

GEMSCAB[®]
CABLES

THE RIGHT CONNECTION

Medium Voltage Cables



Section	Cable Type	Description	Table No.	Page No.
A	Single Core Unarmoured Cables	3.6/6.0 (7.2) kV Single Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	1	4
		6.0/10 (12) kV Single Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	2	5
		8.7/15 (17.5) kV Single Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	3	6
		12/20 (24) kV Single Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	4	7
		18/30 (36) kV Single Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	5	8
		3.6/6.0 (7.2) kV Single Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	6	9
		6.0/10 (12) kV Single Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	7	10
		8.7/15 (17.5) kV Single Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	8	11
		12/20 (24) kV Single Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	9	12
		18/30 (36) kV Single Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	10	13
B	Single Core Aluminium Wire Armoured Cable	3.6/6.0 (7.2) kV Single Core Copper Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	11	14
		6.0/10 (12) kV Single Core Copper Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	12	15
		8.7/15 (17.5) kV Single Core Copper Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	13	16
		12/20 (24) kV Single Core Copper Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	14	17
		18/30 (36) kV Single Core Copper Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	15	18
		3.6/6.0 (7.2) kV Single Core Aluminium Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	16	19
		6.0/10 (12) kV Single Core Aluminium Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	17	20
		8.7/15 (17.5) kV Single Core Aluminium Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	18	21
		12/20 (24) kV Single Core Aluminium Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	19	22
		18/30 (36) kV Single Core Aluminium Conductor, XLPE Insulated Aluminium Wire Armoured to IEC 60502-2	20	23
C	Three Core Unarmoured Cables	3.6/6.0 (7.2) kV Three Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	21	24
		6.0/10 (12) kV Three Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	22	25
		8.7/15 (17.5) kV Three Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	23	26
		12/20 (24) kV Three Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	24	27
		18/30 (36) kV Three Core Copper Conductor, XLPE Insulated Unarmoured to IEC 60502-2	25	28
		3.6/6.0 (7.2) kV Three Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	26	29
		6.0/10 (12) kV Three Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	27	30
		8.7/15 (17.5) kV Three Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	28	31
		12/20 (24) kV Three Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	29	32
		18/30 (36) kV Three Core Aluminium Conductor, XLPE Insulated Unarmoured to IEC 60502-2	30	33
D	Three Core Steel Wire Armoured Cable	3.6/6.0 (7.2) kV Three Core Copper Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	31	34
		6.0/10 (12) kV Three Core Copper Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	32	35
		8.7/15 (17.5) kV Three Core Copper Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	33	36
		12/20 (24) kV Three Core Copper Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	34	37
		18/30 (36) kV Three Core Copper Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	35	38
		3.6/6.0 (7.2) kV Three Core Aluminium Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	36	39
		6.0/10 (12) kV Three Core Aluminium Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	37	40

		8.7/15 (17.5) kV Three Core Aluminium Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	38	41
		12/20 (24) kV Three Core Aluminium Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	39	42
		18/30 (36) kV Three Core Aluminium Conductor, XLPE Insulated Steel Wire Armoured to IEC 60502-2	40	43
E	Three Core Steel Strip Armoured Cables	3.6/6.0 (7.2) kV Three Core Copper Conductor, XLPE Insulated Steel Strip (Flat wire) Armoured to IEC 60502-2	41	44
		6.0/10 (12) kV Three Core Copper Conductor, XLPE Insulated Steel Strip Armoured to IEC 60502-2	42	45
		8.7/15 (17.5) kV Three Core Copper Conductor, XLPE Insulated Flat Wire (Steel Strip) Armoured to IEC 60502-2	43	46
		12/20 (24) kV Three Core Copper Conductor, XLPE Insulated Steel Strip Armoured to IEC 60502-2	44	47
		18/30 (36) kV Three Core Copper Conductor, XLPE Insulated Steel Strip Armoured to IEC 60502-2	45	48
		3./6.0 (7.2) kV Three Core Aluminium Conductor, XLPE Steel Strip Armoured to IEC 60502-2	46	49
		6.0/10 (12) kV Three Core Aluminium Conductor, XLPE Insulated Steel Strip Tape Armoured to IEC 60502-2	47	50
		8.7/15 (17.5) kV Three Core Aluminium Conductor, XLPE Insulated Steel Strip Tape Armoured to IEC 60502-2	48	51
		12/20 (24) kV Three Core Aluminium Conductor, XLPE Steel Strip Armoured to IEC 60502-2	49	52
		18/30 (36) kV Three Core Aluminium Conductor, XLPE Steel Strip Tape Armoured to IEC 60502-2	50	53
		Technical data, Current Rating, Rating Factor & Group Rating Factor	54 to 59	
Short Circuit Chart		Short Circuit Rating		
		Copper Conductor		60
		Aluminium Conductor		61
Drum Handling Instruction				62

Technical Data

Table – 1

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3	3.2	3.2	3.2	3.4
Outersheath Thickness (Nominal)	mm	1.6	1.6	1.7	1.7	1.8	1.8	1.9	2	2.1	2.2	2.3	2.5	2.6
Approximate Overall Diameter	mm	20	21.5	23.5	25	26.5	28	31	33.5	37.5	41	44.5	50	55
Approximate Cable Weight	kg/Km	760	980	1250	1500	1780	2140	2710	3310	4150	5220	6580	8250	10200
Standard Drum Length	m	1000	1000	1000	1000	1000	1000	500	500	500	500	250	250	250
Maximum Bending Radius of Cable (During Installation)	mm	396	428	464	494	526	560	614	668	744	814	882	964	1042
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063	0.05	0.040	0.039	0.029
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.12	0.11	0.11	0.1	0.1	0.1	0.09	0.09	0.09	0.09	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11	0.1	0.096	0.092	0.086
Approximate Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65	0.69	0.73	0.78	0.85
Approx Charging Current per phase at U ₀ = 3.6kV & f=50hz	mA/m	0.38	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74	0.78	0.83	1.5	0.96
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	409	472	534	605	668	739	819	890
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	200	240	285	320	356	392	449	498	543	605	668	739	810
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	217	262	331	382	432	497	589	681	773	865	1021	1168	1288
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.1	13.6	17.2	21.5	26.5	34.4	42.9	57.2	71.5	90.1	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath

Technical Data

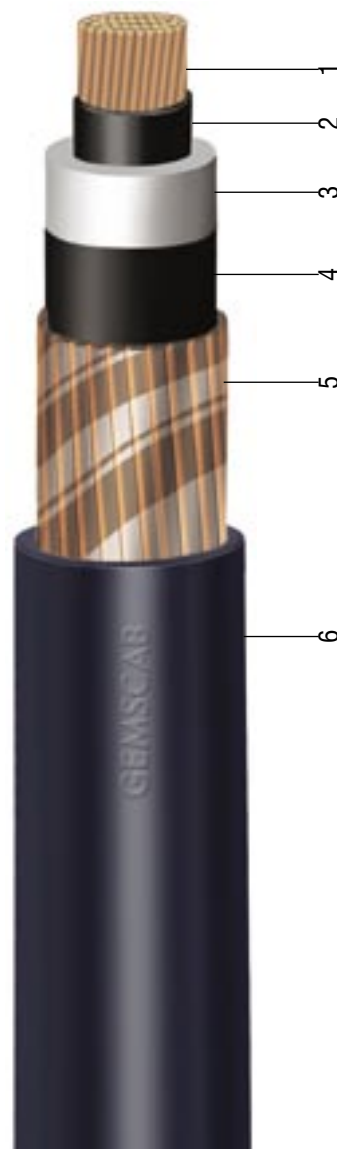
Table – 2

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Outersheath Thickness (Nominal)	mm	1.6	1.7	1.7	1.8	1.8	1.9	2	2	2.1	2.2	2.3	2.5	2.6
Approximate Overall Diameter	mm	22	23.5	25.5	27	28.5	30	32.5	35	38	41.5	46	50	55
Approximate Cable Weight	kg/Km	800	1070	1340	1600	1880	2240	2800	3400	4210	5250	6610	8290	10240
Standard Drum Length	m	1000	1000	1000	1000	1000	1000	500	500	500	500	250	250	250
Maximum Bending Radius of Cable (During Installation)	mm	434	466	502	532	564	598	648	694	760	822	890	972	1056
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063	0.05	0.041	0.039	0.029
Approximate Reactance at 50 hertz	ohm/Km	0.13	0.12	0.11	0.11	0.11	0.1	0.1	0.1	0.09	0.09	0.09	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11	0.1	0.1	0.09	0.09
Approximate Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58	0.66	0.74	0.78	0.8
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	0.1	1.1	1.2	1.4	1.5	1.5
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	409	472	534	605	668	739	819	890
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	200	240	285	320	356	392	449	498	543	605	668	739	810
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	217	262	331	382	432	497	589	681	773	865	1021	1168	1288
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.1	13.6	17.2	21.5	26.5	34.4	42.9	57.2	71.5	90.1	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured

1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath



Technical Data
Table – 3

Nominal Area of Conductor	mm²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Outersheath Thickness (Nominal)	mm	1.8	1.8	1.8	1.9	1.9	2	2	2.1	2.2	2.3	2.4	2.5	2.7
Approximate Overall Diameter	mm	24.5	26	27.5	29	31	32.5	35	37.5	40.5	43.5	48	53	57.5
Approximate Cable Weight	kg/Km	940	1170	1450	1720	2000	2370	2950	3540	4370	5430	7350	8500	10460
Standard Drum Length	m	1000	1000	1000	1000	1000	500	500	500	500	500	250	250	250
Maximum Bending Radius of Cable (During Installation)	mm	482	514	550	580	612	645	696	742	808	870	938	1020	1106
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063	0.051	0.041	0.04	0.03
Approximate Reactance at 50 hertz	ohm/Km	0.13	0.13	0.12	0.11	0.11	0.11	0.1	0.1	0.1	0.09	0.09	0.09	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.23	0.19	0.17	0.14	0.13	0.12	0.11	0.099	0.096	0.091
Approximate Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.44	0.49	0.54	0.59	0.68	0.72
Approx Charging Current per phase at U ₀ = 8.7kV & f = 50hz	mA/m	0.6	0.68	0.77	0.85	0.9	1	1.1	1.2	1.3	1.5	1.6	1.9	2
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	409	472	534	605	668	739	819	890
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	200	240	285	320	356	392	449	498	543	605	668	739	810
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	217	262	331	382	432	497	589	681	773	865	1021	1168	1288
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.1	13.6	17.2	21.5	26.5	34.4	42.9	57.2	71.5	90.1	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured

1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath



Technical Data

Table – 4

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	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	5.5
Outersheath Thickness (Nominal)	mm	1.8	1.8	1.9	1.9	2	2	2.1	2.2	2.3	2.4	2.5	2.6	2.7
Approximate Overall Diameter	mm	26.3	27.9	29.7	31.2	32.8	34.5	36.9	39.3	42.6	45.7	50.5	55	60
Approximate Cable Weight	kg/Km	1030	1280	1560	1830	2120	2500	3080	3690	4530	5600	6990	8700	10680
Standard Drum Length	m	1000	1000	1000	1000	500	500	500	500	500	500	250	250	250
Maximum Bending Radius of Cable (During Installation)	mm	526	558	594	624	656	690	738	786	852	914	962	1062	1148
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063	0.051	0.041	0.04	0.03
Approximate Reactance at 50 hertz	ohm/Km	0.14	0.13	0.12	0.12	0.12	0.11	0.11	0.1	0.1	0.1	0.1	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.37	0.28	0.23	0.2	0.17	0.15	0.13	0.12	0.11	0.1	0.1	0.09
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39	0.43	0.48	0.53	0.58
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1	1.1	1.2	1.3	1.5	1.6	1.8	2	2.2
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	409	472	534	616	676	757	828	899
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	200	240	285	320	360	396	463	507	561	623	694	757	819
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	225	276	331	391	446	506	598	681	782	902	1040	1178	1306
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.1	13.6	17.2	21.5	26.5	34.4	42.9	57.2	71.5	90.1	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath

Technical Data

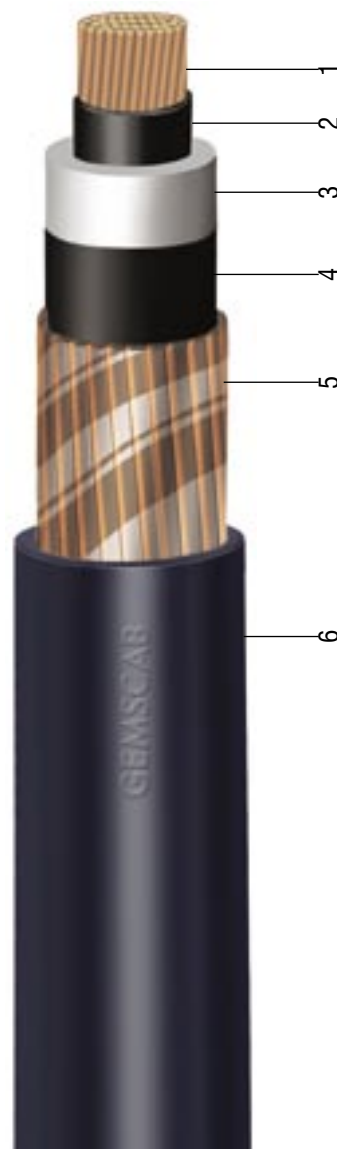
Table – 5

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8	8	8	8	8
Outersheath Thickness (Nominal)	mm	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9
Approximate Overall Diameter	mm	32	33.5	35	36.5	38.5	40	42.5	45	48	51	56	60.5	65.5
Approximate Cable Weight	kg/Km	1320	1590	1880	2170	2480	2870	3470	4100	4970	6070	7500	9240	11270
Standard Drum Length	m	500	500	500	400	300	300	300	300	250	200	200	150	150
Maximum Bending Radius of Cable (During Installation)	mm	632	664	700	730	762	796	846	892	958	1020	1088	1170	1254
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063	0.051	0.041	0.04	0.03
Approximate Reactance at 50 hertz	ohm/Km	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11	0.11	0.1	0.1	0.1	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.37	0.28	0.24	0.2	0.18	0.15	0.14	0.13	0.12	0.11	0.1	0.1
Approximate Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.2	0.22	0.24	0.26	0.29	0.32	0.35	0.4	0.44
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60	1.80	2.00	2.30	2.50
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	409	472	534	616	676	757	828	899
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	200	240	285	320	360	396	463	507	561	623	694	757	819
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	225	276	331	391	446	506	598	681	782	902	1040	1187	1316
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20	71.50	90.10	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured

