Hengtong Cable Australia Pty Ltd
ABN 20 620 520 541
A : Westend on Sixth, Level 1,
74 Smith Street, Southport QLD 4215
PO Box 10332, Southport QLD 4215
T : 07 5636 6060
F : 07 5636 6061
M: 0438 099 888
E : sales@hengtongaustralia.com
W: www.hengtongaustralia.com

Version 1-2024

MEDIUM VOLTAGE

Cables 3.3 - 33kV

EXCELLENCE IS JUST THE BEGINNING

Contents

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.

1.9/3.3kV 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	1.9/3.3kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
16	4.8	2.0	11.7	15.3	27/0.85	14.3	1.0	1.0	20.7	597	1.1	510	300
25	6.0	2.0	12.9	23.8	42/0.85	15.5	1.0	1.0	21.9	788	1.8	540	320
35	7.0	2.0	13.9	34.0	40/1.04	16.9	1.0	1.0	23.2	998	2.5	580	340
50	8.1	2.0	15.0	49.5	28/1.5	18.9	1.0	1.0	25.3	1292	3.5	630	370
70	9.8	2.0	16.7	68.9	39/1.5	20.6	1.0	1.0	27.0	1702	4.9	670	400
95	11.4	2.0	18.3	68.9	39/1.5	22.2	1.0	1.0	28.6	1975	6.7	710	420
120	12.9	2.0	19.8	68.9	39/1.5	23.7	1.0	1.0	30.1	2231	8.4	750	450
150	14.4	2.0	21.3	68.9	39/1.5	25.2	1.0	1.0	31.6	2514	10.5	780	470
185	16.0	2.0	22.9	68.9	39/1.5	26.8	1.0	1.0	33.2	2881	13.0	820	490
240	18.4	2.0	25.3	68.9	39/1.5	29.2	1.0	1.0	35.6	3452	16.8	880	530
300	20.6	2.0	27.5	68.9	39/1.5	31.4	1.0	1.0	37.8	4051	21.0	940	560
400	23.4	2.0	30.3	68.9	39/1.5	34.2	1.0	1.1	40.6	4868	28.0	1010	600
500	26.2	2.2	33.9	68.9	39/1.5	37.8	1.1	1.2	44.1	5957	35.0	1100	660
630	29.8	2.4	37.9	68.9	39/1.5	41.8	1.1	1.3	48.1	7370	44.1	1200	720
800	33.6	2.6	40.6	68.9	39/1.5	45.8	1.3	1.3	51.6	8858	54.4	1290	774
1000	38.5	2.8	45.9	68.9	39/1.5	51.1	1.4	1.4	57.3	10833	68.0	1430	860

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
16	1.15	1.47	1.47	1.47	2.3	2.3	8500	0.283	0.169	1.28	1.23	0.151	0.165	0.209	1.24	2.39	0.0843
25	0.727	0.927	0.927	0.927	3.6	3.5	7400	0.326	0.194	1.48	1.19	0.140	0.155	0.199	0.796	1.52	0.0738
35	0.524	0.668	0.668	0.668	5.0	5.0	6600	0.361	0.215	1.64	1.16	0.135	0.149	0.193	0.558	1.08	0.0687
50	0.387	0.494	0.494	0.494	7.2	7.4	6000	0.400	0.239	1.81	1.14	0.131	0.145	0.189	0.383	0.770	0.0658
70	0.268	0.342	0.342	0.342	10.0	10.2	5200	0.459	0.274	2.08	1.11	0.123	0.137	0.181	0.275	0.543	0.0586
95	0.193	0.247	0.247	0.246	13.6	10.2	4600	0.515	0.308	2.34	1.09	0.117	0.131	0.175	0.275	0.468	0.0545
120	0.153	0.196	0.196	0.196	17.2	10.2	4200	0.568	0.339	2.58	1.08	0.112	0.127	0.170	0.275	0.428	0.0515
150	0.124	0.159	0.159	0.159	21.5	10.2	3800	0.620	0.370	2.81	1.07	0.109	0.123	0.167	0.275	0.399	0.0490
185	0.0991	0.128	0.127	0.127	26.5	10.2	3500	0.676	0.404	3.07	1.05	0.105	0.120	0.163	0.275	0.374	0.0467
240	0.0754	0.0980	0.0976	0.0971	34.3	10.2	3100	0.760	0.454	3.45	1.04	0.101	0.115	0.159	0.275	0.351	0.0440
300	0.0601	0.0790	0.0785	0.0779	42.9	10.2	2800	0.837	0.499	3.80	1.03	0.0973	0.112	0.155	0.275	0.335	0.0419
400	0.0470	0.0631	0.0624	0.0616	57.2	10.2	2500	0.934	0.558	4.24	1.02	0.0938	0.108	0.152	0.275	0.322	0.0398
500	0.0366	0.0508	0.0499	0.0487	71.5	10.2	2500	0.955	0.570	4.33	0.930	0.0920	0.107	0.150	0.275	0.312	0.0395
630	0.0283	0.0413	0.0402	0.0387	90.1	10.2	2400	0.986	0.588	4.47	0.850	0.0894	0.104	0.147	0.275	0.304	0.0383
800	0.0221	0.0354	0.0354	0.0330	114.2	10.2	2200	0.999	0.651	5.01	0.780	0.0880	0.104	0.128	0.275	0.285	0.0375
1000	0.0176	0.0312	0.0312	0.0298	143.1	10.2	2100	1.13	0.723	5.52	0.650	0.0870	0.103	0.126	0.275	0.281	0.0368

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A												
	In air					In ground			In underground ducts				
	D/2 D	D/2 D		D/2 D									
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
16	108	128	99	105	74	111	113	108	97	98	96	86
25	140	170	130	140	95	145	145	140	125	125	125	110
35	175	205	160	170	120	175	175	170	150	150	150	135
50	210	245	195	205	140	205	205	200	175	175	175	160
70	260	305	245	260	180	245	245	245	210	205	210	200
95	315	365	295	315	215	290	285	290	245	240	250	235
120	360	415	340	360	240	330	320	330	275	265	280	270
150	405	460	385	410	280	365	350	370	305	290	315	305
185	460	520	440	470	315	405	385	415	340	320	350	345
240	535	600	520	555	370	460	435	475	385	360	405	395
300	605	665	590	635	430	510	475	535	425	390	450	455
400	690	745	680	730	490	565	520	600	470	425	505	515
500	785	830	780	835	555	625	565	670	515	465	565	575
630	875	915	880	945	620	680	605	745	555	490	615	640
800	985	1015	1005	1075	725	740	650	820	615	535	690	730
1000	1145	1125	1205	1285	850	835	700	955	655	565	750	850

1.9/3.3kV Single 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 tape
8. PVC inner sheath
9. HDPE outer sheath

Properties:

Rated voltage	1.9/3.3kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
25	6.0	2.0	12.9	15.9	28/0.85	15.5	1.0	1.0	21.9	558	1.0	540	320
35	7.0	2.0	13.9	22.1	39/0.85	16.5	1.0	1.0	22.9	667	1.4	570	340
50	8.1	2.0	15.0	31.5	22/1.35	18.6	1.0	1.0	25.0	826	2.0	620	370
70	9.8	2.0	16.7	44.4	31/1.35	20.3	1.0	1.0	26.7	1045	2.8	660	400
95	11.4	2.0	18.3	61.5	43/1.35	21.9	1.0	1.0	28.3	1316	3.8	700	420
120	12.9	2.0	19.8	68.7	48/1.35	23.4	1.0	1.0	29.8	1486	4.8	740	440
150	14.4	2.0	21.3	68.7	48/1.35	24.9	1.0	1.0	31.3	1595	6.0	780	460
185	16.0	2.0	22.9	68.7	48/1.35	26.5	1.0	1.0	32.9	1734	7.4	820	490
240	18.4	2.0	25.3	68.7	48/1.35	28.9	1.0	1.0	35.3	1945	9.6	880	520
300	20.6	2.0	27.5	68.7	48/1.35	31.1	1.0	1.0	37.5	2159	12.0	930	560
400	23.4	2.0	30.3	68.7	48/1.35	33.9	1.0	1.1	40.3	2455	16.0	1000	600
500	26.2	2.0	33.9	68.7	48/1.35	37.5	1.1	1.2	43.9	2863	20.0	1090	650
630	29.8	2.2	37.9	68.7	48/1.35	41.5	1.2	1.2	47.9	3365	25.2	1190	710
800	33.8	2.4	42.3	68.7	48/1.35	45.9	1.2	1.3	52.3	3973	32.0	1300	780
1000	38.5	2.6	45.9	68.7	48/1.35	50.8	1.4	1.4	57.0	4597	39.0	1430	850

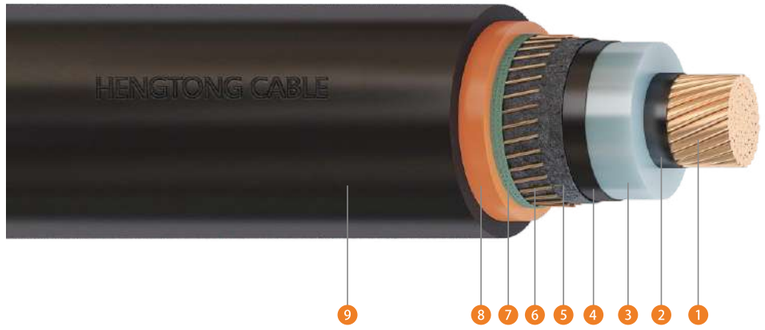
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
25	1.20	1.54	1.54	1.54	2.4	2.4	7400	0.326	0.195	1.48	1.19	0.141	0.155	0.199	1.19	2.39	0.0754
35	0.868	1.11	1.11	1.11	3.3	3.3	6600	0.361	0.215	1.64	1.16	0.134	0.148	0.192	0.859	1.73	0.0691
50	0.641	0.822	0.822	0.822	4.7	4.7	6000	0.400	0.239	1.81	1.14	0.130	0.145	0.188	0.602	1.24	0.0660
70	0.443	0.568	0.568	0.568	6.6	6.6	5200	0.459	0.274	2.08	1.11	0.122	0.137	0.180	0.427	0.873	0.0597
95	0.320	0.411	0.411	0.410	9.0	9.1	4600	0.515	0.307	2.34	1.09	0.116	0.131	0.174	0.309	0.630	0.0534
120	0.253	0.325	0.325	0.325	11.3	10.2	4200	0.568	0.339	2.58	1.08	0.112	0.126	0.170	0.276	0.533	0.0503
150	0.206	0.265	0.265	0.264	14.2	10.2	3800	0.620	0.370	2.81	1.07	0.108	0.123	0.166	0.276	0.486	0.0471
185	0.164	0.211	0.211	0.211	17.5	10.2	3500	0.676	0.404	3.07	1.05	0.105	0.119	0.163	0.276	0.444	0.0471
240	0.125	0.161	0.161	0.161	22.7	10.2	3100	0.760	0.454	3.45	1.04	0.100	0.115	0.158	0.276	0.405	0.0440
300	0.100	0.130	0.129	0.129	28.3	10.2	2800	0.837	0.500	3.80	1.03	0.0968	0.112	0.155	0.276	0.380	0.0408
400	0.0778	0.102	0.101	0.101	37.8	10.2	2500	0.934	0.558	4.24	1.02	0.0933	0.108	0.151	0.276	0.358	0.0377
500	0.0605	0.0802	0.0796	0.0789	47.2	10.2	2500	0.957	0.571	4.34	0.930	0.0917	0.106	0.150	0.276	0.341	0.0377
630	0.0469	0.0636	0.0628	0.0618	59.5	10.2	2400	0.987	0.589	4.48	0.850	0.0892	0.104	0.147	0.276	0.327	0.0377
800	0.0367	0.0516	0.0505	0.0492	75.6	10.2	2300	1.02	0.611	4.64	0.783	0.0867	0.101	0.145	0.276	0.317	0.0377
1000	0.0291	0.0434	0.0434	0.0412	94.6	10.2	2100	1.13	0.723	5.52	0.650	0.0865	0.100	0.126	0.276	0.293	0.0369

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
25	110	130	100	105	75	110	110	105	95	100	95	85
35	135	160	120	130	90	135	135	130	115	115	115	100
50	160	190	150	160	110	160	160	155	135	140	135	125
70	205	240	185	200	135	195	195	190	165	165	165	150
95	245	290	230	245	165	230	230	225	195	195	195	185
120	285	330	265	280	190	260	255	255	220	215	220	210
150	320	370	300	320	220	290	285	285	245	240	250	235
185	365	420	340	365	250	325	315	325	275	265	280	270
240	430	490	405	435	290	370	360	375	315	300	325	310
300	490	550	465	495	330	415	395	420	350	335	365	350
400	570	625	540	580	390	465	440	480	395	370	415	410
500	655	715	635	680	450	525	485	545	445	410	470	470
630	745	800	730	780	510	580	535	615	490	445	525	530
800	845	890	835	895	605	640	580	685	540	485	585	615
1000	985	1005	995	1065	705	725	635	795	590	525	655	705

3.8/6.6kV 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	3.8/6.6kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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.

