

SOLAR

Cables



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EXCELLENCE IS JUST THE BEGINNING

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Company Introduction

Hengtong Cable Australia is part of the Hengtong Group of companies. Founded in 1991, Hengtong Group is an international company with a diverse range of areas covering, Optical Fibre, Power, Marine and Offshore Cable, EPC Turnkey service and maintenance, as well as internet of things, big data and e-commerce, emerging materials and new energy.

Hengtong Group has 70 wholly-owned companies and holding companies (some are listed on various Stock Exchanges: Shanghai, Hong Kong and Indonesia) with 9 manufacturing facilities based in Europe, South America, South Africa, South Asia and Southeast Asia. as well as sales offices in over 30 countries and regions around the world supplying products to over 130 countries.

Hengtong Group is the largest Optical Fibre and Power Cable manufacturer in China and the second largest in the world. It is also in the top 2 largest Optical Fibre communication producers. Hengtong is implementing and transforming to intelligent manufacturing, to make it the most advanced cable manufacturer in the world.

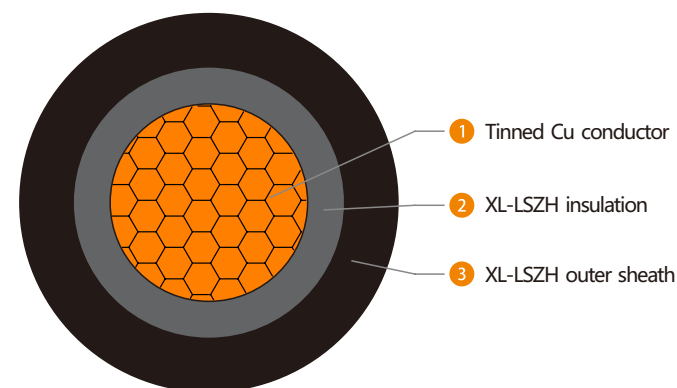
Hengtong High Voltage Park, lays claim to the tallest VCV tower in the world, standing at an incredible 180m high. It currently houses 3 TROESTER VCV extruders and has room for a 4th.

Committing to innovation and social responsibility is at the heart of Hengtong. Hengtong has donated more than 600M RMB to local charities.

Hengtong Group has an annual turnover of USD \$15 Billion and employs some 22,000 people. Hengtong Group has a factory area of 200,000,000m² in China and 400,000m² internationally thus allowing Hengtong Cable Australia the ability to supply projects of any size and type.



1500V DC Photovoltaic Cables T-Cu/XL-LSZH/XL-LSZH



Properties:

Rated Voltage	1500V DC (Conductor to Conductor and Conductor to Earth)
Max. operating temperature of conductor	120°C
Min. ambient temperature for operating	-40°C
Min. temperature for installing without preheating	+0°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Minimal bending radius	During installation: 4D. D is outer diameter of cable
Standard	EN 50618

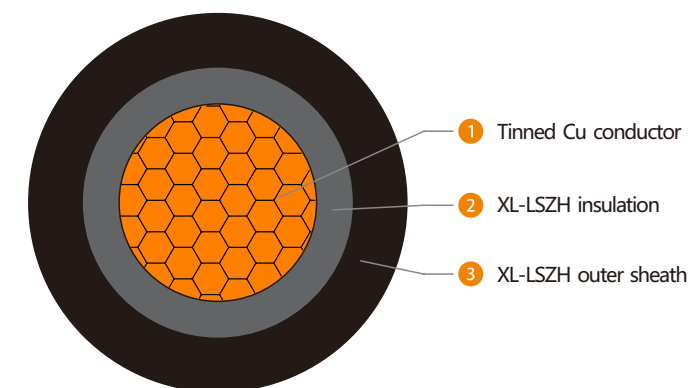
Application:

The cable is used at the DC side of photovoltaic systems for cable junction boxes, interconnection between modules, or between module array and connection box.

Structural Parameters:

Nominal conductor area	Nominal thickness of insulation	Nominal thickness of sheath	Approx. overall diameter of cable	Approx. weight of cable	Max. D.C. resistance at 20°C
mm ²	mm	mm	mm	kg/km	Ω/km
1.5	0.7	0.8	5.6	43	13.7
2.5	0.7	0.8	6.4	55	8.21
4	0.7	0.8	7.0	71	5.09
6	0.7	0.8	7.7	92	3.39
10	0.7	0.8	8.8	138	1.95
16	0.7	0.9	11.3	211	1.24
25	0.9	1.0	13.6	315	0.795
35	0.9	1.1	15.9	425	0.565
50	1.0	1.2	16.4	566	0.393
70	1.1	1.2	19.4	779	0.277
95	1.1	1.3	21.1	993	0.210
120	1.2	1.3	23.6	1242	0.164
150	1.4	1.4	28.3	1558	0.132
185	1.6	1.6	29.9	1889	0.108
240	1.7	1.7	31.2	2411	0.0817

1500V DC Photovoltaic Cables T-Cu/XL-LSZH/XL-LSZH



Properties:

Rated Voltage	1500V DC (Conductor to Conductor), 900V DC (Conductor to Earth)
Max. operating temperature of conductor	120°C
Min. ambient temperature for operating	-40°C
Min. temperature for installing without preheating	+0°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	200°C
Minimal bending radius	During installation: 4D. D is outer diameter of cable
Standard	2 Pfg 1169

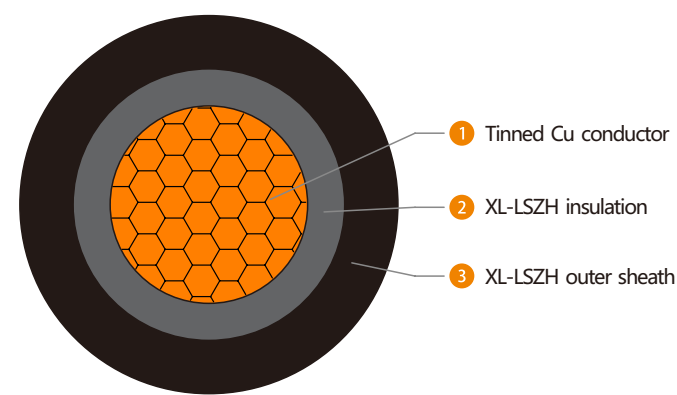
Application:

The cable is used at the DC side of photovoltaic systems for cable junction boxes, interconnection between modules, or between module array and connection box.

