EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

PRODUCTS CATALOGUE

Medium, High and Ultra-High Voltage Cables

Standards Related to Power Cables

IEC Standards

S/N	No. of IEC	Subject
1	60028	International standard of resistance for copper.
2	60060	High-voltage test techniques
3	60183	Guide to the selection of high voltage cables.
4	60228	Conductors of insulated cables.
5	60229	Electric cables – Tests on extruded over sheaths with a special protective function
6	60230	Impulse tests on cables and their accessories.
7	60270	High-Voltage test techniques – Partial discharge measurements
8	60287	Electric cables - Calculation of the current rating.
9	60331	Tests for electric cables under fire conditions - Circuit integrity
10	60332	Tests on electric and optical fiber cables under fire conditions
11	60502-1	Power cables with extruded insulation and their accessories for rated voltages from
		1 kV (Um = 1,2 kV up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV
		(Um = 1,2 kV) and 3 kV (Um = 3,6 kV)
12	60502-2	Power cables with extruded insulation and their accessories for rated voltages from1 kV
		(Um = 1,2 kV) up to 30 kV (Um = 36 kV) – Part 2: Cables for rated voltages from 6 kV
		(Um = 7,2 kV) up to 30 kV (Um = 36 kV)
13	60811	Electric and optical fiber cables - Test methods for non-metallic materials.
14	60840	Power cables with extruded insulation and their accessories for rated voltages above
		30 kV (Um = 36 kV) up to 150 kV (Um = 170 kV) – Test methods and requirements.

Standards Related to Power Cables

IEC Standards

S/N	No. of IEC	Subject
15	60853	Calculation of the cyclic and emergency current rating of cables
16	60865	Short circuit currents - calculation of effects
17	60885	Electrical test methods for electric cables.
18	60949	Calculation of thermally permissible short-circuits currents, taking into account
		non-adiabatic heating effects.
19	60986	Short-circuit temperature limits of electric cables with rated voltages from 6kV
		(Um=7.2 kV) and to 30 kV (Um=36 kV).
20	61443	Short circuit temperature limits of electric cables with rated voltages above 30 kV
		(Um=36 kV).
21	62067	Power cables with extruded insulation and their accessories for rated voltages above
		150 kV (Um = 170 kV) up to 500 kV (Um = 550 kV) – Test methods and requirements.
22	62095	Electric Cables –Calculations for current ratings – Finite element method.
23	62230	Electric cables – Spark-test method

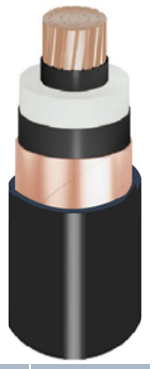
EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

Power Cables

Medium Voltage

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

6/10 (12) KV Single Core Unarmored Cables



Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, and PVC Sheath.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
					Laid in ground		Laid in free air (Shaded)			
	DC at 20 °C	AC at 90 °C		Trefoil	Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	μf/km	Ω/km	A	A	A	A	mm	Kg/Km
1 Core – Cu/XLPE/PVC										
150	0.124	0.16	0.39	0.12	420	370	490	420	31	2100
185	0.0991	0.128	0.43	0.11	440	420	570	440	33	2500
240	0.0754	0.0805	0.48	0.11	580	475	670	520	38	3100
300	0.0601	0.0805	0.54	0.1	660	555	760	610	43	4000
400	0.047	0.064	0.59	0.1	755	620	900	695	48	5050
500	0.0366	0.052	0.67	0.1	845	680	1005	770	51	6100
630	0.0283	0.043	0.75	0.1	1000	755	1230	910	54	7500
800	0.0221	0.0348	0.80	0.09	1150	845	1375	1035	62	10050
1 Core - AL/XLPE/PVC										
150	0.206	0.265	0.39	0.12	300	285	380	305	31	1300
185	0.164	0.212	0.43	0.11	340	325	430	350	33	1420
240	0.125	0.163	0.48	0.11	395	375	520	415	38	1700
300	0.1	0.131	0.53	0.1	445	430	590	470	43	2500
400	0.0778	0. 1	0.59	0.1	515	480	690	540	48	2900
500	0.0605	0.087	0.67	0.1	585	545	820	635	51	3500
630	0.0469	0.061	0.74	0.1	675	610	970	735	54	3700
800	0.0367	0.0517	0.85	0.09	760	680	1100	1080	62	5300

the above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	3.4mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

