1	35.5	38.9	42.7	52.3	57.7	8226	6 / 10 (12)
500	35.8	37.2	40.0	43.6	47.4	57.0	62.9	9975	6 / 10 (12)
630	40.2	41.6	44.5	48.3	52.1	61.8	68.2	12027	6 / 10 (12)
25	16.3	17.7	19.7	22.3	26.1	36.0	39.7	2707	8.7 / 15 (17.5)
35	17.3	18.7	20.7	23.3	27.1	37.0	40.8	2904	8.7 / 15 (17.5)

50	18.4	19.8	21.8	24.4	28.2	38.0	41.9	3134	8.7 / 15 (17.5)
70	20.0	21.4	23.4	26.2	30.0	39.8	43.9	3590	8.7 / 15 (17.5)
95	21.55	23.0	25.0	27.8	31.6	41.3	45.6	3998	8.7 / 15 (17.5)
120	23.06	24.5	26.5	29.5	33.3	43.0	47.4	4501	8.7 / 15 (17.5)
150	24.37	25.8	28.2	31.2	35.0	44.6	49.2	4954	8.7 / 15 (17.5)
185	26.05	27.5	29.9	33.1	36.9	46.5	51.3	5608	8.7 / 15 (17.5)
240	28.4	29.8	32.2	35.4	39.2	48.7	53.7	6395	8.7 / 15 (17.5)
300	30.8	32.2	34.6	38.0	41.8	51.4	56.7	7396	8.7 / 15 (17.5)
400	33.9	35.3	38.1	41.7	45.5	55.2	60.9	8835	8.7 / 15 (17.5)
500	38.0	39.4	42.2	46.0	49.8	59.6	65.7	10551	8.7 / 15 (17.5)
630	42.4	43.8	46.7	50.7	54.5	64.5	71.2	12687	8.7 / 15 (17.5)
50	20.4	21.8	23.8	26.6	30.4	40.2	44.3	3488	12 / 20 (24)
70	22.0	23.4	25.4	28.2	32.0	41.7	46.0	3855	12 / 20 (24)
95	23.55	25.0	27.4	30.4	34.2	43.8	48.4	4442	12 / 20 (24)
120	25.06	26.5	28.9	31.9	35.7	45.3	50.0	4844	12 / 20 (24)
150	26.37	27.8	30.2	33.4	37.2	46.8	51.6	5368	12 / 20 (24)
185	28.05	29.5	31.9	35.1	38.9	48.4	53.4	5908	12 / 20 (24)
240	30.4	31.8	34.2	37.6	41.4	51.0	56.3	6866	12 / 20 (24)
300	32.8	34.2	36.6	40.0	43.8	53.5	59.1	7747	12 / 20 (24)
400	35.9	37.3	40.1	43.7	47.5	57.3	63.2	9185	12 / 20 (24)
500	40.0	41.4	44.3	48.1	51.9	61.8	68.2	10972	12 / 20 (24)
630	44.4	45.8	48.7	52.7	56.5	66.4	73.3	13084	12 / 20 (24)
50	25.4	26.8	29.2	32.2	36.0	45.6	50.3	4348	18 / 30 (36)
70	27.0	28.4	30.8	34.0	37.8	47.3	52.2	4881	18 / 30 (36)
95	28.55	30.0	32.4	35.6	39.4	48.9	53.9	5302	18 / 30 (36)
120	30.06	31.5	33.9	37.3	41.1	50.7	56.0	5889	18 / 30 (36)
150	31.37	32.8	35.2	38.6	42.4	52.0	57.4	6302	18 / 30 (36)
185	33.05	34.5	36.9	40.5	44.3	54.0	59.6	7041	18 / 30 (36)
240	35.4	36.8	39.6	43.2	47.0	56.8	62.7	7973	18 / 30 (36)
300	37.8	39.2	42.0	45.8	49.6	59.4	65.5	9053	18 / 30 (36)
400	40.9	42.3	45.2	49.2	53.0	63.1	69.6	10514	18 / 30 (36)
500	45.0	46.4	49.7	53.9	57.7	67.8	74.8	12465	18 / 30 (36)

Cables for Oil Industry

3 Cores

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Lead Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	33.3	36.7	40.5	46.1	50.8	5486	3.6 / 6 (7.2)
35	13.3	14.7	35.5	38.9	42.7	48.2	53.2	6076	3.6 / 6 (7.2)
50	14.4	15.8	38.4	42.0	45.8	51.2	56.5	7017	3.6 / 6 (7.2)
70	16.0	17.4	41.9	45.7	49.5	54.8	60.5	8307	3.6 / 6 (7.2)
95	17.55	19.0	45.4	49.4	53.2	58.4	64.4	9779	3.6 / 6 (7.2)
120	19.06	20.5	48.7	52.9	56.7	61.8	68.2	11213	3.6 / 6 (7.2)
150	20.37	21.8	52.0	56.4	60.2	65.2	71.9	12767	3.6 / 6 (7.2)
185	22.05	23.5	55.7	60.3	64.1	69.0	76.1	14697	3.6 / 6 (7.2)
240	24.6	26.0	61.2	66.0	69.8	74.5	82.2	17586	3.6 / 6 (7.2)
25	14.1	15.5	37.3	40.7	44.5	50.0	55.1	6159	6 / 10 (12)
35	15.1	16.5	39.9	43.5	47.3	52.7	58.1	7012	6 / 10 (12)
50	16.2	17.6	42.3	46.1	49.9	55.2	60.9	7923	6 / 10 (12)
70	17.8	19.2	45.8	49.8	53.6	58.8	64.8	9262	6 / 10 (12)
95	19.35	20.8	49.8	54.0	57.8	62.9	69.3	10876	6 / 10 (12)
120	20.86	22.3	53.1	57.5	61.3	66.3	73.1	12382	6 / 10 (12)
150	22.17	23.6	55.9	60.5	64.3	69.2	76.3	13886	6 / 10 (12)
185	23.85	25.3	59.7	64.5	68.3	73.0	80.6	15867	6 / 10 (12)
240	26.2	27.6	64.7	69.7	73.5	78.3	86.3	18765	6 / 10 (12)
25	16.3	17.7	42.5	46.3	50.1	55.4	61.1	7455	8.7 / 15 (17.5)
35	17.3	18.7	44.7	48.7	52.5	57.7	63.7	8295	8.7 / 15 (17.5)
50	18.4	19.8	47.2	51.4	55.2	60.3	66.6	9263	8.7 / 15 (17.5)
70	20.0	21.4	51.1	55.3	59.1	64.1	70.7	10566	8.7 / 15 (17.5)
95	21.55	23.0	54.6	59.2	63.0	67.9	74.9	12375	8.7 / 15 (17.5)
120	23.06	24.5	57.9	62.7	66.5	71.3	78.6	13950	8.7 / 15 (17.5)
150	24.37	25.8	60.8	65.6	69.4	74.1	81.7	15281	8.7 / 15 (17.5)
185	26.05	27.5	64.5	69.5	73.3	78.1	86.1	17375	8.7 / 15 (17.5)
240	28.4	29.8	70.0	75.4	80.6	85.7	94.6	21795	8.7 / 15 (17.5)
35	19.3	20.7	49.5	53.7	57.5	62.6	69.0	9479	12 / 20 (24)
50	20.4	21.8	52.0	56.4	60.2	65.2	71.9	10501	12 / 20 (24)

Cables for Oil Industry

70	22.0	23.4	55.5	60.1	63.9	68.8	75.9	11986	12 / 20 (24)
95	23.55	25.0	59.0	63.8	67.6	72.4	79.8	13640	12 / 20 (24)
120	25.06	26.5	62.3	67.3	71.1	76.0	83.8	15312	12 / 20 (24)
150	26.37	27.8	65.6	70.8	74.6	79.5	87.7	17098	12 / 20 (24)
185	28.05	29.5	69.3	74.7	79.9	84.9	93.6	20214	12 / 20 (24)
50	25.4	26.8	63.0	68.0	71.8	76.6	84.5	13849	18 / 30 (36)
70	27.0	28.4	66.9	72.1	75.9	80.8	89.1	15699	18 / 30 (36)
95	28.55	30.0	70.4	75.8	81.0	86.1	95.0	18515	18 / 30 (36)
150	31.37	32.8	76.6	82.4	87.6	92.9	102.1	22128	18 / 30 (36)