Structural Parameters:

Nominal conductor area	Min. thickness of insulation	Min. thickness of sheath	Approx. overall diameter of cable	Approx. weight of cable	Max. D.C. resistance at 20°C
mm ²	mm	mm	mm	kg/km	Ω/km
1.5	0.5	0.5	4.4	30	13.7
2.5	0.5	0.5	5.1	42	8.21
4	0.5	0.5	6.5	64	5.09
6	0.5	0.5	7.1	85	3.39
10	0.5	0.5	8.3	130	1.95
16	0.5	0.5	11.0	205	1.24
25	0.5	0.5	13.4	309	0.795
35	0.5	0.5	15.4	412	0.565

1500V DC Photovoltaic Cables T-Cu/XL-LSZH/XL-LSZH



Properties:

Rated Voltage	1500V DC (Conductor to Conductor and Conductor to Earth)	
Max. operating temperature of conductor		120°C
Min. ambient temperature for operating		-40°C
Min. temperature for installing without preheating		+0°C
Max. short-circuit operation temperature of conductor (5s Max. duration)		250°C
Minimal bending radius	During installation: 4D. D is outer diameter of cable	
Standard		IEC 62930

Application:

The cable is used at the DC side of photovoltaic systems for cable junction boxes, interconnection between modules, or between module array and connection box.

Structural Parameters:

Nominal conductor area	Nominal thickness of insulation	Nominal thickness of sheath	Approx. overall diameter of cable	Approx. weight of cable	Max. D.C. resistance at 20°C
mm ²	mm	mm	mm	kg/km	Ω/km
1.5	0.7	0.8	5.0	38	13.7
2.5	0.7	0.8	5.4	49	8.21
4	0.7	0.8	5.9	64	5.09
6	0.7	0.8	6.5	84	3.39
10	0.7	0.8	7.6	130	1.95
16	0.7	0.9	9.3	197	1.24
25	0.9	1.0	11.1	297	0.795
35	0.9	1.1	13.0	404	0.565
50	1.0	1.2	14.4	552	0.393
70	1.1	1.2	16.8	758	0.277
95	1.1	1.3	18.8	976	0.210
120	1.2	1.3	21.1	1227	0.164
150	1.4	1.4	22.8	1507	0.132
185	1.6	1.6	24.9	1842	0.108
240	1.7	1.7	28.0	2394	0.0817

Accessory



Properties:

Max system voltage	DC 1000V or 1500V
Rated Current	30A
Test voltage	6kV (50Hz, 1min)
Power Range	> 350W
Protection Class	Class II
Protection Degree	IP67
Insulation material	PC/PA
Ambient Temperature	-40°C ~ +90°C
Upper limiting temperature	105°C
Rated Connection Capacity	4mm ² ~16mm ²
Standards	IEC 62852, UL 6703
Case adopts high temperature resistant material, has strong anti-aging UV resistant ability.	

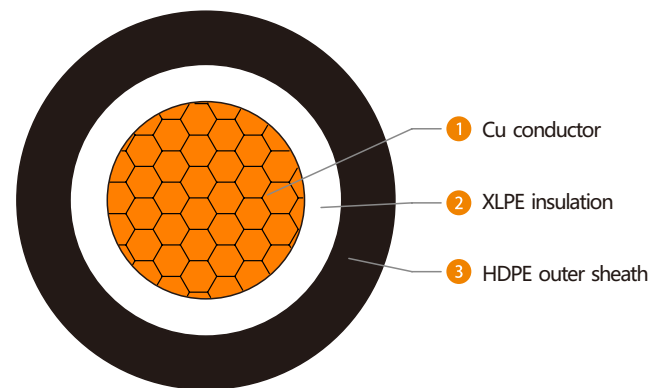
Application:

The connector is part of a circuit that connects several solar cell components to the PV cable.

Structural Parameters:

Cross-section $\varnothing$ mm ²	Outer sheath $\varnothing$ mm	Model
4.0 - 16.0	3.0 - 11.0	Plug Connector 4 - 16mm

1500V DC Sub-array Cables Cu/XLPE/HDPE



Properties:

Rated Voltage	1500V DC
Max. operating temperature of conductor	90°C
Min. ambient temperature for operating	-40°C
Min. temperature for installing without preheating	+0°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Min. bending radius	During installation: 9D After installation: 6D. D is outer diameter of cable
Standard	AS/NZS 5000.1

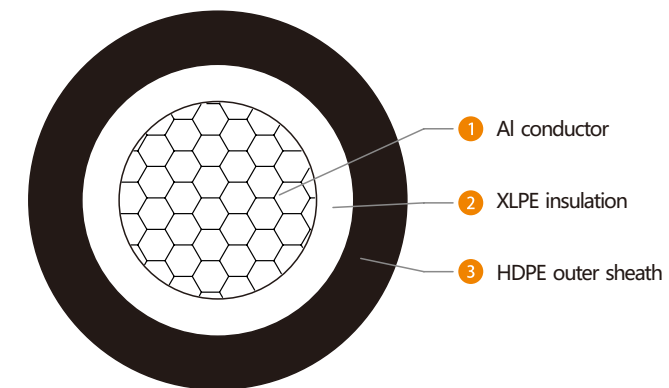
Application:

The low voltage DC power cable is applied to the connection of the collector box in the Photovoltaic system to the DC lightning protection distribution cabinet and the DC lightning protection distribution cabinet to the grid connected inverter. Low voltage DC power cable is applied to connect DC lightning protection switchboard and step-up transformer in photovoltaic system.