6/10 (12) KV Single Core ATA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, covered with a layer of PVC compound as bedding layer, aluminum tape armored and PVC Sheath.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
					Laid in ground		Laid in free air (Shaded)			
	DC at 20 °C	AC at 90 °C		Trefoil	Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/km	A	A	A	A	mm	Kg/Km
1 Core – Cu/XL/XLPE/PVC										
150	0.124	0.16	0.39	0.12	420	370	490	420	33	2300
185	0.0991	0.128	0.43	0.11	440	420	570	440	35	2800
240	0.0754	0.0805	0.48	0.11	580	475	670	520	40	3420
300	0.0601	0.0805	0.53	0.1	660	555	760	610	45	4650
400	0.047	0.064	0.59	0.1	755	620	900	695	50	5700
500	0.0366	0.052	0.67	0.1	845	680	1005	770	53	6400
630	0.0283	0.043	0.74	0.1	1000	755	1230	910	58	8600
800	0.0221	0.0348	0.80	0.09	1150	845	1375	1035	64	11300
1 Core – AL /XL/XLPE/PVC										
150	0.206	0.265	0.39	0.12	300	285	380	305	33	1500
185	0.164	0.212	0.43	0.11	340	325	430	350	35	1700
240	0.125	0.163	0.48	0.11	395	375	520	415	40	1950
300	0.1	0.131	0.53	0.1	445	430	590	470	45	2800
400	0.0778	0. 1	0.59	0.1	515	480	690	540	50	3300
500	0.0605	0.087	0.66	0.1	585	545	820	635	53	3500
630	0.0469	0.061	0.74	0.1	675	610	970	735	58	4700
800	0.0367	0.0517	0.84	0.09	760	680	1100	1080	64	5600

the above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	3.4mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

6/10 (12) KV Single Core AWA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, covered with a layer of PVC compound as bedding, aluminum wire armored and PVC Sheath.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
					Laid in ground		Laid in free air (Shaded)			
	DC at 20 °C	AC at 90 °C		Trefoil	Flat	Trefoil	Flat Touched	Trefoil Touched		
mm2	Ω/Km	Ω/Km	µf/km	Ω/km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/PVC										
150	0.124	0.16	0.39	0.12	420	370	490	420	35	2520
185	0.0991	0.128	0.43	0.11	440	420	570	440	37	2925
240	0.0754	0.0805	0.48	0.11	580	475	670	520	43	3570
300	0.0601	0.0805	0.53	0.1	660	555	760	610	48	4855
400	0.047	0.064	0.59	0.1	755	620	900	695	53	6000
500	0.0366	0.052	0.67	0.1	845	680	1005	770	56	7355
630	0.0283	0.043	0.74	0.1	1000	755	1230	910	61	9455
800	0.0221	0.0348	0.80	0.09	1150	845	1375	1035	67	11210
1 Core – AL/ XLPE/PVC										
150	0.206	0.265	0.39	0.12	300	285	380	305	35	1720
185	0.164	0.212	0.43	0.11	340	325	430	350	37	1845
240	0.125	0.163	0.48	0.11	395	375	520	415	43	2970
300	0.1	0.131	0.53	0.1	445	430	590	470	48	3005
400	0.0778	0. 1	0.59	0.1	515	480	690	540	53	3600
500	0.0605	0.087	0.66	0.1	585	545	820	635	56	4255
630	0.0469	0.061	0.74	0.1	675	610	970	735	61	4555
800	0.0367	0.0517	0.84	0.09	760	680	1100	1080	67	6210

the above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	3.4mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

