

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Copper 12.7/22kV – Three core heavy duty screened unarmoured									
Product code: 3CCUX22HD									
Nominal conductor area mm ²	35	50	70	95	120	150	185	240	300
Nominal conductor diameter mm	7.0	8.2	9.8	11.5	12.9	14.3	16.1	18.2	20.6
Nominal insulation thickness mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Approx cable diameter mm	54.5	57.1	60.9	64.7	68.0	71.2	75.1	80.3	86.2
Approx mass kg/100m	310	360	455	550	640	725	850	1040	1240
Max pulling tension on conductors kN	7.4	11	15	20	25	25	25	25	25
Max pulling tension on stocking grip kN	7.4	11	13	15	16	18	20	23	25
Min bending radius* during installation mm	980	1030	1100	1170	1220	1280	1350	1440	1550
Min bending radius* set in position mm	650	690	730	780	820	850	900	960	1030
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
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	0.668	0.494	0.342	0.247	0.196	0.159	0.128	0.0981	0.0791
Inductance mH/km	0.438	0.418	0.386	0.367	0.351	0.340	0.328	0.316	0.306
Inductive reactance, @ 50Hz Ohm/km	0.138	0.131	0.121	0.115	0.110	0.107	0.103	0.0993	0.0962
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	2.16+ j0.0916	1.56+ j0.0854	1.11+ j0.0754	1.03+ j0.0695	0.995+ j0.0647	0.966+ j0.0613	0.941+ j0.0577	0.917+ j0.0540	0.902+ j0.0511
Capacitance, phase to earth µF/km	0.164	0.179	0.201	0.223	0.242	0.260	0.283	0.311	0.344
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
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
Charging current @ rated voltage & 50 Hz A/phase/km	0.655	0.715	0.802	0.891	0.964	1.04	1.13	1.24	1.37
Short circuit rating	Phase conductor kA, 1 sec	5.0	7.2	10.0	13.6	17.2	21.5	26.5	34.3
	Metallic screen kA, 1 sec	5.1	7.1	10	10	10	10	10	10
Continuous current rating	In ground, direct buried A	170	200	240	290	330	365	410	530
	In ground, in singleway ducts A	145	170	210	245	285	320	360	465
	In free air, unenclosed & spaced from wall A	170	200	250	305	350	390	445	590

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.