Structural Parameters:

Nominal conductor area	Nominal thickness of insulation	Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. mass of cable	Max. DC resistance of conductor at 20°C
mm ²	mm	mm	mm	kg/km	Ω/km
1.5	0.7	1.4	7.9	38	12.1
2.5	0.7	1.4	8.4	50	7.41
4	0.7	1.4	8.9	66	4.61
6	0.7	1.4	9.5	87	3.08
10	0.7	1.4	10.2	129	1.83
16	0.7	1.4	11.2	187	1.15
25	0.9	1.4	12.8	281	0.727
35	0.9	1.4	13.8	373	0.524
50	1.0	1.4	15.1	494	0.387
70	1.1	1.4	17.1	695	0.268
95	1.1	1.5	18.9	941	0.193
120	1.2	1.5	20.5	1174	0.153
150	1.4	1.6	22.6	1449	0.124
185	1.6	1.7	24.9	1801	0.0991
240	1.7	1.8	27.6	2345	0.0754
300	1.8	1.8	30.0	2924	0.0601
400	2.0	2.0	33.6	3723	0.0470
500	2.2	2.1	37.0	4752	0.0366
630	2.4	2.2	41.2	6123	0.0283
800	2.6	2.3	46.0	7801	0.0221

1500V DC Sub-array Cables Al/XLPE/HDPE



Properties:

Rated Voltage	1500V DC
Max. operating temperature of conductor	90°C
Min. ambient temperature for operating	-40°C
Min. temperature for installing without preheating	+0°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Min. bending radius	During installation: 9D After installation: 6D. D is outer diameter of cable
Standard	AS/NZS 5000.1

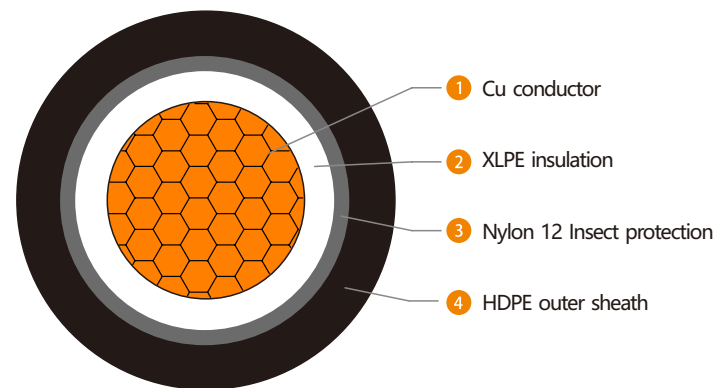
Application:

The low voltage DC power cable is applied to the connection of the collector box in the Photovoltaic system to the DC lightning protection distribution cabinet and the DC lightning protection distribution cabinet to the grid connected inverter. Low voltage DC power cable is applied to connect DC lightning protection switchboard and step-up transformer in photovoltaic system.

Structural Parameters:

Nominal conductor area	Nominal thickness of insulation	Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. mass of cable	Max. DC resistance of conductor at 20°C
mm ²	mm	mm	mm	kg/km	Ω/km
10	0.7	1.4	10.3	66	3.08
16	0.7	1.4	11.4	89	1.91
25	0.9	1.4	12.8	127	1.20
35	0.9	1.4	13.8	160	0.868
50	1.0	1.4	15.1	204	0.641
70	1.1	1.4	17.0	277	0.443
95	1.1	1.5	18.8	364	0.320
120	1.2	1.5	20.5	448	0.253
150	1.4	1.6	22.6	551	0.206
185	1.6	1.6	24.6	678	0.164
240	1.7	1.7	27.4	870	0.125
300	1.8	1.8	30.0	1070	0.100
400	2.0	1.9	33.4	1357	0.0778
500	2.2	2.0	36.8	1716	0.0605
630	2.4	2.2	41.2	2193	0.0469
800	2.6	2.3	46.0	2763	0.0367

1500V DC Sub-array Cables Cu/XLPE/NY/HDPE



Properties:

Rated Voltage	1500V DC
Max. operating temperature of conductor	90°C
Min. ambient temperature for operating	-40°C
Min. temperature for installing without preheating	+0°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Min. bending radius	During installation: 30D After installation: 29D. D is the diameter over the polyamide layer
Standard	AS/NZS 5000.1

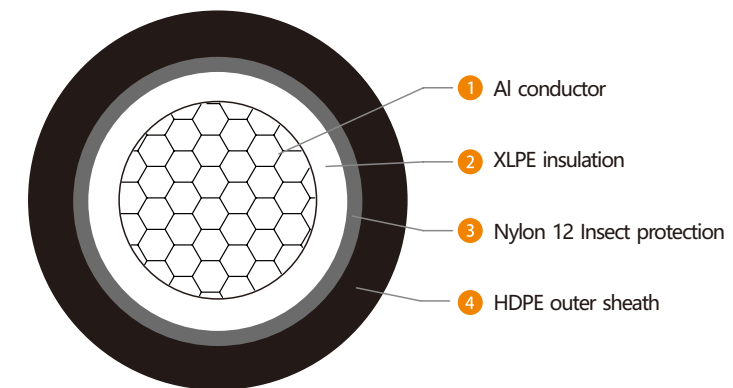
Application:

The low voltage DC power cable is applied to the connection of the collector box in the Photovoltaic system to the DC lightning protection distribution cabinet and the DC lightning protection distribution cabinet to the grid connected inverter. Low voltage DC power cable is applied to connect DC lightning protection switchboard and step-up transformer in photovoltaic system.