1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath



Technical Data

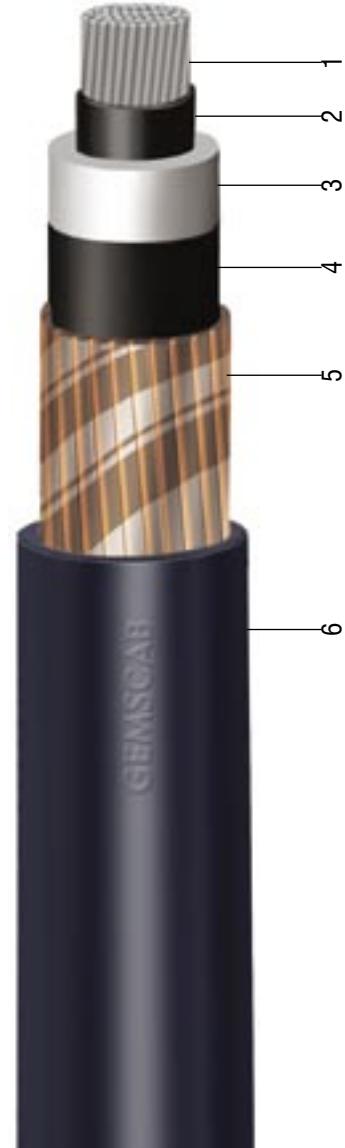
Table – 6

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3	3.2	3.2	3.2	3.2
Outersheath Thickness (Nominal)	mm	1.6	1.6	1.7	1.7	1.8	1.8	1.9	2	2.1	2.2	2.3	2.5	2.6
Approximate Overall Diameter	mm	20	21.5	23.5	25	26.5	28	31	33.5	37.5	41	44.5	48.5	55
Approximate Cable Weight	kg/Km	480	590	700	800	920	1060	1300	1620	2000	2320	2820	3430	4150
Standard Drum Length	m	1000	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500
Maximum Bending Radius of Cable (During Installation)	mm	396	428	464	494	526	560	614	668	744	814	882	964	1042
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.064	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.24	0.19	0.16	0.14	0.13	0.11	0.10	0.091
Approximate Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65	0.69	0.73	0.79	0.85
Approx Charging Current per phase at U ₀ = 3.6kV & f = 50hz	mA/m	0.38	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74	0.78	0.83	0.89	0.96
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	223	249	285	320	369	423	481	543	605	685	757
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	156	191	227	254	280	312	360	405	454	507	570	632	703
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	166	207	258	294	336	391	460	534	616	727	837	975	1095
One Second Short Circuit Current Rating of Conductor	kA	4.7	6.58	8.93	11.3	14.1	17.4	22.6	28.2	37.6	47	59.2	75.2	94

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured

1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath



Technical Data

Table – 7

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Outersheath Thickness (Nominal)	mm	1.6	1.7	1.7	1.8	1.8	1.9	2.0	2.0	2.1	2.2	2.3	2.5	2.6
Approximate Overall Diameter	mm	22	23.5	25.5	27	28.5	30	32.5	35	38	41.5	45.5	50	55
Approximate Cable Weight	kg/Km	560	670	780	900	1020	1160	1400	1620	1950	2350	2850	3470	4200
Standard Drum Length	m	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500	500
Maximum Bending Radius of Cable (During Installation)	mm	434	466	502	532	564	598	648	694	760	822	890	972	1056
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.064	0.443	0.32	0.253	0.206	0.164	0.125	0.1	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.13	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.24	0.19	0.16	0.14	0.12	0.11	0.10	0.09
Approximate Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58	0.66	0.74	0.78	0.80
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10	1.20	1.40	1.50	1.50
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	223	249	285	320	369	423	481	543	605	685	757
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	156	191	227	254	280	312	360	405	454	507	570	632	703
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	166	207	258	294	336	391	460	534	616	727	837	975	1095
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47	59.20	75.20	94

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12) kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath

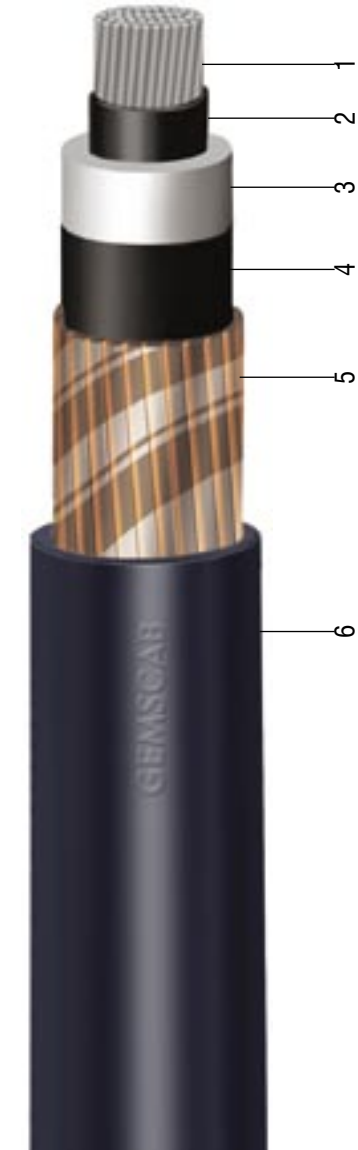
Technical Data

Table – 8

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Outersheath Thickness(Nominal)	mm	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.4	2.5	2.7
Approximate Overall Diameter	mm	24.5	26	27.5	29	31	32.5	35	37.5	40.5	43.5	48	53	57
Approximate Cable Weight	kg/Km	660	770	900	1020	1140	1390	1530	1770	2110	2525	3050	3700	4420
Standard Drum Length	m	1000	1000	1000	1000	1000	500	500	500	500	500	500	500	500
Maximum Bending Radius of Cable (During Installation)	mm	482	514	550	580	612	646	696	742	808	870	938	1020	1106
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.064	0.443	0.32	0.253	0.206	0.164	0.125	0.1	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.13	0.13	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14	0.12	0.11	0.10	0.09
Approximate Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	33	0.36	0.41	0.44	0.49	0.54	0.59	0.68	0.72
Approx Charging Current per phase at U ₀ = 8.7kV & f = 50hz	mA/m	0.60	0.68	0.77	0.85	0.90	1.00	1.10	1.20	1.30	1.50	1.60	1.90	2.00
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	223	249	285	320	369	423	481	543	605	685	757
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	156	191	227	254	280	312	360	405	454	507	570	632	703
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	166	207	258	294	336	391	460	534	616	727	837	975	1095
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47	59.20	75.20	94

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath

Technical Data

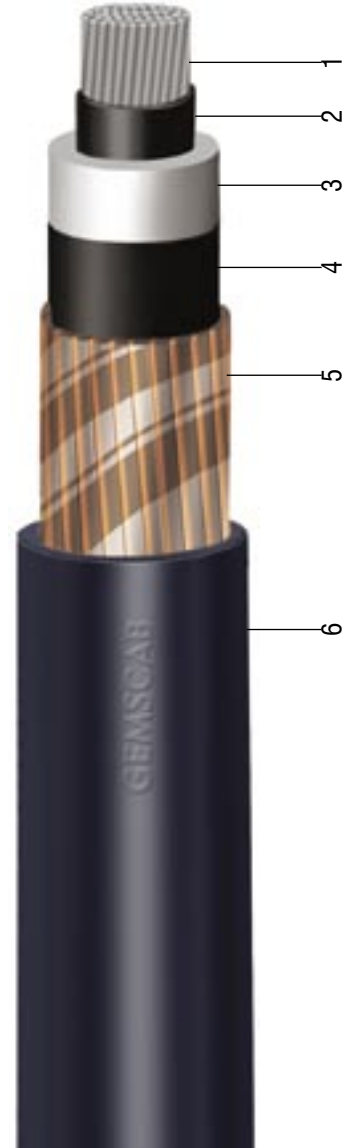
Table – 9

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	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	5.5
Outersheath Thickness(Nominal)	mm	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7
Approximate Overall Diameter	mm	26.50	28	30	31.50	33	34.50	37	39.50	43	46	50.50	55	60
Approximate Cable Weight	kg/Km	760	880	1010	1140	1270	1430	1670	1920	2270	2700	3230	3880	4640
Standard Drum Length	m	1000	1000	1000	1000	500	500	500	500	500	500	400	400	300
Maximum Bending Radius of Cable (During Installation)	mm	526	558	594	624	656	690	738	786	852	914	982	1062	1148
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.064	0.443	0.32	0.253	0.206	0.164	0.125	0.1	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.14	0.13	0.12	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14	0.12	0.11	0.10	0.10
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39	0.43	0.48	0.53	0.58
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50	1.60	1.80	2.00	2.20
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	223	249	285	320	369	423	490	543	614	685	765
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	156	187	223	249	285	369	409	463	507	579	685	712	703
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	175	216	258	304	345	396	469	534	626	727	846	975	1113
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47	59.20	75.20	94

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured

1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath



Technical Data

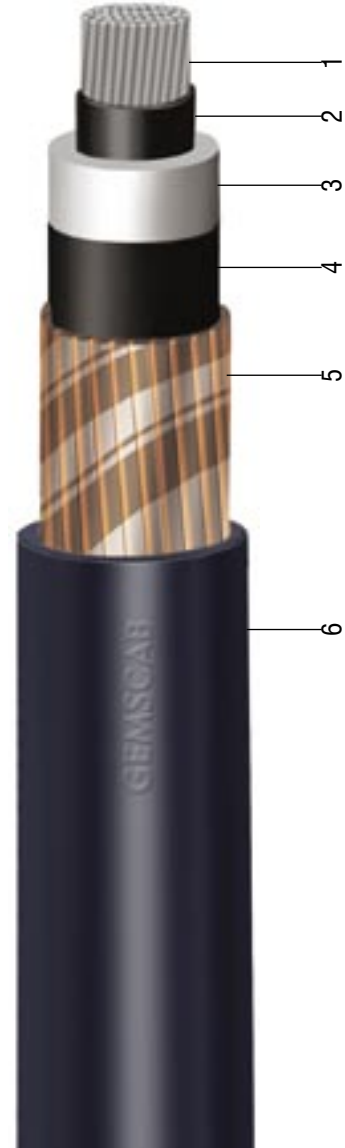
Table – 10

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8	8	8	8	8
Outersheath Thickness(Nominal)	mm	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9
Approximate Overall Diameter	mm	32	33.5	35	36.5	38.5	40	42.5	45	48	52	56	60	65
Approximate Cable Weight	kg/Km	1050	1190	1330	1470	1620	1800	2060	2330	2710	3170	3740	4430	5240
Standard Drum Length	m	500	500	500	400	300	300	300	300	250	200	200	150	150
Maximum Bending Radius of Cable (During Installation)	mm	632	664	700	730	762	796	856	892	958	1020	1088	1170	1254
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.064	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.161	0.129	0.101	0.08	0.063	0.051	0.042
Approximate Reactance at 50 hertz	ohm/Km	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.59	0.43	0.35	0.29	0.24	0.2	0.17	0.15	0.13	0.12	0.11	0.10
Approximate Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.20	0.22	0.24	0.26	0.29	0.32	0.35	0.40	0.44
Approx Charging Current per phase at U ₀ = 18kV & f=50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60	1.80	2.00	2.30	2.50
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	223	249	285	320	369	423	490	543	614	694	765
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	156	182	218	245	267	298	338	369	409	454	498	534	570
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	175	216	258	304	345	396	469	534	626	727	846	984	1113
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47	59.20	75.20	94