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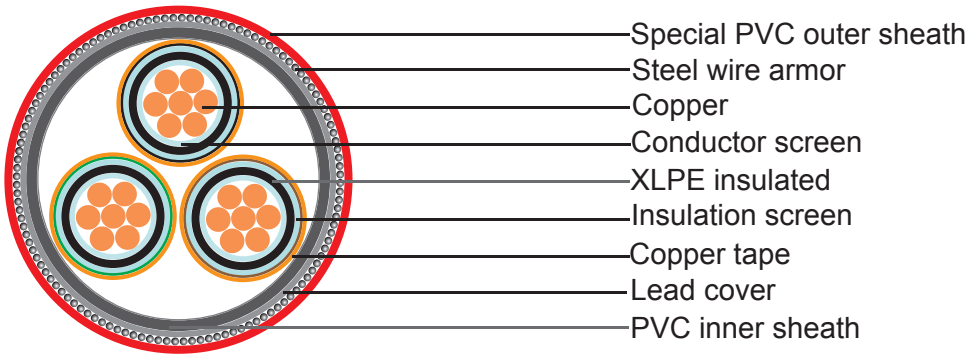
Medium Voltage XLPE Insulated Steel Wire Armored Cable with Lead Cover to IEC 60502-2



XLPE Insulated Steel Wire Armored Cable with Lead Cover to IEC 60502-2

Applications

These cables are suitable for installation mostly in power supply stations, indoors and in cable ducts, outdoors, underground and in water as well as for installation on cable trays for industries, switchboards and power stations, where require chemical and mechanical protection. The lead cover brings an enhanced resistance to aliphatic and aromatic hydrocarbon.

Standards

IEC 60228; IEC 60502-2

Construction

Conductor: Stranded bare copper (class 2)

Conductor screen: This will be an extruded layer of semi-conducting crosslinkable compound applied under simultaneous triple extrusion process over the conductor along with the insulation and the insulation screen.

Insulation: XLPE

Insulation screen: This will be a layer of semi-conducting crosslinkable compound which will be applied by triple extrusion process over the insulation.

Core identification:

1 Core: Natural

3 cores: Black, Green, Brown

Inner sheath: PVC

Lead cover

Armor: Galvanized steel wires for 3 cores or aluminium wires for 1 core cable

Sheath: Special PVC. Color: red. U.V resistance can be offered upon request.

Properties

Fire retardance: IEC 60332-3-22

Operating temperature: -20~60°C

Max. conductor operating temperature: 90°C

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

Cables for Oil Industry

1 Core

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Lead Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	15.7	18.1	24.3	28.4	31.4	1906	3.6 / 6 (7.2)
35	13.3	14.7	16.7	19.1	25.3	29.4	32.4	2076	3.6 / 6 (7.2)
50	14.4	15.8	17.8	20.2	26.4	30.5	33.6	2289	3.6 / 6 (7.2)
70	16.0	17.4	19.4	22.0	28.2	32.2	35.5	2702	3.6 / 6 (7.2)
95	17.55	19.0	21.0	23.6	29.8	33.8	37.2	3089	3.6 / 6 (7.2)
120	19.06	20.5	22.5	25.3	31.5	35.4	39.1	3540	3.6 / 6 (7.2)
150	20.37	21.8	23.8	26.6	32.8	36.7	40.4	3909	3.6 / 6 (7.2)
185	22.05	23.5	25.5	28.3	34.5	38.3	42.3	4410	3.6 / 6 (7.2)
240	24.6	26.0	28.4	31.4	37.6	41.3	45.6	5350	3.6 / 6 (7.2)
300	27.4	28.8	31.2	34.4	42.0	45.8	50.5	6536	3.6 / 6 (7.2)
400	30.9	32.3	34.7	38.1	45.7	49.6	54.7	7923	3.6 / 6 (7.2)
500	35.4	36.8	39.6	43.2	51.0	55.1	60.8	9781	3.6 / 6 (7.2)
630	39.8	41.2	44.1	47.9	55.9	60.0	66.2	11857	3.6 / 6 (7.2)
25	14.1	15.5	17.5	19.9	26.1	30.2	33.3	2084	6 / 10 (12)
35	15.1	16.5	18.5	20.9	27.1	31.1	34.3	2269	6 / 10 (12)
50	16.2	17.6	19.6	22.2	28.4	32.4	35.7	2568	6 / 10 (12)
70	17.8	19.2	21.2	23.8	30.0	34.0	37.5	2909	6 / 10 (12)
95	19.35	20.8	22.8	25.6	31.8	35.7	39.4	3393	6 / 10 (12)
120	20.86	22.3	24.3	27.1	33.3	37.2	41.0	3765	6 / 10 (12)
150	22.17	23.6	25.6	28.4	34.6	38.4	42.4	4138	6 / 10 (12)
185	23.85	25.3	27.7	30.7	36.9	40.6	44.8	4813	6 / 10 (12)
240	26.2	27.6	30.0	33.2	39.4	43.1	47.5	5694	6 / 10 (12)
300	28.6	30.0	32.4	35.6	43.2	46.9	51.8	6723	6 / 10 (12)
400	31.7	33.1	35.5	38.9	46.5	50.5	55.7	8075	6 / 10 (12)
500	35.8	37.2	40.0	43.6	51.4	55.5	61.2	9842	6 / 10 (12)
630	40.2	41.6	44.5	48.3	56.3	60.4	66.7	11925	6 / 10 (12)
25	16.3	17.7	19.7	22.3	28.5	32.5	35.8	2410	8.7 / 15 (17.5)
35	17.3	18.7	20.7	23.3	29.5	33.5	36.9	2604	8.7 / 15 (17.5)
50	18.4	19.8	21.8	24.4	30.6	34.5	38.1	2828	8.7 / 15 (17.5)
70	20.0	21.4	23.4	26.2	32.4	36.3	40.0	3271	8.7 / 15 (17.5)

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Cables for Oil Industry

95	21.55	23.0	25.0	27.8	34.0	37.8	41.7	3664	8.7 / 15 (17.5)
120	23.06	24.5	26.5	29.5	35.7	39.5	43.5	4157	8.7 / 15 (17.5)
150	24.37	25.8	28.2	31.2	37.4	41.1	45.4	4600	8.7 / 15 (17.5)
185	26.05	27.5	29.9	33.1	39.3	43.0	47.4	5240	8.7 / 15 (17.5)
240	28.4	29.8	32.2	35.4	43.0	46.9	51.8	6255	8.7 / 15 (17.5)
300	30.8	32.2	34.6	38.0	45.6	49.5	54.6	7223	8.7 / 15 (17.5)
400	33.9	35.3	38.1	41.7	49.5	53.6	59.2	8710	8.7 / 15 (17.5)
500	38.0	39.4	42.2	46.0	53.8	58.0	64.0	10418	8.7 / 15 (17.5)
630	42.4	43.8	46.7	50.7	58.7	63.0	69.4	12554	8.7 / 15 (17.5)
35	19.3	20.7	22.7	25.5	31.7	35.6	39.3	2937	12 / 20 (24)
50	20.4	21.8	23.8	26.6	32.8	36.7	40.4	3161	12 / 20 (24)
70	22.0	23.4	25.4	28.2	34.4	38.2	42.2	3521	12 / 20 (24)
95	23.55	25.0	27.4	30.4	36.6	40.4	44.5	4096	12 / 20 (24)
120	25.06	26.5	28.9	31.9	38.1	41.8	46.1	4484	12 / 20 (24)
150	26.37	27.8	30.2	33.4	39.6	43.3	47.7	5003	12 / 20 (24)
185	28.05	29.5	31.9	35.1	42.7	46.5	51.3	5736	12 / 20 (24)
240	30.4	31.8	34.2	37.6	45.2	49.1	54.1	6700	12 / 20 (24)
300	32.8	34.2	36.6	40.0	47.8	51.8	57.1	7599	12 / 20 (24)
400	35.9	37.3	40.1	43.7	51.5	55.6	61.3	9022	12 / 20 (24)
500	40.0	41.4	44.3	48.1	56.1	60.4	66.7	10873	12 / 20 (24)
630	44.4	45.8	48.7	52.7	60.9	65.3	72.0	13021	12 / 20 (24)
25	26.3	27.7	30.1	33.3	39.5	43.2	47.6	4059	18 / 30 (36)
50	25.4	26.8	29.2	32.2	38.4	42.1	46.4	3991	18 / 30 (36)
70	27.0	28.4	30.8	34.0	41.6	45.4	50.1	4716	18 / 30 (36)
95	28.55	30.0	32.4	35.6	43.2	47.1	52.0	5159	18 / 30 (36)
120	30.06	31.5	33.9	37.3	44.9	48.8	53.8	5715	18 / 30 (36)
150	31.37	32.8	35.2	38.6	46.4	50.4	55.6	6179	18 / 30 (36)
185	33.05	34.5	36.9	40.5	48.3	52.3	57.7	6883	18 / 30 (36)
240	35.4	36.8	39.6	43.2	51.0	55.1	60.8	7819	18 / 30 (36)
300	37.8	39.2	42.0	45.8	53.8	58.0	64.0	8949	18 / 30 (36)
400	40.9	42.3	45.2	49.2	57.4	61.9	68.3	10451	18 / 30 (36)
500	45.0	46.4	49.7	53.9	62.1	66.6	73.5	12411	18 / 30 (36)