6/10 (12) KV Multi Core STA Cables

Three Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, cores are assembled together with non-hygroscopic polypropylene fillers and wrapped with binder tape, covered with a layer of PVC compound as bedding, steel tape armored and PVC sheathed.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Ground	Laid in free air (Shaded)		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	Mm	Kg/Km
3 Core - Cu/XLPE/STA/PVC								
150	0.124	0.1595	0.39	0.09	350	360	72	9100
185	0.0991	0.1282	0.43	0.09	395	409	76	10100
240	0.0754	0.0987	0.48	0.09	450	465	82	12900
300	0.0601	0.0799	0.54	0.09	500	530	87	15200
400	0.047	0.0642	0.59	0.08	545	600	95	18300
500	0.0366	0.0522	0.67	0.075	590	685	108	22500
3 Core - AL/XLPE/STA/PVC								
150	0.206	0.2650	0.39	0.09	270	280	72	6400
185	0.164	0.2114	0.43	0.09	305	320	76	6800
240	0.125	0.1618	0.48	0.09	350	360	82	8500
300	0.1	0.1302	0.53	0.09	390	410	87	9600
400	0.0778	0.1025	0.59	0.08	435	465	95	11200
500	0.0605	0.0811	0.67	0.075	490	555	108	13300

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	3.4mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

6/10 (12) KV Multi Core SWA Cables

Three Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, cores are assembled together with non-hygroscopic polypropylene fillers and wrapped with binder tape, covered with a layer of PVC compound as bedding, steel wire armored and PVC Sheath.

Cables are produced according to IEC 60502 or BS 6622.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Ground	Laid in free air (Shaded)		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	Mm	Kg/Km
3 Core - Cu/XLPE/SWA/PVC								
150	0.124	0.1595	0.39	0.12	350	360	75	10885
185	0.0991	0.1282	0.43	0.11	395	409	79	12035
240	0.0754	0.0987	0.48	0.11	450	465	87	15860
300	0.0601	0.0799	0.54	0.1	500	530	92	18400
400	0.047	0.0642	0.59	0.1	545	600	99	21500
500	0.0366	0.0522	0.67	0.1	590	685	112	25500
3 Core - AL/XLPE/SWA/PVC								
150	0.206	0.2650	0.39	0.12	270	280	75	8100
185	0.164	0.2114	0.43	0.11	305	320	79	8750
240	0.125	0.1618	0.48	0.11	350	360	87	11500
300	0.1	0.1302	0.53	0.1	390	410	92	12800
400	0.0778	0.1025	0.59	0.1	435	465	99	13900
500	0.0605	0.0811	0.67	0.1	490	555	112	16300

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	3.4mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

8.7/15 (17.5) KV Single Core Unarmored Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, and PVC Sheath.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C		Trefoil	Laid in ground		Laid in free air (Shaded)			
					Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω /km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/PVC										
150	0.124	0.1592	0.31	0.1	405	365	480	410	33	2170
185	0.0991	0.1278	0.34	0.1	435	405	560	430	35	2570
240	0.0754	0.0981	0.38	0.1	570	470	650	510	40	3170
300	0.0601	0.0792	0.42	0.09	650	545	750	600	45	4050
400	0.047	0.0633	0.46	0.09	750	610	890	680	50	5100
500	0.0366	0.0511	0.52	0.09	840	670	990	760	53	6200
630	0.0283	0.0417	0.57	0.081	990	740	1200	906	56	7600
800	0.0221	0.0351	0.64	0.08	1120	830	1300	1005	64	10100
1 Core -AL/XLPE/PVC										
150	0.206	0.2648	0.31	0.1	290	280	370	300	33	1370
185	0.164	0.2111	0.34	0.1	330	320	420	340	35	1490
240	0.125	0.1615	0.37	0.1	390	360	510	405	40	1770
300	0.1	0.1298	0.41	0.09	440	420	570	460	45	2580
400	0.0778	0.1019	0.46	0.09	500	470	670	530	50	2990
500	0.0605	0.0804	0.51	0.09	570	530	800	620	53	3600
630	0.0469	0.0639	0.57	0.081	660	600	950	720	56	3810
800	0.0367	0.0519	0.65	0.08	750	670	1000	1050	64	5600

