

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Copper 12.7/22kV – Single core light duty screened unarmoured												
Product code: 1CCUX22LD												
Nominal conductor area mm ²	35	50	70	95	120	150	185	240	300	400	500	630
Nominal conductor diameter mm	7.0	8.2	9.8	11.5	12.9	14.3	16.1	18.2	20.6	23.5	26.6	30.3
Nominal insulation thickness mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Approx cable diameter mm	26.6	27.7	29.5	31.2	32.8	34.2	36.2	38.4	41.1	44.8	48.1	52.0
Approx mass kg/100m	100	115	140	165	195	225	265	320	385	475	585	725
Max pulling tension on conductor kN	2.5	3.5	4.9	6.7	8.4	11	13	17	21	25	25	25
Max pulling tension on stocking grip kN	2.5	2.7	3.1	3.4	3.8	4.1	4.6	5.2	5.9	7.0	8.1	9.4
Min bending radius* during installation mm	480	500	530	560	590	620	650	690	740	810	860	940
Min bending radius* set in position mm	320	330	350	370	390	410	430	460	490	540	580	620
Max conductor resistance, dc @ 20°C Ohm/km	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.0470	0.0366	0.0283
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	0.668	0.494	0.342	0.247	0.196	0.159	0.128	0.0978	0.0788	0.0628	0.0504	0.0410
Inductance, trefoil touching mH/km	0.492	0.470	0.435	0.414	0.397	0.384	0.372	0.357	0.346	0.335	0.324	0.315
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.155	0.148	0.137	0.130	0.125	0.121	0.117	0.112	0.109	0.105	0.102	0.0988
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	1.46+ j0.0913	1.32+ j0.0851	1.20+ j0.0751	1.13+ j0.0693	1.09+ j0.0645	1.06+ j0.0611	1.03+ j0.0575	1.01+ j0.0538	0.995+ j0.0509	0.982+ j0.0481	0.973+ j0.0451	0.965+ j0.0426
Capacitance, phase to earth µF/km	0.164	0.179	0.200	0.223	0.241	0.259	0.282	0.310	0.343	0.386	0.426	0.473
Min insulation resistance @ 20°C MOhm.km	16,000	14,000	13,000	11,000	10,000	9,700	8,900	8,100	7,300	6,500	5,900	5,300
Electric stress at conductor screen kV/mm	3.64	3.49	3.33	3.21	3.12	3.06	2.99	2.91	2.85	2.78	2.73	2.68
Charging current @ rated voltage & 50 Hz A/phase/km	0.652	0.713	0.799	0.888	0.961	1.03	1.12	1.24	1.37	1.54	1.70	1.89
Short circuit rating	Phase conductor kA, 1 sec	5.0	7.2	10.0	13.6	17.2	21.5	26.5	34.3	42.9	57.2	90.1
	Metallic screen kA, 1 sec	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Continuous current rating	In ground, direct buried A	175	205	250	300	335	375	425	490	550	625	790
	In ground, in singleway ducts A	170	200	245	290	325	360	405	460	515	580	730
	In free air, unenclosed & spaced from wall A	180	215	270	325	375	425	490	575	660	765	1005

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.