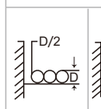
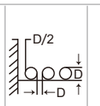
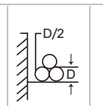
Structural Parameters:

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
16	4.8	2.5	12.7	15.3	27/0.85	15.3	1.0	1.0	21.7	628	1.1	540	320
25	6.0	2.5	13.9	23.8	42/0.85	16.5	1.0	1.0	22.9	821	1.8	570	340
35	7.0	2.5	14.9	34.0	40/1.04	17.9	1.0	1.0	24.2	1033	2.5	600	360
50	8.1	2.5	16.0	49.5	28/1.5	19.9	1.0	1.0	26.3	1328	3.5	650	390
70	9.8	2.5	17.7	68.9	39/1.5	21.6	1.0	1.0	28.0	1740	4.9	690	410
95	11.4	2.5	19.3	68.9	39/1.5	23.2	1.0	1.0	29.6	2016	6.7	730	440
120	12.9	2.5	20.8	68.9	39/1.5	24.7	1.0	1.0	31.1	2274	8.4	770	460
150	14.4	2.5	22.3	68.9	39/1.5	26.2	1.0	1.0	32.6	2560	10.5	810	480
185	16.0	2.5	23.9	68.9	39/1.5	27.8	1.0	1.0	34.2	2928	13.0	850	510
240	18.4	2.6	26.5	68.9	39/1.5	30.4	1.0	1.0	36.8	3513	16.8	910	550
300	20.6	2.8	29.1	68.9	39/1.5	33.0	1.0	1.1	39.4	4138	21.0	980	590
400	23.4	3.0	32.3	68.9	39/1.5	36.2	1.1	1.1	42.6	4986	28.0	1060	630
500	26.2	3.2	35.9	68.9	39/1.5	39.8	1.1	1.2	46.1	6086	35.0	1150	690
630	29.8	3.2	39.5	68.9	39/1.5	43.4	1.2	1.2	49.7	7482	44.1	1240	740
800	33.6	3.2	41.8	68.9	39/1.5	47.0	1.4	.1.4	53.0	8963	54.4	1320	790
1000	38.5	3.2	46.7	68.9	39/1.5	51.9	1.4	1.4	58.1	10889	68.0	1450	870

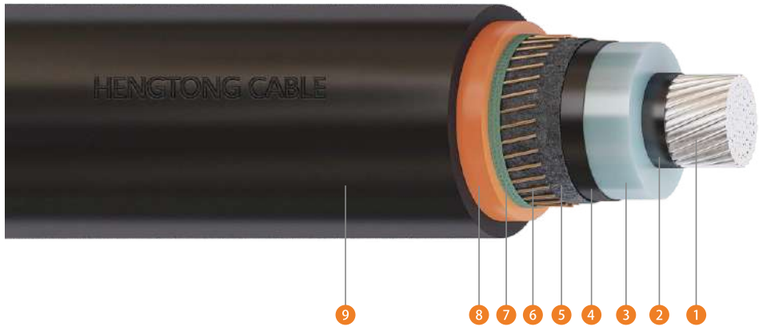
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
16	1.15	1.47	1.47	1.47	2.3	2.3	10100	0.238	0.284	4.32	2.06	0.154	0.168	0.212	1.24	2.39	0.0891
25	0.727	0.927	0.927	0.927	3.6	3.5	8800	0.272	0.325	4.94	1.98	0.143	0.158	0.201	0.796	1.52	0.0782
35	0.524	0.668	0.668	0.668	5.0	5.0	8000	0.301	0.359	5.46	1.93	0.137	0.152	0.195	0.558	1.08	0.0728
50	0.387	0.494	0.494	0.494	7.2	7.4	7200	0.332	0.396	6.02	1.89	0.133	0.148	0.191	0.383	0.770	0.0697
70	0.268	0.342	0.342	0.342	10.0	10.2	6300	0.380	0.453	6.89	1.84	0.125	0.140	0.183	0.275	0.543	0.0620
95	0.193	0.247	0.247	0.246	13.6	10.2	5600	0.425	0.507	7.71	1.80	0.119	0.134	0.177	0.275	0.468	0.0577
120	0.153	0.196	0.196	0.196	17.2	10.2	5100	0.467	0.557	8.47	1.77	0.114	0.129	0.173	0.275	0.428	0.0544
150	0.124	0.159	0.159	0.159	21.5	10.2	4700	0.509	0.608	9.24	1.75	0.111	0.125	0.169	0.275	0.399	0.0517
185	0.0991	0.128	0.127	0.127	26.5	10.2	4300	0.554	0.661	10.0	1.73	0.107	0.121	0.165	0.275	0.374	0.0493
240	0.0754	0.0979	0.0976	0.0971	34.3	10.2	4000	0.599	0.716	10.9	1.65	0.103	0.117	0.161	0.275	0.351	0.0468
300	0.0601	0.0789	0.0785	0.0779	42.9	10.2	3900	0.616	0.736	11.2	1.52	0.100	0.114	0.158	0.275	0.335	0.0454
400	0.0470	0.0630	0.0623	0.0615	57.2	10.2	3700	0.645	0.770	11.7	1.41	0.0968	0.111	0.155	0.275	0.322	0.0437
500	0.0366	0.0506	0.0497	0.0487	71.5	10.2	3500	0.677	0.809	12.3	1.32	0.0948	0.109	0.153	0.275	0.312	0.0430
630	0.0283	0.0411	0.0400	0.0387	90.1	10.2	3100	0.756	0.902	13.7	1.30	0.0914	0.106	0.149	0.275	0.304	0.0408
800	0.0221	0.0349	0.0349	0.0317	114.2	10.2	2600	0.888	1.09	15.9	1.20	0.0880	0.104	0.149	0.275	0.285	0.0396
1000	0.0176	0.0298	0.0298	0.0293	143.1	10.2	2300	0.982	1.18	18.3	1.18	0.0870	0.103	0.151	0.275	0.281	0.0372

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	Solid bond
16	113	133	104	110	79	116	118	113	102	103	101	91	
25	145	173	135	144	101	149	150	145	130	130	129	115	
35	180	210	165	175	124	179	179	174	155	155	154	139	
50	214	250	199	210	145	209	209	204	180	179	179	164	
70	265	308	249	264	183	250	249	249	215	210	215	203	
95	321	370	300	320	219	296	290	295	251	245	255	240	
120	365	419	344	366	246	334	324	335	281	270	286	274	
150	411	466	389	415	285	369	355	374	310	295	319	309	
185	468	524	444	474	321	410	390	419	344	325	355	349	
240	544	602	523	559	374	465	438	480	389	363	408	400	
300	614	669	595	638	435	515	478	538	429	394	454	460	
400	699	749	684	733	495	570	523	604	473	429	508	519	
500	788	833	783	838	559	628	567	674	520	468	569	580	
630	878	915	885	949	624	684	608	748	560	495	620	643	
800	987	1017	1007	1078	727	742	653	822	617	537	692	732	
1000	1143	1127	1208	1287	853	837	702	958	657	567	752	853	

3.8/6.6kV Single 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 tape
8. PVC inner sheath
9. HDPE outer sheath

Properties:

Rated voltage	3.8/6.6kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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.

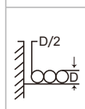
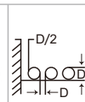
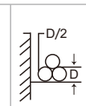
Structural Parameters:

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
25	6.0	2.5	13.9	15.9	28/0.85	16.5	1.0	1.0	22.9	591	1.0	570	340
35	7.0	2.5	14.9	22.1	39/0.85	17.5	1.0	1.0	23.9	701	1.4	590	350
50	8.1	2.5	16.0	31.5	22/1.35	19.6	1.0	1.0	26.0	862	2.0	650	390
70	9.8	2.5	17.7	44.4	31/1.35	21.3	1.0	1.0	27.7	1084	2.8	690	410
95	11.4	2.5	19.3	61.5	43/1.35	22.9	1.0	1.0	29.3	1357	3.8	730	430
120	12.9	2.5	20.8	68.7	48/1.35	24.4	1.0	1.0	30.8	1530	4.8	770	460
150	14.4	2.5	22.3	68.7	48/1.35	25.9	1.0	1.0	32.3	1641	6.0	800	480
185	16.0	2.5	23.9	68.7	48/1.35	27.5	1.0	1.0	33.9	1782	7.4	840	500
240	18.4	2.6	26.5	68.7	48/1.35	30.1	1.0	1.0	36.5	2006	9.6	910	540
300	20.6	2.8	29.1	68.7	48/1.35	32.7	1.0	1.1	39.1	2246	12.0	970	580
400	23.4	3.0	32.3	68.7	48/1.35	35.9	1.1	1.1	42.3	2574	16.0	1050	630
500	26.2	3.2	35.9	68.7	48/1.35	39.5	1.1	1.2	45.9	2992	20.0	1140	680
630	29.8	3.2	39.5	68.7	48/1.35	43.1	1.2	1.2	49.5	3477	25.2	1230	740
800	33.8	3.2	43.5	68.7	48/1.35	47.1	1.3	1.3	53.5	4065	32.0	1330	800
1000	38.5	3.2	46.7	68.7	48/1.35	51.6	1.4	1.4	57.8	4662	39.0	1440	860

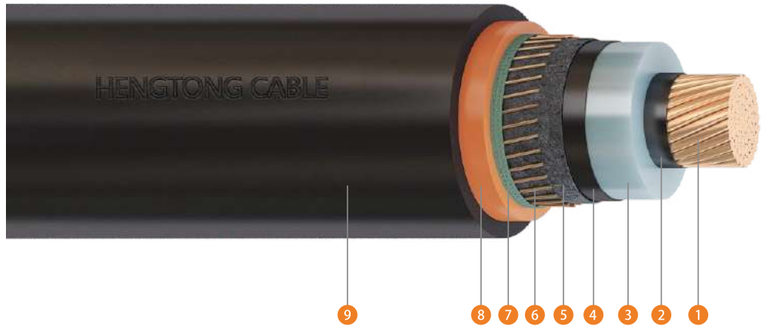
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
25	1.20	1.54	1.54	1.54	2.4	2.4	8800	0.272	0.325	4.94	1.98	0.144	0.158	0.201	1.19	2.39	0.0817
35	0.868	1.11	1.11	1.11	3.3	3.3	8000	0.301	0.359	5.46	1.93	0.136	0.151	0.194	0.859	1.73	0.0723
50	0.641	0.822	0.822	0.822	4.7	4.7	7200	0.332	0.396	6.02	1.89	0.133	0.147	0.191	0.602	1.24	0.0723
70	0.443	0.568	0.568	0.568	6.6	6.6	6300	0.380	0.454	6.90	1.84	0.124	0.139	0.183	0.427	0.873	0.0628
95	0.320	0.411	0.411	0.410	9.0	9.1	5600	0.425	0.507	7.71	1.80	0.118	0.133	0.177	0.309	0.630	0.0565
120	0.253	0.325	0.325	0.325	11.3	10.2	5100	0.467	0.558	8.47	1.77	0.114	0.128	0.172	0.276	0.533	0.0534
150	0.206	0.265	0.265	0.264	14.2	10.2	4700	0.509	0.608	9.24	1.75	0.110	0.124	0.168	0.276	0.486	0.0503
185	0.164	0.211	0.211	0.211	17.5	10.2	4300	0.554	0.661	10.1	1.73	0.106	0.121	0.165	0.276	0.444	0.0471
240	0.125	0.161	0.161	0.161	22.7	10.2	4000	0.599	0.715	10.9	1.65	0.102	0.117	0.160	0.276	0.405	0.0471
300	0.100	0.130	0.129	0.129	28.3	10.2	3900	0.616	0.735	11.2	1.52	0.100	0.114	0.158	0.276	0.380	0.0440
400	0.0778	0.102	0.101	0.101	37.8	10.2	3700	0.645	0.770	11.7	1.41	0.0964	0.111	0.155	0.276	0.358	0.0440
500	0.0605	0.0801	0.0795	0.0788	47.2	10.2	3500	0.678	0.809	12.3	1.32	0.0946	0.109	0.153	0.276	0.341	0.0408
630	0.0469	0.0635	0.0627	0.0618	59.5	10.2	3100	0.757	0.904	13.7	1.30	0.0911	0.106	0.149	0.276	0.327	0.0408
800	0.0367	0.0514	0.0504	0.0492	75.6	10.2	2800	0.844	1.01	15.3	1.29	0.0880	0.103	0.146	0.276	0.317	0.0377
1000	0.0291	0.0387	0.0387	0.0399	94.6	10.2	2300	0.982	1.18	18.3	1.18	0.0870	0.103	0.151	0.276	0.293	0.0372

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	Solid bond
25	115	135	105	110	79	115	115	110	100	105	100	90	
35	139	164	126	134	95	139	139	134	120	121	119	106	
50	166	196	154	164	114	164	164	159	141	144	140	129	
70	209	244	191	204	141	199	199	194	171	170	170	156	
95	251	294	234	249	170	234	234	230	201	199	200	189	
120	289	334	269	285	194	264	260	261	225	220	226	214	
150	325	375	304	324	224	294	289	291	250	244	254	241	
185	370	424	346	370	254	329	320	329	280	271	285	274	
240	435	493	410	439	294	375	363	380	320	305	329	315	
300	495	554	469	501	340	419	399	425	355	338	369	360	
400	573	629	545	585	396	470	444	485	400	374	419	415	
500	660	717	639	683	455	529	490	550	449	414	474	474	
630	750	803	734	785	516	585	538	620	494	450	530	534	
800	849	894	840	900	610	645	584	691	544	489	590	619	
1000	987	1008	997	1067	707	727	638	797	592	527	658	707	

6.35/11kV 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	6.35/11kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
16	4.8	3.4	14.5	15.3	27/0.85	17.1	1.0	1.0	23.5	688	1.1	580	350
25	6.0	3.4	15.7	23.8	42/0.85	18.3	1.0	1.0	24.7	884	1.8	610	360
35	7.0	3.4	16.7	34.0	40/1.04	19.7	1.0	1.0	26.0	1099	2.5	650	390
50	8.1	3.4	17.8	49.5	28/1.5	21.7	1.0	1.0	28.1	1396	3.5	700	420
70	9.8	3.4	19.5	68.9	39/1.5	23.4	1.0	1.0	29.8	1814	4.9	740	440
95	11.4	3.4	21.1	68.9	39/1.5	25.0	1.0	1.0	31.4	2094	6.7	780	470
120	12.9	3.4	22.6	68.9	39/1.5	26.5	1.0	1.0	32.9	2355	8.4	820	490
150	14.4	3.4	24.1	68.9	39/1.5	28.0	1.0	1.0	34.4	2645	10.5	850	510
185	16.0	3.4	25.7	68.9	39/1.5	29.6	1.0	1.0	36.0	3018	13.0	890	530
240	18.4	3.4	28.1	68.9	39/1.5	32.0	1.0	1.1	38.4	3598	16.8	950	570
300	20.6	3.4	30.3	68.9	39/1.5	34.2	1.0	1.1	40.6	4206	21.0	1010	600
400	23.4	3.4	33.1	68.9	39/1.5	37.0	1.1	1.1	43.4	5035	28.0	1080	650
500	26.2	3.4	36.3	68.9	39/1.5	40.2	1.1	1.2	46.5	6112	35.0	1160	690
630	29.8	3.4	39.9	68.9	39/1.5	43.8	1.2	1.2	50.1	7510	44.1	1250	750
800	33.6	3.4	42.2	68.9	39/1.5	47.4	1.3	1.4	53.4	8993	54.4	1330	800
1000	38.5	3.4	47.1	68.9	39/1.5	52.3	1.4	1.5	58.7	10950	68.0	1460	880

