

HIGH VOLTAGE

Cables 66 - 500kV

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Company Introduction

Hengtong Cable Australia is part of the Hengtong Group of companies. Founded in 1991, Hengtong Group is an international company with a diverse range of areas covering, Fibre Optic, Power Cable, Construction and Maintenance, Financial Services, Capital Investment, Information Technology, and Tourism.

Hengtong Group has 70 wholly-owned companies and holding companies (some are listed on various Stock Exchanges: Shanghai, Singapore, 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 40 countries and regions around the world supplying products to over 150 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 6 TROESTER VCV extruders.

Committing to innovation and social responsibility is at the heart of Hengtong. Hengtong has donated more than 700M RMB to local charities.

Hengtong Group has an annual turnover of AUD \$24 Billion and employs some 20,000 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.



38/66kV Single Core Cu/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Cu conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	38/66kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per 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 thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
95	11.6	13	2.0	1.7	1.8	66.2	4284	6.5	1324	993
120	13.0	13	2.0	1.7	1.8	67.6	4614	8.2	1352	1014
150	14.6	12	2.0	1.7	1.8	67.2	4810	10.2	1344	1008
185	16.2	12	2.0	1.7	1.8	68.8	5251	12.6	1376	1032
240	18.4	12	2.0	1.7	1.8	72.0	5951	16.3	1440	1080
300	20.6	11	2.0	1.7	1.8	72.2	6455	20.4	1444	1083
400	23.4	11	2.0	1.7	1.8	75.0	7490	27.2	1500	1125
500	26.6	11	2.0	1.7	1.8	78.2	8673	34.0	1564	1173
630	29.9	11	2.0	2.0	2.0	82.5	10281	42.8	1650	1238
800	33.6	10	2.0	2.0	2.0	85.2	11934	54.4	1704	1278
1000	39.2	10	2.3	2.0	2.0	93.7	14669	68	1874	1406
1200	43.4	10	2.3	2.2	2.3	98.9	16939	81.6	1978	1484
1600	49.6	10	2.3	2.2	2.3	105.1	21022	108.8	2102	1577
2000	55.0	10	2.3	2.5	2.5	111.5	25263	136.0	2230	1673
2500	61.5	10	2.3	2.5	2.5	118.0	30227	170.0	2360	1770

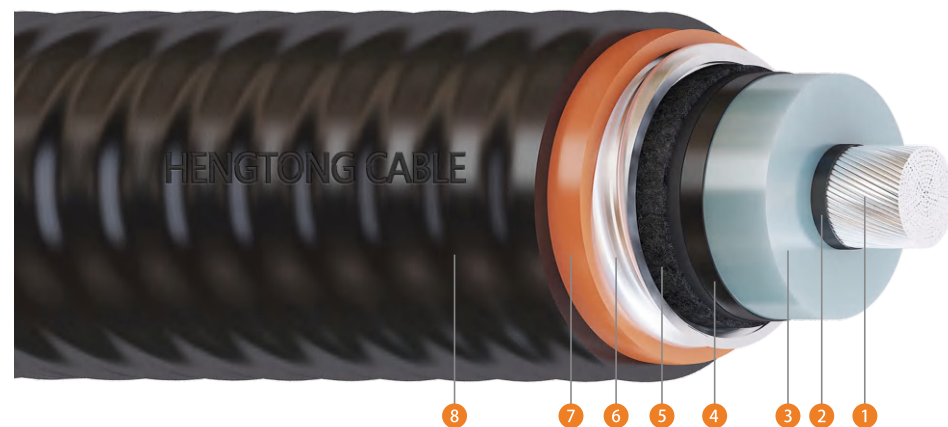
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
95	0.193	0.247	0.247	0.246	13.6	13.6	0.125	1.5	5.1	0.169	0.227	0.183	0.341	0.680
120	0.153	0.196	0.196	0.196	17.2	17.2	0.133	1.6	4.9	0.163	0.221	0.177	0.301	0.671
150	0.124	0.159	0.159	0.159	21.5	21.5	0.149	1.8	5.0	0.155	0.213	0.170	0.272	0.664
185	0.0991	0.127	0.127	0.127	26.5	26.5	0.158	1.9	4.9	0.150	0.208	0.165	0.247	0.655
240	0.0754	0.0972	0.0972	0.0971	34.3	34.3	0.170	2.0	4.7	0.145	0.203	0.159	0.223	0.641
300	0.0601	0.0781	0.0781	0.0778	42.9	42.9	0.195	2.3	4.9	0.138	0.196	0.153	0.208	0.633
400	0.047	0.0618	0.0618	0.0614	57.2	57.2	0.211	2.5	4.7	0.132	0.191	0.147	0.195	0.621
500	0.0366	0.0492	0.0492	0.0486	71.5	64.0	0.231	2.8	4.6	0.127	0.185	0.142	0.185	0.607
630	0.0283	0.0393	0.0393	0.0385	90.1	64.0	0.250	3.0	4.5	0.123	0.181	0.138	0.176	0.593
800	0.0221	0.0323	0.0323	0.0312	114.5	64.0	0.294	3.5	4.8	0.118	0.176	0.132	0.170	0.582
1000	0.0176	0.0250	0.0250	0.0247	143.1	64.0	0.338	4.0	4.6	0.114	0.172	0.129	0.166	0.560
1200	0.0151	0.0222	0.0222	0.0218	171.7	64.0	0.366	4.4	4.5	0.111	0.169	0.126	0.163	0.547
1600	0.0113	0.0181	0.0181	0.0176	229.0	64.0	0.406	4.8	4.5	0.106	0.165	0.121	0.159	0.531
2000	0.009	0.0157	0.0157	0.0151	286.2	64.0	0.440	5.3	4.4	0.104	0.162	0.118	0.157	0.517
2500	0.0072	0.0139	0.0139	0.0132	357.8	64.0	0.482	5.8	4.4	0.100	0.158	0.115	0.155	0.503

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
95	350	380	345	307	316	302	298	296	289
120	400	436	395	347	359	342	338	336	328
150	453	497	447	389	403	383	377	377	367
185	514	567	509	436	455	431	424	425	413
240	600	665	595	501	526	497	488	493	477
300	682	764	678	561	594	559	546	555	536
400	780	885	779	630	676	631	613	632	606
500	889	1024	892	703	768	711	686	718	683
630	1006	1177	1016	780	870	795	762	814	765
800	1123	1346	1142	852	973	877	834	911	844
1000	1269	1555	1314	929	1099	980	914	1031	948
1200	1354	1689	1414	974	1175	1036	961	1104	1004
1600	1491	1932	1581	1040	1309	1128	1030	1230	1097
2000	1592	2121	1708	1087	1411	1194	1080	1328	1164
2500	1684	2320	1829	1121	1507	1250	1118	1421	1223

38/66kV Single Core AI/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken AI conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	38/66kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per 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 thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
95	11.6	13	2.0	1.7	1.8	66.2	3714	3.7	1324	993
120	13.0	13	2.0	1.7	1.8	67.6	3898	4.7	1352	1014
150	14.6	12	2.0	1.7	1.8	67.2	3909	5.9	1344	1008
185	16.2	12	2.0	1.7	1.8	68.8	4133	7.2	1376	1032
240	18.4	12	2.0	1.7	1.8	72.0	4493	9.4	1440	1080
300	20.6	11	2.0	1.7	1.8	72.2	4616	11.7	1444	1083
400	23.4	11	2.0	1.7	1.8	75.0	5105	15.6	1500	1125
500	26.6	11	2.0	1.7	1.8	78.2	5624	19.5	1564	1173
630	29.9	11	2.0	2.0	2.0	82.5	6401	24.6	1650	1238
800	33.6	10	2.0	2.0	2.0	85.2	6939	31.2	1704	1278
1000	39.2	10	2.3	2.0	2.0	93.7	8438	39.0	1874	1406
1200	43.4	10	2.3	2.2	2.3	98.9	9515	46.8	1978	1484
1600	49.6	10	2.3	2.2	2.3	105.1	11123	62.4	2102	1577
2000	55.0	10	2.3	2.5	2.5	111.5	12889	78.0	2230	1673
2500	61.5	10	2.3	2.5	2.5	118.0	14809	97.5	2360	1770