Structural Parameters:

Nominal conductor area	Nominal thickness of insulation	Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. mass of cable	Max. DC resistance of conductor at 20°C
mm ²	mm	mm	mm	kg/km	Ω/km
1.5	0.7	1.4	9.1	50	13.6
2.5	0.7	1.4	9.6	63	7.41
4	0.7	1.4	10.1	81	4.61
6	0.7	1.4	10.7	103	3.08
10	0.7	1.4	11.4	146	1.83
16	0.7	1.4	12.4	206	1.15
25	0.9	1.4	14.0	303	0.727
35	0.9	1.4	15.0	398	0.524
50	1.0	1.4	16.3	521	0.387
70	1.1	1.4	18.3	727	0.268
95	1.1	1.5	19.9	971	0.193
120	1.2	1.5	21.5	1206	0.153
150	1.4	1.6	23.6	1485	0.124
185	1.6	1.6	25.7	1841	0.0991
240	1.7	1.7	28.4	2389	0.0754
300	1.8	1.8	31.0	2972	0.0601
400	2.0	1.9	34.4	3777	0.0470
500	2.2	2.0	37.8	4812	0.0366
630	2.4	2.2	42.2	6191	0.0283
800	2.6	2.3	47.0	7876	0.0221

1500V DC Sub-array Cables Al/XLPE/NY/HDPE



Properties:

Rated Voltage	1500V DC
Max. operating temperature of conductor	90°C
Min. ambient temperature for operating	-40°C
Min. temperature for installing without preheating	+0°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Min. bending radius	During installation: 30D After installation: 29D. D is the diameter over the polyamide layer
Standard	AS/NZS 5000.1

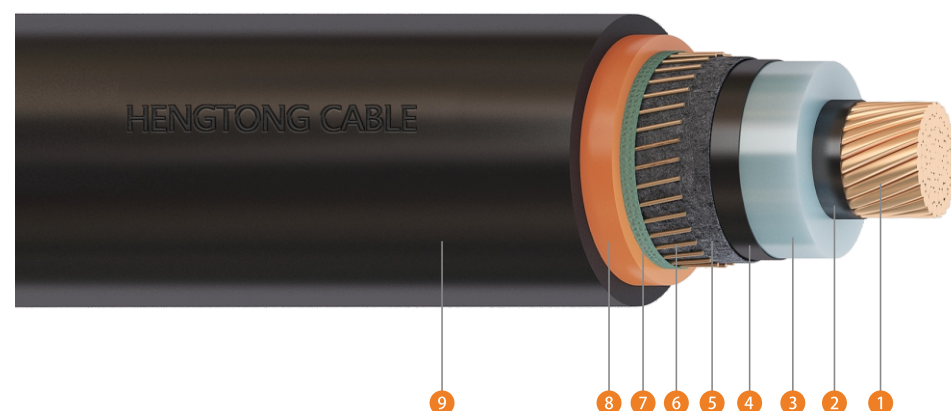
Application:

The low voltage DC power cable is applied to the connection of the collector box in the Photovoltaic system to the DC lightning protection distribution cabinet and the DC lightning protection distribution cabinet to the grid connected inverter. Low voltage DC power cable is applied to connect DC lightning protection switchboard and step-up transformer in photovoltaic system.

Structural Parameters:

Nominal conductor area	Nominal thickness of insulation	Nominal thickness of outer sheath	Approx. overall diameter of cable	Approx. mass of cable	Max. DC resistance of conductor at 20°C
mm ²	mm	mm	mm	kg/km	Ω/km
10	0.7	1.4	11.5	83	3.08
16	0.7	1.4	12.6	108	1.91
25	0.9	1.4	14.0	149	1.20
35	0.9	1.4	15.5	184	0.868
50	1.0	1.4	16.3	231	0.641
70	1.1	1.4	18.2	308	0.443
95	1.1	1.5	19.8	393	0.320
120	1.2	1.5	21.5	480	0.253
150	1.4	1.6	23.6	587	0.206
185	1.6	1.6	25.6	718	0.164
240	1.7	1.7	28.4	914	0.125
300	1.8	1.8	31.0	1118	0.100
400	2.0	1.9	34.4	1411	0.0778
500	2.2	2.0	37.8	1776	0.0605
630	2.4	2.2	42.2	2260	0.0469
800	2.6	2.3	47.0	2839	0.0367

19/33kV Single Core Cu/XLPE/CWS/PVC/HDPE



- 1 Compacted Cu conductor
- 2 Conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Copper wire screen
- 7 Non-hygroscopic tape
- 8 PVC inner sheath
- 9 HDPE outer sheath

Properties:

Rated voltage	19/33kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.1
Fault Level	up to 10kA/s or customer requirements

Application:

Cables are designed for fixed installation, for laying in the ground, for indoor application and in cable ducts.