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured

1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Outer sheath



Technical Data

Table – 11

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3	3.2	3.2	3.2	3.2
Separation Sheath Thickness	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.4	1.4	1.6
Armour Wire Diameter (Nominal)	mm	1.6	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.5	2.6	2.7	2.9
Approximate Overall Diameter	mm	26	28	29.5	31	32.5	35	37.5	40.5	44	49	54	58.5	64
Approximate Cable Weight	kg/km	1090	1340	1630	1900	2200	2670	3320	3970	4870	6150	7640	9400	11520
Standard Drum Length	m	1000	1000	1000	1000	1000	500	500	500	500	250	250	250	250
Maximum Bending Radius of Cable (during installation)	mm	387	417	438	461	485	522	563	605	660	732	786	849	915
Maximum DC resistance of Conductor at 20°C	ohm/km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/km	0.494	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063	0.05	0.041	0.038	0.029
Approximate Reactance at 50 hertz	ohm/km	0.13	0.13	0.12	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11	0.10	0.096	0.092	0.086
Approximate Capacitance of Cable	µf/km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65	0.69	0.73	0.79	0.85
Approx Charging Current per phase at U ₀ = 3.6kV & f = 50hz	mA/m	0.38	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74	0.78	0.83	0.89	0.96
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	405	463	516	579	632	676	721	765
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	196	231	271	303	334	365	418	445	472	507	552	587	614
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	230	285	345	396	451	506	598	681	773	856	957	1049	1132
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20	71.50	90.10	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

Technical Data

Table – 12

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Separation Sheath Thickness	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.4	1.4	1.6
Armour Wire Diameter (Nominal)	mm	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	1.8	1.8	1.9	1.9	2	2.1	2.2	2.2	2.4	2.5	2.6	2.7	2.9
Approximate Overall Diameter	mm	28	29.5	31.5	33	35.5	37	39.5	41.5	46.5	49.5	54.5	59	64.5
Approximate Cable Weight	kg/km	1190	1450	1740	2020	2402	2830	3440	4070	4940	6190	7680	9450	11570
Standard Drum Length	m	1000	1000	1000	1000	1000	500	500	500	500	250	250	250	250
Maximum Bending Radius of Cable (during installation)	mm	416	440	467	489	527	552	568	623	692	738	792	855	921
Maximum DC resistance of Conductor at 20°C	ohm/km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/km	0.493	0.342	0.246	0.196	0.16	0.127	0.098	0.079	0.063	0.05	0.041	0.038	0.029
Approximate Reactance at 50 hertz	ohm/km	0.14	0.13	0.12	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/km	0.51	0.37	0.27	0.23	0.2	0.17	0.15	0.13	0.12	0.11	0.10	0.10	0.091
Approximate Capacitance of Cable	µf/km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58	0.66	0.74	0.78	0.8
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10	1.20	1.40	1.50	1.50
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	405	463	516	579	632	676	721	765
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	196	231	271	303	334	365	418	445	472	507	552	587	614
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	230	285	345	396	451	506	598	681	773	856	957	1049	1132
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20	71.50	90.10	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

Technical Data

Table – 13

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Separation Sheath Thickness	mm	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.6
Armour Wire Diameter (Nominal)	mm	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	1.9	2	2	2.1	2.1	2.2	2.3	2.3	2.5	2.6	2.7	2.8	3
Approximate Overall Diameter	mm	30.5	32	34.5	36	37.5	39.5	42	44	48.5	53	57	61.5	67
Approximate Cable Weight	kg/km	1320	1590	1890	2260	2610	3000	3630	4270	5280	6470	7920	9710	11850
Standard Drum Length	m	1000	1000	1000	500	500	500	500	500	500	250	250	250	250
Maximum Bending Radius of Cable (during installation)	mm	452	476	515	537	561	587	624	660	728	776	828	893	959
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.127	0.098	0.078	0.063	0.05	0.041	0.039	0.029
Approximate Reactance at 50 hertz	ohm/Km	0.14	0.14	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.2	0.19	0.16	0.14	0.13	0.11	0.11	0.11	0.09	0.09
Approximate Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.44	0.49	0.54	0.59	0.68	0.72
Approx Charging Current per phase at U ₀ = 8.7kV & f = 50hz	mA/m	0.60	0.68	0.77	0.85	0.90	1.00	1.10	1.20	1.30	1.50	1.60	1.90	2.00
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	405	463	516	579	632	676	721	765
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	196	231	271	303	334	365	418	445	472	507	552	587	614
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	230	285	345	396	451	506	598	681	773	856	957	1049	1132
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20	71.50	90.10	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

Technical Data

Table – 14

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	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	5.5
Separation Sheath Thickness	mm	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.6	1.6
Armour Wire Diameter (Nominal)	mm	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.6	2.7	2.8	2.9	3.0
Approximate Overall Diameter	mm	32.5	35	36.5	38	39.5	41.5	44	47.5	51	55	59	64	69
Approximate Cable Weight	kg/km	1450	1800	2110	2410	2770	3170	3800	4580	5530	6680	8150	10020	12110
Standard Drum Length	m	1000	1000	1000	1000	500	500	500	500	400	400	250	250	250
Maximum Bending Radius of Cable (during installation)	mm	483	519	548	570	593	618	657	710	761	809	863	926	992
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063	0.05	0.04	0.039	0.029
Approximate Reactance at 50 hertz	ohm/Km	0.15	0.14	0.13	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.37	0.28	0.23	0.2	0.17	0.15	0.14	0.12	0.12	0.11	0.10	0.10
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39	0.43	0.48	0.53	0.58
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50	1.60	1.80	2.00	2.20
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	401	454	507	570	623	676	721	765
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	187	231	271	303	329	356	401	436	472	507	552	587	614
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	239	294	350	405	451	515	598	672	764	865	966	1049	1132
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20	71.50	90.10	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

Technical Data

Table – 15

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8	8	8	8	8
Separation Sheath Thickness	mm	1.2	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.4	1.6	1.6	1.6
Armour Wire Diameter (Nominal)	mm	2	2	2	2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	2.2	2.2	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.8	2.9	3.1	3.2
Approximate Overall Diameter	mm	38.5	40	42	44	46.5	48	51.5	54	56.5	60.5	65	69	74
Approximate Cable Weight	kg/km	1950	2240	2510	2880	3350	3770	4480	5160	6090	7270	8840	10700	12820
Standard Drum Length	m	500	500	500	400	300	300	300	300	250	200	200	150	150
Maximum Bending Radius of Cable (during installation)	mm	576	599	627	651	692	719	756	792	845	893	945	1008	1076
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047	0.036	0.028	0.022	0.017
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.494	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063	0.05	0.041	0.039	0.029
Approximate Reactance at 50 hertz	ohm/Km	0.16	0.15	0.14	0.14	0.13	0.13	0.12	0.12	0.11	0.11	0.11	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.52	0.37	0.28	0.24	0.21	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09
Approximate Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.2	0.22	0.24	0.26	0.29	0.32	0.35	0.4	0.44
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60	1.80	2.00	2.30	2.50
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	196	240	285	320	365	401	454	507	570	623	676	721	765
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	187	231	267	303	329	356	401	436	472	507	543	596	623
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	207	254	305	360	411	466	550	626	719	829	956	1092	1210
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20	71.50	90.10	115	143

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Single Core Copper Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

Technical Data

Table – 16

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3	3.2	3.2	3.2	3.2
Separation Sheath Thickness	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.4	1.4	1.6
Armour Wire Diameter (Nominal)	mm	1.6	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.2	2.3	2.5	2.6	2.7	2.9
Approximate Overall Diameter	mm	26	28	29.5	31	32.5	35	37.5	40.5	44	49	54	58.5	64
Approximate Cable Weight	kg/km	810	940	1080	1210	1350	1590	1900	2200	2610	3250	3880	4590	5490
Standard Drum Length	m	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500	500
Maximum Bending Radius of Cable (during installation)	mm	387	417	438	461	485	522	563	605	660	732	786	849	915
Maximum DC resistance of Conductor at 20°C	ohm/Km	641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.29	0.24	0.19	0.16	0.14	0.13	0.13	0.11	0.10	0.09
Approximate Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65	0.69	0.73	0.79	0.85
Approx Charging Current per phase at U ₀ = 3.6kV & f = 50hz	mA/m	0.38	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74	0.78	0.83	0.89	0.96
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	223	249	280	316	360	405	454	507	570	623	676
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	151	187	218	245	267	298	338	374	405	445	490	525	570
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	179	221	271	327	350	400	469	534	616	708	810	902	994
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47.00	59.22	75.20	94

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

Technical Data

Table – 17

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Separation Sheath Thickness	mm	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.6
Armour Wire Diameter (Nominal)	mm	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	1.8	1.9	1.9	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.9
Approximate Overall Diameter	mm	28	29.5	31.5	33	35.5	37	39.5	41.5	46.5	49.5	54.5	59	64.5
Approximate Cable Weight	kg/km	910	1050	1190	1330	1550	1760	2030	2300	2670	3290	3920	4640	5530
Standard Drum Length	m	1000	1000	1000	1000	1000	1000	1000	1000	500	500	500	500	500
Maximum Bending Radius of Cable (during installation)	mm	416	440	467	489	527	552	588	623	692	738	792	855	921
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.14	0.13	0.12	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14	0.12	0.11	0.10	0.10
Approximate Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58	0.66	0.74	0.78	0.80
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10	1.20	1.40	1.50	1.50
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	223	249	280	316	360	405	454	507	570	623	676
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	151	187	218	245	267	298	338	374	405	445	490	525	570
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	179	221	271	327	350	400	469	534	616	708	810	902	994
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47.00	59.22	75.20	94.00

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured

1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath



Technical Data

Table – 18

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Separation Sheath Thickness	mm	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.6
Armour Wire Diameter (Nominal)	mm	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	1.9	2.0	2.0	2.1	2.1	2.2	2.3	2.3	2.5	2.6	2.7	2.8	3.0
Approximate Overall Diameter	mm	30.5	32	34.5	36	37.5	39.5	42	44	48.5	52	57	61.5	67
Approximate Cable Weight	kg/km	1050	1190	1340	1560	1750	1930	2220	2490	3020	3570	4160	4900	5820
Standard Drum Length	m	1000	1000	1000	1000	1000	500	500	500	500	500	500	500	500
Maximum Bending Radius of Cable (during installation)	mm	452	476	515	537	561	587	624	660	728	776	828	893	959
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.1	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.14	0.13	0.13	0.12	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14	0.12	0.11	0.10	0.10
Approximate Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.40	0.49	0.54	0.59	0.68	0.72
Approx Charging Current per phase at U ₀ = 8.7kV & f = 50hz	mA/m	0.60	0.68	0.77	0.85	0.90	1.00	1.10	1.20	1.30	1.50	1.60	1.90	2.00
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	223	249	280	316	360	405	454	507	570	623	676
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	151	187	218	245	267	298	338	374	405	445	490	525	570
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	179	221	271	327	350	400	469	534	616	708	810	902	994
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47.00	59.22	75.20	94.00

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

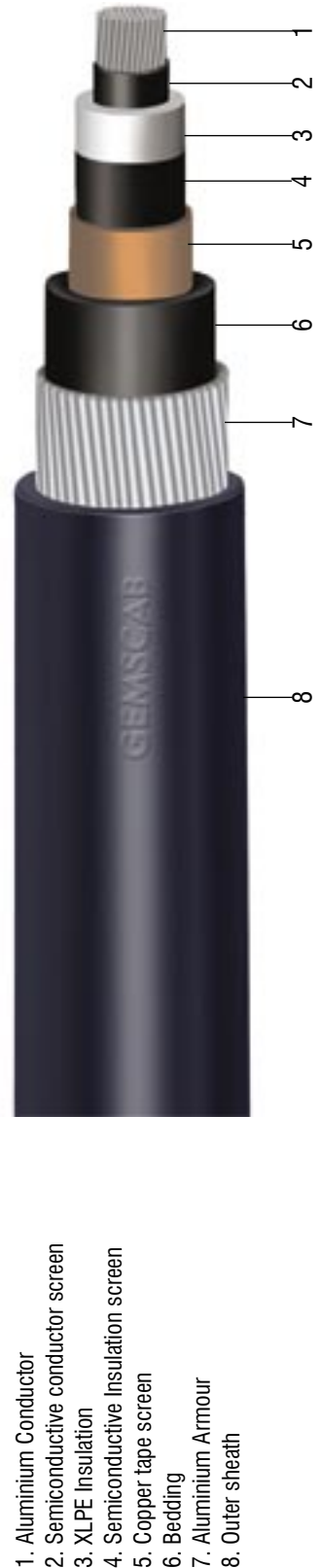
Technical Data

Table – 19

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	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	5.5
Separation Sheath Thickness	mm	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.6	1.6
Armour Wire Diameter (Nominal)	mm	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.6	2.7	2.8	2.9	3.0
Approximate Overall Diameter	mm	32.5	35.0	36.5	38.0	40.0	41.5	44.0	47.5	51.0	54.0	59.0	64.0	69.0
Approximate Cable Weight	kg/km	1180	1400	1560	1760	1910	2110	2390	2810	3270	3780	4390	5200	6080
Standard Drum Length	m	1000	1000	1000	1000	1000	500	500	500	500	500	400	400	300
Maximum Bending Radius of Cable (during installation)	mm	483	519	548	570	593	618	657	710	761	809	863	926	992
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.10	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.15	0.14	0.13	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.10	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14	0.13	0.12	0.12	0.11
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39	0.43	0.48	0.53	0.58
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50	1.60	1.80	2.00	2.20
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	218	249	276	312	360	401	454	507	570	623	676
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	151	182	218	245	267	298	338	369	409	454	498	534	570
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	184	225	271	313	354	405	469	534	616	708	810	902	994
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47.00	59.22	75.20	94.00