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
95	0.320	0.411	0.411	0.411	9.0	9.0	0.125	1.5	5.1	0.169	0.227	0.183	0.468	0.680
120	0.253	0.325	0.325	0.325	11.3	11.3	0.133	1.6	4.9	0.163	0.221	0.177	0.401	0.671
150	0.206	0.265	0.265	0.265	14.2	14.2	0.149	1.8	5.0	0.155	0.213	0.170	0.354	0.664
185	0.164	0.211	0.211	0.211	17.5	17.5	0.158	1.9	4.9	0.150	0.208	0.165	0.312	0.655
240	0.125	0.161	0.161	0.161	22.7	22.7	0.170	2.0	4.7	0.145	0.203	0.159	0.273	0.641
300	0.100	0.129	0.129	0.129	28.3	28.3	0.195	2.3	4.9	0.138	0.196	0.153	0.248	0.633
400	0.0778	0.1009	0.1009	0.1009	37.8	37.8	0.211	2.5	4.7	0.132	0.191	0.147	0.226	0.621
500	0.0605	0.0791	0.0791	0.0791	47.2	47.2	0.231	2.8	4.6	0.127	0.185	0.142	0.208	0.607
630	0.0469	0.0622	0.0622	0.0622	59.5	59.5	0.250	3.0	4.5	0.123	0.181	0.138	0.195	0.593
800	0.0367	0.0498	0.0498	0.0498	75.6	64.0	0.294	3.5	4.8	0.118	0.176	0.132	0.185	0.582
1000	0.0291	0.0375	0.0375	0.0375	94.5	64.0	0.338	4.0	4.6	0.114	0.172	0.129	0.177	0.560
1200	0.0247	0.0319	0.0319	0.0318	113.4	64.0	0.366	4.4	4.5	0.111	0.169	0.126	0.173	0.547
1600	0.0186	0.0241	0.0241	0.0241	151.2	64.0	0.406	4.8	4.5	0.106	0.165	0.121	0.167	0.531
2000	0.0149	0.0195	0.0195	0.0194	189.0	64.0	0.440	5.3	4.4	0.104	0.162	0.118	0.163	0.517
2500	0.0127	0.0167	0.0167	0.0166	236.3	64.0	0.482	5.8	4.4	0.100	0.158	0.115	0.161	0.503

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
95	272	294	268	239	245	235	232	230	225
120	311	338	307	271	279	266	264	261	256
150	353	385	347	304	313	298	295	293	286
185	402	441	397	342	354	337	333	331	323
240	471	518	465	395	410	390	385	384	374
300	537	595	531	444	464	439	432	434	421
400	620	693	615	504	531	501	491	497	481
500	715	808	711	570	608	570	557	569	548
630	820	936	819	642	695	645	628	650	621
800	932	1083	936	715	787	723	700	737	697
1000	1080	1277	1100	802	908	827	789	852	801
1200	1179	1415	1210	859	992	895	848	932	868
1600	1348	1674	1406	951	1142	1012	942	1074	984
2000	1485	1899	1572	1023	1272	1107	1017	1198	1079
2500	1594	2100	1710	1070	1374	1176	1067	1296	1151

76/132kV Single Core Cu/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Cu conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	76/132kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per 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 thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
150	14.6	18	2.0	2.0	2.0	81.2	6235	10.2	1624	1218
185	16.2	18	2.0	2.0	2.0	82.8	6797	12.6	1656	1242
240	18.4	18	2.0	2.0	2.0	85.0	7507	16.3	1700	1275
300	20.6	18	2.0	2.0	2.0	87.2	8270	20.4	1744	1308
400	23.4	18	2.0	2.0	2.0	90.0	9369	27.2	1800	1350
500	26.6	18	2.0	2.0	2.0	93.2	10623	34.0	1864	1398
630	29.9	18	2.0	2.2	2.3	98.5	12360	42.8	1970	1477
800	33.6	18	2.0	2.2	2.3	102.2	14312	54.4	2044	1533
1000	39.2	18	2.3	2.2	2.3	111.7	17500	68	2234	1676
1200	43.4	18	2.3	2.5	2.5	115.9	19697	81.6	2318	1739
1600	49.6	18	2.3	2.5	2.5	122.1	23937	108.8	2442	1832
2000	55.0	18	2.3	2.5	2.5	128.5	28130	136.0	2570	1928
2500	61.5	18	2.3	2.5	2.5	135.0	33295	170.0	2700	2025

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
150	0.124	0.159	0.159	0.159	21.5	21.5	0.115	2.7	7.7	0.167	0.182	0.225	0.272	0.640
185	0.0991	0.127	0.127	0.127	26.5	26.5	0.121	2.9	7.5	0.162	0.176	0.220	0.247	0.631
240	0.0754	0.0972	0.0972	0.0970	34.3	34.3	0.130	3.1	7.2	0.155	0.170	0.213	0.223	0.620
300	0.0601	0.0779	0.0779	0.0778	42.9	42.9	0.138	3.3	6.9	0.150	0.164	0.208	0.208	0.610
400	0.047	0.0617	0.0617	0.0614	57.2	57.2	0.149	3.6	6.7	0.144	0.158	0.202	0.195	0.598
500	0.0366	0.0489	0.0489	0.0485	71.5	71.5	0.161	3.8	6.4	0.138	0.153	0.196	0.185	0.585
630	0.0283	0.0390	0.0390	0.0384	90.1	75.0	0.173	4.1	6.2	0.134	0.149	0.192	0.176	0.571
800	0.0221	0.0318	0.0318	0.0311	114.5	75.0	0.187	4.5	6.1	0.129	0.144	0.187	0.170	0.559
1000	0.0176	0.0249	0.0249	0.0247	143.1	75.0	0.212	5.1	5.8	0.125	0.140	0.183	0.166	0.538
1200	0.0151	0.0220	0.0220	0.0218	171.7	75.0	0.228	5.4	5.7	0.121	0.135	0.179	0.163	0.527
1600	0.0113	0.0179	0.0179	0.0176	229.0	75.0	0.250	6.0	5.5	0.116	0.130	0.174	0.159	0.512
2000	0.009	0.0155	0.0155	0.0151	286.2	75.0	0.270	6.4	5.4	0.113	0.127	0.171	0.157	0.499
2500	0.0072	0.0137	0.0137	0.0132	357.8	75.0	0.293	7.0	5.3	0.109	0.123	0.167	0.155	0.486

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
	 Single point bonding or cross-bonding	 Single point bonding or cross-bonding	 Single point bonding or cross-bonding	 Single point bonding or cross-bonding	 Single point bonding or cross-bonding	 Single point bonding or cross-bonding	 Single point bonding or cross-bonding	 Single point bonding or cross-bonding	 Single point bonding or cross-bonding
mm ²									
150	448	485	443	386	401	382	379	379	369
185	508	553	504	433	453	429	425	428	416
240	592	649	588	497	524	495	488	495	479
300	672	742	669	555	591	556	546	558	538
400	768	858	768	623	673	628	613	635	609
500	874	991	880	695	764	706	685	721	686
630	989	1137	1001	771	865	790	762	817	768
800	1103	1295	1125	840	968	871	832	914	849
1000	1243	1493	1289	891	1092	971	912	1034	949
1200	1327	1623	1387	958	1167	1026	955	1105	1004
1600	1465	1857	1553	1025	1300	1118	1024	1321	1097
2000	1565	2040	1679	1070	1402	1183	1073	1329	1164
2500	1661	2232	1802	1106	1499	1241	1113	1422	1225

