Physical & electrical characteristics

Aluminium 12.7/22kV – Three core heavy duty screened armoured										
Product code: 3CALX22HDA										
Nominal conductor area mm²		35	50	70	95	120	150	185		
Nominal conductor diameter mm		7.1	8.1	9.8	11.5	12.9	14.2	16.0		
Nominal insulation thickness mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5		
Approx cable diameter mm		63.8	66.4	70.4	74.5	79.3	82.6	86.8		
Approx mass kg/100m		535	580	655	735	890	955	1040		
Max pulling tension on conductors kN		5.3	7.5	11	14	18	23	25		
Max pulling tension on stocking grip kN		5.3	7.5	11	14	18	23	25		
Max pulling tension on amour wires kN		17	18	20	23	25	25	25		
Min bending radius* during installation mm		1150	1190	1270	1340	1430	1490	1560		
Min bending radius* set in position mm		770	800	850	890	950	990	1040		
Max conductor resistance, dc @ 20°C Ohm/km		0.868	0.641	0.443	0.320	0.253	0.206	0.164		
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km		1.11	0.822	0.568	0.411	0.325	0.265	0.211		
Inductance mH/km		0.437	0.419	0.386	0.367	0.354	0.343	0.329		
Inductive reactance, @ 50Hz Ohm/km		0.137	0.132	0.121	0.115	0.111	0.108	0.103		
Zero seq. impedance @ 20°C & 50 Hz Ohm/km		3.21+ j0.0911	2.46+ j0.0856	1.76+ j0.0754	1.26+ j0.0695	1.09+ j0.0657	1.05+ j0.0624	1.01+ j0.0579		
Capacitance, phase to earth µF/km		0.165	0.179	0.201	0.223	0.241	0.259	0.281		
Min insulation resistance @ 20°C MOhm.km		16,000	14,000	13,000	11,000	10,000	9,700	8,900		
Electric stress at conductor screen kV/mm		3.63	3.50	3.33	3.21	3.13	3.06	2.99		
Charging current @ rated voltage & 50 Hz A/phase/km		0.659	0.712	0.802	0.891	0.962	1.03	1.12		
Short circuit rating	Phase conductor kA, 1 sec	3.3	4.7	6.6	9.0	11.3	14.2	17.5		
	Metallic screen kA, 1 sec	3.5	4.6	6.3	8.9	10	10	10		
Continuous current rating	In ground, direct buried A	125	145	190	225	250	285	325		
	In ground, in singleway ducts A	110	130	160	190	225	250	280		
	In free air, unenclosed & spaced from wall A	125	145	190	230	265	305	350		

The cables described in this technical manual are designed to be used for the supply of electrical energy in fixed applications up to the rated voltages at a nominal power frequency between 49Hz and 61Hz. All values in this catalogue are for XLPE cables only. *Increased radius required for HDPE and nylon incorporating designs.