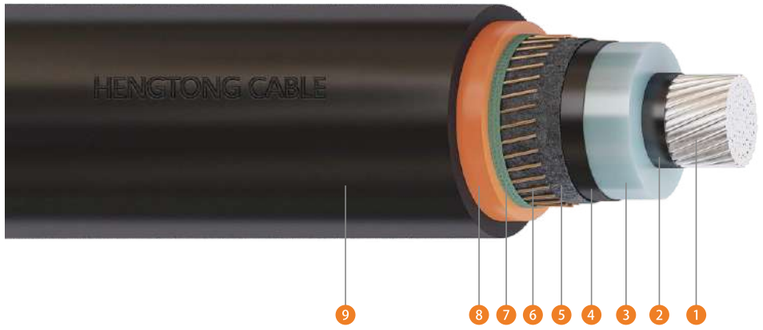
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
16	1.15	1.47	1.47	1.47	2.3	2.3	12700	0.190	0.379	9.63	2.75	0.159	0.173	0.217	1.24	2.39	0.0969
25	0.727	0.927	0.927	0.927	3.6	3.5	11200	0.216	0.430	10.9	2.62	0.148	0.163	0.206	0.796	1.52	0.0854
35	0.524	0.668	0.668	0.668	5.0	5.0	10200	0.237	0.472	12.0	2.54	0.142	0.156	0.200	0.558	1.08	0.0796
50	0.387	0.494	0.494	0.494	7.2	7.4	9300	0.260	0.518	13.2	2.47	0.137	0.152	0.195	0.383	0.770	0.0760
70	0.268	0.342	0.342	0.342	10.0	10.2	8100	0.295	0.589	15.0	2.39	0.129	0.144	0.187	0.275	0.543	0.0678
95	0.193	0.247	0.247	0.246	13.6	10.2	7300	0.329	0.656	16.7	2.33	0.123	0.137	0.181	0.275	0.468	0.0631
120	0.153	0.196	0.196	0.196	17.2	10.2	6700	0.360	0.718	18.2	2.28	0.118	0.133	0.176	0.275	0.428	0.0595
150	0.124	0.159	0.159	0.159	21.5	10.2	6100	0.391	0.780	19.8	2.24	0.114	0.128	0.172	0.275	0.399	0.0564
185	0.0991	0.128	0.127	0.127	26.5	10.2	5700	0.424	0.846	21.5	2.21	0.110	0.125	0.168	0.275	0.374	0.0537
240	0.0754	0.0978	0.0975	0.0971	34.3	10.2	5100	0.473	0.945	24.0	2.17	0.105	0.120	0.163	0.275	0.351	0.0504
300	0.0601	0.0789	0.0784	0.0779	42.9	10.2	4600	0.519	1.04	26.3	2.14	0.102	0.116	0.160	0.275	0.335	0.0478
400	0.0470	0.0629	0.0623	0.0615	57.2	10.2	4100	0.576	1.15	29.2	2.11	0.0980	0.113	0.156	0.275	0.322	0.0452
500	0.0366	0.0505	0.0497	0.0487	71.5	10.2	3700	0.641	1.28	32.5	2.09	0.0953	0.110	0.153	0.275	0.312	0.0437
630	0.0283	0.0411	0.0400	0.0387	90.1	10.2	3300	0.715	1.43	36.2	2.06	0.0919	0.106	0.150	0.275	0.304	0.0414
800	0.0221	0.0349	0.0349	0.0317	114.2	10.2	2800	0.890	1.09	38.4	2.02	0.0901	0.104	0.132	0.275	0.285	0.0392
1000	0.0176	0.0298	0.0298	0.0293	143.1	10.2	2400	0.985	1.19	40.2	1.95	0.0872	0.103	0.129	0.275	0.281	0.0370

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A												
	In air					In ground			In underground ducts				
	D/2 D	D/2 D		D/2 D									
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
16	114	134	106	112	81	116	118	113	103	104	101	91
25	149	174	138	145	104	149	150	145	130	130	129	116
35	181	210	169	179	125	178	179	174	155	155	154	140
50	215	250	200	214	150	209	209	204	180	180	180	166
70	269	309	250	268	184	250	249	249	215	213	216	204
95	324	369	301	320	219	296	290	295	254	245	255	241
120	370	420	349	370	256	334	325	335	284	274	289	279
150	415	469	394	419	289	370	355	374	314	300	321	310
185	473	527	449	479	325	413	393	420	348	329	359	350
240	549	603	525	563	375	468	439	483	393	365	410	403
300	618	672	599	639	439	518	479	539	433	398	458	463
400	703	752	688	735	498	573	523	605	474	433	510	519
500	788	833	783	838	559	628	567	674	522	468	569	580
630	878	915	888	949	624	684	608	748	562	498	622	643
800	988	1018	1008	1088	728	743	652	822	618	538	693	733
1000	1148	1128	1208	1288	853	838	703	958	658	568	752	854

6.35/11kV Single 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 tape
8. PVC inner sheath
9. HDPE outer sheath

Properties:

Rated voltage	6.35/11kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
25	6.0	3.4	15.7	15.9	28/0.85	18.3	1.0	1.0	24.7	654	1.0	610	370
35	7.0	3.4	16.7	22.1	39/0.85	19.3	1.0	1.0	25.7	767	1.4	640	380
50	8.1	3.4	17.8	31.5	22/1.35	21.4	1.0	1.0	27.8	931	2.0	690	410
70	9.8	3.4	19.5	44.4	31/1.35	23.1	1.0	1.0	29.5	1157	2.8	730	440
95	11.4	3.4	21.1	61.5	43/1.35	24.7	1.0	1.0	31.1	1434	3.8	770	460
120	12.9	3.4	22.6	68.7	48/1.35	26.2	1.0	1.0	32.6	1611	4.8	810	480
150	14.4	3.4	24.1	68.7	48/1.35	27.7	1.0	1.0	34.1	1726	6.0	850	510
185	16.0	3.4	25.7	68.7	48/1.35	29.3	1.0	1.0	35.7	1871	7.4	890	530
240	18.4	3.4	28.1	68.7	48/1.35	31.7	1.0	1.1	38.1	2092	9.6	950	570
300	20.6	3.4	30.3	68.7	48/1.35	33.9	1.0	1.1	40.3	2314	12.0	1000	600
400	23.4	3.4	33.1	68.7	48/1.35	36.7	1.1	1.1	43.1	2623	16.0	1070	640
500	26.2	3.4	36.3	68.7	48/1.35	39.9	1.1	1.2	46.3	3019	20.0	1150	690
630	29.8	3.4	39.9	68.7	48/1.35	43.5	1.2	1.2	49.9	3506	25.2	1240	740
800	33.8	3.4	43.9	68.7	48/1.35	47.5	1.3	1.3	53.9	4096	32.0	1340	800
1000	38.5	3.4	47.1	68.7	48/1.35	52.0	1.4	1.4	58.2	4695	39.0	1450	870

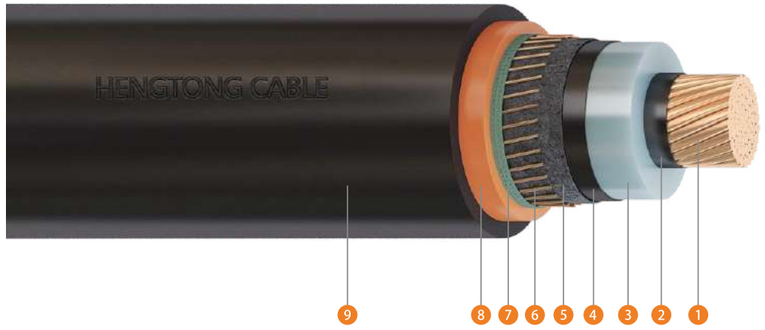
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
25	1.20	1.54	1.54	1.54	2.4	2.4	11200	0.216	0.431	10.9	2.62	0.148	0.163	0.206	1.19	2.39	0.0880
35	0.868	1.11	1.11	1.11	3.3	3.3	10200	0.237	0.473	12.0	2.54	0.141	0.156	0.199	0.859	1.73	0.0785
50	0.641	0.822	0.822	0.822	4.7	4.7	9300	0.260	0.519	13.2	2.47	0.137	0.151	0.195	0.602	1.24	0.0785
70	0.443	0.568	0.568	0.568	6.6	6.6	8100	0.295	0.588	14.9	2.39	0.128	0.143	0.187	0.427	0.873	0.0691
95	0.320	0.411	0.411	0.410	9.0	9.1	7300	0.329	0.656	16.7	2.33	0.122	0.137	0.180	0.309	0.630	0.0628
120	0.253	0.325	0.325	0.325	11.3	10.2	6700	0.360	0.718	18.2	2.28	0.117	0.132	0.176	0.276	0.533	0.0597
150	0.206	0.265	0.265	0.264	14.2	10.2	6100	0.391	0.780	19.8	2.24	0.113	0.128	0.172	0.276	0.486	0.0565
185	0.164	0.211	0.211	0.211	17.5	10.2	5700	0.424	0.846	21.5	2.21	0.110	0.124	0.168	0.276	0.444	0.0534
240	0.125	0.161	0.161	0.161	22.7	10.2	5100	0.473	0.944	24.0	2.17	0.105	0.119	0.163	0.276	0.405	0.0503
300	0.100	0.130	0.129	0.129	28.3	10.2	4600	0.519	1.04	26.3	2.14	0.101	0.116	0.160	0.276	0.380	0.0471
400	0.0778	0.102	0.101	0.101	37.8	10.2	4100	0.576	1.15	29.2	2.11	0.0977	0.112	0.156	0.276	0.358	0.0440
500	0.0605	0.0800	0.0795	0.0788	47.2	10.2	3700	0.642	1.28	32.5	2.09	0.0952	0.110	0.153	0.276	0.341	0.0440
630	0.0469	0.0635	0.0627	0.0618	59.5	10.2	3300	0.716	1.43	36.3	2.06	0.0917	0.106	0.150	0.276	0.327	0.0408
800	0.0367	0.0514	0.0504	0.0492	75.6	10.2	3000	0.798	1.59	40.4	2.04	0.0886	0.103	0.147	0.276	0.317	0.0377
1000	0.0291	0.0403	0.0403	0.0398	94.6	10.2	2400	0.985	1.19	40.2	1.95	0.0872	0.103	0.129	0.276	0.292	0.0370

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A												
	In air					In ground			In underground ducts				
	D/2 D	D/2 D		D/2 D									
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
25	115	135	105	115	80	115	115	115	100	105	100	91
35	140	164	129	135	96	139	139	134	120	121	119	109
50	169	199	155	165	116	164	164	159	144	144	140	130
70	210	244	194	205	144	199	199	194	174	171	170	159
95	254	294	235	250	170	234	234	230	204	200	201	189
120	290	334	270	289	200	264	260	261	226	224	229	219
150	329	375	305	325	225	294	289	293	254	249	255	244
185	374	425	350	374	255	329	320	330	284	274	288	275
240	439	493	414	440	295	375	364	380	324	309	330	319
300	498	554	471	504	346	419	400	426	359	339	369	365
400	574	630	549	585	399	470	444	485	403	375	419	416
500	660	717	639	683	455	529	493	550	449	414	474	474
630	750	803	734	785	519	588	538	620	494	450	530	534
800	849	896	840	900	610	645	584	693	544	489	590	619
1000	986	1008	997	1068	713	728	638	798	597	528	658	707

12.7/22kV 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	12.7/22kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
35	7.0	5.5	20.9	34.0	40/1.04	23.9	1.0	1.0	30.2	1271	2.5	750	450
50	8.1	5.5	22.0	49.5	28/1.5	25.9	1.0	1.0	32.3	1575	3.5	800	480
70	9.8	5.5	23.7	68.9	39/1.5	27.6	1.0	1.0	34.0	2003	4.9	840	500
95	11.4	5.5	25.3	68.9	39/1.5	29.2	1.0	1.0	35.6	2292	6.7	880	530
120	12.9	5.5	26.8	68.9	39/1.5	30.7	1.0	1.0	37.1	2563	8.4	920	550
150	14.4	5.5	28.3	68.9	39/1.5	32.2	1.0	1.1	38.6	2862	10.5	960	570
185	16.0	5.5	29.9	68.9	39/1.5	33.8	1.0	1.1	40.2	3245	13.0	1000	600
240	18.4	5.5	32.3	68.9	39/1.5	36.2	1.1	1.1	42.6	3840	16.8	1060	630
300	20.6	5.5	34.5	68.9	39/1.5	38.4	1.1	1.2	44.8	4462	21.0	1110	670
400	23.4	5.5	37.3	68.9	39/1.5	41.2	1.1	1.3	47.6	5308	28.0	1180	710
500	26.2	5.5	40.5	68.9	39/1.5	44.4	1.2	1.3	50.7	6404	35.0	1260	760
630	29.8	5.5	44.1	68.9	39/1.5	48.0	1.2	1.4	54.3	7824	44.1	1350	810
800	33.6	5.5	46.4	68.9	39/1.5	51.6	1.4	1.4	57.8	9350	54.4	1440	860
1000	38.5	5.5	51.3	68.9	39/1.5	56.5	1.5	1.5	63.1	11343	68.0	1570	940

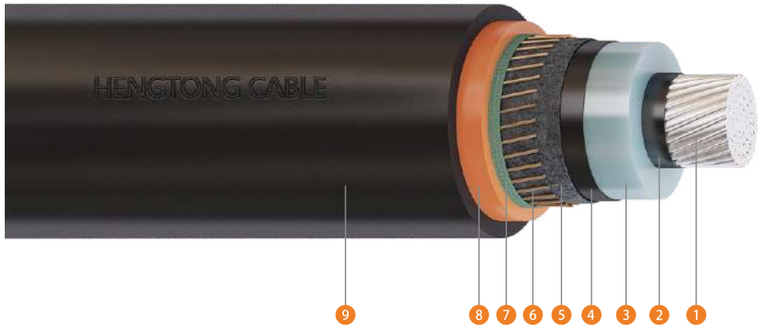
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
35	0.524	0.668	0.668	0.668	5.0	5.0	14400	0.168	0.669	34.0	3.60	0.151	0.166	0.209	0.558	1.08	0.0930
50	0.387	0.494	0.494	0.494	7.2	7.4	13200	0.182	0.727	36.9	3.47	0.146	0.161	0.204	0.383	0.770	0.0888
70	0.268	0.342	0.342	0.342	10.0	10.2	11800	0.205	0.817	41.5	3.31	0.137	0.152	0.195	0.275	0.543	0.0796
95	0.193	0.247	0.247	0.246	13.6	10.2	10700	0.226	0.900	45.7	3.19	0.131	0.145	0.189	0.275	0.468	0.0741
120	0.153	0.196	0.196	0.196	17.2	10.2	9800	0.245	0.978	49.7	3.11	0.126	0.140	0.184	0.275	0.428	0.0698
150	0.124	0.159	0.159	0.159	21.5	10.2	9100	0.265	1.06	53.6	3.04	0.121	0.136	0.179	0.275	0.399	0.0662
185	0.0991	0.127	0.127	0.127	26.5	10.2	8400	0.285	1.14	57.8	2.98	0.117	0.132	0.175	0.275	0.374	0.0629
240	0.0754	0.0977	0.0974	0.0971	34.3	10.2	7600	0.316	1.26	64.1	2.90	0.112	0.126	0.170	0.275	0.351	0.0588
300	0.0601	0.0786	0.0783	0.0778	42.9	10.2	7000	0.345	1.38	69.8	2.85	0.108	0.123	0.166	0.275	0.335	0.0558
400	0.0470	0.0626	0.0621	0.0615	57.2	10.2	6300	0.380	1.52	77.1	2.79	0.104	0.118	0.162	0.275	0.322	0.0526
500	0.0366	0.0502	0.0495	0.0487	71.5	10.2	5700	0.421	1.68	85.3	2.74	0.101	0.115	0.159	0.275	0.312	0.0505
630	0.0283	0.0407	0.0397	0.0386	90.1	10.2	5100	0.467	1.86	94.6	2.69	0.0970	0.112	0.155	0.275	0.304	0.0476
800	0.0221	0.0349	0.0349	0.0317	114.2	10.2	4400	0.520	1.98	102.1	2.54	0.0932	0.108	0.136	0.275	0.285	0.0442
1000	0.0176	0.0298	0.0298	0.0293	143.1	10.2	3800	0.531	2.23	114.6	2.32	0.0882	0.103	0.129	0.275	0.281	0.0396