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

Technical Data

Table – 20

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400	500	630	800	1000
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8	8	8	8	8
Separation Sheath Thickness	mm	1.2	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.4	1.6	1.6	1.6
Armour Wire Diameter (Nominal)	mm	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Outersheath Thickness (Nominal)	mm	2.2	2.2	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.8	2.9	3.1	3.2
Approximate Overall Diameter	mm	38.5	41	42.5	43.5	46.5	48	51.5	54	56.5	60.5	65	69.5	74
Approximate Cable Weight	kg/km	1670	1850	2010	2190	2490	2700	3070	3390	3830	4370	5080	5870	6780
Standard Drum Length	m	500	500	500	400	300	300	300	300	250	200	200	150	150
Maximum Bending Radius of Cable (during installation)	mm	576	599	627	651	692	719	756	792	845	893	945	108	1076
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077	0.060	0.046	0.036	0.029
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102	0.08	0.064	0.051	0.043
Approximate Reactance at 50 hertz	ohm/Km	0.16	0.15	0.14	0.13	0.13	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.10
Approximate Impedance at 50 hertz	ohm/Km	0.84	0.59	0.43	0.35	0.30	0.25	0.2	0.17	0.15	0.14	0.12	0.11	0.10
Approximate Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.20	0.22	0.24	0.26	0.29	0.32	0.35	0.4	0.44
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60	1.80	2.00	2.30	2.50
Sustained Current Ratings														
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	187	218	249	276	312	360	401	454	507	570	623	676
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	151	182	218	245	267	298	338	369	409	454	498	534	570
3. Laid in Air in trefoil touching, Ambient Temp. 35°C	A	184	225	271	313	354	405	469	534	616	708	810	902	994
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60	47.00	59.22	75.20	94.00

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Single Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Aluminium Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Bedding
7. Aluminium Armour
8. Outer sheath

Technical Data

Table – 21

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0
Outersheath Thickness (Nominal)	mm	2.2	2.3	2.5	2.6	2.7	2.0	3.0	3.1	3.4
Approximate Overall Diameter	mm	40.5	44	48	51	54.5	58	64	70	78
Approximate Cable Weight	kg/Km	2590	3350	4220	5080	6000	7180	9080	11120	13940
Standard Drum Length	m	1000	1000	500	500	500	250	250	250	200
Minimum Bending Radius of Cable (During Installation)	mm	605	656	716	764	815	870	957	1047	1169
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.493	0.343	0.247	0.196	0.159	0.128	0.099	0.08	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.5	0.36	0.26	0.22	0.18	0.15	0.13	0.12	0.10
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65
Approx Charging Current per phase at U ₀ = 3.6kV & f=50hz	mA/m	0.38	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	198	241	283	321	358	406	462	510	566
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	170	202	241	273	312	349	401	443	500
3. Laid Singly in Air, Ambient Temp. 35°C	A	210	258	316	359	412	469	545	622	708
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 22

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Outersheath Thickness (Nominal)	mm	2.4	2.5	2.6	2.7	2.8	2.9	3.1	3.2	3.5
Approximate Overall Diameter	mm	45	48.5	52.5	55.5	59	62.5	68	73	80.5
Approximate Cable Weight	kg/Km	2950	3750	4650	5540	6500	7710	9610	11580	14330
Standard Drum Length	m	1000	500	500	500	250	250	250	250	200
Minimum Bending Radius of Cable (During Installation)	mm	671	726	782	831	882	938	1017	1094	1202
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.128	0.098	0.08	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.11	0.10	0.10	0.09	0.09	0.09	0.09	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.18	0.16	0.13	0.12	0.10
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	198	241	283	321	358	406	462	510	566
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	170	202	241	273	312	349	401	443	500
3. Laid Singly in Air, Ambient Temp. 35°C	A	210	258	316	359	412	469	545	622	708
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 23

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Outersheath Thickness (Nominal)	mm	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.4	3.6
Approximate Overall Diameter	mm	50	53.5	57.5	60.5	64	68	73	78	85.5
Approximate Cable Weight	kg/Km	3320	4140	5090	5980	6940	8190	10120	12120	14910
Standard Drum Length	m	500	500	500	500	250	250	250	250	200
Minimum Bending Radius of Cable (During Installation)	mm	749	800	858	908	959	1014	1094	1170	1277
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.128	0.098	0.08	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.18	0.16	0.14	0.12	0.10
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.44	0.49
Approx Charging Current per phase at U ₀ = 8.7kV & f=50hz	mA/m	0.60	0.68	0.77	0.85	0.90	1.00	1.10	1.20	1.30
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	198	241	283	321	358	406	462	510	566
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	170	202	241	273	312	349	401	443	500
3. Laid Singly in Air, Ambient Temp. 35°C	A	210	258	316	359	412	469	545	622	708
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 24

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Outersheath Thickness (Nominal)	mm	2.7	2.8	2.9	3.0	3.1	3.2	3.4	3.5	3.8
Approximate Overall Diameter	mm	54.5	58	62	65.5	68.5	72.5	77.5	83	89
Approximate Cable Weight	kg/Km	3740	4590	5540	6490	7840	8750	11720	12760	15600
Standard Drum Length	m	500	500	500	250	250	250	250	200	200
Minimum Bending Radius of Cable (During Installation)	mm	818	869	929	977	1028	1083	1163	1239	1346
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.128	0.098	0.079	0.063
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	198	241	279	316	354	396	453	500	557
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	175	212	245	283	316	358	406	453	510
3. Laid Singly in Air, Ambient Temp. 35°C	A	215	263	316	364	412	469	545	622	708
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 25

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8
Outersheath Thickness (Nominal)	mm	3.1	3.2	3.3	3.4	3.5	3.6	3.8	3.9	4.2
Approximate Overall Diameter	mm	66	69.5	73.5	77	80.5	84	89.5	94.5	101.5
Approximate Cable Weight	kg/Km	4980	5920	6940	7960	9020	10380	12440	14570	17540
Standard Drum Length	m	500	500	250	250	250	250	200	200	200
Minimum Bending Radius of Cable (During Installation)	mm	1320	1390	1468	1532	1602	1676	1782	1882	2026
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063
Approximate Reactance at 50 hertz	ohm/Km	0.14	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.10
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.37	0.28	0.23	0.20	0.17	0.14	0.13	0.12
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.20	0.22	0.24	0.26	0.29
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	198	241	283	321	358	406	462	510	566
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	170	202	241	273	312	349	401	443	500
3. Laid Singly in Air, Ambient Temp. 35°C	A	210	258	316	359	412	469	545	622	708
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.1	13.6	17.2	21.5	26.5	34.4	42.9	57.2

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 26

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0
Outersheath Thickness (Nominal)	mm	2.2	2.3	2.5	2.6	2.7	2.8	3.0	3.1	3.4
Approximate Overall Diameter	mm	40.5	44.0	48.0	51.0	54.5	58.0	64.0	70.0	78.0
Approximate Cable Weight	kg/Km	1760	2160	2570	2990	3430	3960	4850	5810	7160
Standard Drum Length	m	1000	1000	1000	500	500	500	500	500	250
Minimum Bending Radius of Cable (During Installation)	mm	605	656	716	764	815	870	957	1047	1169
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.130	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.42	0.34	0.28	0.23	0.18	0.15	0.13
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65
Approx Charging Current per phase at U ₀ = 3.6kV & f=50hz	mA/m	0.38	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	184	217	250	283	316	358	410	462
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	127	156	189	212	241	274	316	354	406
3. Laid Singly in Air, Ambient Temp. 35°C	A	163	201	239	282	316	368	431	488	565
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.30	14.10	17.40	22.60	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 27

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Outersheath Thickness (Nominal)	mm	2.4	2.5	2.6	2.7	2.8	2.9	3.1	3.2	3.5
Approximate Overall Diameter	mm	45.0	48.5	52.5	55.5	59	62.5	68.0	73.0	80.5
Approximate Cable Weight	kg/Km	2130	2560	3000	3460	3920	4500	5380	6270	7550
Standard Drum Length	m	1000	1000	1000	500	500	500	500	500	250
Minimum Bending Radius of Cable (During Installation)	mm	671	723	782	831	882	938	1017	1094	1202
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.11	0.10	0.10	0.09	0.09	0.09	0.09	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	184	217	250	283	316	358	410	462
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	127	156	189	212	241	274	316	354	406
3. Laid Singly in Air, Ambient Temp. 35°C	A	163	201	239	282	316	368	431	488	565
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.30	14.10	17.40	22.60	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 28

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Outersheath Thickness (Nominal)	mm	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.4	3.6
Approximate Overall Diameter	mm	50	53.5	57.5	60.5	64	68	73	78	85.5
Approximate Cable Weight	kg/Km	2500	2950	3410	3900	4380	4980	5890	6810	8130
Standard Drum Length	m	1000	1000	500	500	500	500	500	250	250
Minimum Bending Radius of Cable (During Installation)	mm	749	800	858	908	959	1014	1094	1170	1277
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.44	0.49
Approx Charging Current per phase at U ₀ = 8.7kV & f=50hz	mA/m	0.6	0.68	0.77	0.85	0.90	1.00	1.10	1.20	1.30
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	184	217	250	283	316	358	410	462
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	127	156	189	212	241	274	316	354	406
3. Laid Singly in Air, Ambient Temp. 35°C	A	163	201	239	282	316	368	431	488	565
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.30	14.10	17.40	22.60	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 29

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Outersheath Thickness (Nominal)	mm	2.7	2.8	2.9	3.0	3.1	3.2	3.4	3.5	3.8
Approximate Overall Diameter	mm	54.5	58.0	62.0	65.5	68.5	72.5	77.5	83.0	90.0
Approximate Cable Weight	kg/Km	2920	3400	3890	4400	4910	5540	6500	7450	8820
Standard Drum Length	m	1000	500	500	500	500	500	250	250	250
Minimum Bending Radius of Cable (During Installation)	mm	818	869	929	977	1028	1083	1163	1239	1346
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.077
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	184	217	245	274	311	258	401	453
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	132	160	193	222	250	283	325	363	410
3. Laid Singly in Air, Ambient Temp. 35°C	A	167	206	249	287	321	373	440	498	574
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 30

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8
Outersheath Thickness (Nominal)	mm	3.1	3.2	3.3	3.4	3.5	3.6	3.8	3.9	4.2
Approximate Overall Diameter	mm	66	69.5	73.4	76.6	80.1	83.8	89.1	94.1	101.3
Approximate Cable Weight	kg/Km	4160	4730	5290	5880	6450	7140	8210	9260	10760
Standard Drum Length	m	500	500	500	400	300	300	300	300	250
Minimum Bending Radius of Cable (During Installation)	mm	990	1043	1101	1149	1202	1257	1337	1412	1520
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Maximum AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.130	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.136	0.128	0.122	0.117	0.114	0.11	0.106	0.102	0.098
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.24	0.19	0.16	0.14
Maximum Equivalent Star Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.2	0.22	0.24	0.26	0.29
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	151	184	217	245	274	311	358	401	453
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	132	160	193	222	250	283	325	363	410
3. Laid Singly in Air, Ambient Temp. 35°C	A	167	206	249	287	321	373	440	498	574
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Unarmoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Outer sheath

Technical Data

Table – 31

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0
Separation Sheath Thickness	mm	1.3	1.4	1.4	1.5	1.6	1.6	1.7	1.8	2.0
Armour Wire Diameter (Nominal)	mm	2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.15	3.15
Outersheath Thickness (Nominal)	mm	2.5	2.6	2.7	2.8	2.9	3.1	3.3	3.5	3.8
Approximate Overall Diameter	mm	49.0	52.5	56.5	60.0	63.5	67.0	73.0	81.0	89.0
Approximate Cable Weight	kg/km	4700	5600	6700	7700	8800	10400	13500	16000	19300
Standard Drum Length	m	500	500	500	400	400	300	250	250	250
Maximum Bending Radius of Cable (during installation)	mm	583	626	676	715	758	804	876	967	1068
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.343	0.247	0.196	0.159	0.128	0.099	0.800	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.50	0.36	0.26	0.22	0.18	0.15	0.13	0.12	0.10
Approximate Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65
Approx Charging Current per phase at U ₀ = 3.6kV & f = 50hz	mA/m	0.30	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	267	303	338	383	436	481	534
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	161	191	227	258	294	329	378	418	472
3. Laid Singly in Air, Ambient Temp. 35°C	A	203	248	304	345	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/16 (7.2)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanized steel wire armour
10. Outer sheath

Technical Data

Table – 32

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Separation Sheath Thickness	mm	1.4	1.4	1.4	1.6	1.6	1.6	1.6	1.8	1.8
Armour Wire Diameter (Nominal)	mm	2.50	2.50	2.50	2.50	2.50	2.50	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	2.6	2.7	2.9	3.0	3.1	3.2	3.4	3.6	3.8
Approximate Overall Diameter	mm	53	56.5	61	65	67.5	71.5	79	83.5	91
Approximate Cable Weight	kg/km	5110	6090	7150	8280	9380	10760	13680	16020	19140
Standard Drum Length	m	500	500	250	250	250	250	200	200	200
Maximum Bending Radius of Cable (during installation)	mm	636	678	727	768	810	857	940	1002	1092
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.128	0.098	0.078	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.11	0.10	0.10	0.09	0.09	0.09	0.09	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.18	0.16	0.13	0.12	0.10
Approximate Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	267	303	338	383	436	481	534
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	161	191	227	258	294	329	378	418	472
3. Laid Singly in Air, Ambient Temp. 35°C	A	203	248	304	345	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 33