3 Cores

Cables for Oil Industry

Conductor Corss-section	Diameter over Insulation	Diameter over Screen	Diameter over Inner Sheath	Diameter over Lead Sheath	Diameter over Armor	Min. O.D.	Max. O.D.	Approx. Weight	Rated Voltage Uo/ U(Um)
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/km)	(kv)
25	12.3	13.7	33.3	36.7	44.3	49.8	54.9	7023	3.6 / 6 (7.2)
35	13.3	14.7	35.5	38.9	46.5	51.9	57.2	7706	3.6 / 6 (7.2)
50	14.4	15.8	38.4	42.0	49.8	55.1	60.8	8791	3.6 / 6 (7.2)
70	16.0	17.4	41.9	45.7	53.7	58.9	64.9	10266	3.6 / 6 (7.2)
95	17.55	19.0	45.4	49.4	57.4	62.5	68.9	11899	3.6 / 6 (7.2)
120	19.06	20.5	48.7	52.9	61.1	66.1	72.9	13488	3.6 / 6 (7.2)
150	20.37	21.8	52.0	56.4	64.8	69.6	76.8	15239	3.6 / 6 (7.2)
185	22.05	23.5	55.7	60.3	70.0	74.7	82.4	18216	3.6 / 6 (7.2)
240	24.6	26.0	61.2	66.0	76.1	82.4	90.8	21863	3.6 / 6 (7.2)
300	27.4	28.8	67.8	73.0	84.5	89.7	99.0	25846	3.6 / 6 (7.2)
25	14.1	15.5	37.3	40.7	48.5	53.8	59.4	7908	6 / 10 (12)
35	15.1	16.5	39.9	43.5	51.3	56.6	62.4	8849	6 / 10 (12)
50	16.2	17.6	42.3	46.1	54.1	59.3	65.4	9917	6 / 10 (12)
70	17.8	19.2	45.8	49.8	58.0	63.1	69.6	11446	6 / 10 (12)
95	19.35	20.8	49.8	54.0	62.2	67.1	74.0	13219	6 / 10 (12)
120	20.86	22.3	53.1	57.5	65.9	70.7	78.0	14883	6 / 10 (12)
150	22.17	23.6	55.9	60.5	70.4	75.3	83.0	17476	6 / 10 (12)
185	23.85	25.3	59.7	64.5	74.4	80.5	88.8	19945	6 / 10 (12)
240	26.2	27.6	64.7	69.7	79.8	86.1	95.0	23225	6 / 10 (12)
300	28.6	30.0	70.4	75.8	87.3	92.6	102.2	27149	6 / 10 (12)
25	16.3	17.7	42.5	46.3	54.3	59.5	65.6	9448	8.7 / 15 (17.5)
35	17.3	18.7	44.7	48.7	56.7	61.8	68.2	10381	8.7 / 15 (17.5)
50	18.4	19.8	47.2	51.4	59.6	64.6	71.3	11511	8.7 / 15 (17.5)
70	20.0	21.4	51.1	55.3	63.5	68.4	75.4	12939	8.7 / 15 (17.5)
95	21.55	23.0	54.6	59.2	68.9	73.6	81.2	15778	8.7 / 15 (17.5)
120	23.06	24.5	57.9	62.7	72.6	78.8	86.9	17912	8.7 / 15 (17.5)
150	24.37	25.8	60.8	65.6	75.7	82.0	90.4	19497	8.7 / 15 (17.5)
185	26.05	27.5	64.5	69.5	79.6	85.9	94.8	21832	8.7 / 15 (17.5)
240	28.4	29.8	70.0	75.4	85.7	92.2	101.8	25665	8.7 / 15 (17.5)
35	19.3	20.7	49.5	53.7	61.9	66.8	73.7	11826	12 / 20 (24)
50	20.4	21.8	52.0	56.4	64.8	69.6	76.8	12972	12 / 20 (24)

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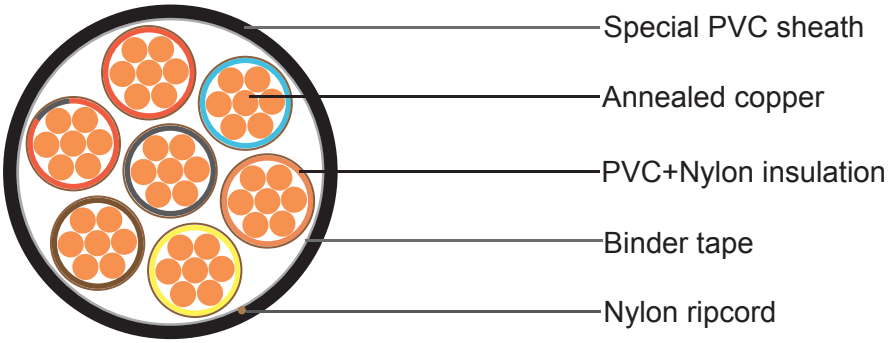
Cables for Oil Industry

70	22.0	23.4	55.5	60.1	70.0	74.9	82.6	15578	12 / 20 (24)
95	23.55	25.0	59.0	63.8	73.7	79.8	88.1	17660	12 / 20 (24)
120	25.06	26.5	62.3	67.3	77.4	83.6	92.2	19610	12 / 20 (24)
150	26.37	27.8	65.6	70.8	80.9	87.2	96.2	21574	12 / 20 (24)
185	28.05	29.5	69.3	74.7	85.0	91.6	101.0	24082	12 / 20 (24)
50	25.4	26.8	63.0	68.0	78.1	84.5	93.2	18249	18 / 30 (36)
70	27.0	28.4	66.9	72.1	82.4	88.9	98.0	20382	18 / 30 (36)
95	28.55	30.0	70.4	75.8	86.3	92.8	102.4	22487	18 / 30 (36)

Unscreened THHN/THWN-2 Cable



Unscreened THHN/THWN-2 Cable

Applications

These cables are use in class 1, Division 2 Hazardous locations, may be installed in trays, wire ways, ducts, conduit and aerially when properly supported by a messenger. They are approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required.