76/132kV Single Core Al/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Al conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	76/132kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per 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 thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
150	14.6	18	2.0	2.0	2.0	81.2	5424	5.9	1624	1218
185	16.2	18	2.0	2.0	2.0	82.8	5679	7.2	1656	1242
240	18.4	18	2.0	2.0	2.0	85.0	6049	9.4	1700	1275
300	20.6	18	2.0	2.0	2.0	87.2	6432	11.7	1744	1308
400	23.4	18	2.0	2.0	2.0	90.0	6983	15.6	1800	1350
500	26.6	18	2.0	2.0	2.0	93.2	7574	19.5	1864	1398
630	29.9	18	2.0	2.2	2.3	98.5	8480	24.6	1970	1477
800	33.6	18	2.0	2.2	2.3	102.2	9318	31.2	2044	1533
1000	39.2	18	2.3	2.2	2.3	111.7	11269	39.0	2234	1676
1200	43.4	18	2.3	2.5	2.5	115.9	12273	46.8	2318	1739
1600	49.6	18	2.3	2.5	2.5	122.1	14038	62.4	2442	1832
2000	55.0	18	2.3	2.5	2.5	128.5	15756	78.0	2570	1928
2500	61.5	18	2.3	2.5	2.5	135.0	17828	97.5	2700	2025

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
150	0.206	0.264	0.264	0.264	14.2	14.2	0.115	2.7	7.7	0.167	0.182	0.225	0.354	0.640
185	0.164	0.211	0.211	0.211	17.5	17.5	0.121	2.9	7.5	0.162	0.176	0.220	0.312	0.631
240	0.125	0.161	0.161	0.161	22.7	22.7	0.130	3.1	7.2	0.155	0.170	0.213	0.273	0.620
300	0.100	0.129	0.129	0.129	28.3	28.3	0.138	3.3	6.9	0.150	0.164	0.208	0.248	0.610
400	0.0778	0.1008	0.1008	0.1006	37.8	37.8	0.149	3.6	6.7	0.144	0.158	0.202	0.226	0.598
500	0.0605	0.079	0.079	0.0787	47.2	47.2	0.161	3.8	6.4	0.138	0.153	0.196	0.208	0.585
630	0.0469	0.062	0.062	0.0616	59.5	59.5	0.173	4.1	6.2	0.134	0.149	0.192	0.195	0.571
800	0.0367	0.0495	0.0495	0.0489	75.6	75.0	0.187	4.5	6.1	0.129	0.144	0.187	0.185	0.559
1000	0.0291	0.0375	0.0375	0.0375	94.5	75.0	0.212	5.1	5.8	0.125	0.140	0.183	0.177	0.538
1200	0.0247	0.0319	0.0319	0.0318	113.4	75.0	0.228	5.4	5.7	0.121	0.135	0.179	0.173	0.527
1600	0.0186	0.0241	0.0241	0.0241	151.2	75.0	0.250	6.0	5.5	0.116	0.130	0.174	0.167	0.512
2000	0.0149	0.0195	0.0195	0.0194	189.0	75.0	0.270	6.4	5.4	0.113	0.127	0.171	0.163	0.499
2500	0.0127	0.0167	0.0167	0.0166	236.3	75.0	0.293	7.0	5.3	0.109	0.123	0.167	0.161	0.486

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
150	349	376	344	302	311	297	296	294	287
185	398	430	393	341	353	336	334	333	325
240	465	505	460	393	409	388	386	386	376
300	529	578	524	411	462	437	433	436	423
400	610	672	606	500	529	498	492	499	483
500	703	782	701	565	605	566	557	571	550
630	805	904	806	636	691	641	629	653	624
800	913	1041	920	707	783	719	699	740	700
1000	1055	1224	1076	792	903	820	788	855	802
1200	1151	1358	1184	847	985	886	844	933	868
1600	1318	1605	1375	937	1135	1001	937	1075	983
2000	1453	1832	1537	1006	1270	1094	1009	1204	1077
2500	1563	2015	1674	1054	1365	1164	1060	1296	1149

87/150kV Single Core Cu/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Cu conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	87/150kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

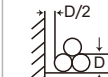
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
185	16.2	22	2.0	2.0	2.0	90.8	7826	12.6	1816	1362
240	18.4	21	2.0	2.0	2.0	91.0	8289	16.3	1820	1365
300	20.6	21	2.0	2.0	2.0	93.2	9071	20.4	1864	1398
400	23.4	21	2.0	2.0	2.0	96.0	10195	27.2	1920	1440
500	26.6	21	2.0	2.2	2.3	101.2	11706	34.0	2024	1518
630	29.9	21	2.0	2.2	2.3	104.5	13255	42.8	2090	1567
800	33.6	20	2.4	2.2	2.3	107.0	15324	54.4	2140	1605
1000	39.2	20	2.4	2.5	2.5	115.9	18281	68	2318	1739
1200	43.4	20	2.4	2.5	2.5	120.1	20506	81.6	2402	1802
1600	49.6	20	2.4	2.5	2.5	127.3	24832	108.8	2546	1910
2000	55.0	20	2.4	2.5	2.5	133.7	29063	136.0	2674	2006
2500	61.5	20	2.4	2.5	2.5	140.2	34272	170.0	2804	2103

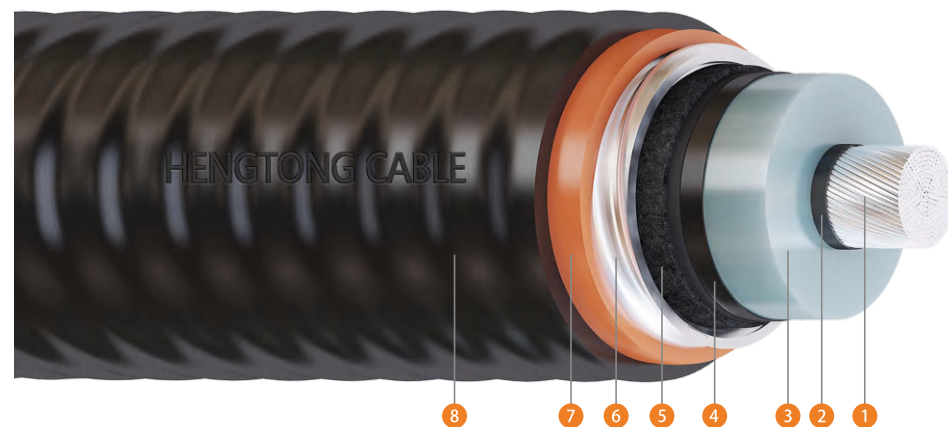
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
185	0.0991	0.127	0.127	0.127	26.5	26.5	0.108	2.9	7.6	0.168	0.182	0.226	0.247	0.620
240	0.0754	0.0971	0.0971	0.0970	34.3	34.3	0.118	3.2	7.5	0.160	0.174	0.218	0.223	0.612
300	0.0601	0.0779	0.0779	0.0778	42.9	42.9	0.125	3.4	7.2	0.154	0.169	0.212	0.208	0.601
400	0.047	0.0616	0.0616	0.0614	57.2	57.2	0.135	3.7	6.9	0.148	0.162	0.206	0.195	0.590
500	0.0366	0.0488	0.0488	0.0485	71.5	71.5	0.145	4.0	6.6	0.143	0.158	0.201	0.185	0.575
630	0.0283	0.0389	0.0389	0.0384	90.1	80.0	0.156	4.3	6.4	0.138	0.152	0.196	0.176	0.564
800	0.0221	0.0317	0.0317	0.0311	114.5	80.0	0.173	4.7	6.4	0.132	0.147	0.190	0.170	0.553
1000	0.0176	0.0249	0.0249	0.0247	143.1	80.0	0.196	5.4	6.1	0.127	0.142	0.185	0.166	0.534
1200	0.0151	0.0220	0.0220	0.0218	171.7	80.0	0.210	5.7	6.0	0.123	0.138	0.181	0.163	0.523
1600	0.0113	0.0179	0.0179	0.0176	229.0	80.0	0.231	6.3	5.8	0.118	0.133	0.177	0.159	0.507
2000	0.009	0.0155	0.0155	0.0151	286.2	80.0	0.248	6.8	5.7	0.115	0.130	0.173	0.157	0.494
2500	0.0072	0.0137	0.0137	0.0132	357.8	80.0	0.269	7.4	5.6	0.111	0.126	0.169	0.155	0.481