The above data is approximate and subjected to manufacturing tolerance.
Cable constructed are based on :

Insulation thickness	4.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

8.7/15 (17.5) KV Single Core ATA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, covered with a layer of PVC compound as bedding layer, aluminum tape armored and PVC sheath.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at	AC at			Laid in ground		Laid in free air (Shaded)			
	20 °C	90 °C		Trefoil	Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω /km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/ATA/PVC										
150	0.124	0.1591	0.31	0.1	405	365	480	410	35	2370
185	0.0991	0.1276	0.34	0.1	435	405	560	430	37	2870
240	0.0754	0.0979	0.38	0.1	570	470	650	510	42	3490
300	0.0601	0.0789	0.42	0.09	650	545	750	600	47	4730
400	0.047	0.0629	0.46	0.09	750	610	890	680	52	6090
500	0.0366	0.0506	0.52	0.09	840	670	990	760	55	7400
630	0.0283	0.0411	0.57	0.081	990	740	1200	906	58	8710
800	0.0221	0.0344	0.64	0.08	1120	830	1300	1005	66	11600
1 Core - AL/XLPE/ATA/PVC										
150	0.206	0.2647	0.31	0.1	290	280	370	300	35	1570
185	0.164	0.2110	0.34	0.1	330	320	420	340	37	1770
240	0.125	0.1613	0.37	0.1	390	360	510	405	42	2020
300	0.1	0.1296	0.41	0.09	440	420	570	460	47	2880
400	0.0778	0.1016	0.46	0.09	500	470	670	530	52	3390
500	0.0605	0.0801	0.51	0.09	570	530	800	620	55	4200
630	0.0469	0.0635	0.57	0.081	660	600	950	720	58	4810
800	0.0367	0.0514	0.65	0.08	750	670	1000	1050	66	5900

The above data is approximate and subjected to manufacturing tolerance.
Cable constructed are based on:

Insulation thickness	4.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

8.7/15 (17.5) KV Single Core AWA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, covered with a layer of PVC compound as bedding layer, aluminum wire armored and PVC sheath.

- Cables are produced according to IEC 60502 or BS 6622.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Laid in ground		Laid in free air (Shaded)			
				Trefoil	Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω /km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/AWA/PVC										
150	0.124	0.1590	0.31	0.1	405	365	480	410	37	2590
185	0.0991	0.1275	0.34	0.1	435	405	560	430	39	3090
240	0.0754	0.0978	0.38	0.1	570	470	650	510	45	3620
300	0.0601	0.0788	0.42	0.09	650	545	750	600	50	4950
400	0.047	0.0627	0.46	0.09	750	610	890	680	55	6490
500	0.0366	0.0503	0.52	0.09	840	670	990	760	58	7800
630	0.0283	0.0407	0.57	0.081	990	740	1200	906	61	9120
800	0.0221	0.0340	0.64	0.08	1120	830	1300	1005	69	12200
1 Core - AL/XLPE/AWA/PVC										
150	0.206	0.2646	0.31	0.1	290	280	370	300	37	1770
185	0.164	0.2110	0.34	0.1	330	320	420	340	39	1970
240	0.125	0.1613	0.37	0.1	390	360	510	405	45	2250
300	0.1	0.1295	0.41	0.09	440	420	570	460	50	3100
400	0.0778	0.1015	0.46	0.09	500	470	670	530	55	3690
500	0.0605	0.0799	0.51	0.09	570	530	800	620	58	4600
630	0.0469	0.0632	0.57	0.081	660	600	950	720	61	5200
800	0.0367	0.0511	0.65	0.08	750	670	1000	1050	69	6500

The above data is approximate and subjected to manufacturing tolerance.
Cable constructed are based on:

Insulation thickness	4.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

8.7/15 (17.5) KV Multi Core STA Cables

Three Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, cores are assembled together with non-hygroscopic polypropylene fillers and wrapped with binder tape, covered with a layer of PVC compound as bedding, steel tape armored and PVC sheathed.