Standards

ICEA S-73-532; UL 1277; UL 83

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and B8

Insulation: Flame-retardant PVC/Nylon type THHN/THWN-2 per UL 83

Color coded per Method #1-E2 per ICEA S-73-532

Binder tape

Ripcord: Nylon

Jacket: Special PVC, flame retardant, UL listed sunlight and moisture resistant, meeting the requirements of UL 1277. Color: Black

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

10 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2 Flat	0.51	0.10	1.14	6.37x10.58	166	40
3	0.51	0.10	1.14	11.37	237	40
4	0.51	0.10	1.14	12.45	298	32/40
5	0.51	0.10	1.14	14.41	391	32
6	0.51	0.10	1.14	15.67	482	32
7	0.51	0.10	1.14	15.67	515	28
8	0.51	0.10	1.14	16.97	591	28
9	0.51	0.10	1.14	18.31	672	28

Cables for Oil Industry

10	0.51	0.10	1.52	19.57	726	20
11	0.51	0.10	1.52	19.86	789	20
12	0.51	0.10	1.52	20.49	852	20
13	0.51	0.10	2.03	21.88	961	20
14	0.51	0.10	2.03	22.60	1094	20
15	0.51	0.10	2.03	23.18	1161	20
16	0.51	0.10	2.03	23.81	1183	20
19	0.51	0.10	2.03	25.07	1360	20
20	0.51	0.10	2.03	25.82	1420	20
25	0.51	0.10	2.03	28.97	1753	18
30	0.51	0.10	2.03	30.98	2075	18
37	0.51	0.10	2.03	33.45	2520	16
40	0.51	0.10	2.03	34.75	2714	16
45	0.51	0.10	2.03	36.85	3036	14
50	0.51	0.10	2.03	38.27	3353	14

12 AWG, 600V, Rated 90°C

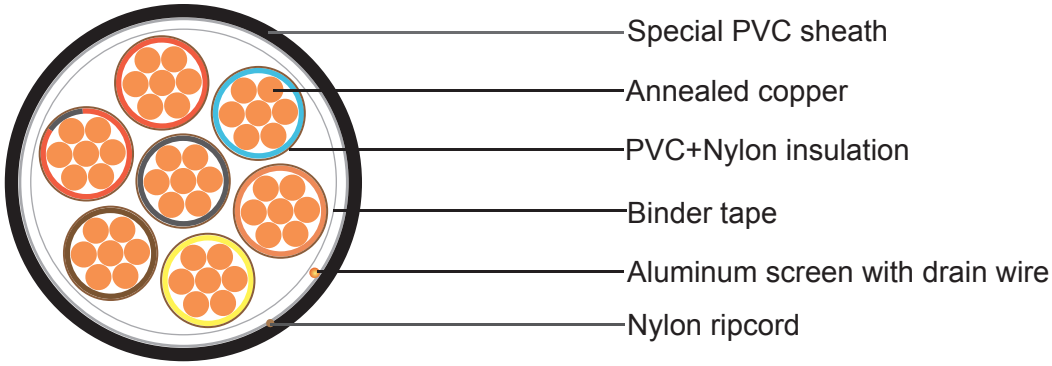
No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2 Flat	0.38	0.10	1.14	5.72 x9.12	115	30.0
3	0.38	0.10	1.14	9.56	156	30.0
4	0.38	0.10	1.14	10.36	188	24.0/30.0
5	0.38	0.10	1.14	11.39	247	24.0
6	0.38	0.10	1.14	12.40	292	24.0
7	0.38	0.10	1.14	12.40	320	21.0
8	0.38	0.10	1.14	14.20	377	21.0
9	0.38	0.10	1.52	15.27	440	21.0
10	0.38	0.10	1.52	16.28	488	15.0
11	0.38	0.10	1.52	16.51	531	15.0
12	0.38	0.10	1.52	17.02	560	15.0
13	0.38	0.10	1.52	17.31	616	15.0
14	0.38	0.10	1.52	17.88	659	15.0
15	0.38	0.10	1.52	18.35	700	15.0
16	0.38	0.10	1.52	18.86	729	15.0
19	0.38	0.10	1.52	19.86	853	15.0
20	0.38	0.10	1.52	20.47	866	15.0
25	0.38	0.10	2.03	24.00	1158	13.5
30	0.38	0.10	2.03	25.61	1362	13.5
37	0.38	0.10	2.03	27.58	1647	12.0

40	0.38	0.10	2.03	28.62	1810	12.0
45	0.38	0.10	2.03	30.30	2021	10.5
50	0.38	0.10	2.03	31.44	2228	10.5

14 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2 Flat	0.38	0.10	1.14	5.21 x 8.00	86	25.0
3	0.38	0.10	1.14	8.52	114	25.0
4	0.38	0.10	1.14	9.25	135	20.0/25.0
5	0.38	0.10	1.14	10.09	174	20.0
6	0.38	0.10	1.14	10.95	204	20.0
7	0.38	0.10	1.14	10.95	226	17.5
8	0.38	0.10	1.14	11.84	260	17.5
9	0.38	0.10	1.14	12.76	290	17.5
10	0.38	0.10	1.52	14.38	345	12.5
11	0.38	0.10	1.52	14.58	372	12.5
12	0.38	0.10	1.52	15.01	396	12.5
13	0.38	0.10	1.52	15.27	427	12.5
14	0.38	0.10	1.52	15.76	457	12.5
15	0.38	0.10	1.52	16.16	485	12.5
16	0.38	0.10	1.52	16.59	510	12.5
19	0.38	0.10	1.52	17.45	589	12.5
20	0.38	0.10	1.52	17.97	620	12.5
25	0.38	0.10	1.52	20.12	771	11.3
30	0.38	0.10	2.03	22.51	949	11.3
37	0.38	0.10	2.03	24.21	1152	10.0
40	0.38	0.10	2.03	25.10	1240	10.0
45	0.38	0.10	2.03	26.54	1381	8.8
50	0.38	0.10	2.03	27.51	1446	8.8

Screened THHN/THWN-2 Cable



Screened THHN/THWN-2 Cable

Applications

These cables are use in class 1, Division 2 Hazardous locations, may be installed in trays, wire ways, ducts, conduit and aerially when properly supported by a messenger. They are approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required.

Standards

ICEA S-73-532; UL 1277; UL 83

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and B8

Insulation: Flame-retardant PVC/Nylon type THHN/THWN-2 per UL 83

Color coded per Method #1-E2 per ICEA S-73-532

Binder tape

Screen: Aluminum tape

Drain Wire: 16 AWG (7w) tinned copper

Ripcord: Nylon

Jacket: Special PVC, flame retardant, UL listed sunlight and moisture resistant, meeting the requirements of UL 1277. Color: Black

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

10 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2	0.51	0.10	1.14	10.87	189	40
3	0.51	0.10	1.14	11.52	251	40
4	0.51	0.10	1.14	12.61	290	32/40
5	0.51	0.10	1.52	14.57	414	32
6	0.51	0.10	1.52	15.82	479	32

7	0.51	0.10	1.52	15.82	540	28
8	0.51	0.10	1.52	17.35	609	28
9	0.51	0.10	1.52	18.69	679	28
10	0.51	0.10	1.52	19.95	748	20
11	0.51	0.10	1.52	20.24	811	20
12	0.51	0.10	2.03	21.89	930	20
13	0.51	0.10	2.03	22.27	984	20
14	0.51	0.10	2.03	22.98	1116	20
15	0.51	0.10	2.03	23.56	1173	20
16	0.51	0.10	2.03	24.19	1262	20
19	0.51	0.10	2.03	25.45	1376	20
20	0.51	0.10	2.03	26.21	1443	20
25	0.51	0.10	2.03	29.35	1771	18
30	0.51	0.10	2.03	31.36	2098	18
37	0.51	0.10	2.03	33.83	2544	16
40	0.51	0.10	2.03	35.13	2738	16
45	0.51	0.10	2.03	37.23	3056	14
50	0.51	0.10	2.03	38.65	3378	14

12 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2	0.38	0.10	1.14	9.35	132	30.0
3	0.38	0.10	1.14	9.87	174	30.0
4	0.38	0.10	1.14	10.74	219	24.0/30.0
5	0.38	0.10	1.14	11.69	272	24.0
6	0.38	0.10	1.14	12.70	310	24.0
7	0.38	0.10	1.14	12.70	338	21.0
8	0.38	0.10	1.52	14.53	394	21.0
9	0.38	0.10	1.52	15.60	470	21.0
10	0.38	0.10	1.52	16.61	513	15.0
11	0.38	0.10	1.52	16.84	549	15.0
12	0.38	0.10	1.52	17.34	595	15.0
13	0.38	0.10	1.52	17.64	634	15.0
14	0.38	0.10	1.52	18.21	677	15.0
15	0.38	0.10	1.52	18.68	717	15.0
16	0.38	0.10	1.52	19.19	747	15.0