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
185	505	546	501	432	452	429	426	429	417
240	589	642	586	496	523	494	488	496	481
300	667	734	666	553	590	555	546	559	540
400	763	848	764	621	671	626	613	636	610
500	868	977	875	694	763	705	687	723	687
630	982	1124	996	767	863	789	761	818	770
800	1089	1284	1117	826	963	864	819	911	844
1000	1235	1519	1283	910	1102	967	906	1045	947
1200	1318	1610	1379	950	1164	1021	949	1104	1002
1600	1455	1837	1545	1018	1298	1114	1020	1231	1096
2000	1555	2019	1670	1063	1399	1180	1069	1328	1163
2500	1651	2210	1794	1100	1497	1238	1109	1422	1224

87/150kV Single Core Al/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Al conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	87/150kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

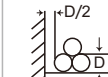
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
185	16.2	22	2.0	2.0	2.0	90.8	6708	7.2	1816	1362
240	18.4	21	2.0	2.0	2.0	91.0	6831	9.4	1820	1365
300	20.6	21	2.0	2.0	2.0	93.2	7233	11.7	1864	1398
400	23.4	21	2.0	2.0	2.0	96.0	7809	15.6	1920	1440
500	26.6	21	2.0	2.2	2.3	101.2	8657	19.5	2024	1518
630	29.9	21	2.0	2.2	2.3	104.5	9375	24.6	2090	1567
800	33.6	20	2.4	2.2	2.3	107.0	10330	31.2	2140	1605
1000	39.2	20	2.4	2.5	2.5	115.9	12049	39.0	2318	1739
1200	43.4	20	2.4	2.5	2.5	120.1	13082	46.8	2402	1802
1600	49.6	20	2.4	2.5	2.5	127.3	14933	62.4	2546	1910
2000	55.0	20	2.4	2.5	2.5	133.7	16689	78.0	2674	2006
2500	61.5	20	2.4	2.5	2.5	140.2	18804	97.5	2804	2103

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
185	0.164	0.211	0.211	0.211	17.5	17.5	0.108	2.9	7.6	0.168	0.182	0.226	0.312	0.620
240	0.125	0.161	0.161	0.161	22.7	22.7	0.118	3.2	7.5	0.160	0.174	0.218	0.273	0.612
300	0.100	0.129	0.129	0.129	28.3	28.3	0.125	3.4	7.2	0.154	0.169	0.212	0.248	0.601
400	0.0778	0.1008	0.1008	0.1006	37.8	37.8	0.135	3.7	6.9	0.148	0.162	0.206	0.226	0.590
500	0.0605	0.0789	0.0789	0.0787	47.2	47.2	0.145	4.0	6.6	0.143	0.158	0.201	0.208	0.575
630	0.0469	0.0619	0.0619	0.0616	59.5	59.5	0.156	4.3	6.4	0.138	0.152	0.196	0.195	0.564
800	0.0367	0.0494	0.0494	0.0489	75.6	75.6	0.173	4.7	6.4	0.132	0.147	0.190	0.185	0.553
1000	0.0291	0.0375	0.0375	0.0375	94.5	80.0	0.196	5.4	6.1	0.127	0.142	0.185	0.177	0.534
1200	0.0247	0.0319	0.0319	0.0318	113.4	80.0	0.210	5.7	6.0	0.123	0.138	0.181	0.173	0.523
1600	0.0186	0.0241	0.0241	0.0241	151.2	80.0	0.231	6.3	5.8	0.118	0.133	0.177	0.167	0.507
2000	0.0149	0.0194	0.0194	0.0194	189.0	80.0	0.248	6.8	5.7	0.115	0.130	0.173	0.163	0.494
2500	0.0127	0.0167	0.0167	0.0166	236.3	80.0	0.269	7.4	5.6	0.111	0.126	0.169	0.161	0.481

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
185	395	425	391	340	352	336	335	334	327
240	462	500	458	392	408	388	386	387	377
300	525	572	521	439	461	436	433	437	425
400	606	665	603	499	528	497	492	500	485
500	697	770	696	564	605	566	559	573	552
630	799	893	801	634	690	640	628	654	625
800	904	1032	914	698	780	715	692	739	698
1000	1048	1213	1071	787	901	818	785	855	801
1200	1143	1346	1177	841	983	883	840	932	867
1600	1308	1588	1367	931	1133	998	933	1075	982
2000	1442	1802	1528	1000	1260	1091	1005	1197	1076
2500	1552	1993	1664	1048	1363	1160	1056	1296	1148

127/220kV Single Core Cu/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Cu conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	127/220kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

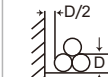
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
400	23.4	27	2.4	2.5	2.5	114.5	13209	27.2	2290	1718
500	26.6	27	2.4	2.5	2.5	118.0	14584	34.0	2360	1770
630	29.9	26	2.4	2.5	2.5	118.9	15825	42.8	2378	1784
800	33.6	25	2.4	2.5	2.5	121.4	17583	54.4	2428	1821
1000	39.2	24	2.6	2.5	2.5	126.5	20365	68	2530	1898
1200	43.4	24	2.6	2.5	2.5	133.0	22720	81.6	2660	1995
1600	49.6	24	2.6	2.5	2.5	139.5	27150	108.8	2790	2093
2000	55.0	24	2.8	2.5	2.5	146.5	31742	136.0	2930	2198
2500	61.5	24	2.8	2.5	2.5	157.5	37284	170.0	3150	2363

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. A.C resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
400	0.047	0.0615	0.0615	0.0613	57.2	57.2	0.118	4.7	8.5	0.159	0.174	0.217	0.195	0.451
500	0.0366	0.0487	0.0487	0.0485	71.5	71.5	0.126	5.0	8.2	0.153	0.167	0.211	0.185	0.440
630	0.0283	0.0388	0.0388	0.0384	90.1	90.1	0.138	5.5	8.1	0.146	0.161	0.204	0.176	0.431
800	0.0221	0.0316	0.0316	0.0310	114.5	106	0.151	6.0	8.0	0.140	0.154	0.198	0.170	0.421
1000	0.0176	0.0248	0.0248	0.0247	143.1	106	0.172	6.9	7.8	0.133	0.147	0.191	0.166	0.406
1200	0.0151	0.0220	0.0220	0.0218	171.7	106	0.184	7.3	7.6	0.130	0.144	0.188	0.163	0.394
1600	0.0113	0.0178	0.0178	0.0175	229.0	106	0.201	8.0	7.4	0.124	0.139	0.182	0.159	0.379
2000	0.009	0.0154	0.0154	0.0151	286.2	106	0.216	8.6	7.2	0.121	0.135	0.179	0.157	0.367
2500	0.0072	0.0135	0.0135	0.0131	357.8	106	0.234	9.3	7.0	0.118	0.133	0.176	0.155	0.351

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
400	748	824	752	612	668	621	621	637	609
500	851	951	860	682	758	698	698	723	685
630	963	1097	981	753	857	780	780	817	766
800	1075	1250	1103	821	958	860	860	912	844
1000	1213	1449	1263	888	1079	953	953	1026	941
1200	1303	1579	1366	943	1168	1022	1022	1113	1010
1600	1431	1795	1522	996	1287	1099	1099	1225	1089
2000	1528	1973	1646	1037	1388	1163	1163	1323	1155
2500	1626	2147	1769	1082	1492	1228	1228	1424	1223

127/220kV Single Core Al/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Al conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	127/220kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