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A												
	In air					In ground			In underground ducts				
	D/2	D/2		D/2									
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
35	185	211	174	183	130	178	179	174	156	156	155	144
50	220	250	205	218	156	209	209	205	184	181	180	171
70	273	308	254	269	193	250	249	249	220	216	220	209
95	329	369	309	326	230	296	291	296	259	251	260	249
120	375	420	355	376	261	335	325	335	290	280	294	281
150	424	469	400	425	294	370	359	374	319	305	325	314
185	479	528	455	485	343	414	394	420	354	335	365	363
240	558	604	534	569	395	469	443	484	399	374	418	416
300	628	674	609	648	445	519	483	540	440	405	465	465
400	712	753	698	744	504	574	528	608	487	443	520	524
500	799	837	794	848	568	633	572	679	528	473	573	585
630	892	920	899	959	663	692	613	753	574	509	635	674
800	1007	1028	1028	1107	738	748	658	832	612	538	687	742
1000	1158	1137	1218	1297	862	843	708	962	678	577	772	858

12.7/22kV Single 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 tape
8. PVC inner sheath
9. HDPE outer sheath

Properties:

Rated voltage	12.7/22kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
35	7.0	5.5	20.9	22.1	39/0.85	23.5	1.0	1.0	29.9	939	1.4	740	440
50	8.1	5.5	22.0	31.5	22/1.35	25.6	1.0	1.0	32.0	1110	2.0	800	480
70	9.8	5.5	23.7	44.4	31/1.35	27.3	1.0	1.0	33.7	1346	2.8	840	500
95	11.4	5.5	25.3	61.5	43/1.35	28.9	1.0	1.0	35.3	1633	3.8	880	520
120	12.9	5.5	26.8	68.7	48/1.35	30.4	1.0	1.0	36.8	1819	4.8	920	550
150	14.4	5.5	28.3	68.7	48/1.35	31.9	1.0	1.1	38.3	1943	6.0	950	570
185	16.0	5.5	29.9	68.7	48/1.35	33.5	1.0	1.1	39.9	2098	7.4	990	590
240	18.4	5.5	32.3	68.7	48/1.35	35.9	1.1	1.1	42.3	2334	9.6	1050	630
300	20.6	5.5	34.5	68.7	48/1.35	38.1	1.1	1.2	44.5	2570	12.0	1110	660
400	23.4	5.5	37.3	68.7	48/1.35	40.9	1.2	1.2	47.3	2895	16.0	1180	700
500	26.2	5.5	40.5	68.7	48/1.35	44.1	1.2	1.3	50.5	3311	20.0	1260	750
630	29.8	5.5	44.1	68.7	48/1.35	47.7	1.3	1.3	54.1	3820	25.2	1350	810
800	33.8	5.5	48.1	68.7	48/1.35	51.7	1.3	1.4	58.1	4434	32.0	1450	870
1000	38.5	5.5	51.3	68.7	48/1.35	56.2	1.5	1.5	62.8	5106	39.0	1570	940

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
35	0.868	1.11	1.11	1.11	3.3	3.3	14400	0.168	0.670	34.1	3.60	0.150	0.165	0.209	0.859	1.73	0.0942
50	0.641	0.822	0.822	0.822	4.7	4.7	13200	0.182	0.726	36.9	3.47	0.145	0.160	0.204	0.602	1.24	0.0911
70	0.443	0.568	0.568	0.568	6.6	6.6	11800	0.205	0.818	41.6	3.31	0.137	0.151	0.195	0.427	0.873	0.0817
95	0.320	0.411	0.411	0.410	9.0	9.1	10700	0.226	0.902	45.8	3.19	0.130	0.145	0.188	0.309	0.630	0.0723
120	0.253	0.325	0.325	0.325	11.3	10.2	9800	0.245	0.978	49.7	3.11	0.125	0.140	0.183	0.276	0.533	0.0691
150	0.206	0.265	0.265	0.264	14.2	10.2	9100	0.265	1.06	53.7	3.04	0.121	0.135	0.179	0.276	0.486	0.0660
185	0.164	0.211	0.211	0.211	17.5	10.2	8400	0.285	1.14	57.8	2.98	0.117	0.131	0.175	0.276	0.444	0.0628
240	0.125	0.161	0.161	0.161	22.7	10.2	7600	0.316	1.26	64.0	2.90	0.112	0.126	0.170	0.276	0.405	0.0565
300	0.100	0.129	0.129	0.129	28.3	10.2	7000	0.345	1.38	69.9	2.85	0.108	0.122	0.166	0.276	0.380	0.0534
400	0.0778	0.101	0.101	0.101	37.8	10.2	6300	0.380	1.52	77.0	2.79	0.103	0.118	0.161	0.276	0.358	0.0503
500	0.0605	0.0798	0.0794	0.0788	47.2	10.2	5700	0.421	1.68	85.3	2.74	0.101	0.115	0.159	0.276	0.341	0.0503
630	0.0469	0.0632	0.0625	0.0617	59.5	10.2	5100	0.467	1.86	94.7	2.69	0.0968	0.111	0.155	0.276	0.327	0.0471
800	0.0367	0.0510	0.0502	0.0491	75.6	10.2	4600	0.518	2.07	105.0	2.65	0.0933	0.108	0.151	0.276	0.317	0.0440
1000	0.0291	0.0402	0.0402	0.0398	94.6	10.2	3800	0.531	2.23	114.6	2.32	0.0882	0.103	0.129	0.276	0.293	0.0398

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	Solid bond
35	144	164	134	140	100	139	139	135	121	124	120	110	
50	174	199	160	169	121	164	164	159	144	145	141	134	
70	214	244	199	210	150	199	199	194	176	175	175	164	
95	259	294	240	255	179	234	234	231	206	205	205	194	
120	295	334	275	294	204	264	260	261	231	229	234	220	
150	334	375	311	330	229	294	289	294	258	250	259	245	
185	379	424	355	379	269	329	320	330	286	279	290	284	
240	444	493	419	445	311	378	364	380	329	315	335	329	
300	504	554	479	509	351	420	403	429	365	345	375	369	
400	579	629	555	590	404	474	448	485	409	383	425	420	
500	668	717	644	688	460	530	494	553	454	420	479	475	
630	758	803	741	790	546	590	540	623	504	459	539	556	
800	855	897	849	905	615	649	588	695	545	493	590	621	
1000	992	1008	997	1068	713	727	642	798	607	537	668	712	

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℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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

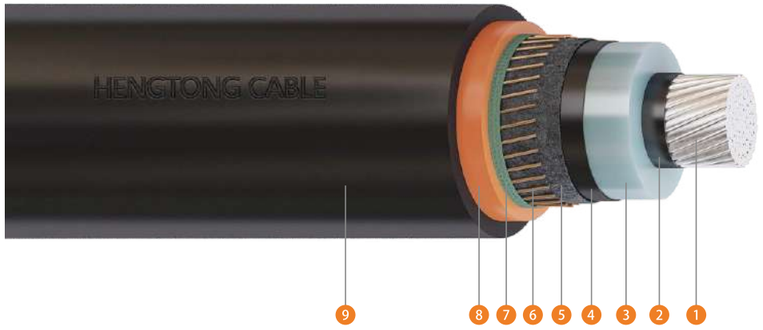
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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				
	D/2 D	D/2 D		D/2 D									
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 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 tape
8. PVC inner sheath
9. HDPE outer sheath

Properties:

Rated voltage	19/33kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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

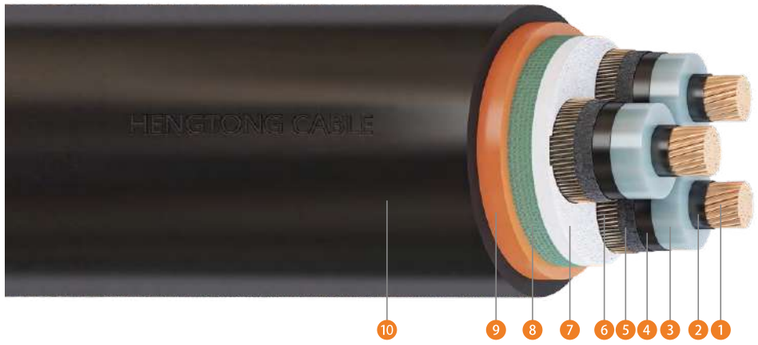
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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				
	D/2 D	D/2 D		D/2 D									
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

1.9/3.3kV 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	1.9/3.3kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
16	4.8	2.0	11.7	15.3	18/0.6	13.8	1.0	1.0	36.1	1402	3.4	900	540
25	6.0	2.0	12.9	24.6	29/0.6	15.0	1.0	1.1	38.7	1833	5.3	960	580
35	7.0	2.0	13.9	34.0	20/0.85	16.5	1.0	1.2	41.9	2289	7.4	1040	620
50	8.1	2.0	15.0	49.4	29/0.85	17.6	1.1	1.2	44.3	2857	10.5	1100	660
70	9.8	2.0	16.7	68.1	40/0.85	19.3	1.1	1.3	47.9	3741	14.7	1190	710
95	11.4	2.0	18.3	68.1	40/0.85	20.9	1.2	1.3	51.4	4589	20.0	1280	770
120	12.9	2.0	19.8	68.1	40/0.85	22.4	1.2	1.4	54.6	5385	25.2	1360	810
150	14.4	2.0	21.3	68.1	40/0.85	23.9	1.3	1.4	57.8	6269	31.5	1440	860
185	16.0	2.0	22.9	68.1	40/0.85	25.5	1.4	1.4	61.3	7407	38.9	1530	910
240	18.4	2.0	25.3	68.1	40/0.85	27.9	1.4	1.6	66.6	9202	50.4	1660	990
300	20.6	2.0	27.5	68.1	40/0.85	30.1	1.5	1.6	71.5	11078	63.0	1780	1070
400	23.4	2.0	30.3	68.1	40/0.85	32.9	1.6	1.8	78.0	13694	84.0	1940	1160
500	26.2	2.2	33.9	68.1	40/0.85	36.5	1.7	1.9	86.1	17179	105.0	2150	1290

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
16	1.15	1.47	2.3	2.3	8500	0.283	0.169	1.28	1.23	0.126	1.24	2.39	0.0870
25	0.727	0.927	3.6	3.7	7400	0.326	0.194	1.48	1.19	0.117	0.771	1.50	0.0756
35	0.524	0.668	5.0	5.1	6600	0.361	0.215	1.64	1.16	0.113	0.557	1.08	0.0727
50	0.387	0.494	7.2	7.3	6000	0.400	0.239	1.81	1.14	0.108	0.384	0.771	0.0656
70	0.268	0.342	10.0	10.1	5200	0.459	0.274	2.08	1.11	0.102	0.279	0.547	0.0584
95	0.193	0.247	13.6	10.1	4600	0.515	0.308	2.34	1.09	0.0973	0.279	0.472	0.0544
120	0.153	0.196	17.2	10.1	4200	0.568	0.339	2.58	1.08	0.0939	0.279	0.432	0.0514
150	0.124	0.159	21.5	10.1	3800	0.620	0.370	2.81	1.07	0.0911	0.279	0.403	0.0488
185	0.0991	0.128	26.5	10.1	3500	0.676	0.404	3.07	1.05	0.0885	0.279	0.378	0.0466
240	0.0754	0.0986	34.3	10.1	3100	0.760	0.454	3.45	1.04	0.0854	0.279	0.354	0.0439
300	0.0601	0.0798	42.9	10.1	2800	0.837	0.499	3.80	1.03	0.0831	0.279	0.339	0.0418
400	0.0470	0.0641	57.2	10.1	2500	0.934	0.558	4.24	1.02	0.0807	0.279	0.326	0.0397
500	0.0366	0.0519	71.5	10.1	2500	0.955	0.570	4.33	0.93	0.0800	0.279	0.315	0.0394

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
16	80	88	63	98	74
25	115	125	84	130	100
35	145	155	105	160	120
50	175	185	125	190	145
70	225	240	160	235	180
95	275	300	195	285	220
120	320	345	225	325	255
150	360	390	260	360	285
185	415	455	300	410	330
240	500	540	355	475	385
300	570	625	420	540	450
400	665	725	485	615	510
500	740	810	520	700	580

1.9/3.3kV 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	1.9/3.3kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
25	6.0	2.0	12.9	16.2	19/0.6	15.0	1.0	1.0	38.7	1293	3.0	960	580
35	7.0	2.0	13.9	22.8	27/0.6	16.0	1.0	1.1	40.9	1521	4.2	1020	610
50	8.1	2.0	15.0	32.1	38/0.6	17.1	1.1	1.2	43.2	1800	6.0	1080	640
70	9.8	2.0	16.7	44.4	26/0.85	19.3	1.2	1.2	48.0	2260	8.4	1200	720
95	11.4	2.0	18.3	61.2	36/0.85	20.9	1.2	1.3	51.4	2774	11.4	1280	770
120	12.9	2.0	19.8	68.1	40/0.85	22.4	1.3	1.3	54.6	3176	14.4	1360	810
150	14.4	2.0	21.3	68.1	40/0.85	23.9	1.3	1.4	57.9	3540	18.0	1440	860
185	16.0	2.0	22.9	68.1	40/0.85	25.5	1.4	1.4	61.3	3992	22.2	1530	910
240	18.4	2.0	25.3	68.1	40/0.85	27.9	1.5	1.5	66.5	4693	28.8	1660	990
300	20.6	2.0	27.5	68.1	40/0.85	30.1	1.5	1.6	71.4	5420	36.0	1780	1070
400	23.4	2.0	30.3	68.1	40/0.85	32.9	1.7	1.7	78.1	6506	48.0	1950	1170
500	26.2	2.2	33.9	68.1	40/0.85	36.5	1.8	1.8	86.2	7940	60.0	2150	1290

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
25	1.20	1.54	2.4	2.4	7400	0.326	0.195	1.48	1.19	0.117	1.17	2.37	0.0785
35	0.868	1.11	3.3	3.4	6600	0.361	0.215	1.64	1.16	0.111	0.832	1.70	0.0723
50	0.641	0.822	4.7	4.7	6000	0.400	0.239	1.81	1.14	0.106	0.591	1.23	0.0628
70	0.443	0.568	6.6	6.6	5200	0.459	0.274	2.08	1.11	0.102	0.427	0.873	0.0597
95	0.320	0.411	9.0	9.2	4600	0.515	0.307	2.34	1.09	0.0974	0.310	0.630	0.0534
120	0.253	0.325	11.3	10.2	4200	0.568	0.339	2.58	1.08	0.0939	0.279	0.533	0.0503
150	0.206	0.265	14.2	10.2	3800	0.620	0.370	2.81	1.07	0.0911	0.279	0.486	0.0503
185	0.164	0.211	17.5	10.2	3500	0.676	0.404	3.07	1.05	0.0886	0.279	0.444	0.0471
240	0.125	0.162	22.7	10.2	3100	0.760	0.454	3.45	1.04	0.0855	0.279	0.405	0.0440
300	0.100	0.130	28.3	10.2	2800	0.837	0.500	3.80	1.03	0.0829	0.279	0.380	0.0408
400	0.0778	0.102	37.8	10.2	2500	0.934	0.558	4.24	1.02	0.0807	0.279	0.358	0.0408
500	0.0605	0.081	47.2	10.2	2500	0.957	0.571	4.34	0.93	0.0801	0.279	0.341	0.0408