- Cables are produced according to IEC 60502.

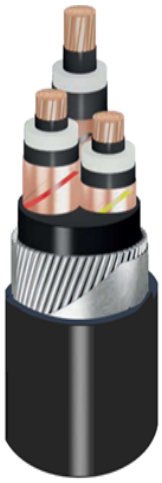
Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Ground	Laid in free air (Shaded)		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	mm	Kg/Km
3 Core - Cu/XLPE/STA/PVC								
150	0.124	0.1594	0.31	0.1	350	400	74	9200
185	0.0991	0.1280	0.34	0.095	395	415	78	10300
240	0.0754	0.0984	0.38	0.09	455	495	84	13100
300	0.0601	0.0796	0.42	0.088	530	580	89	15450
400	0.047	0.0638	0.46	0.087	590	660	97	18600
500	0.0366	0.0518	0.52	0.08	670	750	110	22700
3 Core - AL/XLPE/STA/PVC								
150	0.206	0.2649	0.31	0.1	270	300	74	6500
185	0.164	0.2113	0.34	0.095	310	340	78	6900
240	0.125	0.1617	0.38	0.09	350	390	84	8700
300	0.1	0.1300	0.42	0.088	405	445	89	9900
400	0.0778	0.1022	0.46	0.087	455	515	97	11500
500	0.0605	0.0808	0.52	0.08	530	620	110	13050

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	4.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

8.7/15 (17.5) KV Multi Core SWA Cables



Three Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, cores are assembled together with non-hygroscopic polypropylene fillers and wrapped with binder tape, covered with a layer of PVC compound as bedding, steel wire armored and PVC sheathed.

Cables are produced according to IEC 60502 or BS 6622.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Ground	Laid in free air (Shaded)		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	Mm	Kg/Km
3 Core - Cu/XLPE/SWA/PVC								
150	0.124	0.1594	0.31	0.1	350	400	77	10985
185	0.0991	0.1280	0.34	0.095	395	415	81	12235
240	0.0754	0.0984	0.38	0.09	455	495	89	16060
300	0.0601	0.0796	0.42	0.088	530	580	94	18410
400	0.047	0.0638	0.46	0.087	590	660	101	21300
500	0.0366	0.0518	0.52	0.08	670	750	114	25670
3 Core - AL/XLPE/SWA/PVC								
150	0.206	0.2649	0.31	0.1	270	300	77	8285
185	0.164	0.2113	0.34	0.095	310	340	81	8835
240	0.125	0.1617	0.38	0.09	350	390	89	11660
300	0.1	0.1300	0.42	0.088	405	445	94	13130
400	0.0778	0.1022	0.46	0.087	455	515	101	14200
500	0.0605	0.0808	0.52	0.08	530	620	114	16020

The above data is approximate and subjected to manufacturing tolerance.
Cable constructed are based on:

Insulation thickness	4.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

12/20 (24) KV Single Core Unarmored Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, and PVC sheathed.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C		Trefoil	Laid in ground		Laid in free air (Shaded)			
					Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/PVC										
150	0.124	0.1591	0.26	0.11	394	378	485	403	36	2400
185	0.0991	0.1277	0.28	0.1	446	425	546	456	38	2780
240	0.0754	0.0980	0.32	0.1	510	488	646	537	40	3450
300	0.0601	0.0790	0.35	0.1	583	551	741	613	43	4200
400	0.047	0.0631	0.39	0.09	640	609	874	694	47	5300
500	0.0366	0.0508	0.43	0.09	735	682	1007	793	52	6800
630	0.0283	0.0414	0.48	0.09	845	766	1170	921	56	7900
800	0.0221	0.0347	0.53	0.09	960	830	1245	1040	61	10300
1 Core - AL/XLPE/PVC										
150	0.206	0.2647	0.26	0.1	300	289	370	308	36	1500
185	0.164	0.2111	0.28	0.1	341	326	425	351	38	1680
240	0.125	0.1614	0.32	0.1	400	378	508	413	40	1950
300	0.1	0.1297	0.35	0.1	446	425	580	470	43	2300
400	0.0778	0.1017	0.39	0.09	515	494	692	546	47	2900
500	0.0605	0.0802	0.43	0.09	585	546	748	636	52	3400
630	0.0469	0.0637	0.48	0.09	677	620	864	741	56	3900
800	0.0367	0.0517	0.54	0.09	760	704	969	820	61	5300