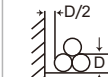
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
400	23.4	27	2.4	2.5	2.5	114.5	10823	15.6	2290	1718
500	26.6	27	2.4	2.5	2.5	118.0	11535	19.5	2360	1770
630	29.9	26	2.4	2.5	2.5	118.9	11945	24.6	2378	1784
800	33.6	25	2.4	2.5	2.5	121.4	12589	31.2	2428	1821
1000	39.2	24	2.6	2.5	2.5	126.5	14133	39.0	2530	1898
1200	43.4	24	2.6	2.5	2.5	133.0	15296	46.8	2660	1995
1600	49.6	24	2.6	2.5	2.5	139.5	17251	62.4	2790	2093
2000	55.0	24	2.8	2.5	2.5	146.5	19368	78.0	2930	2198
2500	61.5	24	2.8	2.5	2.5	157.5	21817	97.5	3150	2363

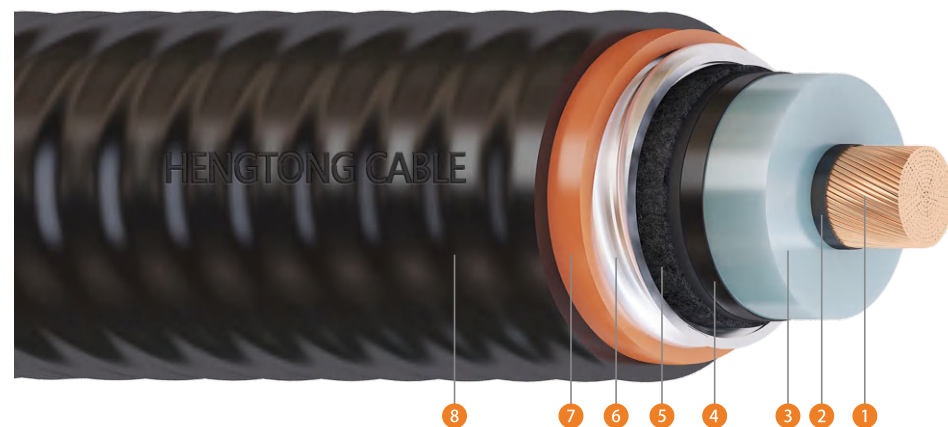
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
400	0.0778	0.101	0.101	0.101	37.8	37.8	0.118	4.7	8.5	0.159	0.174	0.217	0.226	0.451
500	0.0605	0.0788	0.0788	0.0787	47.2	47.2	0.126	5.0	8.2	0.153	0.167	0.211	0.208	0.440
630	0.0469	0.0617	0.0617	0.0615	59.5	59.5	0.138	5.5	8.1	0.146	0.161	0.204	0.195	0.431
800	0.0367	0.0491	0.0491	0.0488	75.6	75.6	0.151	6.0	8.0	0.140	0.154	0.198	0.185	0.421
1000	0.0291	0.0375	0.0375	0.0375	94.5	94.5	0.172	6.9	7.8	0.133	0.147	0.191	0.177	0.406
1200	0.0247	0.0319	0.0319	0.0318	113.4	106	0.184	7.3	7.6	0.130	0.144	0.188	0.173	0.394
1600	0.0186	0.0241	0.0241	0.0241	151.2	106	0.201	8.0	7.4	0.124	0.139	0.182	0.167	0.379
2000	0.0149	0.0194	0.0194	0.0194	189.0	106	0.216	8.6	7.2	0.121	0.135	0.179	0.163	0.367
2500	0.0127	0.0167	0.0167	0.0166	236.3	106	0.234	9.3	7.0	0.118	0.133	0.176	0.161	0.351

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
400	595	646	594	494	526	494	492	502	485
500	684	750	685	557	601	561	556	574	551
630	785	872	790	625	686	635	624	654	624
800	891	1005	902	694	777	712	694	739	699
1000	1029	1188	1054	772	894	808	773	851	798
1200	1129	1319	1165	836	987	885	840	941	875
1600	1285	1550	1344	913	1124	986	920	1070	977
2000	1414	1759	1502	976	1251	1075	987	1192	1068
2500	1522	1932	1634	1029	1357	1148	1045	1296	1144

160/275kV Single Core Cu/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Cu conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	160/275kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

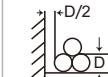
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
400	23.4	29	2.4	2.5	2.5	118.5	13840	27.2	2370	1778
500	26.6	29	2.4	2.5	2.5	122.0	15234	34.0	2440	1830
630	29.9	28	2.4	2.5	2.5	122.9	16481	42.8	2458	1843
800	33.6	27	2.4	2.5	2.5	125.4	18249	54.4	2508	1881
1000	39.2	26	2.6	2.5	2.5	130.5	21027	68	2610	1958
1200	43.4	26	2.6	2.5	2.5	137.0	23449	81.6	2740	2055
1600	49.6	26	2.6	2.5	2.5	143.5	27880	108.8	2870	2153
2000	55.0	26	2.8	2.5	2.5	150.5	32545	136.0	3010	2258
2500	61.5	26	2.8	3.0	3.0	163.5	38769	170.0	3270	2453

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
400	0.047	0.0615	0.0615	0.0614	57.2	57.2	0.113	5.7	10.3	0.161	0.176	0.219	0.195	0.447
500	0.0366	0.0487	0.0487	0.0485	71.5	71.5	0.120	6.1	9.8	0.155	0.169	0.213	0.185	0.435
630	0.0283	0.0387	0.0387	0.0384	90.1	90.1	0.131	6.6	9.7	0.148	0.163	0.206	0.176	0.427
800	0.0221	0.0315	0.0315	0.0311	114.5	106	0.144	7.2	9.5	0.142	0.157	0.200	0.170	0.417
1000	0.0176	0.0248	0.0248	0.0247	143.1	106	0.163	8.2	9.3	0.136	0.149	0.193	0.166	0.403
1200	0.0151	0.0219	0.0219	0.0218	171.7	106	0.174	8.7	9.1	0.131	0.146	0.190	0.163	0.390
1600	0.0113	0.0179	0.0179	0.0175	229.0	106	0.189	9.5	8.8	0.126	0.141	0.184	0.159	0.376
2000	0.009	0.0154	0.0154	0.0151	286.2	106	0.203	10.2	8.6	0.123	0.137	0.181	0.157	0.363
2500	0.0072	0.0135	0.0135	0.0131	357.8	106	0.220	11.0	8.3	0.121	0.135	0.179	0.155	0.346

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
400	743	818	747	609	665	617	607	635	607
500	845	943	855	678	754	694	678	720	683
630	956	1088	974	748	853	775	749	813	763
800	1069	1240	1096	815	953	854	816	908	841
1000	1209	1434	1254	890	1073	948	893	1022	936
1200	1287	1556	1349	925	1148	1001	931	1094	991
1600	1423	1779	1512	989	1279	1093	998	1218	1085
2000	1520	1958	1637	1028	1380	1157	1040	1315	1149
2500	1620	2121	1761	1080	1488	1223	1099	1422	1219

160/275kV Single Core Al/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Al conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	160/275kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

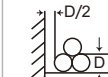
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
400	23.4	29	2.4	2.5	2.5	118.5	11455	15.6	2290	1718
500	26.6	29	2.4	2.5	2.5	122.0	12185	19.5	2360	1770
630	29.9	28	2.4	2.5	2.5	122.9	12601	24.6	2378	1784
800	33.6	27	2.4	2.5	2.5	125.4	13255	31.2	2428	1821
1000	39.2	26	2.6	2.5	2.5	130.5	14796	39.0	2530	1898
1200	43.4	26	2.6	2.5	2.5	137.0	16025	46.8	2660	1995
1600	49.6	26	2.6	2.5	2.5	143.5	17981	62.4	2790	2093
2000	55.0	26	2.8	2.5	2.5	150.5	20171	78.0	2930	2198
2500	61.5	26	2.8	3.0	3.0	163.5	23301	97.5	3150	2363