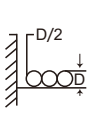
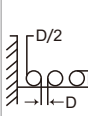
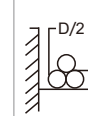
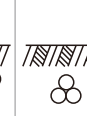
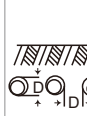
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal diameter over insulation	Nominal screen area	No. & diameter of screen wire	Nominal diameter over wire screen	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius	
							Inner layer	Outer layer				During installation	Installed
mm ²	mm	mm	mm	mm ²	No./mm	mm	mm	mm	mm	kg/km	kN	mm	mm
50	8.1	8.0	27.0	49.5	28/1.5	30.9	1.0	1.0	37.3	1821	3.5	930	550
70	9.8	8.0	28.7	68.9	39/1.5	32.6	1.0	1.1	39.0	2261	4.9	970	580
95	11.4	8.0	30.3	68.9	39/1.5	34.2	1.0	1.2	40.6	2563	6.7	1010	600
120	12.9	8.0	31.8	68.9	39/1.5	35.7	1.1	1.1	42.1	2845	8.4	1050	630
150	14.4	8.0	33.3	68.9	39/1.5	37.2	1.1	1.2	43.6	3155	10.5	1080	650
185	16.0	8.0	34.9	68.9	39/1.5	38.8	1.1	1.2	45.2	3549	13.0	1120	670
240	18.4	8.0	37.3	68.9	39/1.5	41.2	1.1	1.3	47.6	4162	16.8	1180	710
300	20.6	8.0	39.5	68.9	39/1.5	43.4	1.2	1.3	49.8	4799	21.0	1240	740
400	23.4	8.0	42.3	68.9	39/1.5	46.2	1.2	1.4	52.6	5666	28.0	1310	780
500	26.2	8.0	45.5	68.9	39/1.5	49.4	1.3	1.4	55.7	6785	35.0	1390	830
630	29.8	8.0	49.1	68.9	39/1.5	53.0	1.3	1.5	59.3	8232	44.1	1480	880
800	33.6	8.0	51.4	68.9	39/1.5	56.6	1.5	1.5	63.2	9827	54.4	1580	940
1000	38.5	8.0	56.3	68.9	39/1.5	61.5	1.6	1.6	68.5	11864	68.0	1710	1020

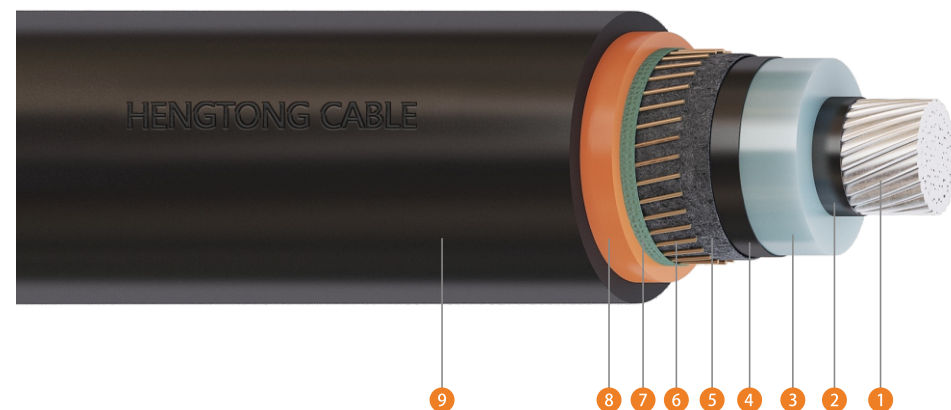
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Screen DC resistance at 20°C	Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced								Trefoil touching	Flat touching	Flat spaced			
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
50	0.387	0.494	0.494	0.494	7.2	7.4	17000	0.142	0.847	64.4	4.04	0.155	0.170	0.213	0.383	0.770	0.1012
70	0.268	0.342	0.342	0.342	10.0	10.2	15300	0.158	0.942	71.6	3.81	0.146	0.160	0.204	0.275	0.543	0.0912
95	0.193	0.247	0.247	0.246	13.6	10.2	14000	0.173	1.03	78.3	3.65	0.139	0.154	0.197	0.275	0.468	0.0850
120	0.153	0.196	0.196	0.196	17.2	10.2	12900	0.186	1.11	84.5	3.53	0.134	0.148	0.192	0.275	0.428	0.0802
150	0.124	0.159	0.159	0.159	21.5	10.2	12000	0.200	1.19	90.7	3.43	0.129	0.143	0.187	0.275	0.399	0.0761
185	0.0991	0.127	0.127	0.127	26.5	10.2	11200	0.214	1.28	97.2	3.34	0.124	0.139	0.183	0.275	0.374	0.0724
240	0.0754	0.0975	0.0973	0.0971	34.3	10.2	10200	0.236	1.41	107.0	3.24	0.119	0.133	0.177	0.275	0.351	0.0677
300	0.0601	0.0785	0.0782	0.0778	42.9	10.2	9400	0.256	1.53	115.9	3.16	0.115	0.129	0.173	0.275	0.335	0.0641
400	0.0470	0.0624	0.0620	0.0614	57.2	10.2	8600	0.280	1.67	127.2	3.08	0.110	0.125	0.168	0.275	0.322	0.0603
500	0.0366	0.0499	0.0493	0.0486	71.5	10.2	7800	0.308	1.84	139.9	3.00	0.107	0.121	0.165	0.275	0.312	0.0576
630	0.0283	0.0403	0.0395	0.0386	90.1	10.2	7100	0.340	2.03	154.3	2.93	0.103	0.117	0.161	0.275	0.304	0.0542
800	0.0221	0.0328	0.0328	0.0315	114.2	10.2	6100	0.360	2.23	164.2	2.54	0.0932	0.108	0.136	0.275	0.285	0.0442
1000	0.0176	0.0296	0.0296	0.0291	143.1	10.2	5400	0.385	2.46	178.4	2.10	0.0892	0.104	0.130	0.275	0.281	0.0422

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A											
	In air					In ground			In underground ducts			
												
mm ²	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond
50	224	250	210	220	160	209	209	205	186	185	185	174
70	275	308	259	274	203	250	249	249	224	219	224	215
95	334	369	315	331	241	298	293	296	265	256	266	259
120	380	420	360	380	275	335	328	335	295	286	300	291
150	429	469	406	430	309	371	359	375	326	314	334	325
185	485	528	464	490	349	414	398	420	363	344	373	365
240	564	605	543	574	403	470	444	485	409	383	425	420
300	634	677	618	654	453	523	485	543	448	414	470	469
400	719	758	708	750	534	579	533	610	493	449	528	548
500	808	841	804	854	600	638	577	683	542	484	587	613
630	903	927	913	969	673	698	622	759	578	514	635	680
800	1017	1028	1037	1108	747	757	668	837	632	553	708	747
1000	1167	1138	1218	1307	887	848	717	967	692	593	792	883

19/33kV Single Core AI/XLPE/CWS/PVC/HDPE



- 1 Compacted Al conductor
- 2 Conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Copper wire screen
- 7 Non-hygroscopic tape
- 8 PVC inner sheath
- 9 HDPE outer sheath

Properties:

Rated voltage	19/33kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.1
Fault Level	up to 10kA/s or customer requirements

Application:

Cables are designed for fixed installation, for laying in the ground, for indoor application and in cable ducts.