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	5.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

12/20 (24) KV Single Core ATA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, covered with a layer of PVC compound as bedding layer, aluminum tape armored and PVC sheath.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C		Trefoil	Laid in ground		Laid in free air (Shaded)			
					Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	A	A	Mm	Kg/Km
1 Core - Cu/XLPE/ATA/PVC										
150	0.124	0.1590	0.26	0.11	394	378	485	403	42	2600
185	0.0991	0.1275	0.28	0.1	446	425	546	456	44	3080
240	0.0754	0.0978	0.32	0.1	510	488	646	537	45	3800
300	0.0601	0.0788	0.35	0.1	583	551	741	613	51	5200
400	0.047	0.0628	0.39	0.09	640	609	874	694	52	5920
500	0.0366	0.0504	0.43	0.09	735	682	1007	793	60	7600
630	0.0283	0.0409	0.48	0.09	845	766	1170	921	63	8900
800	0.0221	0.0342	0.53	0.09	960	830	1245	1040	67	11400
1 Core - AL/XLPE/ATA/PVC										
150	0.206	0.2646	0.26	0.11	300	289	370	308	42	1700
185	0.164	0.2110	0.28	0.1	341	326	425	351	44	1980
240	0.125	0.1613	0.32	0.1	400	378	508	413	45	2300
300	0.1	0.1295	0.35	0.1	446	425	580	470	51	3300
400	0.0778	0.1015	0.39	0.09	515	494	692	546	52	3500
500	0.0605	0.0799	0.43	0.09	585	546	748	636	60	4500
630	0.0469	0.0633	0.48	0.09	677	620	864	741	63	5050
800	0.0367	0.0512	0.54	0.09	760	704	969	820	67	6400

The above data is approximate and subjected to manufacturing tolerance.
Cable constructed are based on:

Insulation thickness	5.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

12/20 (24) KV Single Core AWA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, covered with a layer of PVC compound as bedding layer, aluminum wire armored and PVC sheath.

- Cables are produced according to IEC 60502 or BS 6622.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Laid in ground		Laid in free air (Shaded)			
				Trefoil	Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/AWA/PVC										
150	0.124	0.1590	0.26	0.11	394	378	485	403	44	2820
185	0.0991	0.1275	0.28	0.1	446	425	546	456	46	3300
240	0.0754	0.0977	0.32	0.1	510	488	646	537	47	3930
300	0.0601	0.0786	0.35	0.1	583	551	741	613	54	5420
400	0.047	0.0625	0.39	0.09	640	609	874	694	55	6320
500	0.0366	0.0501	0.43	0.09	735	682	1007	793	63	8000
630	0.0283	0.0406	0.48	0.09	845	766	1170	921	66	9310
800	0.0221	0.0338	0.53	0.09	960	830	1245	1040	69	12000
1 Core - AL/XLPE/AWA/PVC										
150	0.206	0.2646	0.26	0.11	300	289	370	308	44	1920
185	0.164	0.2109	0.28	0.1	341	326	425	351	46	2200
240	0.125	0.1612	0.32	0.1	400	378	508	413	47	2430
300	0.1	0.1294	0.35	0.1	446	425	580	470	54	3520
400	0.0778	0.1014	0.39	0.09	515	494	692	546	55	3900
500	0.0605	0.0798	0.43	0.09	585	546	748	636	63	4900
630	0.0469	0.0631	0.48	0.09	677	620	864	741	66	5450
800	0.0367	0.0509	0.54	0.09	760	704	969	820	69	7000