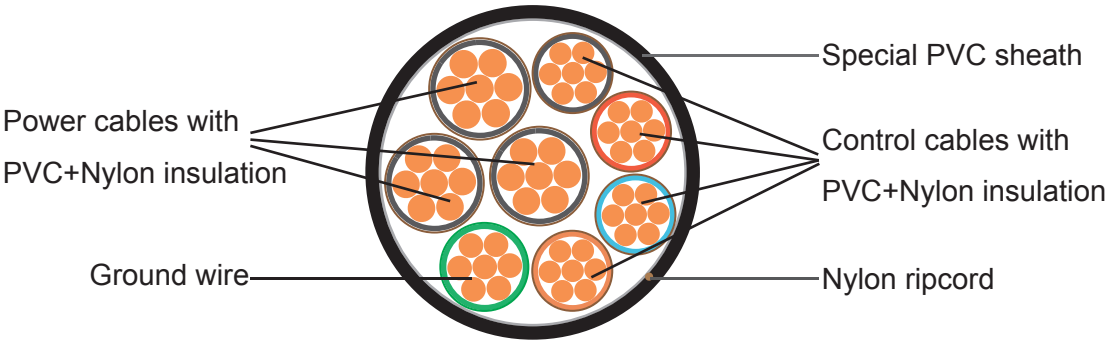
Cables for Oil Industry

19	0.38	0.10	1.52	20.19	870	15.0
20	0.38	0.10	1.52	20.80	933	15.0
25	0.38	0.10	2.03	24.33	1176	13.5
30	0.38	0.10	2.03	25.94	1379	13.5
37	0.38	0.10	2.03	27.91	1665	12.0
40	0.38	0.10	2.03	28.95	1827	12.0
45	0.38	0.10	2.03	30.63	2039	10.5
50	0.38	0.10	2.03	31.77	2245	10.5

14 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2	0.38	0.10	1.14	8.23	103	25.0
3	0.38	0.10	1.14	8.67	129	25.0
3	0.38	0.10	1.14	8.67	129	25.0
4	0.38	0.10	1.14	9.42	159	20.0/25.0
5	0.38	0.10	1.14	10.24	190	20.0
6	0.38	0.10	1.14	11.10	220	20.0
7	0.38	0.10	1.14	11.10	243	17.5
8	0.38	0.10	1.14	12.14	277	17.5
9	0.38	0.10	1.52	13.06	307	17.5
10	0.38	0.10	1.52	14.68	362	12.5
11	0.38	0.10	1.52	14.88	388	12.5
12	0.38	0.10	1.52	15.31	421	12.5
13	0.38	0.10	1.52	15.57	443	12.5
14	0.38	0.10	1.52	16.06	473	12.5
15	0.38	0.10	1.52	16.46	501	12.5
16	0.38	0.10	1.52	16.89	533	12.5
19	0.38	0.10	1.52	17.75	615	12.5
20	0.38	0.10	1.52	18.27	643	12.5
25	0.38	0.10	1.52	20.42	787	11.3
30	0.38	0.10	2.03	22.82	972	11.3
37	0.38	0.10	2.03	24.51	1174	10.0
40	0.38	0.10	2.03	25.40	1262	10.0
45	0.38	0.10	2.03	26.84	1403	8.8
50	0.38	0.10	2.03	27.81	1537	8.8

Unscreened Composite THHN/THWN-2 Cable



Unscreened Composite THHN/THWN-2 Cable

Applications

These cables are use in class 1, Division 2 Hazardous locations, may be installed in trays, wire ways, ducts, conduit and aerially when properly supported by a messenger. They are approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required.

Standards

ICEA S-73-532; ICEA S-95-658; UL 1277; UL 83

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and B8

4 Control Conductors with 3 Power conductors and 1 Ground Wire

Insulation: Flame-retardant PVC/Nylon type THHN/THWN-2 per UL 83

Core identification:

Control conductors are color coded as E2 per ICEA S-73-532

Power conductors are black with numbers

Ground wire are green insulated

Binder tape

Ripcord: Nylon

Jacket: Special PVC, flame retardant, UL listed sunlight and moisture resistant, meeting the requirements of UL 1277. Color: Black

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

600V, Rated 90°C

Control Cable		Power Cable		Ground Wire	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity	
Size (AWG)	Insulation Thickness PVC/Nylon (mm)	Size (AWG)	Insulation Thickness PVC/Nylon (mm)	Size (AWG)	(mm)	(mm)	(kg/km)	Control (amps)	Power (amps)
12	0.38/0.10	10	0.51/0.10	10	1.52	15.37	467	21	28

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Cables for Oil Industry

12	0.38/0.10	8	0.76/0.13	10	1.52	18.19	616	21	55
12	0.38/0.10	6	0.76/0.13	8	1.52	19.66	808	21	75
12	0.38/0.10	4	1.02/0.15	8	2.03	22.61	1125	21	95
12	0.38/0.10	2	1.02/0.15	6	2.03	25.50	1582	21	130

600V, Rated 90°C

Control Cable		Power Cable		Ground Wire	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity	
Size (AWG)	Insulation Thickness PVC/Nylon (mm)	Size (AWG)	Insulation Thickness PVC/Nylon (mm)	Size (AWG)	(mm)	(mm)	(kg/km)	Control (amps)	Power (amps)
14	.38/.10	12	.38/.10	12	1.52	13.46	333	17.5	21
14	.38/.10	10	.38/.10	10	1.52	15.14	423	17.5	28
14	.38/.10	8	.76/.10	10	1.52	17.63	558	17.5	55
14	.38/.10	6	.76/.10	8	1.52	19.43	759	17.5	75
14	.38/.10	4	1.02/.15	8	2.03	22.99	1042	17.5	95
14	.38/.10	2	1.02/.15	6	2.03	25.50	1534	17.5	130

Unscreened THHN/THWN-2 Cable with Ground Wire

Unscreened THHN/THWN-2 Cable with Ground Wire

Applications

These cables are use in class 1, Division 2 Hazardous locations, may be installed in trays, wire ways, ducts, conduit and aerially when properly supported by a messenger. They are approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required.

Standards

ICEA S-73-532; ICEA S-95-658; UL 1277; UL 83

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and B8

Ground wires: Sized as required by UL 1277. Sizes 14 AWG to 6 AWG have an insulated green ground wire. Sizes 4 AWG and larger have a bare ground wire.

Insulation: Flame-retardant PVC/Nylon type THHN/THWN-2 per UL 83

Color coded per Method #1-E2 per ICEA S-73-532

Binder tape

Ripcord: Nylon

Jacket: Special PVC, flame retardant, UL listed sunlight and moisture resistant, meeting the requirements of UL 1277. Color: Black

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

3 Cores, 600V, Rated 90°C

Conductor Size	Grond Wire Size	Insulation Thickness		Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
(AWG/ kcmil)	(AWG)	PVC(mm)	Nylon(mm)	(mm)	(mm)	(kg/km)	(amps)
14	14	0.38	0.10	1.14	9.25	135	25
12	12	0.38	0.10	1.14	10.36	188	30
10	10	0.51	0.10	1.14	11.66	284	40
8	10	0.76	0.13	1.52	15.49	449	55

