TELE-FONIKA Kable S.A.

HIGH VOLTAGE XLPE CABLES 36/60 ÷ 69(72.5)kV

COPPER CONDUCTOR

- 2XS(FL)2Y acc. IEC 60840
- N2XS(FL)2Y acc. DIN VDE 0276-632
- XRUHKXS acc. ZN-BFK-021:1998

Cross-section of conductor	Diameter of conductor	Insulation		Copper screen		Outer diameter of cable	Weight of cable	Max. pulling force	Min. bending radius
		Average thickness	Diameter over insulation	Cross-section	Diameter over screen				
mm^2	mm			mm^2	mm		kg / km	kN	m
1 x 120 RM	$12.9^{+0.25}$	13.0	41.5	35	48.0	57.0	3370	6.0	1.27
1 x 150 RM	$14.5^{+0.30}$	12.0	41.2	35	47.6	56.7	3550	7.5	1.26
1 x 185 RM	$16.0^{+0.30}$	12.0	42.7	35	49.1	58.2	3960	9.25	1.30
1 x 240 RM	$18.5^{+0.30}$	11.0	43.2	35	49.6	58.7	4420	12	1.31
1 x 300 RM	$20.5^{+0.30}$	11.0	45.6	35	52.4	61.7	5160	15	1.38
1 x 400 RM	$23.5^{+0.30}$	11.0	48.6	35	55.4	64.9	6130	20	1.46
1 x 500 RM	$26.5^{+0.40}$	10.0	49.7	35	56.5	66.2	7110	25	1.48
1 x 630 RM	$30.3^{+0.40}$	10.0	55.0	35	62.2	72.3	8760	31.5	1.61
1 x 800 RM	$34.6^{+0.50}$	10.0	59.4	35	66.6	76.9	10540	40	1.72
1 x 1000 RM	$37.6^{+0.50}$	10.0	62.4	50	69.6	80.1	12660	50	1.81
1 x 1200 RMS	$43.6^{+0.80}$	10.0	69.2	50	76.6	87.7	15000	60	1.99
1 x 1400 RMS	$46.6^{+1.0}$	10.0	72.8	50	80.2	91.5	17100	70	2.08
1 x 1600 RMS	$50.0^{+1.0}$	10.0	76.8	50	84.6	96.3	19290	80	2.19
1 x 1800 RMS	$53.3^{+1.0}$	10.0	80.1	50	87.9	99.8	21310	90	2.27
1 x 2000 RMS	$56.3^{+1.2}$	10.0	83.3	50	91.1	103.2	23380	100	2.35

ELECTRICAL PARAMETERS

RM – round multiwire conductor

RMS – round multiwire segmented conductor (Milliken construction)

/1 – trefoil formation

/2 – phase distance at flat formation = 2 x cable diameter

/3 – phase distance at flat formation = 70 mm + cable diameter

/4 – SPB – Single Point Bonding; CB – Cross-bonding; Both-ends – Both-ends Bonding