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	5.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

12/20 (24) KV Multi Core STA Cables

Three Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, cores are assembled together with non-hygroscopic polypropylene fillers and wrapped with binder tape, covered with a layer of PVC compound as bedding, steel tape armored and PVC sheathed.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Ground	Laid in free air (Shaded)		
mm2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	Mm	Kg/Km
3 Core - Cu/XLPE/STA/PVC								
150	0.124	0.1592	0.26	0.1	360	370	76	9500
185	0.0991	0.1279	0.28	0.1	390	400	81	10400
240	0.0754	0.0982	0.32	0.1	450	465	87	13500
300	0.0601	0.0794	0.35	0.09	495	530	92	15800
400	0.047	0.0636	0.39	0.09	555	600	100	19000
500	0.0366	0.0514	0.43	0.09	700	745	110	22700
3 Core - AL/XLPE/STA/PVC								
150	0.206	0.2648	0.26	0.1	265	300	76	6800
185	0.164	0.2112	0.28	0.1	305	345	81	7100
240	0.125	0.1615	0.32	0.1	345	370	87	9000
300	0.1	0.1299	0.35	0.09	390	420	92	10100
400	0.0778	0.1020	0.39	0.09	435	480	100	11900
500	0.0605	0.0806	0.43	0.09	570	620	110	13400

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on :

Insulation thickness	5.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

12/20 (24) KV Multi Core SWA Cables

Three Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, cores are assembled together with non-hygroscopic polypropylene fillers and wrapped with binder tape, covered with a layer of PVC compound as bedding, steel wire armored and PVC sheathed.

- Cables are produced according to IEC 60502 or BS 6622.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Ground	Laid in free air (Shaded)		
mm2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	Mm	Kg/Km
3 Core - Cu/XLPE/SWA/PVC								
150	0.124	0.1592	0.26	0.1	360	370	80	11300
185	0.0991	0.1279	0.28	0.1	390	400	84	12600
240	0.0754	0.0982	0.32	0.1	450	465	92	16400
300	0.0601	0.0794	0.35	0.09	495	530	97	18700
400	0.047	0.0636	0.39	0.09	555	600	104	21700
500	0.0366	0.0514	0.43	0.09	700	745	114	25700
3 Core - AL/XLPE/SWA/PVC								
150	0.206	0.2648	0.26	0.1	265	300	80	8600
185	0.164	0.2112	0.28	0.1	305	345	84	9300
240	0.125	0.1615	0.32	0.1	345	370	92	11900
300	0.1	0.1299	0.35	0.09	390	420	97	13300
400	0.0778	0.1020	0.39	0.09	435	480	104	14600
500	0.0605	0.0806	0.43	0.09	570	620	114	16400

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	5.5mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

18/30 (36) KV Single Core Unarmored Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, and PVC sheathed.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Laid in ground		Laid in free air (Shaded)			
				Trefoil	Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/PVC										
150	0.124	0.1590	0.2	0.12	390	380	480	400	41	2580
185	0.0991	0.1275	0.21	0.12	440	425	545	455	43	2980
240	0.0754	0.0977	0.24	0.11	505	490	655	535	45	3650
300	0.0601	0.0787	0.26	0.11	580	550	750	610	48	4400
400	0.047	0.0627	0.28	0.1	660	620	870	695	53	5600
500	0.0366	0.0503	0.32	0.1	755	690	1010	800	56	6600
630	0.0283	0.0408	0.35	0.1	860	770	1050	920	60	8100
800	0.0221	0.0341	0.39	0.09	970	830	1100	1140	66	10400
1 Core - AL/XLPE/PVC										
150	0.206	0.2646	0.2	0.12	300	290	370	310	41	1690
185	0.164	0.2110	0.21	0.12	340	325	425	350	43	1880
240	0.125	0.1612	0.24	0.11	400	380	500	415	45	2160
300	0.1	0.1295	0.26	0.11	445	430	580	470	48	2500
400	0.0778	0.1015	0.28	0.1	515	495	680	550	53	3400
500	0.0605	0.0799	0.32	0.1	590	550	800	635	56	3600
630	0.0469	0.0632	0.35	0.1	670	670	850	740	60	4200
800	0.0367	0.0512	0.39	0.09	805	830	890	900	66	5400