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Cables for Oil Industry

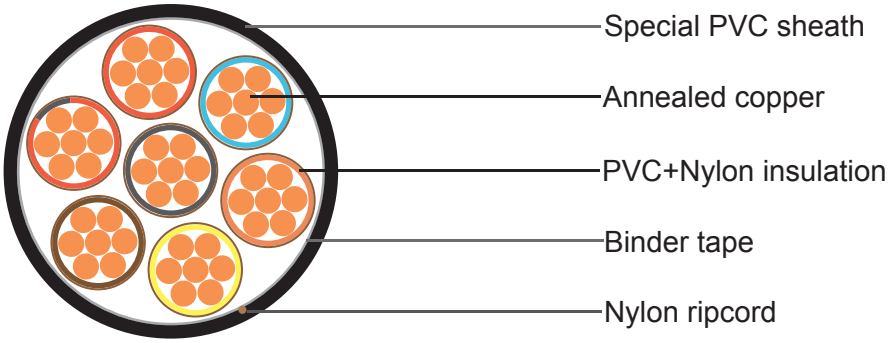
6	8	0.76	0.13	1.52	18.42	628	75
4	8	1.02	0.15	2.03	21.77	963	95
2	6	1.02	0.15	2.03	25.30	1433	130
1	6	1.27	0.18	2.03	28.14	1720	150
1/0	6	1.27	0.18	2.03	30.66	2159	170
2/0	6	1.27	0.18	2.03	32.94	2586	195
3/0	4	1.27	0.18	2.03	35.81	3158	225
4/0	4	1.27	0.18	2.03	38.86	3834	260
250	4	1.52	0.20	2.79	42.09	4508	290
350	3	1.52	0.20	2.79	49.81	6469	350
500	2	1.52	0.20	2.79	56.74	8660	430

4 Cores, 600V, Rated 90°C

Conductor Size	Grond Wire Size	Insulation Thickness		Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity	
(AWG/ kcmil)	(AWG)	PVC(mm)	Nylon(mm)	(mm)	(mm)	(kg/km)	(amps)	(amps)*
8	10	0.76	0.13	1.52	17.22	561	44	55
6	8	0.76	0.13	1.52	19.81	813	60	75
4	8	1.02	0.15	2.03	23.93	1222	76	95
2	6	1.02	0.15	2.03	27.56	1823	104	130
1	6	1.27	0.18	2.03	31.67	2261	120	150
1/0	6	1.27	0.18	2.03	33.38	2695	136	170
2/0	6	1.27	0.18	2.03	36.88	3405	156	195
3/0	4	1.27	0.18	2.03	40.00	4101	180	225
4/0	4	1.27	0.18	2.79	44.91	5115	208	260
250	4	1.52	0.20	2.79	49.20	6021	232	290
350	3	1.52	0.20	2.79	55.37	8155	280	350
500	2	1.52	0.20	2.79	63.35	11271	344	430

*Where the 4th conductor is the neutral of a balanced 3 phase system.

Unscreened TFN Cable



Unscreened TFN Cable

Applications

These cables are use in class 1, Division 2 Hazardous locations, may be installed in trays, wire ways, ducts, conduit and aerially when properly supported by a messenger. They are approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required.

Standards

ICEA S-73-532; UL 1277; UL 66

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and B8

Insulation: Flame-retardant PVC/Nylon type TFN per UL 66

Color coded per Method #1-E2 per ICEA S-73-532

Binder tape

Ripcord: Nylon

Jacket: Special PVC, flame retardant, UL listed sunlight and moisture resistant, meeting the requirements of UL 1277. Color: Black

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

16 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2 Flat	0.38	0.10	1.14	4.83 x 7.37	67	8.0
3	0.38	0.10	1.14	7.77	86	8.0
4	0.38	0.10	1.14	8.38	106	6.4
5	0.38	0.10	1.14	9.14	128	6.4
6	0.38	0.10	1.14	9.91	149	6.4
7	0.38	0.10	1.14	9.91	164	5.6
8	0.38	0.10	1.14	10.80	190	5.6
9	0.38	0.10	1.14	11.48	210	5.6

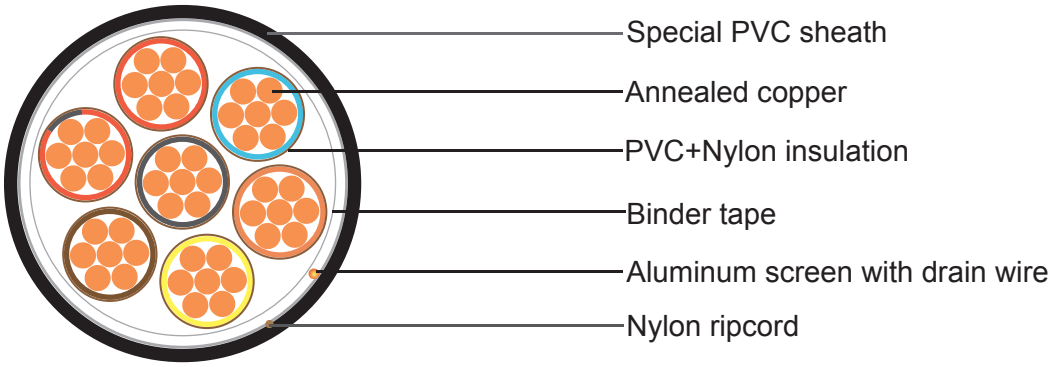
Cables for Oil Industry

10	0.38	0.10	1.14	12.19	234	4.0
11	0.38	0.10	1.14	12.34	246	4.0
12	0.38	0.10	1.14	12.83	266	4.0
13	0.38	0.10	1.14	12.95	305	4.0
14	0.38	0.10	1.52	14.12	326	4.0
15	0.38	0.10	1.52	14.48	345	4.0
16	0.38	0.10	1.52	15.09	357	4.0
19	0.38	0.10	1.52	15.49	421	4.0
20	0.38	0.10	1.52	16.26	446	4.0
25	0.38	0.10	1.52	18.16	546	3.6
30	0.38	0.10	1.52	19.43	640	3.6
37	0.38	0.10	2.03	21.99	815	3.2
40	0.38	0.10	2.03	22.68	869	3.2
45	0.38	0.10	2.03	23.95	966	2.8
50	0.38	0.10	2.03	24.88	1025	2.8

18 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2 Flat	0.38	0.10	1.14	4.57 x 6.86	52	6.0
3	0.38	0.10	1.14	7.31	67	6.0
4	0.38	0.10	1.14	7.91	80	4.8
5	0.38	0.10	1.14	8.56	98	4.8
6	0.38	0.10	1.14	9.25	113	4.8
7	0.38	0.10	1.14	9.25	122	4.2
8	0.38	0.10	1.14	9.95	137	4.2
9	0.38	0.10	1.14	10.69	160	4.2
10	0.38	0.10	1.14	11.37	175	3.0
11	0.38	0.10	1.14	11.53	182	3.0
12	0.38	0.10	1.14	11.87	195	3.0
13	0.38	0.10	1.14	12.08	207	3.0
14	0.38	0.10	1.14	12.47	220	3.0
15	0.38	0.10	1.14	12.79	274	3.0
19	0.38	0.10	1.52	14.58	312	3.0
20	0.38	0.10	1.52	14.99	323	3.0
25	0.38	0.10	1.52	16.71	405	2.7
30	0.38	0.10	1.52	17.80	458	2.7
37	0.38	0.10	1.52	19.15	564	2.4
40	0.38	0.10	1.52	19.86	591	2.4
45	0.38	0.10	1.52	22.02	658	2.1
50	0.38	0.10	2.03	22.80	768	2.1

Screened TFN Cable



Screened TFN Cable

Applications

These cables are use in class 1, Division 2 Hazardous locations, may be installed in trays, wire ways, ducts, conduit and aerially when properly supported by a messenger. They are approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required.