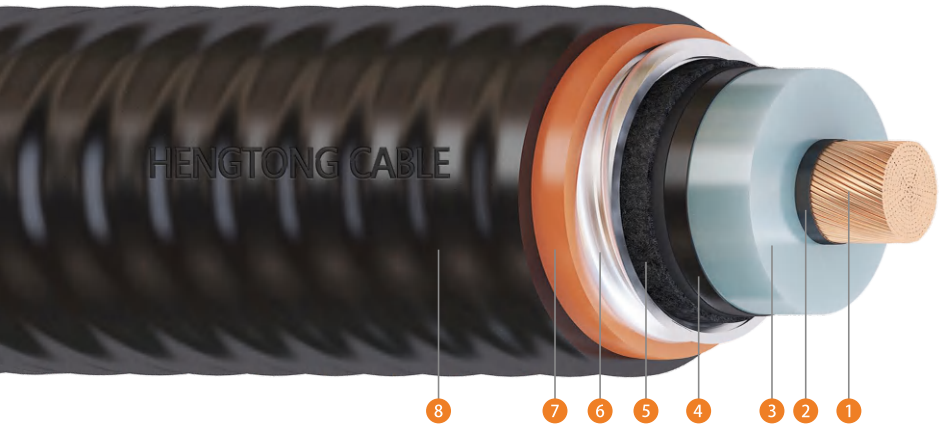
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
400	0.0778	0.101	0.101	0.101	37.8	37.8	0.113	5.7	10.3	0.159	0.174	0.217	0.226	0.451
500	0.0605	0.0788	0.0788	0.0787	47.2	47.2	0.120	6.1	9.8	0.153	0.167	0.211	0.208	0.440
630	0.0469	0.0617	0.0617	0.0616	59.5	59.5	0.131	6.6	9.7	0.146	0.161	0.204	0.195	0.431
800	0.0367	0.0491	0.0491	0.0486	75.6	75.6	0.144	7.2	9.5	0.140	0.154	0.198	0.185	0.421
1000	0.0291	0.0375	0.0375	0.0375	94.5	94.5	0.163	8.2	9.3	0.133	0.147	0.191	0.177	0.406
1200	0.0247	0.0319	0.0319	0.0318	113.4	106	0.174	8.7	9.1	0.130	0.144	0.188	0.173	0.394
1600	0.0186	0.0241	0.0241	0.0241	151.2	106	0.189	9.5	8.8	0.124	0.139	0.182	0.167	0.379
2000	0.0149	0.0194	0.0194	0.0194	189.0	106	0.203	10.2	8.6	0.121	0.135	0.179	0.163	0.367
2500	0.0127	0.0167	0.0167	0.0166	236.3	106	0.220	11.0	8.3	0.118	0.133	0.176	0.161	0.351

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
400	591	641	590	491	523	491	490	500	483
500	680	744	680	554	598	558	554	571	549
630	778	864	784	621	682	631	622	651	621
800	895	998	896	689	774	707	690	737	696
1000	1025	1175	1046	772	889	803	774	847	794
1200	1114	1300	1149	821	970	867	926	925	858
1600	1277	1536	1334	907	1117	980	915	1065	972
2000	1407	1745	1492	968	1243	1068	979	1185	1062
2500	1515	1907	1624	1026	1352	1143	1044	1293	1139

190/330kV Single Core Cu/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Cu conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	190/330kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

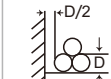
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
500	26.6	29	2.4	2.5	2.5	124.0	15432	34.0	2480	1860
630	29.9	29	2.4	2.5	2.5	126.9	17077	42.8	2538	1904
800	33.6	28	2.4	2.5	2.5	129.4	18815	54.4	2588	1941
1000	39.2	27	2.6	2.5	2.5	132.5	21410	68	2650	1988
1200	43.4	27	2.6	2.5	2.5	139.0	23844	81.6	2780	2085
1600	49.6	26	2.6	2.5	2.5	143.5	27880	108.8	2870	2153
2000	55.0	26	2.8	2.5	2.5	150.5	32545	136.0	3010	2258
2500	61.5	26	2.8	3.0	3.0	163.5	38769	170.0	3270	2453

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
500	0.0366	0.0487	0.0487	0.0485	71.5	71.5	0.120	7.2	11.7	0.156	0.170	0.214	0.185	0.433
630	0.0283	0.0387	0.0387	0.0384	90.1	90.1	0.128	7.7	11.2	0.150	0.165	0.208	0.176	0.423
800	0.0221	0.0315	0.0315	0.0311	114.5	106	0.140	8.4	11.1	0.144	0.158	0.202	0.170	0.413
1000	0.0176	0.0248	0.0248	0.0247	143.1	106	0.159	9.5	10.8	0.136	0.150	0.194	0.166	0.402
1200	0.0151	0.0220	0.0220	0.0218	171.7	106	0.169	10.1	10.5	0.132	0.147	0.190	0.163	0.388
1600	0.0113	0.0178	0.0178	0.0176	229.0	106	0.189	11.3	10.4	0.126	0.141	0.184	0.159	0.376
2000	0.009	0.0154	0.0154	0.0151	286.2	106	0.203	12.1	10.2	0.123	0.137	0.181	0.157	0.363
2500	0.0072	0.0136	0.0136	0.0132	357.8	106	0.220	13.1	9.9	0.121	0.135	0.179	0.155	0.346

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
500	844	944	852	674	750	690	674	714	678
630	954	1081	970	744	848	770	745	809	758
800	1065	1233	1090	810	947	848	811	902	835
1000	1205	1365	1252	883	1023	943	885	974	930
1200	1286	1555	1346	922	1141	996	927	1086	983
1600	1423	1783	1511	985	1270	1084	992	1207	1072
2000	1519	1964	1634	1023	1368	1144	1033	1301	1135
2500	1617	2144	1759	1068	1469	1207	1083	1398	1199

190/330kV Single Core Al/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Al conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	190/330kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

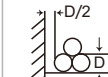
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
500	26.6	29	2.4	2.5	2.5	124.0	12383	19.5	2480	1860
630	29.9	29	2.4	2.5	2.5	126.9	13197	24.6	2538	1904
800	33.6	28	2.4	2.5	2.5	129.4	13821	31.2	2588	1941
1000	39.2	27	2.6	2.5	2.5	132.5	15178	39.0	2650	1988
1200	43.4	27	2.6	2.5	2.5	139.0	16419	46.8	2780	2085
1600	49.6	26	2.6	2.5	2.5	143.5	17981	62.4	2870	2153
2000	55.0	26	2.8	2.5	2.5	150.5	20171	78.0	3010	2258
2500	61.5	26	2.8	3.0	3.0	163.5	23301	97.5	3270	2453

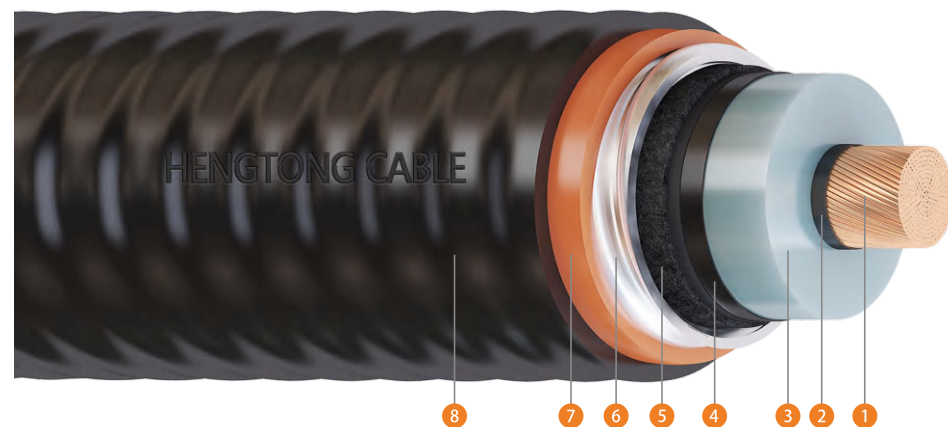
Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. A.C resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
500	0.0605	0.0788	0.0788	0.0787	47.2	71.5	0.120	7.2	11.7	0.156	0.170	0.214	0.208	0.433
630	0.0469	0.0617	0.0617	0.0615	59.5	90.1	0.128	7.7	11.2	0.150	0.165	0.208	0.195	0.423
800	0.0367	0.0491	0.0491	0.0488	75.6	106	0.140	8.4	11.1	0.144	0.158	0.202	0.185	0.413
1000	0.0291	0.0375	0.0375	0.0375	94.5	106	0.159	9.5	10.8	0.136	0.150	0.194	0.177	0.402
1200	0.0247	0.0319	0.0319	0.0319	113.4	106	0.169	10.1	10.5	0.132	0.147	0.190	0.173	0.388
1600	0.0186	0.0241	0.0241	0.0241	151.2	106	0.189	11.3	10.4	0.126	0.141	0.184	0.167	0.376
2000	0.0149	0.0195	0.0195	0.0194	189.0	106	0.203	12.1	10.2	0.123	0.137	0.181	0.163	0.363
2500	0.0127	0.0167	0.0167	0.0166	236.3	106	0.220	13.1	9.9	0.121	0.135	0.179	0.161	0.346

