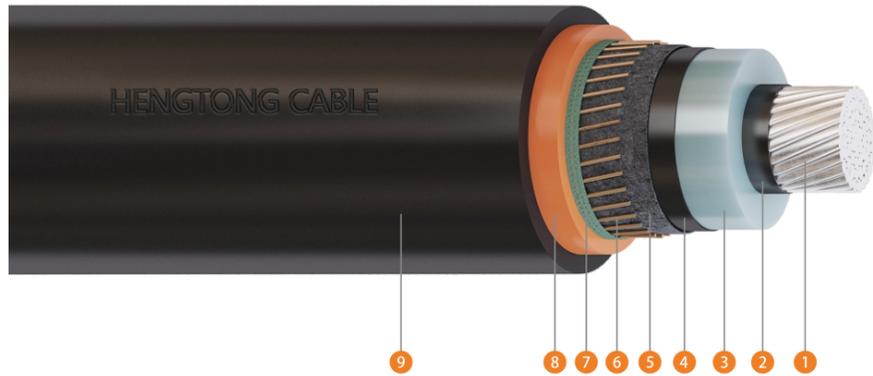


# 12.7/22kV Single Core Al/XLPE/CWS/PVC/HDPE



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

### Application:

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

### Structural Parameters:

Nominal conductor area mm <sup>2</sup>	Approx. diameter of conductor mm	Nominal thickness of insulation mm	Nominal diameter over insulation mm	Nominal screen area mm <sup>2</sup>	No. & diameter of screen wire No./mm	Nominal diameter over wire screen mm	Nominal thickness of outer sheath		Approx. overall diameter of cable mm	Approx. weight of cable kg/km	Max. allowable pulling force of conductor kN	Min. bending radius	
							Inner layer mm	Outer layer mm				During installation mm	Installed mm
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 mm <sup>2</sup>	Max. DC resistance of conductor at 20°C Ω/km	Max. AC resistance of conductor at 90°C Ω/km			Fault current carrying of conductor for 1 second kA	Fault current carrying of screen for 1 second kA	Insulation resistance at 20°C MΩ/km	Conductor to screen capacitance μF/km	Charging current per phase A/km	Dielectric loss per phase W/km	Maximum dielectric stress kV/mm	Inductive reactance at 50Hz and 90°C Ω/km			Screen DC resistance at 20°C Ω/km	Zero sequence resistance at 20°C Ω/km	Zero sequence reactance at 50Hz Ω/km
		Trefoil touching	Flat touching	Flat spaced								Trefoil touching	Flat touching	Flat spaced			
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 mm <sup>2</sup>	Continuous current-carrying capacity, A											
	In air					In ground			In underground ducts			
	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