Standards

ICEA S-73-532; UL 1277; UL 66

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and B8

Insulation: Flame-retardant PVC/Nylon type TFN per UL 66

Color coded per Method #1-E2 per ICEA S-73-532

Binder tape

Screen: Aluminum tape

Drain Wire: 18 AWG (7w) tinned copper for 16 AWG conductor

20 AWG (7w) tinned copper for 18 AWG conductor

Ripcord: Nylon

Jacket: Special PVC, flame retardant, UL listed sunlight and moisture resistant, meeting the requirements of UL 1277. Color: Black

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

16 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2	0.38	0.10	1.14	7.57	76	8.0
3	0.38	0.10	1.14	7.98	100	8.0
4	0.38	0.10	1.14	8.61	119	6.4
5	0.38	0.10	1.14	9.35	143	6.4

Cables for Oil Industry

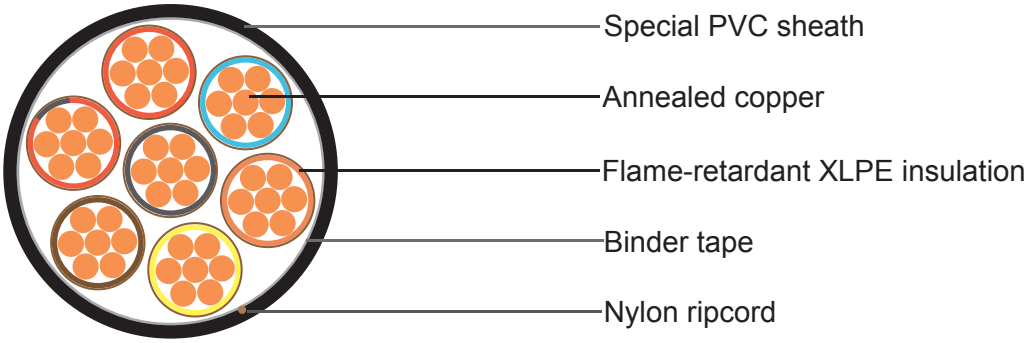
6	0.38	0.10	1.14	10.11	165	6.4
7	0.38	0.10	1.14	10.11	179	5.6
8	0.38	0.10	1.14	11.05	202	5.6
9	0.38	0.10	1.14	11.86	222	5.6
10	0.38	0.10	1.14	12.62	240	4.0
11	0.38	0.10	1.14	12.80	257	4.0
12	0.38	0.10	1.52	13.94	278	4.0
13	0.38	0.10	1.52	14.17	317	4.0
14	0.38	0.10	1.52	14.61	341	4.0
15	0.38	0.10	1.52	14.96	360	4.0
19	0.38	0.10	1.52	16.10	448	4.0
20	0.38	0.10	1.52	16.56	461	4.0
25	0.38	0.10	1.52	18.47	561	3.6
30	0.38	0.10	1.52	19.69	655	3.6
37	0.38	0.10	2.03	22.20	845	3.2
40	0.38	0.10	2.03	22.99	899	3.2
45	0.38	0.10	2.03	24.26	995	2.8
50	0.38	0.10	2.03	25.12	1106	2.8

18 AWG, 600V, Rated 90°C

No. of Cores	PVC Thickness	Nylon Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	mm	mm	mm	mm	kg/km	amps
2	0.38	0.10	1.14	7.11	57	6.0
3	0.38	0.10	1.14	7.47	73	6.0
4	0.38	0.10	1.14	8.06	86	4.8
5	0.38	0.10	1.14	8.71	108	4.8
6	0.38	0.10	1.14	9.40	122	4.8
7	0.38	0.10	1.14	9.40	136	4.2
8	0.38	0.10	1.14	10.26	145	4.2
9	0.38	0.10	1.14	10.99	167	4.2
10	0.38	0.10	1.14	11.68	188	3.0
11	0.38	0.10	1.14	11.84	193	3.0
12	0.38	0.10	1.14	12.18	202	3.0
13	0.38	0.10	1.14	12.39	214	3.0

14	0.38	0.10	1.14	12.77	228	3.0
15	0.38	0.10	1.14	13.09	245	3.0
19	0.38	0.10	1.52	14.88	320	3.0
20	0.38	0.10	1.52	15.30	326	3.0
25	0.38	0.10	1.52	17.01	416	2.7
30	0.38	0.10	1.52	18.11	473	2.7
37	0.38	0.10	1.52	19.46	580	2.4
40	0.38	0.10	1.52	20.17	606	2.4
45	0.38	0.10	2.03	22.32	673	2.1
50	0.38	0.10	2.03	23.10	783	2.1

Unscreened XHHW-2 Cable



Unscreened XHHW-2 Cable

Applications

These cables are use in class 1, Division 2 Hazardous locations, may be installed in trays, wire ways, ducts, conduit and aerially when properly supported by a messenger. They are approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required.

Standards

ICEA S-73-532; UL 1277; UL 44

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and B8

Insulation: Flame-retardant XLPE meeting the requirements for XHHW-2 per UL 44 and the requirements of ICEA S-95-658 for XLPE insulation as standard. Sizes 14 AWG to 10 AWG are VW-1, Binder tape

Jacket: Special PVC, flame retardant, UL listed sunlight and moisture resistant, meeting the requirements of UL 1277. Color: Black

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

10AWG, 600V, Rated 90°C

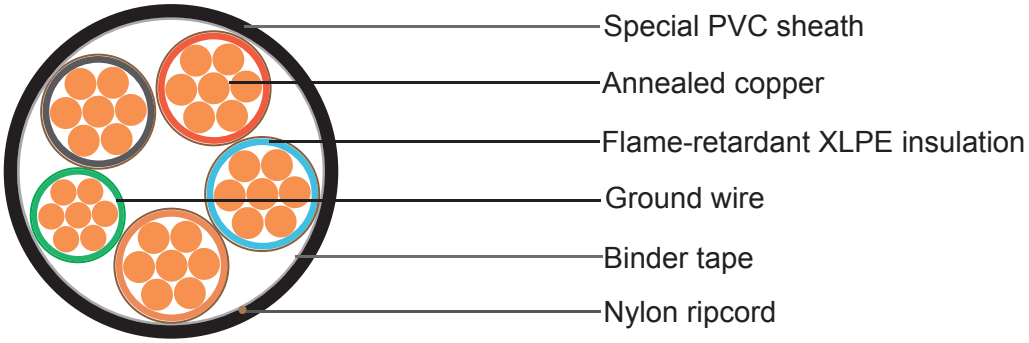
No. of Cores	Insulation Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	(mm)	(mm)	(mm)	(kg/km)	(amps)
2	0.76	1.14	11.94	190	40.0
3	0.76	1.14	12.57	259	40.0
4	0.76	1.14	13.84	332	32/40
5	0.76	1.52	16.00	432	32.0
6	0.76	1.52	17.40	507	32.0
7	0.76	1.52	17.40	568	28.0
8	0.76	1.52	18.80	607	28.0
9	0.76	1.52	20.32	713	28.0

10	0.76	1.52	21.72	752	20.0
11	0.76	2.03	23.11	865	20.0
12	0.76	2.03	23.75	932	20.0
13	0.76	2.03	24.13	997	20.0
14	0.76	2.03	24.89	1064	20.0
15	0.76	2.03	25.65	1131	20.0
20	0.76	2.03	28.58	1463	20.0
25	0.76	2.03	32.00	1799	18.0
30	0.76	2.03	34.16	2124	18.0
35	0.76	2.03	36.32	2447	16.0
40	0.76	2.03	38.35	2770	16.0
45	0.76	2.03	40.77	3098	14.0
50	0.76	2.03	42.29	3417	14.0

12AWG, 600V, Rated 90°C

No. of Cores	Insulation Thickness	Jacket Thickness	Nom. O.D.	Approx. Weight	Ampacity
	(mm)	(mm)	(mm)	(kg/km)	(amps)
2	0.76	1.14	10.67	140	30.0
3	0.76	1.14	11.30	188	30.0
4	0.76	1.14	12.32	238	24.0/30.0
5	0.76	1.14	13.59	289	24.0
6	0.76	1.52	15.49	366	24.0
7	0.76	1.52	15.49	406	21.0
8	0.76	1.52	16.76	432	21.0
9	0.76	1.52	18.03	507	21.0
10	0.76	1.52	19.18	530	15.0
11	0.76	1.52	19.56	573	15.0
12	0.76	1.52	20.19	619	15.0
13	0.76	1.52	20.57	662	15.0
14	0.76	1.52	21.21	708	15.0
15	0.76	1.52	21.84	753	15.0
19	0.76	2.03	24.26	975	15.0
20	0.76	2.03	25.27	1028	15.0
25	0.76	2.03	28.32	1260	13.5
30	0.76	2.03	30.23	1481	13.5
35	0.76	2.03	32.13	1700	12.0
37	0.76	2.03	32.13	1897	12.0
40	0.76	2.03	33.91	1918	12.0
45	0.76	2.03	35.81	2140	10.5
50	0.76	2.03	37.21	2354	10.5

Unscreened XHHW-2 Cable with Ground Wire



Unscreened XHHW-2 Cable with Ground Wire

Applications

These cables are use in class 1, Division 2 Hazardous locations, may be installed in trays, wire ways, ducts, conduit and aerially when properly supported by a messenger. They are approved for direct burial, wet or dry locations and outdoors in cable trays where a sunlight resistant rating is required.