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
25	90	95	60	95	72
35	110	120	75	120	90
50	135	145	95	145	110
70	170	185	120	180	135
95	210	230	150	215	170
120	245	265	175	250	195
150	275	300	200	275	220
185	320	345	225	315	250
240	380	415	270	365	295
300	440	480	320	415	345
400	515	565	375	480	400
500	590	635	410	530	460

3.8/6.6kV 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	3.8/6.6kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
16	4.8	2.5	12.7	15.3	18/0.6	14.8	1.0	1.0	38.2	1505	3.4	950	570
25	6.0	2.5	13.9	24.6	29/0.6	16.0	1.0	1.1	40.8	1942	5.3	1020	610
35	7.0	2.5	14.9	34.0	20/0.85	17.5	1.1	1.1	44.1	2404	7.4	1100	660
50	8.1	2.5	16.0	49.4	29/0.85	18.6	1.1	1.2	46.4	2979	10.5	1160	690
70	9.8	2.5	17.7	68.1	40/0.85	20.3	1.2	1.2	50.1	3872	14.7	1250	750
95	11.4	2.5	19.3	68.1	40/0.85	21.9	1.2	1.4	53.5	4730	20.0	1330	800
120	12.9	2.5	20.8	68.1	40/0.85	23.4	1.3	1.4	56.8	5535	25.2	1410	850
150	14.4	2.5	22.3	68.1	40/0.85	24.9	1.3	1.5	60.0	6427	31.5	1490	890
185	16.0	2.5	23.9	68.1	40/0.85	26.5	1.4	1.5	63.4	7574	38.9	1580	950
240	18.4	2.6	26.5	68.1	40/0.85	29.1	1.5	1.6	69.2	9418	50.4	1720	1030
300	20.6	2.8	29.1	68.1	40/0.85	31.7	1.6	1.7	75.2	11430	63.0	1870	1120
400	23.4	3.0	32.3	68.1	40/0.85	34.9	1.7	1.8	82.6	14173	84.0	2060	1230
500	26.2	3.2	35.9	68.1	40/0.85	38.5	1.8	1.9	90.7	17707	105.0	2260	1360

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
16	1.15	1.47	2.3	2.3	10100	0.238	0.284	4.32	2.06	0.130	1.24	2.39	0.0918
25	0.727	0.927	3.6	3.7	8800	0.272	0.325	4.94	1.98	0.121	0.771	1.50	0.0800
35	0.524	0.668	5.0	5.1	8000	0.301	0.359	5.46	1.93	0.117	0.557	1.08	0.0768
50	0.387	0.494	7.2	7.3	7200	0.332	0.396	6.02	1.89	0.111	0.384	0.771	0.0695
70	0.268	0.342	10.0	10.1	6300	0.380	0.453	6.89	1.84	0.105	0.279	0.547	0.0619
95	0.193	0.247	13.6	10.1	5600	0.425	0.507	7.71	1.80	0.100	0.279	0.472	0.0576
120	0.153	0.196	17.2	10.1	5100	0.467	0.557	8.47	1.77	0.0967	0.279	0.432	0.0543
150	0.124	0.159	21.5	10.1	4700	0.509	0.608	9.24	1.75	0.0937	0.279	0.403	0.0516
185	0.0991	0.128	26.5	10.1	4300	0.554	0.661	10.0	1.73	0.0910	0.279	0.378	0.0492
240	0.0754	0.0985	34.3	10.1	4000	0.599	0.716	10.9	1.65	0.0881	0.279	0.354	0.0467
300	0.0601	0.0796	42.9	10.1	3900	0.616	0.736	11.2	1.52	0.0863	0.279	0.339	0.0453
400	0.0470	0.0638	57.2	10.1	3700	0.645	0.770	11.7	1.41	0.0844	0.279	0.326	0.0436
500	0.0366	0.0515	71.5	10.1	3500	0.677	0.809	12.3	1.32	0.0834	0.279	0.315	0.0429

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
16	102	108	75	113	86
25	132	141	96	145	111
35	160	171	118	173	134
50	191	205	140	204	159
70	238	256	173	249	195
95	291	313	212	298	237
120	336	363	243	339	270
150	381	411	281	379	307
185	436	472	319	429	348
240	515	559	373	496	404
300	591	642	439	559	468
400	683	744	503	634	532
500	779	850	569	710	597

3.8/6.6kV 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	3.8/6.6kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
25	6.0	2.5	13.9	16.2	19/0.6	16.0	1.0	1.1	40.9	1406	3.0	1020	610
35	7.0	2.5	14.9	22.8	27/0.6	17.0	1.1	1.1	43.0	1635	4.2	1070	640
50	8.1	2.5	16.0	32.1	38/0.6	18.1	1.1	1.2	45.4	1925	6.0	1130	680
70	9.8	2.5	17.7	44.4	26/0.85	20.3	1.2	1.2	50.1	2391	8.4	1250	750
95	11.4	2.5	19.3	61.2	36/0.85	21.9	1.3	1.3	53.6	2919	11.4	1340	800
120	12.9	2.5	20.8	68.1	40/0.85	23.4	1.3	1.4	56.8	3330	14.4	1420	850
150	14.4	2.5	22.3	68.1	40/0.85	24.9	1.4	1.4	60.0	3697	18.0	1500	900
185	16.0	2.5	23.9	68.1	40/0.85	26.5	1.4	1.5	63.5	4164	22.2	1580	950
240	18.4	2.6	26.5	68.1	40/0.85	29.1	1.5	1.6	69.3	4934	28.8	1730	1030
300	20.6	2.8	29.1	68.1	40/0.85	31.7	1.6	1.7	75.3	5797	36.0	1880	1120
400	23.4	3.0	32.3	68.1	40/0.85	34.9	1.7	1.8	82.6	6966	48.0	2060	1230
500	26.2	3.2	35.9	68.1	40/0.85	38.5	1.8	1.9	90.7	8447	60.0	2260	1360

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
25	1.20	1.54	2.4	2.4	8800	0.272	0.325	4.94	1.98	0.121	1.17	2.37	0.0817
35	0.868	1.11	3.3	3.4	8000	0.301	0.359	5.46	1.93	0.115	0.832	1.70	0.0754
50	0.641	0.822	4.7	4.7	7200	0.332	0.396	6.02	1.89	0.110	0.591	1.23	0.0691
70	0.443	0.568	6.6	6.6	6300	0.380	0.454	6.90	1.84	0.105	0.427	0.873	0.0628
95	0.320	0.411	9.0	9.2	5600	0.425	0.507	7.71	1.80	0.100	0.310	0.630	0.0565
120	0.253	0.325	11.3	10.2	5100	0.467	0.558	8.47	1.77	0.0968	0.279	0.533	0.0534
150	0.206	0.265	14.2	10.2	4700	0.509	0.608	9.24	1.75	0.0936	0.279	0.486	0.0503
185	0.164	0.211	17.5	10.2	4300	0.554	0.661	10.1	1.73	0.0911	0.279	0.444	0.0503
240	0.125	0.162	22.7	10.2	4000	0.599	0.715	10.9	1.65	0.0880	0.279	0.405	0.0471
300	0.100	0.130	28.3	10.2	3900	0.616	0.735	11.2	1.52	0.0864	0.279	0.380	0.0440
400	0.0778	0.102	37.8	10.2	3700	0.645	0.770	11.7	1.41	0.0845	0.279	0.358	0.0440
500	0.0605	0.081	47.2	10.2	3500	0.678	0.809	12.3	1.32	0.0836	0.279	0.341	0.0440

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
25	95	100	67	100	77
35	124	133	92	134	104
50	148	159	109	158	123
70	185	199	134	193	151
95	225	242	164	231	183
120	260	280	188	263	209
150	295	318	217	294	238
185	338	365	247	333	270
240	400	434	290	387	315
300	459	499	342	436	365
400	537	584	396	500	420
500	622	679	454	567	477

6.35/11kV 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	6.35/11kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
16	4.8	3.4	14.5	15.3	18/0.6	16.6	1.0	1.2	42.1	1703	3.4	1050	630
25	6.0	3.4	15.7	24.6	29/0.6	17.8	1.1	1.2	44.7	2154	5.3	1110	670
35	7.0	3.4	16.7	34.0	20/0.85	19.3	1.1	1.3	47.9	2627	7.4	1190	710
50	8.1	3.4	17.8	49.4	29/0.85	20.4	1.2	1.3	50.3	3212	10.5	1250	750
70	9.8	3.4	19.5	68.1	40/0.85	22.1	1.2	1.4	54.0	4124	14.7	1340	800
95	11.4	3.4	21.1	68.1	40/0.85	23.7	1.3	1.4	57.4	4998	20.0	1430	860
120	12.9	3.4	22.6	68.1	40/0.85	25.2	1.4	1.4	60.6	5818	25.2	1510	900
150	14.4	3.4	24.1	68.1	40/0.85	26.7	1.4	1.5	63.9	6728	31.5	1590	950
185	16.0	3.4	25.7	68.1	40/0.85	28.3	1.5	1.5	67.4	7895	38.9	1680	1010
240	18.4	3.4	28.1	68.1	40/0.85	30.7	1.5	1.7	72.9	9748	50.4	1820	1090
300	20.6	3.4	30.3	68.1	40/0.85	32.9	1.6	1.7	77.9	11697	63.0	1940	1160
400	23.4	3.4	33.1	68.1	40/0.85	35.7	1.7	1.9	84.4	14367	84.0	2110	1260
500	26.2	3.4	36.3	68.1	40/0.85	38.9	1.8	2.0	91.6	17813	105.0	2290	1370

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
16	1.15	1.47	2.3	2.3	12700	0.190	0.379	9.63	2.75	0.137	1.24	2.39	0.0996
25	0.727	0.927	3.6	3.7	11200	0.216	0.430	10.9	2.62	0.128	0.771	1.50	0.0872
35	0.524	0.668	5.0	5.1	10200	0.237	0.472	12.0	2.54	0.123	0.557	1.08	0.0835
50	0.387	0.494	7.2	7.3	9300	0.260	0.518	13.2	2.47	0.117	0.384	0.771	0.0758
70	0.268	0.342	10.0	10.1	8100	0.295	0.589	15.0	2.39	0.110	0.279	0.547	0.0677
95	0.193	0.247	13.6	10.1	7300	0.329	0.656	16.7	2.33	0.105	0.279	0.472	0.0630
120	0.153	0.196	17.2	10.1	6700	0.360	0.718	18.2	2.28	0.101	0.279	0.432	0.0593
150	0.124	0.159	21.5	10.1	6100	0.391	0.780	19.8	2.24	0.0981	0.279	0.403	0.0563
185	0.0991	0.128	26.5	10.1	5700	0.424	0.846	21.5	2.21	0.0951	0.279	0.378	0.0536
240	0.0754	0.0983	34.3	10.1	5100	0.473	0.945	24.0	2.17	0.0914	0.279	0.354	0.0502
300	0.0601	0.0795	42.9	10.1	4600	0.519	1.04	26.3	2.14	0.0887	0.279	0.339	0.0477
400	0.0470	0.0637	57.2	10.1	4100	0.576	1.15	29.2	2.11	0.0858	0.279	0.326	0.0451
500	0.0366	0.0515	71.5	10.1	3700	0.641	1.28	32.5	2.09	0.0840	0.279	0.315	0.0436

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
16	104	110	78	113	89
25	134	143	100	145	114
35	162	173	120	173	136
50	194	208	145	204	162
70	241	259	178	249	199
95	295	317	220	299	242
120	340	367	252	340	276
150	385	415	284	380	310
185	440	476	322	429	350
240	519	563	389	497	416
300	594	645	442	560	470
400	685	746	505	635	534
500	779	850	569	710	597

6.35/11kV 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	6.35/11kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
25	6.0	3.4	15.7	16.2	19/0.6	17.8	1.1	1.2	44.7	1616	3.0	1110	670
35	7.0	3.4	16.7	22.8	27/0.6	18.8	1.2	1.2	46.9	1860	4.2	1170	700
50	8.1	3.4	17.8	32.1	38/0.6	19.9	1.2	1.3	49.3	2161	6.0	1230	730
70	9.8	3.4	19.5	44.4	26/0.85	22.1	1.3	1.3	54.0	2646	8.4	1350	810
95	11.4	3.4	21.1	61.2	36/0.85	23.7	1.3	1.4	57.4	3186	11.4	1430	860
120	12.9	3.4	22.6	68.1	40/0.85	25.2	1.4	1.4	60.7	3617	14.4	1510	910
150	14.4	3.4	24.1	68.1	40/0.85	26.7	1.4	1.5	63.9	4000	18.0	1590	950
185	16.0	3.4	25.7	68.1	40/0.85	28.3	1.5	1.5	67.4	4484	22.2	1680	1010
240	18.4	3.4	28.1	68.1	40/0.85	30.7	1.6	1.6	72.9	5271	28.8	1820	1090
300	20.6	3.4	30.3	68.1	40/0.85	32.9	1.6	1.7	77.9	6047	36.0	1940	1160
400	23.4	3.4	33.1	68.1	40/0.85	35.7	1.8	1.8	84.5	7183	48.0	2110	1260
500	26.2	3.4	36.3	68.1	40/0.85	38.9	1.9	1.9	91.8	8591	60.0	2290	1370

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
25	1.20	1.54	2.4	2.4	11200	0.216	0.431	10.9	2.62	0.128	1.17	2.37	0.0911
35	0.868	1.11	3.3	3.4	10200	0.237	0.473	12.0	2.54	0.121	0.832	1.70	0.0817
50	0.641	0.822	4.7	4.7	9300	0.260	0.519	13.2	2.47	0.116	0.591	1.23	0.0754
70	0.443	0.568	6.6	6.6	8100	0.295	0.588	14.9	2.39	0.110	0.427	0.873	0.0691
95	0.320	0.411	9.0	9.2	7300	0.329	0.656	16.7	2.33	0.105	0.310	0.630	0.0628
120	0.253	0.325	11.3	10.2	6700	0.360	0.718	18.2	2.28	0.101	0.279	0.533	0.0597
150	0.206	0.265	14.2	10.2	6100	0.391	0.780	19.8	2.24	0.0980	0.279	0.486	0.0565
185	0.164	0.211	17.5	10.2	5700	0.424	0.846	21.5	2.21	0.0952	0.279	0.444	0.0534
240	0.125	0.162	22.7	10.2	5100	0.473	0.944	24.0	2.17	0.0914	0.279	0.405	0.0503
300	0.100	0.130	28.3	10.2	4600	0.519	1.04	26.3	2.14	0.0886	0.279	0.380	0.0471
400	0.0778	0.102	37.8	10.2	4100	0.576	1.15	29.2	2.11	0.0858	0.279	0.358	0.0440
500	0.0605	0.081	47.2	10.2	3700	0.642	1.28	32.5	2.09	0.0842	0.279	0.341	0.0440