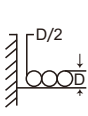
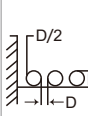
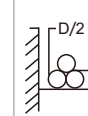
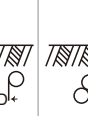
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal diameter over insulation	Nominal screen area	No. & diameter of screen wire	Nominal diameter over wire screen	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius	
							Inner layer	Outer layer				During installation	Installed
mm ²	mm	mm	mm	mm ²	No./mm	mm	mm	mm	mm	kg/km	kN	mm	mm
50	8.1	8.0	27.0	31.5	22/1.35	30.6	1.0	1.0	37.0	1356	2.0	920	550
70	9.8	8.0	28.7	44.4	31/1.35	32.3	1.0	1.1	38.7	1605	2.8	960	580
95	11.4	8.0	30.3	61.5	43/1.35	33.9	1.1	1.1	40.3	1904	3.8	1000	600
120	12.9	8.0	31.8	68.7	48/1.35	35.4	1.1	1.1	41.8	2100	4.8	1040	620
150	14.4	8.0	33.3	68.7	48/1.35	36.9	1.1	1.2	43.3	2236	6.0	1080	640
185	16.0	8.0	34.9	68.7	48/1.35	38.5	1.1	1.2	44.9	2402	7.4	1120	670
240	18.4	8.0	37.3	68.7	48/1.35	40.9	1.2	1.2	47.3	2655	9.6	1180	700
300	20.6	8.0	39.5	68.7	48/1.35	43.1	1.2	1.3	49.5	2907	12.0	1230	740
400	23.4	8.0	42.3	68.7	48/1.35	45.9	1.3	1.3	52.3	3253	16.0	1300	780
500	26.2	8.0	45.5	68.7	48/1.35	49.1	1.3	1.4	55.5	3692	20.0	1380	830
630	29.8	8.0	49.1	68.7	48/1.35	52.7	1.4	1.4	59.1	4228	25.2	1470	880
800	33.8	8.0	53.1	68.7	48/1.35	56.7	1.4	1.5	63.1	4872	32.0	1570	940
1000	38.5	8.0	56.3	68.7	48/1.35	61.2	1.6	1.6	68.2	5627	39.0	1700	1020

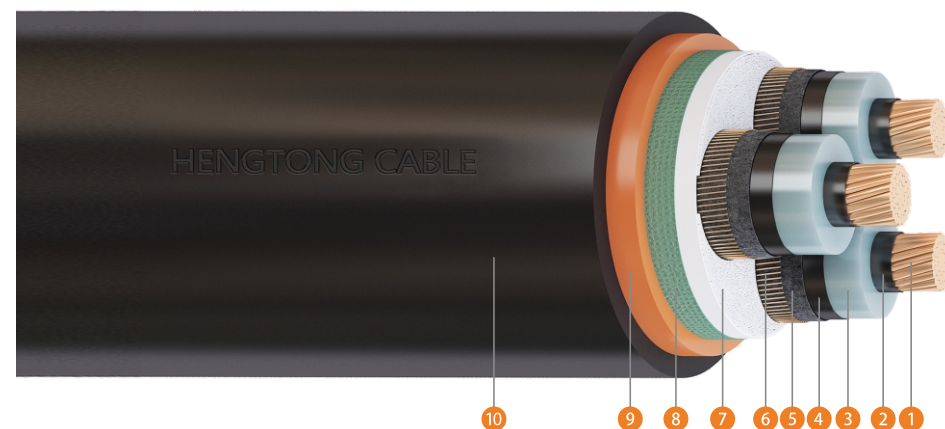
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Screen DC resistance at 20°C	Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced								Trefoil touching	Flat touching	Flat spaced			
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
50	0.641	0.822	0.822	0.822	4.7	4.7	17000	0.142	0.848	64.4	4.04	0.155	0.169	0.213	0.602	1.24	0.1037
70	0.443	0.568	0.568	0.568	6.6	6.6	15300	0.158	0.943	71.7	3.81	0.145	0.160	0.204	0.427	0.873	0.0911
95	0.320	0.411	0.411	0.410	9.0	9.1	14000	0.173	1.03	78.5	3.65	0.139	0.153	0.197	0.309	0.630	0.0848
120	0.253	0.325	0.325	0.325	11.3	10.2	12900	0.186	1.11	84.4	3.53	0.133	0.148	0.191	0.276	0.533	0.0785
150	0.206	0.265	0.265	0.264	14.2	10.2	12000	0.200	1.19	90.7	3.43	0.128	0.143	0.187	0.276	0.486	0.0754
185	0.164	0.211	0.211	0.211	17.5	10.2	11200	0.214	1.28	97.1	3.34	0.124	0.139	0.182	0.276	0.444	0.0723
240	0.125	0.161	0.161	0.161	22.7	10.2	10200	0.236	1.41	107.1	3.24	0.118	0.133	0.177	0.276	0.405	0.0660
300	0.100	0.129	0.129	0.129	28.3	10.2	9400	0.256	1.53	116.1	3.16	0.114	0.129	0.172	0.276	0.380	0.0628
400	0.0778	0.101	0.101	0.101	37.8	10.2	8600	0.280	1.67	127.0	3.08	0.110	0.124	0.168	0.276	0.358	0.0597
500	0.0605	0.0796	0.0792	0.0788	47.2	10.2	7800	0.309	1.84	140.2	3.00	0.106	0.121	0.165	0.276	0.341	0.0565
630	0.0469	0.0629	0.0624	0.0617	59.5	10.2	7000	0.341	2.04	154.7	2.93	0.102	0.117	0.160	0.276	0.327	0.0534
800	0.0367	0.0507	0.0500	0.0490	75.6	10.2	6400	0.376	2.24	170.6	2.87	0.0983	0.113	0.156	0.276	0.317	0.0503
1000	0.0291	0.0392	0.0392	0.0396	94.6	10.2	5400	0.385	2.46	178.4	2.10	0.0892	0.104	0.130	0.276	0.293	0.0422