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Separation Sheath Thickness	mm	1.4	1.6	1.6	1.6	1.6	1.6	1.8	1.8	1.8
Armour Wire Diameter (Nominal)	mm	2.50	2.50	2.50	2.50	2.50	3.15	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	2.8	2.9	3	3.1	3.3	3.4	3.6	3.7	4.0
Approximate Overall Diameter	mm	58.5	62	66	69.5	73	78	84	89	97
Approximate Cable Weight	kg/km	5770	6850	7940	9030	10160	12340	14690	16970	20140
Standard Drum Length	m	500	500	250	250	250	250	250	200	200
Maximum Bending Radius of Cable (during installation)	mm	698	742	791	832	874	936	1003	1066	1154
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.128	0.098	0.078	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11
Approximate Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.44	0.49
Approx Charging Current per phase at U ₀ = 8.7kV & f = 50hz	mA/m	0.6	0.68	0.77	0.85	0.90	1.00	1.10	1.20	1.30
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	267	303	338	383	436	481	534
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	161	191	227	258	294	329	378	418	472
3. Laid Singly in Air, Ambient Temp. 35°C	A	203	248	304	345	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 34

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Separation Sheath Thickness	mm	1.6	1.6	1.6	1.6	1.8	1.8	1.8	1.8	1.8
Armour Wire Diameter (Nominal)	mm	2.50	2.50	2.50	3.15	3.15	3.15	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	3.0	3.1	3.2	3.4	3.5	3.6	3.7	3.9	4.1
Approximate Overall Diameter	mm	63.5	67	71	75.5	79	83	88.5	94	101.5
Approximate Cable Weight	kg/km	6470	7520	8630	10490	11780	13260	15500	17870	21090
Standard Drum Length	m	500	250	250	250	250	250	200	200	200
Maximum Bending Radius of Cable (during installation)	mm	757	799	848	906	948	995	1061	1123	1213
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	263	298	334	374	427	472	525
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	165	200	231	267	298	338	383	427	481
3. Laid Singly in Air, Ambient Temp. 35°C	A	207	253	304	350	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 35

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8
Separation Sheath Thickness	mm	1.6	1.8	1.8	1.8	1.8	1.8	1.8	2.0	2.0
Armour Wire Diameter (Nominal)	mm	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	3.4	3.5	3.6	3.7	3.9	3.9	4.1	4.3	4.5
Approximate Overall Diameter	mm	76.5	80	84.5	88.5	91.5	95	100.5	106.5	113.5
Approximate Cable Weight	kg/km	9020	10290	11520	12750	14000	15550	17950	20480	23850
Standard Drum Length	m	250	250	250	250	250	200	200	200	200
Maximum Bending Radius of Cable (during installation)	mm	918	960	1009	1050	1093	1139	1205	1267	1357
Maximum DC resistance of Conductor at 20°C	ohm/km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/km	0.493	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063
Approximate Reactance at 50 hertz	ohm/km	0.14	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.10
Approximate Impedance at 50 hertz	ohm/km	0.51	0.36	0.28	0.23	0.2	0.17	0.14	0.13	0.12
Approximate Capacitance of Cable	µf/km	0.14	0.16	0.18	0.19	0.2	0.22	0.24	0.26	0.29
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	267	303	338	383	436	481	534
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	160	191	227	258	294	329	378	418	472
3. Laid Singly in Air, Ambient Temp. 35°C	A	202	248	304	345	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 36

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Separation Sheath Thickness	mm	1.2	1.4	1.4	1.4	1.6	1.6	1.6	1.8	1.8
Armour Wire Diameter (Nominal)	mm	2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.15	3.15
Outersheath Thickness (Nominal)	mm	2.5	2.6	2.7	2.8	2.9	3.1	3.2	3.5	3.7
Approximate Overall Diameter	mm	49	52.5	56.5	60	63.5	67.5	73.5	81	89
Approximate Cable Weight	kg/km	3720	4370	4940	5540	6200	6920	8080	10200	12000
Standard Drum Length	m	500	500	500	400	250	250	250	250	250
Minimum Bending Radius of Cable (during installation)	mm	583	626	676	715	758	804	876	967	1068
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.10	0.10	0.10	0.10	0.09	0.09	0.08	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.42	0.34	0.28	0.23	0.18	0.15	0.13
Approximate Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65
Approx Charging Current per phase at U ₀ = 3.6kV & f = 50hz	mA/m	0.38	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	236	267	298	338	387	436
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	120	147	178	200	227	258	298	334	383
3. Laid Singly in Air, Ambient Temp. 35°C	A	156	193	230	271	304	354	414	469	543
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 37

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Separation Sheath Thickness	mm	1.4	1.4	1.4	1.6	1.6	1.6	1.6	1.8	1.8
Armour Wire Diameter (Nominal)	mm	2.50	2.50	2.50	2.50	2.50	2.50	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	2.6	2.7	2.9	3	3.1	3.2	3.4	3.6	3.8
Approximate Overall Diameter	mm	53	57.5	61.0	64.0	67.5	71.5	78.5	83.5	91.0
Approximate Cable Weight	kg/km	4290	4900	5500	6200	6810	7540	9450	10700	12350
Standard Drum Length	m	500	500	500	500	250	250	250	250	200
Minimum Bending Radius of Cable (during installation)	mm	636	678	727	768	810	857	940	1002	1092
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.11	0.10	0.10	0.09	0.09	0.09	0.09	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14
Approximate Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	236	267	298	338	387	436
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	120	147	178	200	227	258	298	334	383
3. Laid Singly in Air, Ambient Temp. 35°C	A	156	193	230	271	304	354	414	469	543
One Second Short Circuit Current Rating of Conductor	kA	4.7	6.58	8.93	11.28	14.1	17.39	22.56	28.2	37.6

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 38

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Separation Sheath Thickness	mm	1.4	1.6	1.6	1.6	1.6	1.6	1.8	1.8	1.8
Armour Wire Diameter (Nominal)	mm	2.50	2.50	2.50	2.50	2.50	3.15	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	2.8	2.9	3.0	3.2	3.3	3.4	3.6	3.8	4.0
Approximate Overall Diameter	mm	58.5	62	66	69.5	73	78.5	84	89	96.5
Approximate Cable Weight	kg/km	4940	5660	6290	6950	7590	9120	10450	11650	13360
Standard Drum Length	m	500	500	500	250	250	250	250	200	200
Minimum Bending Radius of Cable (during installation)	mm	698	742	791	832	874	936	1003	1066	1154
Maximum DC resistance of Conductor at 20°C	ohm/km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Approximate AC resistance of Conductor at 90°C	ohm/km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/km	0.12	0.11	0.11	0.10	0.10	0.01	0.09	0.09	0.09
Approximate Impedance at 50 hertz	ohm/km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14
Approximate Capacitance of Cable	µf/km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.44	0.90
Approx Charging Current per phase at U ₀ = 8.7kV & f = 50hz	mA/m	0.60	0.68	0.70	0.85	0.90	1.00	1.10	1.20	1.30
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	236	267	298	338	387	436
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	120	147	178	200	227	258	298	334	383
3. Laid Singly in Air, Ambient Temp. 35°C	A	156	193	230	271	304	354	414	469	543
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 39

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Separation Sheath Thickness	mm	1.6	1.6	1.6	1.6	1.8	1.8	1.8	1.8	1.8
Armour Wire Diameter (Nominal)	mm	2.50	2.50	2.50	3.15	3.15	3.15	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	3	3.1	3.2	3.4	3.5	3.6	3.8	3.9	4.1
Approximate Overall Diameter	mm	63.5	67	71	75.5	79	83	89	94	101.5
Approximate Cable Weight	kg/km	5650	6330	6980	8410	9200	10040	11320	12560	14310
Standard Drum Length	m	500	250	250	250	250	250	200	200	200
Minimum Bending Radius of Cable (during installation)	mm	757	799	848	906	948	995	1061	1123	1213
Maximum DC resistance of Conductor at 20°C	ohm/km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Approximate AC resistance of Conductor at 90°C	ohm/km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14
Approximate Capacitance of Cable	µf/km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	231	258	294	338	378	427
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	124	151	182	209	236	267	307	343	387
3. Laid Singly in Air, Ambient Temp. 35°C	A	161	198	239	276	308	359	423	478	552
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 40

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8
Separation Sheath Thickness	mm	1.60	1.80	1.80	1.80	1.80	1.80	1.80	2.00	2.00
Armour Wire Diameter (Nominal)	mm	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15
Outersheath Thickness (Nominal)	mm	3.40	3.50	3.60	3.70	3.90	4.00	4.10	4.30	4.50
Approximate Overall Diameter	mm	76.5	80	84.5	87.5	91.5	95	100.5	106	113.5
Approximate Cable Weight	kg/km	8200	9100	9860	10660	11430	12340	13720	15170	17070
Standard Drum Length	m	250	250	250	250	250	200	200	200	200
Minimum Bending Radius of Cable (during installation)	mm	918	960	1009	1050	1093	1139	1205	1267	1357
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.10	0.077
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.130	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.01	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.24	0.19	0.16	0.14
Approximate Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.20	0.22	0.24	0.26	0.29
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	231	258	294	338	378	427
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	125	151	182	209	236	267	307	343	387
3. Laid Singly in Air, Ambient Temp. 35°C	A	161	198	239	276	308	359	423	478	552
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Wire Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised steel wire armour
10. Outer sheath

Technical Data

Table – 41

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3
Separation Sheath Thickness	mm	1.20	1.40	1.40	1.40	1.60	1.60	1.60	1.80	1.80
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	2.40	2.50	2.60	2.70	2.80	2.90	3.10	3.30	3.60
Approximate Overall Diameter	mm	46	50.50	54	57	61.50	65.50	71	77.50	85
Approximate Cable Weight	kg/km	3500	4400	5340	6280	7340	8600	10630	12880	15860
Standard Drum Length	m	500	500	500	250	250	250	250	200	200
Minimum Bending Radius of Cable (during installation)	mm	560	604	652	692	736	781	853	928	1028
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.343	0.247	0.196	0.159	0.128	0.099	0.080	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.50	0.36	0.26	0.22	0.18	0.15	0.13	0.12	0.10
Approximate Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.56	0.61	0.63	0.65
Approx Charging Current per phase at U ₀ = 3.6kV & f = 50hz	mA/m	0.38	0.43	0.40	0.53	0.58	0.63	0.69	0.71	0.74
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	267	303	338	383	436	481	534
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	161	191	227	258	294	329	378	418	472
3. Laid Singly in Air, Ambient Temp. 35°C	A	203	248	304	345	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanized Steel Strip armour
10. Outer sheath

Technical Data

Table – 42

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Separation Sheath Thickness	mm	1.40	1.40	1.40	1.60	1.60	1.60	1.60	1.80	1.80
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	2.50	2.60	2.70	2.80	3.00	3.10	3.20	3.40	3.60
Approximate Overall Diameter	mm	50	54	57.50	62	66	69	75	80.50	87
Approximate Cable Weight	kg/km	3950	4820	5800	6830	7840	9130	11130	13280	16150
Standard Drum Length	m	500	500	500	250	250	250	250	200	200
Minimum Bending Radius of Cable (during installation)	mm	612	655	704	744	787	833	899	962	1051
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.343	0.247	0.196	0.159	0.128	0.099	0.08	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.11	0.10	0.10	0.09	0.09	0.09	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.18	0.16	0.13	0.12	0.10
Approximate Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.8	0.41	0.47	0.51	0.54	0.58
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	267	303	338	383	436	481	534
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	161	191	227	258	294	329	378	418	472
3. Laid Singly in Air, Ambient Temp. 35°C	A	203	248	304	345	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanized Steel Strip armour
10. Outer sheath

Technical Data

Table – 43

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Separation Sheath Thickness	mm	1.40	1.60	1.60	1.60	1.60	1.60	1.80	1.80	1.80
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	2.70	2.80	2.90	3.00	3.10	3.20	3.40	3.60	3.80
Approximate Overall Diameter	mm	55	60	63.50	67.50	71	74	80.50	85.50	92
Approximate Cable Weight	kg/km	4480	5450	6550	7450	8500	9810	11940	14050	16980
Standard Drum Length	m	500	500	250	250	250	250	200	200	200
Minimum Bending Radius of Cable (during installation)	mm	676	719	768	808	851	896	962	1026	1115
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.343	0.247	0.196	0.159	0.128	0.098	0.079	0.064
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11
Approximate Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.44	0.49
Approx Charging Current per phase at U ₀ = 8.7kV & f = 50hz	mA/m	0.60	0.68	0.77	0.85	0.90	1.00	1.10	1.20	1.30
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	267	303	338	383	436	481	534
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	161	191	227	258	294	329	378	418	472
3. Laid Singly in Air, Ambient Temp. 35°C	A	203	248	304	345	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised Steel Strip armour
10. Outer sheath