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
25	95	100	68	105	79
35	126	135	93	134	106
50	151	161	112	158	126
70	187	201	138	193	154
95	228	245	171	231	188
120	263	283	195	263	214
150	298	321	220	295	240
185	341	368	250	333	272
240	403	436	292	387	316
300	462	501	344	437	366
400	538	585	397	500	420
500	622	679	454	567	477

12.7/22kV 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	12.7/22kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
35	7.0	5.5	20.9	34.0	20/0.85	23.5	1.3	1.4	57.0	3218	7.4	1420	850
50	8.1	5.5	22.0	49.4	29/0.85	24.6	1.3	1.5	59.3	3830	10.5	1480	890
70	9.8	5.5	23.7	68.1	40/0.85	26.3	1.4	1.5	63.0	4782	14.7	1570	940
95	11.4	5.5	25.3	68.1	40/0.85	27.9	1.5	1.5	66.5	5698	20.0	1660	990
120	12.9	5.5	26.8	68.1	40/0.85	29.4	1.5	1.6	69.9	6577	25.2	1740	1040
150	14.4	5.5	28.3	68.1	40/0.85	30.9	1.6	1.6	73.4	7556	31.5	1830	1100
185	16.0	5.5	29.9	68.1	40/0.85	32.5	1.6	1.7	77.1	8787	38.9	1920	1150
240	18.4	5.5	32.3	68.1	40/0.85	34.9	1.7	1.8	82.6	10720	50.4	2060	1230
300	20.6	5.5	34.5	68.1	40/0.85	37.1	1.8	1.9	87.6	12733	63.0	2190	1310
400	23.4	5.5	37.3	68.1	40/0.85	39.9	1.9	2.0	94.1	15486	84.0	2350	1410
500	26.2	5.5	40.5	68.1	40/0.85	43.1	2.0	2.1	101.3	19023	105.0	2530	1510

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
35	0.524	0.668	5.0	5.1	14400	0.168	0.669	34.0	3.60	0.135	0.557	1.08	0.0970
50	0.387	0.494	7.2	7.3	13200	0.182	0.727	36.9	3.47	0.129	0.384	0.771	0.0886
70	0.268	0.342	10.0	10.1	11800	0.205	0.817	41.5	3.31	0.121	0.279	0.547	0.0795
95	0.193	0.247	13.6	10.1	10700	0.226	0.900	45.7	3.19	0.115	0.279	0.472	0.0739
120	0.153	0.196	17.2	10.1	9800	0.245	0.978	49.7	3.11	0.111	0.279	0.432	0.0697
150	0.124	0.159	21.5	10.1	9100	0.265	1.06	53.6	3.04	0.107	0.279	0.403	0.0661
185	0.0991	0.128	26.5	10.1	8400	0.285	1.14	57.8	2.98	0.104	0.279	0.378	0.0628
240	0.0754	0.0980	34.3	10.1	7600	0.316	1.26	64.1	2.90	0.0995	0.279	0.354	0.0587
300	0.0601	0.0791	42.9	10.1	7000	0.345	1.38	69.8	2.85	0.0962	0.279	0.339	0.0557
400	0.0470	0.0632	57.2	10.1	6300	0.380	1.52	77.1	2.79	0.0928	0.279	0.326	0.0524
500	0.0366	0.0509	71.5	10.1	5700	0.421	1.68	85.3	2.74	0.0905	0.279	0.315	0.0503

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
35	167	178	126	173	140
50	199	213	152	204	168
70	247	265	187	250	205
95	301	323	225	299	246
120	346	373	258	340	280
150	392	422	299	381	321
185	448	483	339	430	363
240	527	570	396	498	421
300	602	652	449	562	474
400	694	754	513	638	539
500	789	859	601	714	624

12.7/22kV 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	12.7/22kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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
35	7.0	5.5	20.9	22.8	27/0.6	23.0	1.3	1.4	55.9	2453	4.2	1390	830
50	8.1	5.5	22.0	32.1	38/0.6	24.1	1.4	1.4	58.3	2781	6.0	1450	870
70	9.8	5.5	23.7	44.4	26/0.85	26.3	1.4	1.5	63.1	3315	8.4	1570	940
95	11.4	5.5	25.3	61.2	36/0.85	27.9	1.5	1.5	66.5	3893	11.4	1660	990
120	12.9	5.5	26.8	68.1	40/0.85	29.4	1.5	1.6	69.9	4376	14.4	1740	1040
150	14.4	5.5	28.3	68.1	40/0.85	30.9	1.6	1.6	73.4	4835	18.0	1830	1100
185	16.0	5.5	29.9	68.1	40/0.85	32.5	1.6	1.7	77.0	5378	22.2	1920	1150
240	18.4	5.5	32.3	68.1	40/0.85	34.9	1.7	1.8	82.6	6243	28.8	2060	1230
300	20.6	5.5	34.5	68.1	40/0.85	37.1	1.8	1.9	87.7	7111	36.0	2190	1310
400	23.4	5.5	37.3	68.1	40/0.85	39.9	1.9	2.0	94.1	8293	48.0	2350	1410
500	26.2	5.5	40.5	68.1	40/0.85	43.1	2.0	2.1	101.4	9793	60.0	2530	1520

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km
35	0.868	1.11	3.3	3.4	14400	0.168	0.670	34.1	3.60	0.134	0.832	1.70	0.0942
50	0.641	0.822	4.7	4.7	13200	0.182	0.726	36.9	3.47	0.128	0.591	1.23	0.0880
70	0.443	0.568	6.6	6.6	11800	0.205	0.818	41.6	3.31	0.121	0.427	0.873	0.0817
95	0.320	0.411	9.0	9.2	10700	0.226	0.902	45.8	3.19	0.116	0.310	0.630	0.0754
120	0.253	0.325	11.3	10.2	9800	0.245	0.978	49.7	3.11	0.111	0.279	0.533	0.0691
150	0.206	0.265	14.2	10.2	9100	0.265	1.06	53.7	3.04	0.107	0.279	0.486	0.0660
185	0.164	0.211	17.5	10.2	8400	0.285	1.14	57.8	2.98	0.104	0.279	0.444	0.0628
240	0.125	0.161	22.7	10.2	7600	0.316	1.26	64.0	2.90	0.100	0.279	0.405	0.0597
300	0.100	0.130	28.3	10.2	7000	0.345	1.38	69.9	2.85	0.0961	0.279	0.380	0.0565
400	0.0778	0.102	37.8	10.2	6300	0.380	1.52	77.0	2.79	0.0927	0.279	0.358	0.0534
500	0.0605	0.080	47.2	10.2	5700	0.421	1.68	85.3	2.74	0.0905	0.279	0.341	0.0503

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
35	130	138	97	134	109
50	155	165	118	158	130
70	192	205	145	194	159
95	233	250	175	232	191
120	268	288	199	264	217
150	303	326	232	295	249
185	346	374	263	334	281
240	408	441	307	388	327
300	467	506	349	437	369
400	543	590	403	501	423
500	628	683	478	568	497

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℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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	49.4	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	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	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	0.387	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	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2					
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℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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	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℃	Max. AC resistance of conductor at 90℃	Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃	Screen DC resistance at 20℃	Zero sequence resistance at 20℃	Zero sequence reactance at 50Hz
mm^2	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	
					
mm^2					
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

6.35/11kV Triplex 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	6.35/11kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from - 40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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	Max. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius (bundled cable)	
							Inner layer	Outer layer					During installation	Installed
mm^2	mm	mm	mm	mm^2	No./mm	mm	mm	mm	mm	kg/m	kN	mm	mm	mm
16	4.8	3.4	14.5	15.3	27/0.85	17.1	1.0	1.0	24.1	51.6	2.0	3.4	770	520
25	6.0	3.4	15.7	23.8	42/0.85	18.3	1.0	1.0	25.3	54.2	2.6	5.3	810	540
35	7.0	3.4	16.7	34.0	40/1.04	19.7	1.0	1.0	26.7	57.1	3.2	7.4	860	570
50	8.1	3.4	17.8	49.5	28/1.5	21.7	1.0	1.0	28.7	61.5	4.1	10.5	920	620
70	9.8	3.4	19.5	68.9	39/1.5	23.4	1.0	1.0	30.4	65.1	5.3	14.7	980	650
95	11.4	3.4	21.1	68.9	39/1.5	25.0	1.0	1.0	32.0	68.5	6.2	20.0	1030	690
120	12.9	3.4	22.6	68.9	39/1.5	26.5	1.0	1.0	33.5	71.7	7.0	25.2	1080	720
150	14.4	3.4	24.1	68.9	39/1.5	28.0	1.0	1.0	35.0	74.9	7.8	31.5	1120	750
185	16.0	3.4	25.7	68.9	39/1.5	29.6	1.0	1.0	36.6	78.4	8.9	38.9	1180	780
240	18.4	3.4	28.1	68.9	39/1.5	32.0	1.0	1.1	39.0	83.5	10.1	50.4	1250	840
300	20.6	3.4	30.3	68.9	39/1.5	34.2	1.0	1.1	41.2	88.2	12.5	63.0	1320	880
400	23.4	3.4	33.1	68.9	39/1.5	37.0	1.1	1.2	44.0	94.2	14.9	84.0	1410	940
500	26.2	3.4	36.3	68.9	39/1.5	40.2	1.1	1.2	47.2	101.0	18.2	105.0	1520	1010

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
16	1.15	1.47	1.47	1.47	2.3	2.3	12700	0.190	0.379	9.63	2.75	0.161	0.175	0.219	1.24	2.39	0.0969
25	0.727	0.927	0.927	0.927	3.6	3.5	11200	0.216	0.430	10.9	2.62	0.150	0.164	0.208	0.796	1.52	0.0854
35	0.524	0.668	0.668	0.668	5.0	5.0	10200	0.237	0.472	12.0	2.54	0.143	0.158	0.201	0.558	1.08	0.0796
50	0.387	0.494	0.494	0.494	7.2	7.4	9300	0.260	0.518	13.2	2.47	0.139	0.153	0.197	0.383	0.770	0.0760
70	0.268	0.342	0.342	0.342	10.0	10.2	8100	0.295	0.589	15.0	2.39	0.130	0.145	0.189	0.275	0.543	0.0678
95	0.193	0.247	0.247	0.246	13.6	10.2	7300	0.329	0.656	16.7	2.33	0.124	0.139	0.182	0.275	0.468	0.0631
120	0.153	0.196	0.196	0.196	17.2	10.2	6700	0.360	0.718	18.2	2.28	0.119	0.134	0.177	0.275	0.428	0.0595
150	0.124	0.159	0.159	0.159	21.5	10.2	6100	0.391	0.780	19.8	2.24	0.115	0.130	0.173	0.275	0.399	0.0564
185	0.0991	0.128	0.127	0.127	26.5	10.2	5700	0.424	0.846	21.5	2.21	0.111	0.126	0.169	0.275	0.374	0.0537
240	0.0754	0.0978	0.0975	0.0971	34.3	10.2	5100	0.473	0.945	24.0	2.17	0.106	0.121	0.165	0.275	0.351	0.0504
300	0.0601	0.0788	0.0784	0.0779	42.9	10.2	4600	0.519	1.04	26.3	2.14	0.103	0.117	0.161	0.275	0.335	0.0478
400	0.0470	0.0628	0.0623	0.0615	57.2	10.2	4100	0.576	1.15	29.2	2.11	0.0990	0.113	0.157	0.275	0.322	0.0452
500	0.0366	0.0505	0.0497	0.0487	71.5	10.2	3700	0.641	1.28	32.5	2.09	0.0962	0.111	0.154	0.275	0.312	0.0437

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond
16	106	112	81	113	91
25	138	145	104	145	116
35	169	179	125	174	140
50	200	214	150	204	166
70	250	268	184	249	204
95	301	320	219	295	241
120	349	370	256	335	279
150	394	419	289	374	310
185	449	479	325	420	350
240	525	563	375	483	403
300	599	639	439	539	463
400	688	735	498	605	519
500	783	838	559	674	580

6.35/11kV Triplex 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 tape
8. PVC inner sheath
9. HDPE outer sheath

Properties:

Rated voltage	6.35/11kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from - 40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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	Max. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius (bundled cable)	
							Inner layer	Outer layer					During installation	Installed
mm^2	mm	mm	mm	mm^2	No./mm	mm	mm	mm	mm	kg/m	kN	mm	mm	mm
25	6.0	3.4	15.7	15.9	28/0.85	18.3	1.0	1.0	25.3	54.1	1.7	3.0	810	540
35	7.0	3.4	16.7	22.1	39/0.85	19.3	1.0	1.0	26.3	56.3	2.0	4.2	840	560
50	8.1	3.4	17.8	31.5	22/1.35	21.4	1.0	1.0	28.4	60.8	2.5	6.0	910	610
70	9.8	3.4	19.5	44.4	31/1.35	23.1	1.0	1.0	30.1	64.4	3.2	8.4	970	640
95	11.4	3.4	21.1	61.5	43/1.35	24.7	1.0	1.0	31.7	67.8	4.0	11.4	1020	680
120	12.9	3.4	22.6	68.7	48/1.35	26.2	1.0	1.0	33.2	71.0	4.5	14.4	1070	710
150	14.4	3.4	24.1	68.7	48/1.35	27.7	1.0	1.0	34.7	74.3	4.8	18.0	1110	740
185	16.0	3.4	25.7	68.7	48/1.35	29.3	1.0	1.0	36.3	77.7	5.2	22.2	1170	780
240	18.4	3.4	28.1	68.7	48/1.35	31.7	1.0	1.1	38.7	82.8	5.9	28.8	1240	830
300	20.6	3.4	30.3	68.7	48/1.35	33.9	1.0	1.1	40.9	87.5	6.5	36.0	1310	880
400	23.4	3.4	33.1	68.7	48/1.35	36.7	1.1	1.1	43.7	93.5	7.4	48.0	1400	940
500	26.2	3.4	36.3	68.7	48/1.35	39.9	1.1	1.2	46.9	100.4	8.6	60.0	1500	1000

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
25	1.20	1.54	1.54	1.54	2.4	2.4	11200	0.216	0.431	10.9	2.62	0.150	0.164	0.208	1.20	2.39	0.0880
35	0.868	1.11	1.11	1.11	3.3	3.3	10200	0.237	0.473	12.0	2.54	0.142	0.157	0.200	0.859	1.73	0.0785
50	0.641	0.822	0.822	0.822	4.7	4.7	9300	0.260	0.519	13.2	2.47	0.138	0.153	0.196	0.602	1.24	0.0785
70	0.443	0.568	0.568	0.568	6.6	6.6	8100	0.295	0.588	14.9	2.39	0.130	0.144	0.188	0.427	0.870	0.0691
95	0.320	0.411	0.411	0.410	9.0	9.1	7300	0.329	0.656	16.7	2.33	0.123	0.138	0.182	0.309	0.629	0.0628
120	0.253	0.325	0.325	0.325	11.3	10.2	6700	0.360	0.718	18.2	2.28	0.119	0.133	0.177	0.276	0.529	0.0597
150	0.206	0.265	0.265	0.264	14.2	10.2	6100	0.391	0.780	19.8	2.24	0.115	0.129	0.172	0.276	0.482	0.0565
185	0.164	0.211	0.211	0.211	17.5	10.2	5700	0.424	0.846	21.5	2.21	0.111	0.125	0.169	0.276	0.440	0.0534
240	0.125	0.161	0.161	0.161	22.7	10.2	5100	0.473	0.944	24.0	2.17	0.106	0.121	0.164	0.276	0.401	0.0503
300	0.100	0.130	0.129	0.129	28.3	10.2	4600	0.519	1.04	26.3	2.14	0.102	0.117	0.161	0.276	0.376	0.0471
400	0.0778	0.102	0.101	0.101	37.8	10.2	4100	0.576	1.15	29.2	2.11	0.0986	0.113	0.156	0.276	0.354	0.0440
500	0.0605	0.0800	0.0795	0.0788	47.2	10.2	3700	0.642	1.28	32.5	2.09	0.0958	0.110	0.154	0.276	0.337	0.0440