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A											
	In air					In ground			In underground ducts			
												
mm ²	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond
50	175	196	164	171	125	161	164	159	146	149	145	135
70	216	244	201	214	159	199	199	194	179	179	175	169
95	261	291	245	259	189	234	234	231	209	206	209	200
120	299	333	280	295	215	264	261	261	238	234	236	229
150	336	374	316	335	240	294	290	294	264	258	264	254
185	384	423	361	381	271	330	324	330	294	285	295	286
240	449	490	425	450	315	379	365	381	334	320	340	330
300	509	553	484	514	356	420	404	429	370	353	380	370
400	584	629	560	595	425	475	449	488	414	389	430	438
500	673	714	650	690	486	534	498	554	463	429	485	496
630	764	803	749	795	554	594	545	625	508	464	540	560
800	863	897	855	910	624	654	593	699	558	503	603	625
1000	998	1008	1007	1067	732	733	647	797	618	547	682	728

19/33kV Three Core Cu/XLPE/CWS/PVC/HDPE



- 1 Compacted Cu conductor
- 2 Conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Copper wire screen
- 7 Non-hygroscopic filler
- 8 Non-hygroscopic tape
- 9 PVC inner sheath
- 10 HDPE outer sheath

Properties:

Rated voltage	19/33kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.1
Fault Level	up to 10kA/s or customer requirements

Application:

Cables are designed for fixed installation, for laying in the ground, for indoor application and in cable ducts.

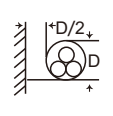
Structural Parameters:

Nominal conductor area mm ²	Approx. diameter of conductor mm	Nominal thickness of insulation mm	Nominal diameter over insulation mm	Nominal screen area mm ²	No. & diameter of screen wire No./mm	Nominal diameter over wire screen mm	Nominal thickness of outer sheath		Approx. overall diameter of cable mm	Approx. weight of cable kg/km	Max. allowable pulling force of conductor kN	Min. bending radius	
							Inner layer mm	Outer layer mm				During installation mm	Installed mm
50	8.1	8.0	27.0	49.4	29/0.85	29.6	1.5	1.7	70.5	4732	10.5	1760	1050
70	9.8	8.0	28.7	68.1	40/0.85	31.3	1.6	1.7	74.3	5769	14.7	1850	1110
95	11.4	8.0	30.3	68.1	40/0.85	32.9	1.7	1.7	78.0	6770	20.0	1950	1170
120	12.9	8.0	31.8	68.1	40/0.85	34.4	1.7	1.8	81.5	7700	25.2	2030	1220
150	14.4	8.0	33.3	68.1	40/0.85	35.9	1.8	1.8	84.9	8731	31.5	2120	1270
185	16.0	8.0	34.9	68.1	40/0.85	37.5	1.8	1.9	88.6	10017	38.9	2210	1320
240	18.4	8.0	37.3	68.1	40/0.85	39.9	1.9	2.0	94.1	12033	50.4	2350	1410
300	20.6	8.0	39.5	68.1	40/0.85	42.1	2.0	2.0	99.1	14122	63.0	2470	1480
400	23.4	8.0	42.3	68.1	40/0.85	44.9	2.1	2.2	105.6	16974	84.0	2640	1580
500	26.2	8.0	45.5	68.1	40/0.85	48.1	2.2	2.3	112.8	20619	105.0	2820	1690

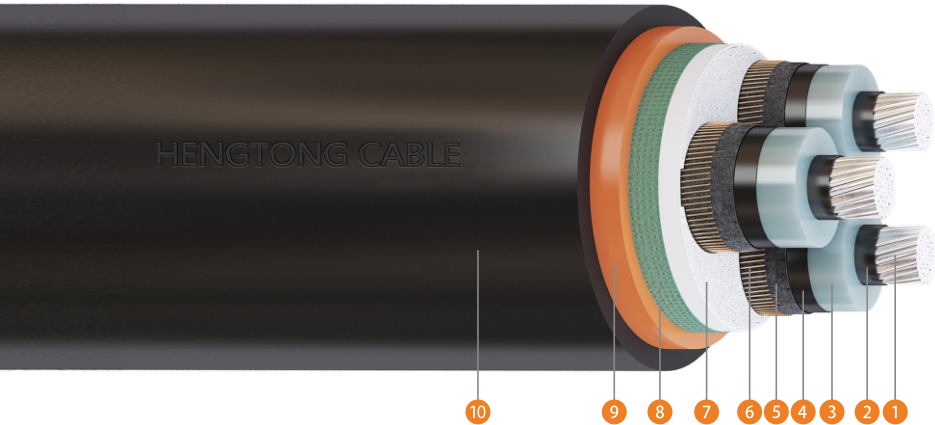
Electrical Characteristics:

