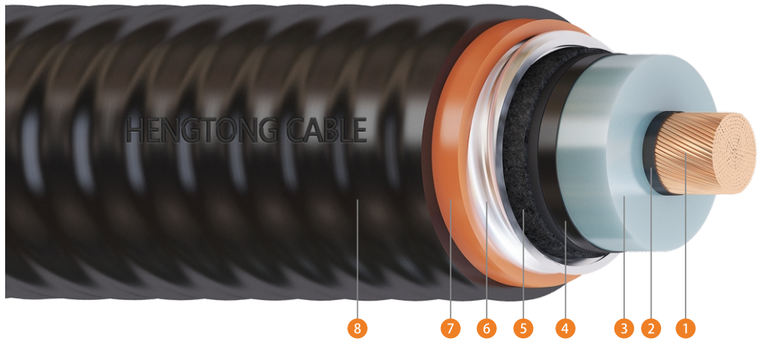
160/275kV Single Core Cu/XLPE/CAS/PVC/HDPE



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℃
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 1429.2
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.

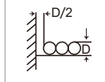
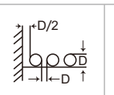
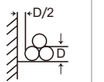
Structural Parameters:

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. D.C resistance of conductor at 20℃	Max. A.C resistance of conductor at 90℃			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℃			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	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		
	 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									
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