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
500	678	745	679	551	595	555	551	567	534
630	777	837	780	618	662	627	618	637	618
800	882	998	891	685	773	702	686	737	692
1000	1017	1167	1043	765	882	798	767	840	788
1200	1114	1299	1147	817	964	861	821	918	851
1600	1278	1540	1334	903	1109	971	909	1055	961
2000	1407	1751	1492	963	1232	1058	971	1173	1049
2500	1516	1930	1626	1016	1336	1129	1030	1272	1122

220/400kV Single Core Cu/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Cu conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	220/400kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

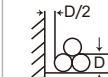
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
630	29.9	32	2.6	2.5	2.5	138.6	18888	42.8	2772	2079
800	33.6	31	2.6	2.5	2.5	140.3	20634	54.4	2806	2105
1000	39.2	30	2.8	2.5	2.5	145.6	23297	68	2912	2184
1200	43.4	30	2.8	2.5	2.5	149.8	25648	81.6	2996	2247
1600	49.6	29	2.8	3.0	3.0	156.0	30345	108.8	3120	2340
2000	55.0	28	3.0	3.0	3.0	161.8	34686	136.0	3236	2427
2500	61.5	28	3.0	3.0	3.0	168.3	40129	170.0	3366	2525

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. A.C resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
630	0.0283	0.0386	0.0386	0.0384	90.1	90.1	0.122	8.4	12.2	0.156	0.170	0.214	0.176	0.412
800	0.0221	0.0314	0.0314	0.0310	114.5	114.5	0.132	9.1	12.0	0.149	0.164	0.207	0.170	0.403
1000	0.0176	0.0248	0.0248	0.0246	143.1	120	0.149	10.3	11.6	0.142	0.156	0.200	0.166	0.389
1200	0.0151	0.0219	0.0219	0.0218	171.7	120	0.158	10.9	11.3	0.137	0.152	0.195	0.163	0.379
1600	0.0113	0.0177	0.0177	0.0175	229.0	120	0.176	12.2	11.1	0.131	0.146	0.189	0.159	0.365
2000	0.009	0.0153	0.0153	0.0150	286.2	120	0.193	13.4	11.1	0.127	0.142	0.185	0.157	0.354
2500	0.0072	0.0135	0.0135	0.0131	357.8	120	0.209	14.4	10.8	0.123	0.137	0.181	0.155	0.342

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
630	939	1060	957	765	843	765	740	807	757
800	1049	1208	1077	800	942	842	805	901	834
1000	1186	1398	1234	873	1063	936	881	1015	928
1200	1268	1519	1328	912	1136	989	923	1085	982
1600	1406	1737	1492	982	1268	1081	997	1211	1074
2000	1507	1913	1618	1027	1369	1146	1045	1308	1140
2500	1605	2096	1743	1066	1486	1206	1088	1402	1203

220/400kV Single Core Al/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Al conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	220/400kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

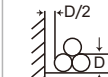
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
630	29.9	32	2.6	2.5	2.5	138.6	15008	24.6	2772	2079
800	33.6	31	2.6	2.5	2.5	140.3	15640	31.2	2806	2105
1000	39.2	30	2.8	2.5	2.5	145.6	17065	39.0	2912	2184
1200	43.4	30	2.8	2.5	2.5	149.8	18224	46.8	2996	2247
1600	49.6	29	2.8	3.0	3.0	156.0	20446	62.4	3120	2340
2000	55.0	28	3.0	3.0	3.0	161.8	22312	78.0	3236	2427
2500	61.5	28	3.0	3.0	3.0	168.3	24662	97.5	3366	2525

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
630	0.0469	0.0616	0.0616	0.0615	59.5	59.5	0.122	8.4	12.2	0.156	0.170	0.214	0.195	0.412
800	0.0367	0.0490	0.0490	0.0488	75.6	75.6	0.132	9.1	12.0	0.149	0.164	0.207	0.185	0.403
1000	0.0291	0.0375	0.0375	0.0375	94.5	94.5	0.149	10.3	11.6	0.142	0.156	0.200	0.177	0.389
1200	0.0247	0.0319	0.0319	0.0318	113.4	113.4	0.158	10.9	11.3	0.137	0.152	0.195	0.173	0.379
1600	0.0186	0.0241	0.0241	0.0241	151.2	120	0.176	12.2	11.1	0.131	0.146	0.189	0.167	0.365
2000	0.0149	0.0194	0.0194	0.0194	189.0	120	0.193	13.4	11.1	0.127	0.142	0.185	0.163	0.354
2500	0.0127	0.0167	0.0167	0.0166	236.3	120	0.209	14.4	10.8	0.123	0.137	0.181	0.161	0.342

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
630	764	842	770	612	675	623	615	647	617
800	867	970	879	678	763	697	682	730	691
1000	1004	1144	1027	758	879	793	765	841	786
1200	1096	1268	1129	809	959	855	818	917	850
1600	1257	1498	1314	898	1105	967	911	1056	961
2000	1389	1703	1472	964	1231	1056	981	1176	1051
2500	1499	1883	1605	1012	1333	1125	1033	1274	1122

290/500kV Single Core Cu/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Cu conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	290/500kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per 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 thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
800	33.6	34	2.9	3.0	3.0	149.9	22923	54.4	2998	2248
1000	39.2	33	3.0	3.0	3.0	155.0	25492	68	3100	2325
1200	43.4	33	3.0	3.0	3.0	160.2	28011	81.6	3204	2403
1600	49.6	32	3.1	3.0	3.0	164.6	32262	108.8	3292	2469
2000	55.0	31	3.2	3.0	3.0	170.2	36514	136.0	3404	2553
2500	61.5	31	3.3	3.0	3.0	176.9	42183	170.0	3538	2654

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
800	0.0221	0.0313	0.0313	0.0310	114.5	114.5	0.125	11.4	14.9	0.153	0.168	0.211	0.170	0.395
1000	0.0176	0.0247	0.0247	0.0246	143.1	120	0.139	12.7	14.4	0.146	0.160	0.204	0.166	0.381
1200	0.0151	0.0219	0.0219	0.0218	171.7	120	0.148	13.5	14.0	0.141	0.156	0.199	0.163	0.370
1600	0.0113	0.0177	0.0177	0.0175	229.0	120	0.164	15.0	13.7	0.135	0.149	0.193	0.159	0.359
2000	0.009	0.0153	0.0153	0.0150	286.2	120	0.180	16.4	13.6	0.130	0.145	0.188	0.157	0.348
2500	0.0072	0.0134	0.0134	0.0131	357.8	120	0.194	17.6	13.3	0.126	0.140	0.184	0.155	0.336