Standards

ICEA S-73-532; ICEA S-95-658; UL 1277; UL 44

Construction

Conductor: Bare, annealed copper conforming to ASTM B3 and B8

Ground wires: Sized as required by UL 1277. Sizes 14 AWG to 6 AWG have an insulated green ground wire. Sizes 4 AWG and larger have a bare ground wire.

Insulation: Flame-retardant XLPE meeting the requirements for XHHW-2 per UL 44 and the requirements of ICEA S-95-658 for XLPE insulation as standard. Sizes 14 AWG to 8 AWG are VW-1, and sizes #6 AWG and larger are non-VW-1.

Binder tape

Jacket: Special PVC, flame retardant, UL listed sunlight and moisture resistant, meeting the requirements of UL 1277. Color: Black

Chemical resistance: Aliphatic and aromatic hydrocarbon resistance

3 Cores, 600V, Rated 90°C

Conductor Size	Ground Wire Size	Insulation Thickness	Jacket Thickness	Nom. O.D.	Approx Weight	Ampacity
(AWG/kcmil)	(AWG)	(mm)	(mm)	(mm)	(kg/km)	(amps)
12	12	0.76	1.14	11.82	216	30
10	10	0.76	1.14	13.30	305	45
8	10	1.14	1.52	16.89	480	55
6	8	1.14	1.52	19.53	672	75

4	8	1.14	1.52	20.78	886	95
3	6	1.14	2.03	23.28	1226	110
2	6	1.14	2.03	25.12	1372	130
1	6	1.40	2.03	27.75	1786	150
1/0	6	1.40	2.03	30.00	2021	170
2/0	6	1.40	2.03	32.33	2474	195
3/0	4	1.40	2.03	35.59	3209	225
4/0	4	1.40	2.03	39.13	3729	260
250	4	1.65	2.03	41.51	4376	290
300	3	1.65	2.79	45.72	5050	320
350	3	1.65	2.79	49.12	6105	350
400	3	1.65	2.79	51.33	7169	380
500	2	1.65	2.79	55.63	8438	430

4 Cores, 600V, Rated 90°C

Conductor Size	Ground Wire Size	Insulation Thickness	Jacket Thickness	Nom. O.D.	Approx Weight	Ampacity
(AWG/kcmil)	(AWG)	(mm)	(mm)	(mm)	(kg/km)	(amps)
10	10	0.76	1.52	15.33	401	40
8	10	1.14	1.52	18.65	582	55
6	8	1.14	2.03	22.59	885	75
4	8	1.14	2.03	24.13	1177	95
3	6	1.14	2.03	26.29	1523	110
2	6	1.14	2.03	27.76	1751	130
1	6	1.40	2.03	30.96	2187	150
1/0	6	1.40	2.03	33.27	2637	170
2/0	6	1.40	2.03	36.00	3200	195
3/0	4	1.40	2.03	39.01	3969	225
4/0	4	1.40	2.03	42.09	4827	260
250	4	1.65	2.79	47.78	5845	290
300	3	1.65	2.79	51.10	6903	320
350	3	1.65	2.79	53.82	7887	350
400	3	1.65	2.79	56.69	8933	380
500	2	1.65	2.79	61.62	10998	430

Cables for Oil Industry

Color Code: E2 per ICEA S-73-532

Cond. No.	Base Color	Tracer	Cond. No.	Base Color	Tracer
1	Black	-	19	Orange	Blue
2	Red	-	20	Yellow	Blue
3	Blue	-	21	Brown	Blue
4	Orange	-	22	Black	Orange
5	Yellow	-	23	Red	Orange
6	Brown	-	24	Blue	Orange
7	Red	Black	25	Yellow	Orange
8	Blue	Black	26	Brown	Orange
9	Orange	Black	27	Black	Yellow
10	Yellow	Black	28	Red	Yellow
11	Brown	Black	29	Blue	Yellow
12	Black	Red	30	Orange	Yellow
13	Blue	Red	31	Brown	Yellow
14	Orange	Red	32	Black	Brown
15	Yellow	Red	33	Red	Brown
16	Brown	Red	34	Blue	Brown
17	Black	Blue	35	Orange	Brown
18	Red	Blue	36	Yellow	Brown

For Insulation & Sheath Material Properties

Properties	LDPE	Cellular PE	HDPE	CSPE	PP	Cellular PP	PUR	Nylon	EPR	CPE
Oxidation Resistance	E	E	E	E	E	E	E	E	G	E
Heat Resistance	G	G	E	E	E	E	G	E	E	E
Oil Resistance	G–E	G	G–E	G	F	F	E	E	F	E
Low-Temperature Flexibility	E	E	E	F	P	P	G	G	G-E	E
Weather, Sun Resistance	E	E	E	E	E	E	G	E	E	E
Ozone Resistance	E	E	E	E	E	E	E	E	E	E
Abrasion Resistance	G	F	E	G	F–G	F–G	O	E	G	E–O
Electrical Properties	E	E	E	G	E	E	P	P	E	E
Flame Resistance	P	P	P	G	P	P	P	P	P	E
Nuclear Radiation Resistance	G–E	G	G–E	G	F	F	G	F–G	G	O
Water Resistance	E	E	E	G-E	E	E	P–G	P–F	G-E	O

Cables for Oil Industry

Acid Resistance	G–E	G–E	E	E	E	E	F	P–F	G-E	E
Alkali Resistance	G–E	G–E	E	E	E	E	F	E	G-E	E
Aliphatic Hydrocarbons Resistance	G–E	G	G–E	F	P–F	P	P–G	G	P	E
(Gasoline, Kerosene, etc.) Aromatic Hydrocarbons Resistance	P	P	P	F	P–F	P	P–G	G	F	G–E
(Benzol, Toluol, etc.) Halogenated Hydrocarbons Resistance	G	G	G	P-F	P	P	P–G	G	P	E

Properties	Styrene Butadiene Rubber	Natural Rubber	Synthetic Rubber	Poly Butadiene	Neoprene	PVC	NBR	NBR/ PVC
Oxidation Resistance	F	F	G	G	G	E	F	E
Heat Resistance	F-G	F	F	F	G	G–E	G	G
Oil Resistance	P	P	P	P	G	F	G-E	G
Low-Temperature Flexibility	F-G	G	E	E	F-G	P–G	F	F
Weather, Sun Resistance	F	F	F	F	G	G–E	F-G	G
Ozone Resistance	P	P	P	P	G	E	P	G
Abrasion Resistance	G-E	E	E	E	G-E	F–G	G-E	E
Electrical Properties	E	E	E	E	F	F–G	P	F
Flame Resistance	P	P	P	P	G	E	P	G
Nuclear Radiation Resistance	F-G	F-G	F-G	P	F-G	F	F-G	P
Water Resistance	G-E	G-E	E	E	G	F–G	G-E	E
Acid Resistance	F-G	F-G	F-G	F-G	G	G–E	G	G
Alkali Resistance	F-G	F-G	F-G	F-G	G	G–E	F-G	G
Aliphatic Hydrocarbons Resistance	P	P	P	P	G	P	E	G-E
(Gasoline, Kerosene, etc.) Aromatic Hydrocarbons Resistance	P	P	P	P	P-F	P–F	G	G
(Benzol, Toluol, etc.) Halogenated Hydrocarbons Resistance	P	P	P	P	P	P–F	P	G

P = Poor F = Fair G = Good E = Excellent O = Outstanding

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