Technical Data

Table – 44

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Separation Sheath Thickness	mm	1.60	1.60	1.60	1.60	1.60	1.80	1.80	1.80	1.80
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	3.10	3.20	3.40	3.50	3.60	3.70	3.90	4.00	4.20
Approximate Overall Diameter	mm	60	65	68.50	72.50	76	80	85.50	90.50	97
Approximate Cable Weight	kg/km	5060	6000	7030	8050	9200	10550	12640	14780	17760
Standard Drum Length	m	500	500	250	250	250	250	200	200	200
Minimum Bending Radius of Cable (during installation)	mm	734	778	826	866	910	955	1021	1085	1174
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.36	0.27	0.22	0.19	0.16	0.14	0.12	0.11
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	263	298	334	374	427	472	525
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	165	200	231	267	298	338	383	427	481
3. Laid Singly in Air, Ambient Temp. 35°C	A	207	253	304	350	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanized Steel Strip armour
10. Outer sheath

Technical Data

Table – 45

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8
Separation Sheath Thickness	mm	1.60	1.80	1.80	1.80	1.80	1.80	1.80	2.00	2.00
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	3.20	3.30	3.50	3.60	3.70	3.80	4.00	4.10	4.30
Approximate Overall Diameter	mm	72.5	77	81	84.5	88	92	97.5	102.5	109.5
Approximate Cable Weight	kg/km	6560	7660	8760	9860	10990	12410	14610	16950	20070
Standard Drum Length	m	500	250	250	250	250	250	200	200	200
Minimum Bending Radius of Cable (during installation)	mm	878	922	971	1010	1054	1099	1166	1226	1313
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.060	0.047
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.493	0.342	0.247	0.196	0.159	0.127	0.098	0.079	0.063
Approximate Reactance at 50 hertz	ohm/Km	0.14	0.13	0.12	0.12	0.11	0.11	0.11	0.10	0.10
Approximate Impedance at 50 hertz	ohm/Km	0.51	0.37	0.28	0.23	0.20	0.17	0.14	0.13	0.11
Approximate Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.20	0.22	0.24	0.26	0.29
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	187	227	267	303	338	383	436	481	534
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	160	191	227	258	294	329	378	416	472
3. Laid Singly in Air, Ambient Temp. 35°C	A	202	248	304	345	396	451	524	598	681
One Second Short Circuit Current Rating of Conductor	kA	7.15	10.10	13.60	17.20	21.50	26.50	34.40	42.90	57.20

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Three Core Copper Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Copper Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanized Steel Strip armour
10. Outer sheath

Technical Data

Table – 46

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0
Separation Sheath Thickness	mm	1.20	1.40	1.40	1.40	1.60	1.60	1.60	1.80	1.80
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	2.40	2.50	2.60	2.70	2.80	2.90	3.10	3.30	3.60
Approximate Overall Diameter	mm	46	50.5	54.5	58	61.5	65.5	71.5	77.5	85.5
Approximate Cable Weight	kg/km	2670	3210	3690	4200	4770	5390	6400	7560	9080
Standard Drum Length	m	1000	500	500	500	500	500	500	250	250
Minimum Bending Radius of Cable (during installation)	mm	560	604	652	692	736	781	853	928	1028
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.10	0.077
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.10	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.42	0.34	0.28	0.23	0.18	0.15	0.13
Approximate Capacitance of Cable	µf/Km	0.34	0.38	0.43	0.47	0.51	0.57	0.61	0.63	0.65
Approx Charging Current per phase at U ₀ = 3.6kV & f = 50hz	mA/m	0.38	0.43	0.49	0.53	0.58	0.63	0.69	0.71	0.74
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	236	267	298	338	387	436
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	120	147	178	200	227	258	298	334	383
3. Laid Singly in Air, Ambient Temp. 35°C	A	156	193	230	271	304	354	414	469	543
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

3.6/6 (7.2)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised Steel Strip armour
10. Outer sheath

Technical Data

Table – 47

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Separation Sheath Thickness	mm	1.40	1.40	1.40	1.60	1.60	1.60	1.60	1.80	1.80
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	2.50	2.60	2.70	2.80	3.00	3.10	3.20	3.40	3.60
Approximate Overall Diameter	mm	51	55	58	62	65.5	69.5	75	80.5	87.5
Approximate Cable Weight	kg/km	3120	3640	4140	4740	5270	5910	6900	7960	9370
Standard Drum Length	m	500	500	500	500	500	500	250	250	250
Minimum Bending Radius of Cable (during installation)	mm	612	655	704	744	787	833	899	962	1051
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.100	0.077
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.11	0.11	0.1	0.1	0.09	0.09	0.09	0.09	0.08
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.13
Approximate Capacitance of Cable	µf/Km	0.25	0.29	0.35	0.38	0.41	0.47	0.51	0.54	0.58
Approx Charging Current per phase at U ₀ = 6kV & f = 50hz	mA/m	0.47	0.55	0.66	0.72	0.77	0.89	0.96	1.00	1.10
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	236	267	298	338	387	436
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	120	147	178	200	227	258	298	334	383
3. Laid Singly in Air, Ambient Temp. 35°C	A	156	193	230	271	304	354	414	469	543
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

6/10 (12)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised Steel Strip armour
10. Outer sheath

Technical Data

Table – 48

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Separation Sheath Thickness	mm	1.40	1.60	1.60	1.60	1.60	1.60	1.80	1.80	1.80
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	2.70	2.80	2.90	3.00	3.10	3.20	3.40	3.60	3.80
Approximate Overall Diameter	mm	56	60	64	67.50	71	75	80.50	85.50	93
Approximate Cable Weight	kg/km	3650	4260	4800	5370	5920	6590	7710	8730	10200
Standard Drum Length	m	500	500	500	500	500	250	250	250	250
Minimum Bending Radius of Cable (during installation)	mm	676	719	768	808	851	896	962	1026	1115
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.1	0.077
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14
Approximate Capacitance of Cable	µf/Km	0.22	0.25	0.28	0.31	0.33	0.36	0.41	0.44	0.49
Approx Charging Current per phase at U ₀ = 8.7kV & f = 50hz	mA/m	0.60	0.68	0.77	0.85	0.90	1.00	1.10	1.20	1.30
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	236	267	298	338	387	436
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	120	147	178	200	227	258	298	334	383
3. Laid Singly in Air, Ambient Temp. 35°C	A	156	193	230	271	304	354	414	469	543
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

8.7/15 (17.5)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanized Steel Strip armour
10. Outer sheath

Technical Data

Table – 49

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Separation Sheath Thickness	mm	1.60	1.60	1.60	1.60	1.80	1.80	1.80	1.80	1.80
Steel Strip Thickness (Nominal)	mm	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Outersheath Thickness (Nominal)	mm	2.80	2.90	3.10	3.20	3.30	3.40	3.60	3.70	4.00
Approximate Overall Diameter	mm	60.5	65	69	72.5	76	79	85.5	90.5	97
Approximate Cable Weight	kg/km	4230	4810	5380	5970	6630	7330	8410	9470	10980
Standard Drum Length	m	500	500	500	250	250	250	250	250	250
Minimum Bending Radius of Cable (during installation)	mm	734	778	826	866	910	955	1021	1085	1174
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.077
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.13	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.12	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.09
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.23	0.19	0.16	0.14
Approximate Capacitance of Cable	µf/Km	0.18	0.21	0.23	0.25	0.27	0.29	0.32	0.35	0.39
Approx Charging Current per phase at U ₀ = 12kV & f = 50hz	mA/m	0.68	0.79	0.87	0.94	1.00	1.10	1.20	1.30	1.50
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	231	258	294	338	378	427
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	125	151	182	209	236	267	307	343	387
3. Laid Singly in Air, Ambient Temp. 35°C	A	161	198	239	276	308	359	423	478	552
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

12/20 (24)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised Steel Strip armour
10. Outer sheath

Technical Data

Table – 50

Nominal Area of Conductor	mm ²	50	70	95	120	150	185	240	300	400
Insulation Thickness (Nominal)	mm	8	8	8	8	8	8	8	8	8
Separation Sheath Thickness	mm	1.60	1.80	1.80	1.80	1.80	1.80	1.80	2.00	2.00
Steel Strip Thickness (Nominal)	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Outersheath Thickness (Nominal)	mm	3.2	3.3	3.5	3.6	3.7	3.8	4.0	4.1	4.4
Approximate Overall Diameter	mm	72	77	81	84.5	88	92	97.5	102.5	109.5
Approximate Cable Weight	kg/km	5740	6470	7110	7780	8420	9190	10380	11640	13290
Standard Drum Length	m	500	250	250	250	250	250	250	200	200
Minimum Bending Radius of Cable (during installation)	mm	878	922	971	1010	1054	1099	1166	1229	1313
Maximum DC resistance of Conductor at 20°C	ohm/Km	0.641	0.443	0.32	0.253	0.206	0.164	0.125	0.1	0.077
Approximate AC resistance of Conductor at 90°C	ohm/Km	0.822	0.568	0.41	0.324	0.265	0.211	0.161	0.129	0.102
Approximate Reactance at 50 hertz	ohm/Km	0.14	0.13	0.12	0.12	0.11	0.11	0.10	0.10	0.10
Approximate Impedance at 50 hertz	ohm/Km	0.83	0.58	0.43	0.34	0.29	0.24	0.19	0.16	0.14
Approximate Capacitance of Cable	µf/Km	0.14	0.16	0.18	0.19	0.20	0.22	0.24	0.26	0.29
Approx Charging Current per phase at U ₀ = 18kV & f = 50hz	mA/m	0.79	0.90	1.00	1.10	1.10	1.20	1.40	1.50	1.60
Sustained Current Ratings										
1. Laid Direct, Ground Temp. 30°C & g = 1.2°C m/W depth of laying = 0.8m, laid in trefoil touching	A	142	174	205	231	258	294	338	378	427
2. Drawn into Ducts, Ground Temp. 30°C & g = 1.2°C m/W, depth of laying = 0.8m, laid singly	A	125	151	182	209	236	267	307	343	387
3. Laid Singly in Air, Ambient Temp. 35°C	A	161	198	239	276	308	359	423	478	552
One Second Short Circuit Current Rating of Conductor	kA	4.70	6.58	8.93	11.28	14.10	17.39	22.56	28.20	37.60

FOR ALL CABLES THE MAXIMUM CONDUCTOR OPERATING TEMPERATURE IS 90°C AND LIMITED CONDUCTOR TEMPERATURE AFTER SHORT CIRCUIT IS 250°C.

18/30 (36)kV Three Core Aluminium Conductors XLPE Insulated to IEC 60502-2 Steel Strip Armoured



1. Aluminium Conductor
2. Semiconductive conductor screen
3. XLPE Insulation
4. Semiconductive Insulation screen
5. Copper tape screen
6. Fillers
7. Tape binder / Thread binder
8. Bedding
9. Galvanised Steel Strip armour
10. Outer sheath

TECHNICAL DATA

Current Ratings and Rating Factors

The Current rating of copper and aluminium conductor cables stated in the tables in this catalogue are based on the IEC 287 Publication, assuming continuous conductor operating temperature of 90 °C, for cables laid underground or in air, or drawn through ducts.

Th

- Ambient temperature
- Ground temperature
- Depth of buried cable
- Thermal resistivity of soil
- Multiple circuits and their configuration

Appropriate tables for derating factors are provided in the latter part of this catalogue.

Short Circuit Rating

The short circuit rating graphs given in this catalogue assume final conductor temperature of 250°C rising from 90°C i.e., in a fully loaded condition. It is therefore necessary that accessories used with the cables are also capable of operation at these values of fault current and temperature.

The tables also indicate the specific short circuit fault current rating for a duration of one second for each cable size and type. When the fa

Installation

Cables described in this publication are suitable for laying direct ground, in air or drawn through ducts. Special construction features are needed when sustained wet conditions prevail in the ground.

Cable pulling forces have to be limited according to the total conductor cross section area (A) in mm² and the maximum may be limited to A x 50 Newtons for copper and A x 30 Newtons for Aluminium.

