

12.7/22kV Triplex AI/XLPE/CWS/PVC/HDPE



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

Properties:

Rated voltage	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.

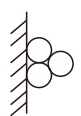
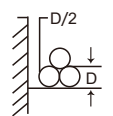
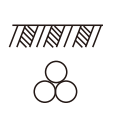
Structural Parameters:

Nominal conductor area	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°C	Max. AC resistance of conductor at 90°C			Fault current carrying of conductor for 1 second	Fault current carrying of screen for 1 second	Insulation resistance at 20°C	Conductor to screen capacitance	Charging current per phase	Dielectric loss per phase	Maximum dielectric stress	Inductive reactance at 50Hz and 90°C			Screen DC resistance at 20°C	Zero sequence resistance at 20°C	Zero sequence reactance at 50Hz
		Trefoil touching	Flat touching	Flat spaced								Trefoil touching	Flat touching	Flat spaced			
mm ²	Ω/km	Ω/km	Ω/km	Ω/km	kA	kA	MΩ/km	μF/km	A/km	W/km	kV/mm	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km
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