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond
25	105	115	80	115	91
35	129	135	96	134	109
50	155	165	116	159	130
70	194	205	144	194	159
95	235	250	170	230	189
120	270	289	200	261	219
150	305	325	225	293	244
185	350	374	255	330	275
240	414	440	295	380	319
300	471	504	346	426	365
400	549	585	399	485	416
500	639	683	455	550	474

12.7/22kV Triplex 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	12.7/22kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from - 40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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	Max. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius (bundled cable)	
							Inner layer	Outer layer					During installation	Installed
mm^2	mm	mm	mm	mm^2	No./mm	mm	mm	mm	mm	kg/m	kN	mm	mm	mm
35	7.0	5.5	20.9	34.0	40/1.04	23.9	1.0	1.0	30.9	66.1	3.7	7.4	990	660
50	8.1	5.5	22.0	49.5	28/1.5	25.9	1.0	1.0	32.9	70.4	4.6	10.5	1060	700
70	9.8	5.5	23.7	68.9	39/1.5	27.6	1.0	1.0	34.6	74.1	5.9	14.7	1110	740
95	11.4	5.5	25.3	68.9	39/1.5	29.2	1.0	1.0	36.2	77.5	6.7	20.0	1160	780
120	12.9	5.5	26.8	68.9	39/1.5	30.7	1.0	1.1	37.7	80.7	7.5	25.2	1210	810
150	14.4	5.5	28.3	68.9	39/1.5	32.2	1.0	1.1	39.2	83.9	8.4	31.5	1260	840
185	16.0	5.5	29.9	68.9	39/1.5	33.8	1.0	1.1	40.8	87.4	9.6	38.9	1310	870
240	18.4	5.5	32.3	68.9	39/1.5	36.2	1.1	1.2	43.2	92.5	11.3	50.4	1390	930
300	20.6	5.5	34.5	68.9	39/1.5	38.4	1.1	1.2	45.4	97.2	13.2	63.0	1460	970
400	23.4	5.5	37.3	68.9	39/1.5	41.2	1.1	1.2	48.2	103.2	15.7	84.0	1550	1030
500	26.2	5.5	40.5	68.9	39/1.5	44.4	1.2	1.3	51.4	110.0	19.0	105.0	1650	1110

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
35	0.524	0.668	0.668	0.668	5.0	5.0	14400	0.168	0.669	34.0	3.60	0.153	0.167	0.211	0.558	1.08	0.0930
50	0.387	0.494	0.494	0.494	7.2	7.4	13200	0.182	0.727	36.9	3.47	0.147	0.162	0.205	0.383	0.770	0.0888
70	0.268	0.342	0.342	0.342	10.0	10.2	11800	0.205	0.817	41.5	3.31	0.139	0.153	0.197	0.275	0.543	0.0796
95	0.193	0.247	0.247	0.246	13.6	10.2	10700	0.226	0.900	45.7	3.19	0.132	0.146	0.190	0.275	0.468	0.0741
120	0.153	0.196	0.196	0.196	17.2	10.2	9800	0.245	0.978	49.7	3.11	0.127	0.141	0.185	0.275	0.428	0.0698
150	0.124	0.159	0.159	0.159	21.5	10.2	9100	0.265	1.06	53.6	3.04	0.122	0.137	0.180	0.275	0.399	0.0662
185	0.0991	0.127	0.127	0.127	26.5	10.2	8400	0.285	1.14	57.8	2.98	0.118	0.133	0.176	0.275	0.374	0.0629
240	0.0754	0.0977	0.0974	0.0971	34.3	10.2	7600	0.316	1.26	64.1	2.90	0.113	0.127	0.171	0.275	0.351	0.0588
300	0.0601	0.0786	0.0783	0.0778	42.9	10.2	7000	0.345	1.38	69.8	2.85	0.109	0.123	0.167	0.275	0.335	0.0558
400	0.0470	0.0626	0.0621	0.0615	57.2	10.2	6300	0.380	1.52	77.1	2.79	0.105	0.119	0.163	0.275	0.322	0.0526
500	0.0366	0.0501	0.0495	0.0486	71.5	10.2	5700	0.421	1.68	85.3	2.74	0.102	0.116	0.160	0.275	0.312	0.0505

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond
35	174	183	130	174	144
50	205	218	156	205	171
70	254	269	193	249	209
95	309	326	230	296	249
120	355	376	261	335	281
150	400	425	294	374	314
185	455	485	343	420	363
240	534	569	395	484	416
300	609	648	445	540	465
400	698	744	504	608	524
500	794	848	568	679	585

12.7/22kV Triplex 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 tape
8. PVC inner sheath
9. HDPE outer sheath

Properties:

Rated voltage	12.7/22kV
Max. operating temperature of conductor	90℃
Max. short-circuit operation temperature of conductor (5s Max. duration)	250℃
Ambient temperature range for operating	from -40℃ to +50℃
Relative air humidity at temperature lower than +35℃	up to 95%
Min. temperature for installing without preheating	+0℃
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	Max. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius (bundled cable)	
							Inner layer	Outer layer					During installation	Installed
mm^2	mm	mm	mm	mm^2	No./mm	mm	mm	mm	mm	kg/m	kN	mm	mm	mm
35	7.0	5.5	20.9	22.1	39/0.85	23.5	1.0	1.0	30.5	65.3	2.5	4.2	980	650
50	8.1	5.5	22.0	31.5	22/1.35	25.6	1.0	1.0	32.6	69.8	3.0	6.0	1050	700
70	9.8	5.5	23.7	44.4	31/1.35	27.3	1.0	1.0	34.3	73.4	3.7	8.4	1100	730
95	11.4	5.5	25.3	61.5	43/1.35	28.9	1.0	1.0	35.9	76.8	4.5	11.4	1150	770
120	12.9	5.5	26.8	68.7	48/1.35	30.4	1.0	1.0	37.4	80.0	5.1	14.4	1200	800
150	14.4	5.5	28.3	68.7	48/1.35	31.9	1.0	1.1	38.9	83.2	5.4	18.0	1250	830
185	16.0	5.5	29.9	68.7	48/1.35	33.5	1.0	1.1	40.5	86.7	5.9	22.2	1300	870
240	18.4	5.5	32.3	68.7	48/1.35	35.9	1.1	1.1	42.9	91.8	6.6	28.8	1380	920
300	20.6	5.5	34.5	68.7	48/1.35	38.1	1.1	1.2	45.1	96.5	7.2	36.0	1450	970
400	23.4	5.5	37.3	68.7	48/1.35	40.9	1.2	1.2	47.9	102.5	8.2	48.0	1540	1030
500	26.2	5.5	40.5	68.7	48/1.35	44.1	1.2	1.3	51.1	109.4	9.4	60.0	1640	1090

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20℃	Max. AC resistance of conductor at 90℃			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20℃	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90℃			Screen DC resistance at 20℃	Zero sequence resistance at 20℃	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
35	0.868	1.11	1.11	1.11	3.3	3.3	14400	0.168	0.670	34.1	3.60	0.152	0.166	0.210	0.859	1.73	0.0942
50	0.641	0.822	0.822	0.822	4.7	4.7	13200	0.182	0.726	36.9	3.47	0.147	0.161	0.205	0.602	1.24	0.0911
70	0.443	0.568	0.568	0.568	6.6	6.6	11800	0.205	0.818	41.6	3.31	0.138	0.152	0.196	0.427	0.870	0.0817
95	0.320	0.411	0.411	0.410	9.0	9.1	10700	0.226	0.902	45.8	3.19	0.131	0.146	0.189	0.309	0.629	0.0723
120	0.253	0.325	0.325	0.325	11.3	10.2	9800	0.245	0.978	49.7	3.11	0.126	0.141	0.184	0.276	0.529	0.0691
150	0.206	0.265	0.265	0.264	14.2	10.2	9100	0.265	1.06	53.7	3.04	0.122	0.136	0.180	0.276	0.482	0.0660
185	0.164	0.211	0.211	0.211	17.5	10.2	8400	0.285	1.14	57.8	2.98	0.117	0.132	0.176	0.276	0.440	0.0628
240	0.125	0.161	0.161	0.161	22.7	10.2	7600	0.316	1.26	64.0	2.90	0.112	0.127	0.171	0.276	0.401	0.0565
300	0.100	0.129	0.129	0.129	28.3	10.2	7000	0.345	1.38	69.9	2.85	0.108	0.123	0.167	0.276	0.376	0.0534
400	0.0778	0.101	0.101	0.101	37.8	10.2	6300	0.380	1.52	77.0	2.79	0.104	0.119	0.162	0.276	0.354	0.0503
500	0.0605	0.0798	0.0793	0.0788	47.2	10.2	5700	0.421	1.68	85.3	2.74	0.101	0.116	0.159	0.276	0.337	0.0503

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A				
	In air			In ground	
					
mm^2	Solid bond	Solid bond	Solid bond	Solid bond	Solid bond
35	134	140	100	135	110
50	160	169	121	159	134
70	199	210	150	194	164
95	240	255	179	231	194
120	275	294	204	261	220
150	311	330	229	294	245
185	355	379	269	330	284
240	419	445	311	380	329
300	479	509	351	429	369
400	555	590	404	485	420
500	644	688	460	553	475

Technical Information – Current Ratings

Continuous Current Ratings:

The continuous current ratings given in this catalogue have been based on the following standard operating conditions as per IEC 60287:

Maximum conductor temperature	90°C
Ambient air temperature	40°C
Ambient soil temperature	25°C
Soil thermal resistivity	1.2K.m/W

The ratings are also based on the following standard installation conditions:
- In air, shaded, no wind
- Buried direct with a depth of laying of 0.8m to centre of cable or cable group
- In duct with a depth of laying of 0.8m to centre of duct

Single core cables are laid in the configurations indicated in the current rating tables and the screens are bonded to the earth at both ends.

Emergency Rating:

XLPE insulated cables can operate under emergency conditions with a conductor temperature of 130°C for periods of up to 36 hours to a maximum of three times per year.

However, due to high volume expansion of XLPE above 100°C, a limit of 105°C for emergency rating has become widely accepted and is specified in AS/NZS 1429, IEC, and European specifications. A further restriction is evident where metal tape screens are specified; here the overload temperature may have to be limited to 100°C. The 105°C emergency limit represents the following approximate percentage increase over the normal continuous ratings:
Cables in air: +14%
Cables in ground (laid direct or in ducts): +11%

Rating Factors:

Where it is desired to depart from the standard conditions, the rating correction factors given in the following tables should be applied.

Ambient Air Temperature Variation:

Air temp. (°C)	20	25	35	40	45	50	55
Rating factor	1.18	1.14	1.05	1.00	0.95	0.89	0.84

Ground Temperature Variation:

Cables laid direct in ground or in ducts

Ground temp. (°C)	10	15	20	25	30	35	40
Rating factor	1.11	1.07	1.04	1.00	0.96	0.92	0.88

Depth of Burial Variation:

Depth of burial (m)	Cables laid direct in ground		Cables laid direct in ducts	
	Rating factor (up to 300mm²)	Rating factor (above 300mm²)	Rating factor (single core)	Rating factor (three core)
0.80	1.00	1.00	1.00	1.00
1.00	0.98	0.97	0.98	0.99
1.25	0.96	0.95	0.95	0.97
1.50	0.95	0.93	0.94	0.96
1.75	0.94	0.91	0.92	0.96
2.00	0.92	0.89	0.91	0.95
2.50	0.91	0.88	0.89	0.94
3.00	0.90	0.86	0.88	0.93

Thermal Resistivity of Soil Variation

Single Core Cable Laid in Single Way Ducts:

Nominal conductor area mm²	Thermal resistivity (°C m/W)										
	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.0	3.5	4.0
50	1.07	1.05	1.04	1.03	1.00	0.95	0.89	0.85	0.80	0.76	0.74
70	1.08	1.05	1.04	1.03	1.00	0.95	0.89	0.84	0.80	0.75	0.72
95	1.08	1.06	1.05	1.03	1.00	0.95	0.88	0.84	0.80	0.74	0.72
120	1.08	1.06	1.05	1.03	1.00	0.95	0.88	0.83	0.78	0.74	0.70
150	1.09	1.06	1.05	1.03	1.00	0.95	0.87	0.82	0.78	0.74	0.70
185	1.09	1.07	1.05	1.03	1.00	0.95	0.87	0.82	0.78	0.73	0.69
240	1.10	1.07	1.05	1.03	1.00	0.95	0.87	0.81	0.78	0.72	0.69
300	1.10	1.07	1.05	1.03	1.00	0.95	0.87	0.81	0.77	0.72	0.69
400	1.10	1.07	1.06	1.04	1.00	0.04	0.87	0.81	0.77	0.72	0.68
500	1.12	1.07	1.06	1.04	1.00	0.94	0.86	0.81	0.76	0.70	0.68
630	1.12	1.09	1.06	1.04	1.00	0.94	0.86	0.81	0.76	0.70	0.67
800	1.12	1.09	1.06	1.04	1.00	0.94	0.86	0.80	0.75	0.70	0.67
1000	1.12	1.10	1.06	1.04	1.00	0.94	0.86	0.80	0.75	0.69	0.66

Single Core Cable Laid Direct in Ground:

Nominal conductor area mm²	Thermal resistivity (°C m/W)										
	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.0	3.5	4.0
50	1.20	1.15	1.10	1.06	1.00	0.91	0.81	0.73	0.68	0.63	0.59
70	1.22	1.15	1.11	1.06	1.00	0.91	0.81	0.73	0.67	0.62	0.59
95	1.22	1.15	1.11	1.06	1.00	0.91	0.81	0.73	0.67	0.62	0.59
120	1.22	1.16	1.11	1.06	1.00	0.91	0.81	0.73	0.67	0.62	0.59
150	1.22	1.16	1.11	1.06	1.00	0.91	0.81	0.73	0.67	0.62	0.58
185	1.22	1.16	1.12	1.07	1.00	0.91	0.81	0.73	0.67	0.62	0.58
240	1.23	1.16	1.12	1.07	1.00	0.91	0.81	0.73	0.67	0.62	0.58
300	1.23	1.17	1.12	1.07	1.00	0.91	0.80	0.72	0.67	0.62	0.58
400	1.23	1.17	1.12	1.07	1.00	0.90	0.80	0.72	0.67	0.61	0.58
500	1.23	1.17	1.12	1.07	1.00	0.90	0.80	0.72	0.66	0.61	0.58
630	1.23	1.17	1.12	1.07	1.00	0.90	0.80	0.72	0.66	0.61	0.58
800	1.23	1.17	1.12	1.07	1.00	0.90	0.80	0.71	0.66	0.61	0.58
1000	1.23	1.17	1.12	1.07	1.00	0.90	0.80	0.71	0.66	0.60	0.57