Cable bending radii are recommended as follow:

	Minimum Bending Radius	
	During installation	Controlled bending
Single Core Unarmoured	20D	15D
Single Core Armoured	15D	12D
Three Core Unarmoured	15D	12D
Three Core Armoured	12D	10D

SHORT CIRCUIT RATING FOR XLPE CABLES

(FOR DURATION OF ONE SECOND)

Nominal-area of Conductor Sq. mm	With Aluminium Conductor K.Amp.	With Copper Conductor K.Amp.
1.5	0.141	0.215
2.5	0.235	0.358
4.0	0.376	0.572
6.0	0.564	0.858
10	0.940	1.430
16	1.504	2.290
25	2.350	3.580
35	3.290	5.000
50	4.700	7.150
70	6.580	10.000
95	8.930	13.590
120	11.280	17.160
150	14.100	21.450
185	17.390	26.450
240	22.560	34.320
300	28.200	42.900
400	37.600	57.200
500	47.000	71.500
630	59.220	90.100
800	75.200	114.400
1000	94.000	143.000

Rating Factors

Table – 51

Cable laid direct in ground

VARIAION IN GROUND TEMPERATURE

Ground temperature °C	15	20	25	30	35	40	45
Cable Type All Cables	Rating Factor						
	1.11	1.08	1.04	1.00	0.96	0.91	0.87

Table – 52

RATING FACTORS FOR DEPTH OF LAYING (TO CENTRE OF CABLE OR TREFOIL GROUP OF CABLES)

Depth of laying m	3.6/6 kV to 18/30kV cables	
	Up to 300mm ²	Above 300mm ²
0.50	-	-
0.60	-	-
0.80	1.00	1.00
1.00	0.98	0.97
1.25	0.96	0.95
150	0.95	0.94
1.75	0.94	0.92
2.00	0.92	0.90
2.50	0.91	0.89
3.00	0.90	0.88
or more		

Table – 53

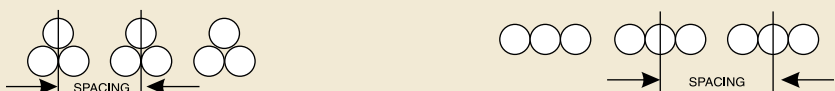
RATING FACTORS FOR VARIATION IN THERMAL RESISTIVITY OF SOIL (AVERAGE VALUE)

Size of cables mm ²	Soil thermal resistivity in K.m./W						
	0.8	0.9	1	1.5	2	2.5	3
Single core							
50	1.50	1.11	1.07	0.91	0.81	0.73	0.68
70	1.60	1.12	1.07	0.91	0.81	0.73	0.68
95	1.60	1.12	1.07	0.91	0.81	0.73	0.68
120	1.60	1.12	1.07	0.91	0.81	0.73	0.68
150	1.17	1.12	1.07	0.91	0.81	0.73	0.68
185	1.17	1.12	1.07	0.91	0.81	0.73	0.68
240	1.17	1.12	1.07	0.91	0.80	0.73	0.68
300	1.18	1.12	1.07	0.91	0.80	0.73	0.68
400	1.18	1.12	1.07	0.91	0.80	0.73	0.67
500	1.18	1.12	1.07	0.91	0.80	0.73	0.67
630	1.18	1.12	1.07	0.91	0.80	0.73	0.67
800	1.18	1.12	1.07	0.91	0.80	0.73	0.66
1000	1.18	1.12	1.07	0.91	0.80	0.73	0.66
Multicore							
50	1.13	1.09	1.06	0.92	0.83	0.76	0.71
70	1.14	1.09	1.06	0.92	0.83	0.75	0.70
95	1.14	1.09	1.06	0.92	0.83	0.75	0.70
120	1.14	1.10	1.06	0.92	0.82	0.75	0.69
150	1.14	1.10	1.06	0.92	0.82	0.75	0.69
185	1.14	1.10	1.06	0.92	0.82	0.74	0.69
240	1.15	1.10	1.07	0.92	0.81	0.74	0.69
300	1.15	1.10	1.07	0.92	0.81	0.74	0.69
400	1.15	1.10	1.07	0.92	0.81	0.74	0.69

Table – 54

Group Rating Factors

GROUP RATING FACTORS FOR CIRCUITS OF THREE SINGLE CORE CABLES IN TREFOIL AND LAID FLAT TOUCHING, HORIZONTAL FORMATION (AVERAGE VALUES)

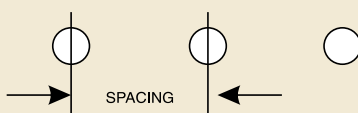
	Number of Circuit						
		Spacing of Circuit					
		Touching ⁺					
		Trefoil	Laid flat	0.15* m	0.30 m	0.45 m	0.60 m
3.6/6 to 12/20kV Cables	2	0.78	0.81	0.81	0.85	0.88	0.90
	3	0.66	0.68	0.71	0.76	0.80	0.83
	4	0.59	0.62	0.65	0.72	0.76	0.80
	5	0.55	0.58	0.61	0.68	0.73	0.77
	6	0.52	0.55	0.58	0.66	0.72	0.76
18/30kV Cables	2	0.79	0.81	0.81	0.85	0.88	0.90
	3	0.67	0.70	0.71	0.76	0.80	0.83
	4	0.62	0.65	0.65	0.72	0.76	0.80
	5	0.57	0.60	0.60	0.68	0.73	0.77
	6	0.54	0.57	0.57	0.66	0.72	0.76

*This configuration, at 0.15m spacing, may not be practical for the larger size cables

Table – 55

Group Rating Factors

GROUP RATING FACTORS FOR MULTICORE CABLES IN HORIZONTAL FORMATION

	Number of cable in Group					
		Spacing				
		Touching	0.15 m	0.30 m	0.45 m	0.60 m
3.6/6 to 12/20kV cables	2	0.80	0.85	0.89	0.9	0.92
	3	0.68	0.75	0.80	0.84	0.86
	4	0.62	0.7	0.77	0.8	0.84
	5	0.57	0.66	0.73	0.78	0.81
	6	0.55	0.63	0.71	0.76	0.80
18/30kV cables	2	0.80	0.83	0.87	0.89	0.91
	3	0.70	0.73	0.78	0.82	0.85
	4	0.64	0.68	0.74	0.78	0.82
	5	0.59	0.63	0.7	0.75	0.79
	6	0.56	0.60	0.68	0.74	0.78

Cables installed in single way ducts:

The term 'ducts' applies to single earthenware, fibre or plastic pipes.

Table - 56

VARIATION IN GROUND TEMPERATURE

Ground temperature °C	15	20	25	30	35	40	45
	Rating Factor						
Cable Type All Cables	1.11	1.08	1.04	1.00	0.96	0.91	0.87

Table – 57

RATING FACTORS FOR DEPTH OF LAYING (TO CENTRE OF CABLE OR TREFOIL GROUP OF CABLES)

Depth of laying m	3.6/6kV to 18/30 kV	
	Up to 300 mm²	Above 300mm²
0.50	-	-
0.60	-	-
0.80	1.00	1.00
1.00	0.98	0.99
1.25	0.95	0.97
1.50	0.93	0.96
1.75	0.92	0.95
2.00	0.90	0.94
2.50	0.89	0.93
3.00	0.88	0.92
or more		

Table – 58

RATING FACTORS FOR VARIATION IN THERMAL RESISTIVITY OF SOIL (AVERAGE VALUES)

Size of cables mm²	Soil thermal resistivity in K.m./W						
	0.8	0.9	1.0	1.5	2	2.5	3
Single core							
50	1.08	1.06	1.04	0.94	0.87	0.82	0.77
70	1.09	1.06	1.04	0.94	0.87	0.81	0.76
95	1.09	1.06	1.04	0.94	0.87	0.81	0.76
120	1.10	1.07	1.04	0.94	0.86	0.80	0.75
150	1.10	1.07	1.04	0.94	0.86	0.80	0.75
185	1.10	1.07	1.04	0.93	0.86	0.79	0.75
240	1.11	1.07	1.04	0.93	0.86	0.79	0.74
300	1.11	1.08	1.05	0.93	0.85	0.79	0.74
400	1.11	1.08	1.05	0.93	0.85	0.78	0.73
500	1.11	1.08	1.05	0.93	0.85	0.78	0.73
630	1.12	1.08	1.05	0.93	0.84	0.78	0.72
800	1.12	1.09	1.05	0.93	0.84	0.77	0.72
1000	1.13	1.09	1.05	0.92	0.84	0.77	0.71
Multicore							
50	1.05	1.03	1.02	0.96	0.91	0.87	0.83
70	1.05	1.04	1.02	0.96	0.91	0.86	0.82
95	1.06	1.04	1.02	0.96	0.91	0.86	0.82
120	1.06	1.04	1.03	0.95	0.9	0.85	0.81
150	1.06	1.04	1.03	0.95	0.9	0.85	0.80
185	1.07	1.05	1.03	0.95	0.89	0.84	0.80
240	1.07	1.05	1.03	0.95	0.89	0.84	0.79
300	1.07	1.05	1.03	0.95	0.89	0.83	0.78
400	1.07	1.05	1.03	0.95	0.89	0.83	0.78

Table – 59

Group Rating Factors

GROUP RATING FACTORS FOR SINGLE CORE CABLES IN TREFOIL SINGLE WAY DUCTS, HORIZONTAL FORMATION (AVERAGE VALUES)

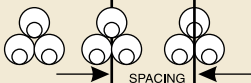
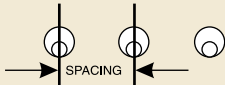
	Number of Circuit			
		Spacing		
		Touching	0.45 m	0.60 m
3.6/6 to 12/20kV Cables	2	0.85	0.88	0.90
	3	0.75	0.80	0.83
	4	0.70	0.76	0.80
	5	0.67	0.73	0.77
	6	0.64	0.71	0.76
18/30kV Cables	2	0.85	0.88	0.90
	3	0.76	0.8	0.83
	4	0.71	0.76	0.80
	5	0.67	0.73	0.77
	6	0.65	0.71	0.76

Table – 60

GROUP RATING FACTORS FOR SINGLE CORE CABLES IN TREFOIL SINGLE WAY DUCTS, HORIZONTAL FORMATION (AVERAGE VALUES)

	Number of Circuit				
		Spacing			
		Touching	0.30 m	0.45 m	0.60 m
3.6/6 to 12/20kV Cables	2	0.88	0.91	0.93	0.94
	3	0.80	0.84	0.87	0.89
	4	0.75	0.81	0.84	0.87
	5	0.71	0.77	0.82	0.85
	6	0.69	0.75	0.8	0.84
18/30kV Cables	2	0.87	0.89	0.92	0.93
	3	0.78	0.82	0.85	0.87
	4	0.73	0.78	0.82	0.85
	5	0.69	0.75	0.79	0.83
	6	0.67	0.73	0.78	0.82

Group Rating Factors

Cables installed in free air:

All the rating for cables run in air are based upon the assumption that they are shielded from direct sunlight and without restriction of ventilation.

Table – 61

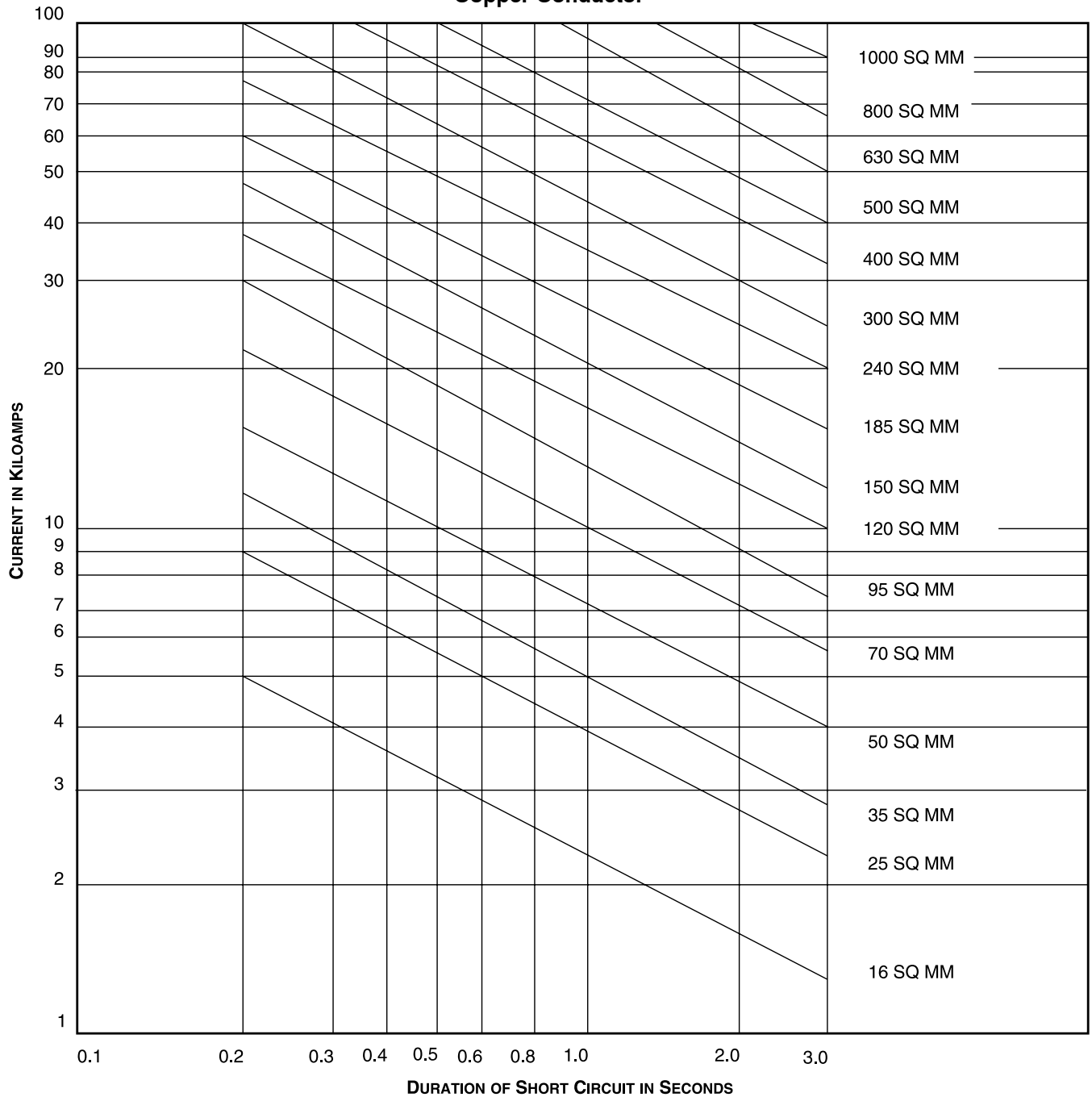
VARIAION IN AIR TEMPERATURE

Ground temperature °C	25	30	35	40	45	50	55
	Rating Factor						
Cable Type All Cables	1.09	1.04	1.00	0.95	0.90	0.85	0.80

Effect of grouping cables: No reduction in rating is necessary where there is free circulation of air around the circuits provided that:

1. The horizontal clearance between circuits is not less than twice the overall diameter of an individual cable.
2. The vertical clearance between circuits is not less than four times the diameter of an individual cable.
3. If the number of circuits execute exceeds three, they are installed in a horizontal plane.