Nominal conductor area mm ²	Max. DC resistance of conductor at 20°C Ω/km	Max. AC resistance of conductor at 90°C Ω/km	Fault current carrying of conductor for 1 second kA	Fault current carrying of screen for 1 second kA	Insulation resistance at 20°C MΩ/km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	Inductive reactance at 50Hz and 90°C Ω/km	Screen DC resistance at 20°C Ω/km	Zero sequence resistance at 20°C Ω/km	Zero sequence reactance at 50Hz Ω/km
50	0.387	0.494	7.2	7.3	17000	0.142	0.847	64.4	4.04	0.141	0.384	0.771	0.1010
70	0.268	0.342	10.0	10.1	15300	0.158	0.942	71.6	3.81	0.132	0.279	0.547	0.0911
95	0.193	0.247	13.6	10.1	14000	0.173	1.03	78.3	3.65	0.126	0.279	0.472	0.0849
120	0.153	0.196	17.2	10.1	12900	0.186	1.11	84.5	3.53	0.121	0.279	0.432	0.0801
150	0.124	0.159	21.5	10.1	12000	0.200	1.19	90.7	3.43	0.117	0.279	0.403	0.0760
185	0.0991	0.128	26.5	10.1	11200	0.214	1.28	97.2	3.34	0.113	0.279	0.378	0.0723
240	0.0754	0.0978	34.3	10.1	10200	0.236	1.41	107.0	3.24	0.108	0.279	0.354	0.0675
300	0.0601	0.0788	42.9	10.1	9400	0.256	1.53	115.9	3.16	0.104	0.279	0.339	0.0640
400	0.0470	0.0628	57.2	10.1	8600	0.280	1.67	127.2	3.08	0.100	0.279	0.326	0.0602
500	0.0366	0.0504	71.5	10.1	7800	0.308	1.84	139.9	3.00	0.097	0.279	0.315	0.0575

Current Ratings:

Nominal conductor area mm ²	Continuous current-carrying capacity, A				
	In air			In ground	
					
50	204	217	156	205	170
70	252	269	198	250	213
95	306	328	238	299	255
120	352	377	271	341	290
150	397	427	304	381	324
185	454	488	345	431	366
240	533	575	402	499	424
300	609	658	456	563	478
400	701	759	542	640	562
500	797	864	610	718	630

19/33kV Three Core Al/XLPE/CWS/PVC/HDPE



- 1 Compacted Al conductor
- 2 Conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Copper wire screen
- 7 Non-hygroscopic filler
- 8 Non-hygroscopic tape
- 9 PVC inner sheath
- 10 HDPE outer sheath

Properties:

Rated voltage	19/33kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.1
Fault Level	up to 10kA/s or customer requirements

Application:

Cables are designed for fixed installation, for laying in the ground, for indoor application and in cable ducts.

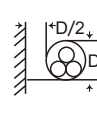
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal diameter over insulation	Nominal screen area	No. & diameter of screen wire	Nominal diameter over wire screen	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius	
							Inner layer	Outer layer				During installation	Installed
mm²	mm	mm	mm	mm²	No./mm	mm	mm	mm	mm	kg/km	kN	mm	mm
50	8.1	8.0	27.0	32.1	38/0.6	29.1	1.6	1.6	69.5	3707	6.0	1730	1040
70	9.8	8.0	28.7	44.4	26/0.85	31.3	1.6	1.7	74.4	4314	8.4	1860	1110
95	11.4	8.0	30.3	61.2	36/0.85	32.9	1.7	1.7	78.1	4983	11.4	1950	1170
120	12.9	8.0	31.8	68.1	40/0.85	34.4	1.7	1.8	81.5	5518	14.4	2030	1220
150	14.4	8.0	33.3	68.1	40/0.85	35.9	1.8	1.8	84.9	6023	18.0	2120	1270
185	16.0	8.0	34.9	68.1	40/0.85	37.5	1.8	1.9	88.6	6628	22.2	2210	1320
240	18.4	8.0	37.3	68.1	40/0.85	39.9	1.9	2.0	94.1	7570	28.8	2350	1410
300	20.6	8.0	39.5	68.1	40/0.85	42.1	2.0	2.0	99.1	8497	36.0	2470	1480
400	23.4	8.0	42.3	68.1	40/0.85	44.9	2.1	2.2	105.7	9807	48.0	2640	1580
500	26.2	8.0	45.5	68.1	40/0.85	48.1	2.2	2.3	113.0	11418	60.0	2820	1690

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C	Screen DC resistance at 20°C	Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
mm²	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
50	0.641	0.822	4.7	4.7	17000	0.142	0.848	64.4	4.04	0.139	0.591	1.23	0.1005
70	0.443	0.568	6.6	6.6	15300	0.158	0.943	71.7	3.81	0.132	0.427	0.873	0.0942
95	0.320	0.411	9.0	9.2	14000	0.173	1.03	78.5	3.65	0.126	0.310	0.630	0.0848
120	0.253	0.325	11.3	10.2	12900	0.186	1.11	84.4	3.53	0.121	0.279	0.533	0.0785
150	0.206	0.265	14.2	10.2	12000	0.200	1.19	90.7	3.43	0.117	0.279	0.486	0.0754
185	0.164	0.211	17.5	10.2	11200	0.214	1.28	97.1	3.34	0.113	0.279	0.444	0.0723
240	0.125	0.161	22.7	10.2	10200	0.236	1.41	107.1	3.24	0.108	0.279	0.405	0.0691
300	0.100	0.130	28.3	10.2	9400	0.256	1.53	116.1	3.16	0.104	0.279	0.380	0.0628
400	0.0778	0.102	37.8	10.2	8600	0.280	1.67	127.0	3.08	0.100	0.279	0.358	0.0597
500	0.0605	0.080	47.2	10.2	7800	0.309	1.84	140.2	3.00	0.097	0.279	0.341	0.0565

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm²					
50	158	168	121	159	132
70	196	209	153	194	165
95	237	254	184	232	197
120	272	292	210	264	224
150	307	330	236	295	251
185	351	378	268	334	284
240	413	445	312	388	330
300	472	509	354	438	372
400	548	593	424	502	440
500	632	686	484	570	499