Cross-section of conductor	Conductor resistance		Copper screen resistance		Field strengthat conductor screen / insulation	Max. short circuit current		Capacitance	Inductance o°o /1 o o o /2 o o o /3	Ampacity	
										In ground	In air
										SPB, CB /4	o o o / o°o
										Both-ends /4	o o o / o°o
mm²	DC20 °C	AC90 °C	DC20 °C	AC80 °C	kV / mm	Conductor	Copper screen	µF / km	mH / km	A	
1 x 120 RM	0.153	0.1956	0.531	0.656	4.71 / 1.70	17.16	7.1	0.13	0.480.670.69	380 / 365	483 / 420
										370 / 365	462 / 420
1 x 150 RM	0.124	0.1587	0.531	0.656	4.77 / 1.92	21.45	7.1	0.14	0.460.640.66	435 / 410	551 / 478
										410 / 410	520 / 478
1 x 185 RM	0.0991	0.1273	0.531	0.656	4.63 / 1.96	26.45	7.1	0.15	0.440.630.65	490 / 465	630 / 546
										455 / 460	583 / 546
1 x 240 RM	0.0754	0.0973	0.531	0.656	4.72 / 2.25	34.32	7.1	0.17	0.420.600.62	570 / 540	745 / 645
										515 / 530	672 / 640
1 x 300 RM	0.0601	0.0782	0.531	0.656	4.57 / 2.31	42.9	7.1	0.19	0.410.590.60	645 / 610	861 / 740
										570 / 600	756 / 730
1 x 400 RM	0.047	0.062	0.531	0.656	3.43 / 2.37	57.2	7.1	0.20	0.390.570.58	735 / 690	1003 / 856
										630 / 675	856 / 840
1 x 500 RM	0.0366	0.0495	0.531	0.656	4.62 / 2.71	71.5	7.1	0.24	0.370.550.56	835 / 785	1160 / 992
										695 / 760	955 / 961
1 x 630 RM	0.0283	0.0397	0.531	0.656	4.46 / 2.79	90.09	7.1	0.27	0.360.540.54	950 / 885	1349 / 1139
										760 / 845	1066 / 1097
1 x 800 RM	0.0221	0.0327	0.531	0.656	4.36 / 2.85	114.4	7.1	0.30	0.350.530.52	1070 / 990	1544 / 1291
										820 / 930	1176 / 1234
1 x 1000 RM	0.0176	0.0278	0.372	0.460	4.30 / 2.88	143	7.1	0.32	0.340.520.51	1180 / 1080	1743 / 1444
										848 / 980	1244 / 1326
1 x 1200 RMS	0.0151	0.0207	0.372	0.460	4.19 / 2.94	171.6	10.15	0.36	0.330.510.49	1365 / 1280	2063 / 1754
										917 / 1111	1385 / 1548
1 x 1400 RMS	0.0129	0.018	0.372	0.460	4.15 / 2.97	200.2	10.15	0.38	0.320.510.48	1475 / 1380	2268 / 1916
										955 / 1174	1467 / 1670
1 x 1600 RMS	0.0113	0.0162	0.372	0.460	4.1 / 3.0	228.8	10.15	0.41	0.320.500.47	1570 / 1465	2457 / 2058
										985 / 1227	1538 / 1772
1 x 1800 RMS	0.0101	0.0149	0.372	0.460	4.07 / 3.02	257.4	10.15	0.43	0.310.500.46	1650 / 1530	2604 / 2174
										1004 / 1259	1571 / 1834
1 x 2000 RMS	0.009	0.0137	0.372	0.460	4.04 / 3.04	286	10.15	0.45	0.310.490.46	1730 / 1600	2751 / 2284
										1536 / 1291	1608 / 1900

HIGH VOLTAGE XLPE CABLES
36/60 ÷ 69(72.5)kV

ALUMINIUM CONDUCTOR

- A2XS(FL)2Y acc. IEC 60840
- NA2XS(FL)2Y acc. DIN VDE 0276-632
- XRUHAKXS acc. ZN-BFK-021:1998

Cross-section of conductor	Diameter of conductor	Insulation		Copper screen		Outer diameter of cable	Weight of cable	Max. pulling force	Min. bending radius
		Average thick-ness	Diameter over insulation	Cross-section	Diameter over screen				
mm^2	mm			mm^2	mm		kg / km	kN	m
1 x 120 RM	$12.5^{+0.20}$	13.0	41.1	35	47.5	56.6	2620	3.6	1.26
1 x 150 RM	$14.2^{+0.20}$	12.0	40.8	35	47.2	56.3	2640	4.5	1.25
1 x 185 RM	$15.8^{+0.20}$	12.0	42.4	35	48.8	57.9	2820	5.55	1.29
1 x 240 RM	$17.8^{+0.10}$	11.0	42.3	35	48.7	57.8	2920	7.2	1.29
1 x 300 RM	$20.0^{+0.30}$	11.0	45.1	35	51.9	61.2	3290	9.0	1.37
1 x 400 RM	$22.9^{+0.30}$	11.0	48.0	35	54.8	64.3	3700	12.0	1.44
1 x 500 RM	$25.7^{+0.40}$	10.0	48.9	35	55.7	65.4	3980	15.0	1.46
1 x 630 RM	$29.3^{+0.50}$	10.0	54.1	35	61.3	71.2	4750	18.9	1.60
1 x 800 RM	$33.0^{+0.50}$	10.0	57.8	35	65.0	75.3	5440	24.0	1.70
1 x 1000 RM	$38.0^{+0.50}$	10.0	62.8	50	70.0	80.7	6470	30.0	1.82
1 x 1200 RM	$41.0^{+0.60}$	10.0	65.9	50	73.3	84.2	7280	36.0	1.90
1 x 1200 RMS	$43.6^{+0.80}$	10.0	69.2	50	76.6	87.7	7600	36.0	1.99
1 x 1400 RMS	$46.6^{+1.0}$	10.0	72.8	50	80.2	91.5	8420	42.0	2.08
1 x 1600 RMS	$50.0^{+1.0}$	10.0	76.8	50	84.6	96.3	9370	48.0	2.19
1 x 1800 RMS	$53.3^{+1.0}$	10.0	80.1	50	87.3	99.8	10170	54.0	2.27
1 x 2000 RMS	$55.4^{+1.2}$	10.0	82.4	50	90.2	102.3	10800	60.0	2.33