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
800	1033	1184	1061	786	928	827	795	888	820
1000	1169	1370	1215	859	1046	919	871	1000	912
1200	1249	1486	1307	898	1118	971	913	1069	966
1600	1385	1704	1469	960	1245	1058	978	1190	1054
2000	1486	1876	1594	1005	1344	1121	1027	1284	1119
2500	1586	2057	1720	1044	1442	1181	1070	1378	1181

290/500kV Single Core Al/XLPE/CAS/PVC/HDPE



- 1 Compacted or Milliken Al conductor
- 2 Semi conductive screen tape and conductor screen
- 3 XLPE insulation
- 4 Insulation screen
- 5 Semi conductive water-blocking tape
- 6 Corrugated aluminium
- 7 PVC inner sheath
- 8 HDPE outer sheath with graphite coating

Properties:

Rated voltage	290/500kV
Max. operating temperature of conductor	90°C
Max. short-circuit operation temperature of conductor (5s Max. duration)	250°C
Ambient temperature range for operating	from -40°C to +50°C
Relative air humidity at temperature lower than +35°C	up to 95%
Min. temperature for installing without preheating	+0°C
Standard	AS/NZS 1429.2
Fault Level	as per customer requirements

Application:

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

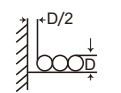
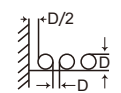
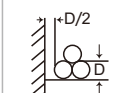
Structural Parameters:

Nominal conductor area	Approx. diameter of conductor	Nominal thickness of insulation	Nominal thickness of aluminium sheath	Nominal thickness of outer sheath		Approx. overall diameter of cable	Approx. weight of cable	Max. allowable pulling force of conductor	Min. bending radius during installation	Min. bending radius after installed
				Inner layer	Outer layer					
mm ²	mm	mm	mm	mm	mm	mm	kg/km	kN	mm	mm
800	33.6	34	2.9	3.0	3.0	149.9	17929	31.2	2998	2248
1000	39.2	33	3.0	3.0	3.0	155.0	19261	39.0	3100	2325
1200	43.4	33	3.0	3.0	3.0	160.2	20586	46.8	3204	2403
1600	49.6	32	3.1	3.0	3.0	164.6	22362	62.4	3292	2469
2000	55.0	31	3.2	3.0	3.0	170.2	24140	78.0	3404	2553
2500	61.5	31	3.3	3.0	3.0	176.9	26715	97.5	3538	2654

Electrical Characteristics:

Nominal conductor area	Max. DC resistance of conductor at 20°C	Max. A.C resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Conductor to screen capacitance	Charging current per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced						Trefoil touching	Flat touching	Flat spaced		
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	μF/km	A/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
800	0.0367	0.0490	0.0490	0.0488	75.6	75.6	0.125	11.4	14.9	0.153	0.168	0.211	0.185	0.395
1000	0.0291	0.0375	0.0375	0.0375	94.5	94.5	0.139	12.7	14.4	0.146	0.160	0.204	0.177	0.381
1200	0.0247	0.0319	0.0319	0.0318	113.4	113.4	0.148	13.5	14.0	0.141	0.156	0.199	0.173	0.370
1600	0.0186	0.0241	0.0241	0.0241	151.2	120	0.164	15.0	13.7	0.135	0.149	0.193	0.167	0.359
2000	0.0149	0.0194	0.0194	0.0194	189.0	120	0.180	16.4	13.6	0.130	0.145	0.188	0.163	0.348
2500	0.0127	0.0167	0.0167	0.0166	236.3	120	0.194	17.6	13.3	0.126	0.140	0.184	0.161	0.336

Current Ratings:

Nominal conductor area	Continuous current-carrying capacity, A								
	In air			In ground			In underground ducts		
									
mm ²	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding	Single point bonding or cross-bonding
800	853	950	864	666	751	684	673	719	678
1000	987	1121	1010	745	864	777	755	827	772
1200	1077	1240	1109	795	943	839	808	902	834
1600	1237	1468	1291	878	1085	945	894	1037	942
2000	1368	1668	1447	943	1207	1032	963	1154	1030
2500	1478	1846	1580	990	1308	1100	1015	1250	1101

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 at a single point or cross-bonded.

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		Cable laid direct in ducts
	Rating factor (up to 300mm2)	Rating factor (above 300mm2)	Rating factor (single core)
0.80	1.00	1.00	1.00
1.00	0.98	0.97	0.98
1.25	0.96	0.95	0.95
1.50	0.95	0.93	0.94
1.75	0.94	0.91	0.92
2.00	0.92	0.89	0.91
2.50	0.91	0.88	0.89
3.00	0.90	0.86	0.88

Thermal Resistivity of Soil Variation

Cable Laid in Single Way Ducts:

Nominal conductor area mm²	Thermal resistivity (°C m/W)									
	0.7	0.8	0.9	1.0	1.5	2.0	2.5	3.0	3.5	4.0
95	1.08	1.07	1.05	1.03	0.95	0.89	0.84	0.80	0.75	0.72
120	1.09	1.07	1.05	1.03	0.95	0.89	0.83	0.79	0.75	0.71
150	1.09	1.07	1.05	1.03	0.95	0.88	0.83	0.79	0.74	0.71
185	1.09	1.07	1.05	1.03	0.95	0.88	0.83	0.78	0.74	0.70
240	1.10	1.08	1.05	1.04	0.95	0.88	0.82	0.78	0.73	0.70
300	1.10	1.08	1.06	1.04	0.95	0.87	0.82	0.77	0.72	0.69
400	1.11	1.08	1.06	1.04	0.94	0.87	0.82	0.77	0.72	0.68
500	1.12	1.08	1.06	1.04	0.94	0.87	0.81	0.76	0.71	0.68
630	1.12	1.09	1.06	1.04	0.94	0.87	0.81	0.76	0.71	0.67
800	1.13	1.10	1.07	1.04	0.94	0.86	0.80	0.75	0.71	0.67
1000	1.13	1.10	1.07	1.04	0.94	0.86	0.80	0.75	0.70	0.66
1200	1.13	1.10	1.07	1.05	0.93	0.86	0.80	0.75	0.70	0.66
1600	1.14	1.11	1.08	1.05	0.93	0.85	0.80	0.74	0.70	0.65
2000	1.14	1.11	1.08	1.05	0.93	0.85	0.79	0.74	0.69	0.65
2500	1.14	1.12	1.08	1.06	0.92	0.85	0.79	0.74	0.69	0.64

Cable Laid Direct in Ground:

Nominal conductor area mm²	Thermal resistivity (°C m/W)									
	0.7	0.8	0.9	1.0	1.5	2.0	2.5	3.0	3.5	4.0
95	1.22	1.16	1.12	1.07	0.91	0.81	0.73	0.68	0.63	0.59
120	1.22	1.16	1.12	1.07	0.91	0.81	0.73	0.68	0.63	0.59
150	1.22	1.16	1.12	1.07	0.91	0.81	0.73	0.68	0.63	0.59
185	1.22	1.17	1.12	1.07	0.91	0.81	0.73	0.68	0.62	0.59
240	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.68	0.62	0.59
300	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.68	0.62	0.59
400	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.67	0.62	0.58
500	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.67	0.62	0.58
630	1.23	1.17	1.12	1.07	0.91	0.80	0.73	0.67	0.61	0.58
800	1.23	1.17	1.12	1.07	0.91	0.80	0.72	0.66	0.61	0.58
1000	1.24	1.18	1.12	1.07	0.91	0.80	0.72	0.66	0.61	0.58
1200	1.24	1.18	1.12	1.07	0.91	0.80	0.72	0.65	0.60	0.57
1600	1.24	1.18	1.12	1.07	0.91	0.80	0.71	0.65	0.60	0.57
2000	1.24	1.18	1.13	1.07	0.91	0.79	0.71	0.65	0.60	0.57
2500	1.25	1.18	1.13	1.08	0.92	0.79	0.70	0.64	0.60	0.56