SHORT CIRCUIT RATING Copper Conductor



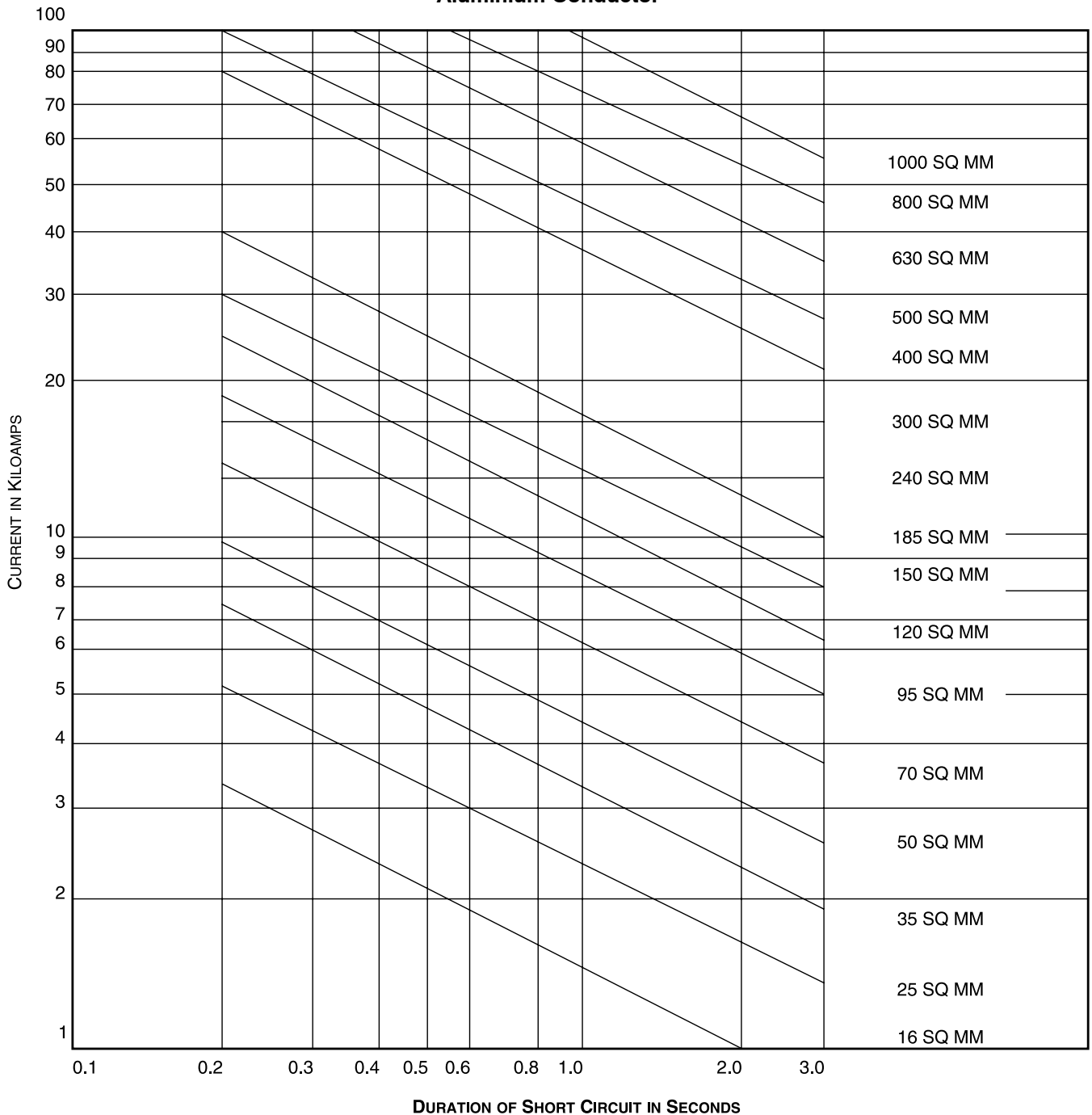
Basis

1. Cable fully loaded at start of short circuit. (Conductor temperature: 90°C)
2. Conductor temperature at end of short circuit: 250°C

Note:

It should be ensured that the accessories associated with the cable are also capable of operation at these values of fault current and temperature.

SHORT CIRCUIT RATING
Aluminium Conductor



Basis

1. Cable fully loaded at start of short circuit. (Conductor temperature: 90°C)
2. Conductor temperature at end of short circuit: 250°C

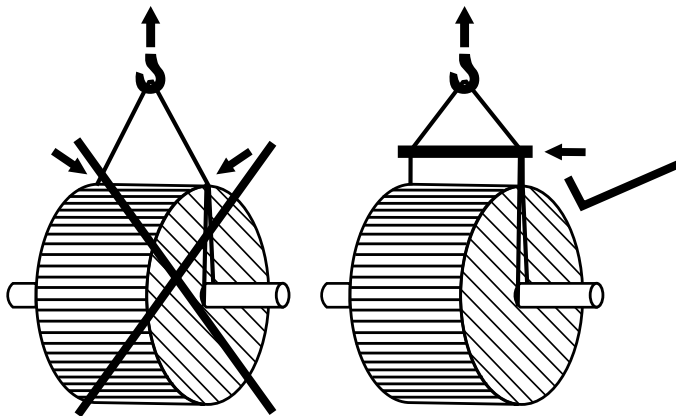
Note:

It should be ensured that the accessories associated with the cable are also capable of operation at these values of fault current and temperature.

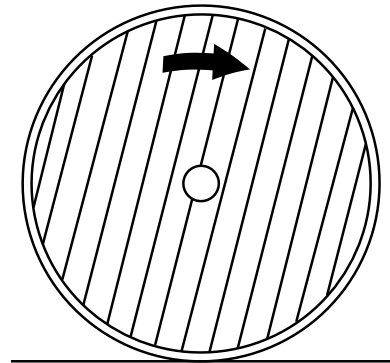
CABLE DRUM HANDLING

Gemscab Medium Voltage cables should be installed by trained personnel in accordance with good engineering practices, recognised codes of practice statutory local requirements, IEE wiring regulations and where relevant, in accordance with any specific instructions issued by the company. Cables are often supplied in heavy cable drums and handling these drums can constitute a safety hazard. In particular, dangers may arise during the removal of steel binding straps and during the removal of retaining battens and timbers which may expose projecting nails.

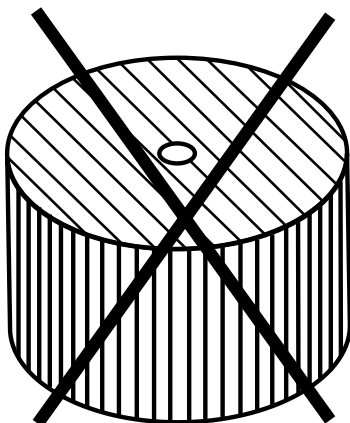
For detailed information, refer to Gemscab Drum Handling Instructions as given below:



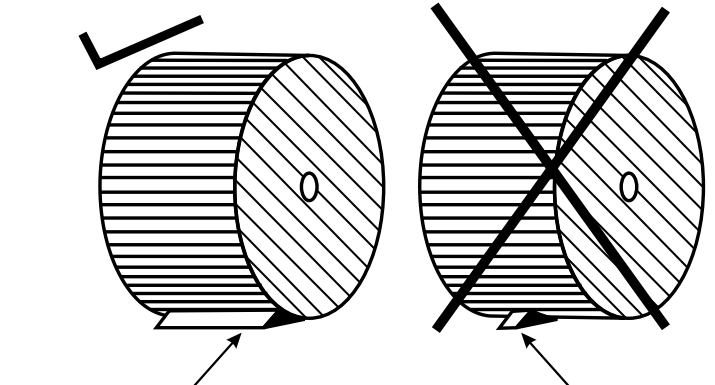
Lifting Cable Drums By Crane



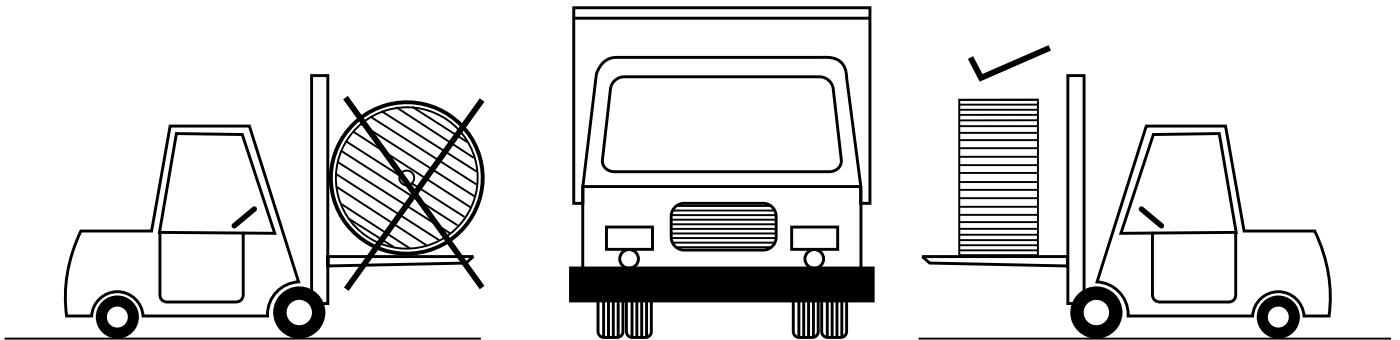
Roll the Drum Shown in the Direction of the Arrow



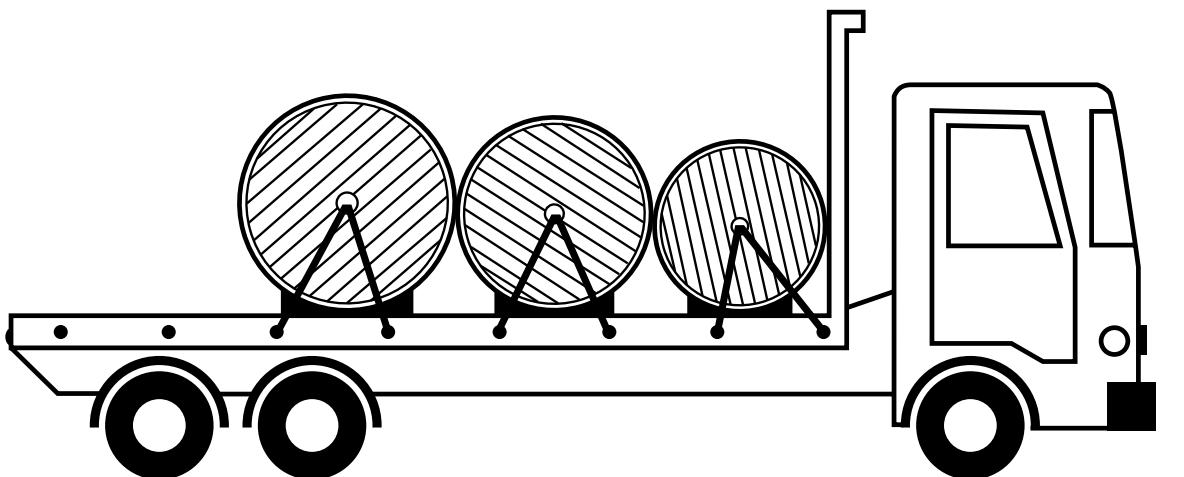
Do Not Lay Drums of Their Flanges



Use Proper Stops to Prevent Drums Rolling



Lift Drums on Fork Trucks Correctly



Secure Drums Adequately Before Transportation



GEMSCAB INDUSTRIES LIMITED

Corporate Office

4th Floor, Prem Sadan, 11 Rajendra Place, New Delhi-110 008
Ph.: + 91-11-25815390, 25815391 Fax : + 91-11-25815376
E-Mail : gemscab@vsnl.com

Works

SP-1192/L & K, Phase-IV, RIICO Industrial Area
Bhiwadi, Distt. Alwar (Rajasthan) - 301 019
Ph.: + 91-1493-645143, 645144 Fax : +91-1493-222752

Bangalore

14/2, 1st Floor, Patalamma Temple Street
Opp. R.N.R. Convention Hall, Basavanagudi, Bangalore - 560 004
Mobile : + 91 9243472777

Chennai

113, 1st Floor, Gee Gee Shroff Centre, Poonamalle High Road, Chennai-600 084
Ph.: + 91-44-64565211
Mobile : + 91 9282349620

Hyderabad

5-2-174/2/7, Rashtrapathi Road, Opp. C.H.Yagnaiah Petrol Pump
Secunderabad - 500 003
Mobile : + 91 9246569590

Kolkata

Riddhi Apartment, 2nd Floor, 36/2A Garcha Road
Kolkata-700 019
Mobile : + 91 9231003568

Mumbai

519 - Laxmi Plaza, Laxmi Industrial Estate, Andheri (West)
Mumbai - 400 053. Ph.: + 91-22-26351354, 26351356
Mobile : + 91 9223170503, 9223170504

www.gemscab.com