ELECTRICAL PARAMETERS

RM – round multiwire conductor

RMS – round multiwire segmented conductor (Milliken construction)

/1 – trefoil formation

/2 – phase distance at flat formation = 2 x cable diameter

/3 – phase distance at flat formation = 70 mm + cable diameter

/4 – SPB – Single Point Bonding; CB – Cross-bonding; Both-ends – Both-ends Bonding

Cross-section of conductor	Conductor resistance		Copper screen resistance		Field strengthat conductor screen / insulation	Max. short circuit current		Capacitance	Inductance o o o /1 o o o /2 o o o /3	Ampacity	
										In ground	In air
										SPB, CB /4	o o o / o o o
										Both-ends /4	o o o / o o o
mm²	DC20 °C	AC90 °C	DC20 °C	AC80 °C	kV / mm	Conductor	Copper screen	µF / km	mH / km	A	
1 x 120 RM	0.253	0.3243	0.531	0.656	4.77 / 1.68	11.34	7.1	0.12	0.490.670.69	300 / 285	373 / 326
										295 / 285	368 / 331
1 x 150 RM	0.206	0.2644	0.531	0.656	4.81 / 1.91	14.18	7.1	0.14	0.460.650.67	335 / 320	431 / 373
										325 / 320	415 / 373
1 x 185 RM	0.164	0.2105	0.531	0.656	4.66 / 1.96	17.48	7.1	0.15	0.450.630.65	380 / 360	494 / 425
										365 / 360	467 / 425
1 x 240 RM	0.125	0.1607	0.531	0.656	4.78 / 2.23	22.68	7.1	0.17	0.420.610.63	445 / 420	583 / 504
										420 / 420	546 / 504
1 x 300 RM	0.100	0.1289	0.531	0.656	4.60 / 2.30	28.35	7.1	0.18	0.410.590.61	500 / 475	672 / 578
										465 / 470	620 / 578
1 x 400 RM	0.0778	0.101	0.531	0.656	4.45 / 2.36	37.8	7.1	0.20	0.390.580.59	575 / 545	782 / 677
										520 / 540	709 / 667
1 x 500 RM	0.0605	0.0794	0.531	0.656	4.65 / 2.69	47.25	7.1	0.23	0.370.560.56	660 / 620	914 / 788
										585 / 610	803 / 772
1 x 630 RM	0.0469	0.0624	0.531	0.656	4.48 / 2.78	59.54	7.1	0.27	0.360.550.55	755 / 710	1071 / 914
										650 / 690	914 / 893
1 x 800 RM	0.0367	0.0501	0.531	0.656	4.39 / 2.83	75.6	7.1	0.29	0.350.540.53	855 / 805	1239 / 1055
										710 / 775	1024 / 1024
1 x 1000 RM	0.0291	0.0412	0.372	0.460	4.29 / 2.88	94.5	10.15	0.32	0.340.520.51	960 / 895	1418 / 1197
										767 / 846	1123 / 1143
1 x 1200 RM	0.0247	0.0362	0.372	0.460	4.24 / 2.91	113.4	10.15	0.34	0.330.510.50	1040 / 965	1565 / 1307
										807 / 906	1201 / 1237
1 x 1200 RMS	0.0247	0.0326	0.372	0.460	4.19 / 2.94	113.4	10.15	0.36	0.330.510.49	1040 / 965	1565 / 1307
										807 / 906	1201 / 1237
1 x 1400 RMS	0.0212	0.0282	0.372	0.460	4.15 / 2.97	132.3	10.15	0.38	0.320.510.48	1115 / 1030	1701 / 1412
										842 / 951	1267 / 1319
1 x 1600 RMS	0.0186	0.025	0.372	0.460	4.10 / 3.0	151.2	10.15	0.41	0.320.500.47	1175 / 1080	1817 / 1496
										867 / 985	1322 / 1390
1 x 1800 RMS	0.0165	0.0225	0.372	0.460	4.07 / 3.02	170.1	10.15	0.43	0.310.500.46	1230 / 1125	1922 / 1575
										890 / 1019	1372 / 1451
1 x 2000 RMS	0.0149	0.0206	0.372	0.460	4.05 / 3.04	189.0	10.15	0.44	0.310.490.46	1285 / 1170	2027 / 1654
										911 / 1054	1420 / 1513