Three Core Cables Laid in Duct:

Nominal conductor area mm²	Thermal resistivity (°C m/W)										
	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.0	3.5	4.0
16	1.06	1.04	1.02	1.01	1.00	0.96	0.92	0.87	0.84	0.81	0.79
25	1.06	1.05	1.02	1.01	1.00	0.96	0.92	0.87	0.84	0.81	0.77
35	1.06	1.05	1.02	1.01	1.00	0.96	0.92	0.87	0.83	0.81	0.77
50	1.06	1.05	1.03	1.01	1.00	0.96	0.91	0.87	0.83	0.79	0.76
70	1.07	1.05	1.03	1.01	1.00	0.96	0.91	0.86	0.81	0.78	0.75
95	1.07	1.05	1.04	1.01	1.00	0.96	0.91	0.85	0.81	0.77	0.75
120	1.08	1.05	1.04	1.02	1.00	0.95	0.89	0.84	0.80	0.77	0.74
150	1.08	1.06	1.04	1.02	1.00	0.95	0.89	0.84	0.79	0.77	0.73
185	1.09	1.06	1.05	1.02	1.00	0.94	0.88	0.84	0.79	0.76	0.71
240	1.09	1.07	1.05	1.02	1.00	0.94	0.88	0.83	0.78	0.76	0.71
300	1.10	1.07	1.05	1.02	1.00	0.94	0.87	0.83	0.77	0.74	0.70
400	1.10	1.07	1.05	1.02	1.00	0.94	0.87	0.82	0.77	0.74	0.70
500	1.10	1.06	1.05	1.02	1.00	0.94	0.87	0.82	0.77	0.74	0.70

Three Core Cables Laid Direct in Ground:

Nominal conductor area mm²	Thermal resistivity (°C m/W)										
	0.7	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.0	3.5	4.0
16	1.16	1.12	1.08	1.04	1.00	0.92	0.83	0.77	0.71	0.66	0.61
25	1.17	1.12	1.08	1.04	1.00	0.92	0.83	0.76	0.71	0.66	0.61
35	1.17	1.12	1.08	1.05	1.00	0.92	0.83	0.76	0.71	0.65	0.61
50	1.17	1.12	1.08	1.05	1.00	0.91	0.83	0.76	0.70	0.64	0.60
70	1.17	1.13	1.08	1.05	1.00	0.91	0.82	0.74	0.70	0.63	0.60
95	1.17	1.13	1.09	1.05	1.00	0.91	0.82	0.74	0.69	0.63	0.59
120	1.18	1.13	1.10	1.06	1.00	0.91	0.81	0.74	0.69	0.63	0.59
150	1.18	1.13	1.10	1.06	1.00	0.91	0.81	0.74	0.69	0.62	0.59
185	1.18	1.13	1.10	1.06	1.00	0.91	0.81	0.73	0.69	0.62	0.58
240	1.19	1.14	1.10	1.07	1.00	0.91	0.81	0.73	0.68	0.62	0.58
300	1.19	1.14	1.10	1.07	1.00	0.91	0.81	0.73	0.68	0.62	0.58
400	1.19	1.15	1.10	1.07	1.00	0.91	0.80	0.73	0.68	0.62	0.58
500	1.19	1.15	1.10	1.07	1.00	0.91	0.80	0.73	0.68	0.62	0.58

Installation Factors Affecting Current Ratings

Screen Bonding:

The current ratings given for single core cables assume that the copper wire screens are solidly bonded to earth at both ends.

Single point bonding results in an increase in current rating of up to
25% due to the elimination of heating effects of the circulating currents caused by the induced voltage in the screens. This loss can be minimized by doing the following:

- For short runs of cable, earthing can be done at one end only (in which case the screens cannot be used for earthing)
- In long runs of cable, by transposing the screens at every joint position so that the voltages induced by the three phases cancel one another.

With single point bonding, higher current ratings may be used, however, under some conditions, a high standing voltage may occur at the open end of the screens and attention must be paid to the safety aspects. Generally, it is considered practical to use special bonding arrangements only on transmission class cables of 66kV and above as the extra equipment required must also be considered in the total project cost.

Three core cables have their screens permanently in contact with one another internally within the cable for their entire length so circulating currents cannot flow. Current ratings for three core cables therefore assume their screens are solidly bonded to earth at both ends.

Grouping of Cables:

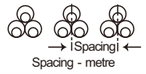
Where a number of circuits are installed in close proximity to one another, consideration must be given to the mutual heating effect.
With cables in ground, a derating factor must be applied when the spacing between circuits is less than 1m. Cables in unenclosed installations in air must be derated when the spacing is less than three times the cable diameter.

Allowance must also be made for other heat sources and in cases where cables of different temperature ratings are installed in close proximity.

This catalogue provides group derating factors for underground cables. For group derating factors for cables installed in air references may be made to AS/NZS 3008.1:1998.

Derating Factors for Grouping of Cables

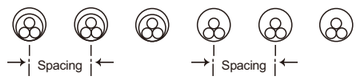
Single Core Cables:

Number of circuits	Laid flat, spaced, horizontal formation, laid direct in ground				Trefoil touching, laid flat touching horizontal formation, laid direct in ground						Trefoil single way ducts, horizontal formation		
													
	Spacing of circuits – meter				Spacing of circuits – meter						Spacing – meter		
	0.15	0.3	0.45	0.6	Touching (Trefoil)	Touching (Laid flat)	0.15	0.3	0.45	0.6	Touching	0.45	0.6
2	0.80	0.84	0.87	0.89	0.77	0.79	0.81	0.85	0.88	0.90	0.85	0.88	0.90
3	0.69	0.74	0.79	0.81	0.66	0.68	0.70	0.77	0.80	0.83	0.75	0.8	0.82
4	0.63	0.69	0.75	0.78	0.58	0.61	0.65	0.72	0.76	0.80	0.69	0.76	0.80
5	0.59	0.65	0.72	0.76	0.54	0.58	0.60	0.67	0.73	0.77	0.67	0.73	0.77
6	0.55	0.63	0.70	0.73	0.52	0.54	0.57	0.65	0.71	0.75	0.64	0.71	0.76
7	0.53	0.62	0.68	0.72	0.49	0.52	0.56	0.64	0.70	0.74	0.61	0.70	0.74
8	0.52	0.60	0.67	0.71	0.47	0.50	0.53	0.63	0.69	0.74	0.61	0.69	0.74
9	0.50	0.58	0.66	0.71	0.44	0.48	0.51	0.61	0.68	0.74	0.59	0.67	0.72
10	0.48	0.58	0.65	0.71	0.43	0.46	0.51	0.61	0.68	0.72	0.58	0.66	0.72
11	0.48	0.57	0.64	0.69	0.42	0.46	0.50	0.59	0.66	0.73	0.57	0.66	0.72
12	0.46	0.56	0.63	0.69	0.41	0.45	0.48	0.59	0.66	0.71	0.56	0.65	0.72

Three Core Cables:

Number of cables in group	Horizontal formation laid direct in ground				
					
	Spacing – meter				
	Touching	0.15	0.3	0.45	0.6
2	0.80	0.85	0.89	0.91	0.93
3	0.68	0.76	0.81	0.84	0.87
4	0.62	0.71	0.77	0.81	0.84
5	0.57	0.66	0.73	0.78	0.82
6	0.54	0.64	0.71	0.77	0.81
7	0.51	0.61	0.69	0.75	0.79
8	0.49	0.59	0.68	0.74	0.79
9	0.47	0.58	0.67	0.73	0.78
10	0.45	0.57	0.66	0.73	0.78
11	0.44	0.55	0.65	0.72	0.77
12	0.43	0.54	0.64	0.72	0.77

Single Core, Three Core or Triplex Cables:

Number of ducts in group	Horizontal formation in single way ducts			
				
	Spacing – meter			
	Touching	0.3	0.45	0.6
2	0.88	0.91	0.93	0.94
3	0.80	0.85	0.88	0.90
4	0.76	0.81	0.85	0.88
5	0.72	0.78	0.83	0.86
6	0.69	0.76	0.81	0.85
7	0.67	0.75	0.80	0.84
8	0.65	0.74	0.79	0.83
9	0.63	0.72	0.78	0.83
10	0.62	0.72	0.78	0.82
11	0.61	0.71	0.77	0.82
12	0.60	0.70	0.77	0.81

Short Circuit Ratings

Conductors:

The short circuit current ratings given in the tables are calculated in accordance with IEC 60986 and are the symmetrical currents which will cause the conductor temperature to rise from the normal operating value of 90°C to the maximum short circuit temperature of 250°C in the time stated, assuming adiabatic conditions.

Where high fault currents are anticipated in single core cables, consideration should be given to the electromechanical forces which will cause the cables to move apart if adequate restraint is not provided.

Screens:

The screen short circuit current ratings given in the tables are calculated in accordance with IEC 60986 and are the asymmetrical currents which will cause the screen temperature to rise from the normal operating value of 80°C to the maximum short circuit temperature, assuming adiabatic conditions. The final temperature used in the calculation varies depending upon the nature of the screen material itself and other materials in direct contact with the screen.

The screen constructions detailed can be tailored in size to meet the specific fault requirements of any operating system.

This catalogue details cables rated up to and including 33kV.

There have been two other commonly used screen ratings, although the terminology used to describe them has varied over the years.
These are described following.

Installation Notes

Moisture:

MV cables are manufactured in conditions free of moisture.
It is important that precautions are taken during installation to ensure that moisture or water is not permitted to enter the cable.
- Cut ends or opened sheath must be protected and sealed from moisture.
- After cutting the cable, the ends must be re-sealed using a heat shrinkable cable cap.
- When using a pulling sock, the cable end cap must be checked for integrity before the pull and replaced when broken or torn.

Single Core Cables:

The following points should be noted relating to single core cables –
- Single core cables carrying the phase currents of a single circuit must be installed as closely as possible together, to minimize inductive reactance. The preferred formation for three phase conductors is in "trefoil" or flat formation. Sheaths should be in contact with one another in either case.

- A single core cable generates an alternating magnetic field around itself which can cause large increases in voltage drop and power loss. When ferrous metal is allowed to encircle the cable. Steel racking or ladder will not induce this effect, but the following must be observed:
1.Cable cleats may be of wood, plastic, or non-ferrous metal but steel should not be used, unless fixed to a non-conductive surface.
2.Where three single phase cables pass through a steel bulkhead all must pass through the same hole and glanding is required cut out a panel and replace this with a non-ferrous plate in which the three or four glands are mounted.

- Under fault conditions, single core cables may be subjected to large electromechanical forces which tend to drive them apart, depending on installation geometry. Properly designed cleats spaced at 1500mm intervals will provide adequate support to the cable, however, special consideration may be required if fault currents in excess of 15kA are anticipated. Contact Hengtong for further advice.

Outer Sheath:

As high voltage XLPE cables are lighter than paper insulated cables they are generally supplied in longer lengths and therefore it is often necessary to provide a tougher outer sheath to assist in installation.

High density polyethylene (HDPE) is a tough, rigid material. Because this material is so rigid, it may be subject to stress cracking if applied over an uneven surface. Hengtong therefore recommends a bedding layer of orange PVC be provided for the black HDPE sheath.

Where termites are known to be a problem, a extruded layer of nylon is recommended or chemical additive added to the HDPE. The nylon layer will be applied between the PVC and the HDPE.

Bending Radius and Duct Sizes

Bending Radius:

The safe bending radius for an electric cable is limited by the flexibility of the insulation and sheathing material used.

Hengtong XLPE insulation will withstand high elongation without sustaining damage which might impair its electrical performance, and the semi-conductive screening material has both the flexibility and adhesion to ensure that it will not delaminate even during severe bends.

Hengtong PVC sheathing stands up very well to bending, but HDPE sheathing and nylon termite barriers both have to be treated with caution because, being hard and brittle materials, they are subject to damage if bending exceeds the Australian Standard.

Fire retardant and halogen free sheathing materials, some being soft materials, must be treated with caution during the pulling operation as they could be torn or ripped.

An additional issue must be considered in that a cable being installed may be pulled around several curves in different directions and subjected to dynamic stresses which could cause damage. Consequently the bending radius around which a cable may be pulled is greater than that at which it can be set into its final position.

The following recommended minimum bending radii are expressed as a function of the cable diameter and refer to the inside of the curve. In all cases, bending radii should be as large as practicable.

Recommended Bending Radius Factors for for 1 and 3 Core MV XLPE Cables as per AS1429.1

Cable outer sheath or covering	Multiplying factor	
	During installation	Set
PVC and all other outer sheath material	18	12
HDPE	25	15
Polyamide(Nylon)	30*	20*

*In the case of nylon. Diameter is over the nylon.

Recommended Bending Radius Factors for MV Triplex Cables as per AS1429.1

Cable outer sheath or covering		Multiplying factor* Minimum bending radius	
		During installation	Set
PVC and all other outer sheath material	(i) Bundled cable (ii) Phase cable	12 18	8 12
HDPE	(i) Bundled cable (ii) Phase cable	15 25	10 15
Polyamide(Nylon)	(i) Bundled cable (ii) Phase cable	20 30	15 20

*In multiples of circumscribing overall diameter for bundled cables and in multiples of the phase cable diameter for phase cables.

Duct Sizes:

Ducts are another important consideration affecting the pulling operation. Selection of the appropriate duct should be based on internal duct diameter to suit a cable size, and wall thickness to prevent deformation during duct installation.

The internal finish of the installed ducting should be smooth to prevent cable sheath damage during installation. The use of graphite or other commercially available pulling lubricants can also prevent sheath damage and reduce pulling tensions.

Pulling Tension

Conductors:

Where a cable is to be pulled using a winch and steel wire rope, the rope may be secured to the cable by either:
- A cable stocking of steel wire braid
- A pulling eye attached to the cables conductor
- A pulling eye over the complete cable end
- A pulling eye formed from the armour wires.

The maximum tension which may be used is limited by the tensile strength of the conductors or armour wires, or by the gripping capability of the cable stocking, depending on the method used.

Both copper and aluminium are extremely ductile metals which, in their annealed state, have no clearly defined yield point so that elongation can commence at stresses substantially less than the yield stress for the material. Galvanised mild steel, as used for cable armouring, has a more clearly defined yield stress below which negligible elongation will occur.

In the calculation of pulling tensions it is not usual to allow for the tensile strength of the insulating and sheathing materials. Reliance on these materials, which have high elongation factors, may result in some elongation of the conductors and a consequent increase in the conductor resistance.

Material	Maximum safetensile stress (S) N/mm²
Stranded copper conductor	70
Stranded aluminium conductor	40
Solid aluminium conductor	30
Galvanised steel wire armour	130
Hard drawn aluminium wire armour	60