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on :

Insulation thickness	8.0mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

18/30 (36) KV Single Core ATA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, covered with a layer of PVC compound as bedding layer, aluminum tape armored and PVC sheath.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Laid in ground		Laid in free air (Shaded)			
				Trefoil	Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/ATA/PVC										
150	0.124	0.1589	0.2	0.13	390	380	480	400	45	2980
185	0.0991	0.1274	0.21	0.12	440	425	545	455	47	3400
240	0.0754	0.0976	0.24	0.12	505	490	655	535	49	4200
300	0.0601	0.0785	0.26	0.11	580	550	750	610	52	4900
400	0.047	0.0625	0.28	0.1	660	620	870	695	54	6100
500	0.0366	0.0500	0.32	0.1	755	690	1010	800	62	7800
630	0.0283	0.0404	0.35	0.1	860	770	1050	920	66	8700
800	0.0221	0.0336	0.39	0.1	970	830	1100	1140	71	11500
1 Core - AL/XLPE/ATA/PVC										
150	0.206	0.2646	0.2	0.13	300	290	370	310	45	2090
185	0.164	0.2109	0.21	0.12	340	325	425	350	47	2280
240	0.125	0.1611	0.24	0.12	400	380	500	415	49	2710
300	0.1	0.1294	0.26	0.11	445	430	580	470	52	3020
400	0.0778	0.1013	0.28	0.1	515	495	680	550	54	3600
500	0.0605	0.0797	0.32	0.1	590	550	800	635	62	4700
630	0.0469	0.0630	0.35	0.1	670	670	850	740	66	5100
800	0.0367	0.0508	0.39	0.1	805	830	890	900	71	6400

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	8.0mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

18/30 (36) KV Single Core AWA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, covered with a layer of PVC compound as bedding layer, aluminum wire armored and PVC sheath.

- Cables are produced according to IEC 60502 or BS 6622.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating				Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C		Trefoil	Laid in ground		Laid in free air (Shaded)			
					Flat	Trefoil	Flat Touched	Trefoil Touched		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	A	A	mm	Kg/Km
1 Core - Cu/XLPE/AWA/PVC										
150	0.124	0.1589	0.2	0.13	390	380	480	400	48	3000
185	0.0991	0.1274	0.21	0.13	440	425	545	455	50	3500
240	0.0754	0.0975	0.24	0.12	505	490	655	535	52	4130
300	0.0601	0.0784	0.26	0.12	580	550	750	610	55	5620
400	0.047	0.0623	0.28	0.11	660	620	870	695	62	6900
500	0.0366	0.0498	0.32	0.11	755	690	1010	800	64	7800
630	0.0283	0.0402	0.35	0.1	860	770	1050	920	68	9500
800	0.0221	0.0333	0.39	0.1	970	830	1100	1140	74	12100
1 Core - AL/XLPE/AWA/PVC										
150	0.206	0.2646	0.2	0.13	300	290	370	310	48	2080
185	0.164	0.2109	0.21	0.13	340	325	425	350	50	2400
240	0.125	0.1611	0.24	0.12	400	380	500	415	52	2650
300	0.1	0.1293	0.26	0.12	445	430	580	470	55	3700
400	0.0778	0.1012	0.28	0.11	515	495	680	550	62	4500
500	0.0605	0.0796	0.32	0.11	590	550	800	635	64	4800
630	0.0469	0.0628	0.35	0.1	670	670	850	740	68	5580
800	0.0367	0.0506	0.39	0.1	805	830	890	900	74	7000

The above data is approximate and subjected to manufacturing tolerance.
Cable constructed are based on:

Insulation thickness	8.0mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

18/30 (36) KV Multi Core STA Cables

Single Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, cores are assembled together with non-hygroscopic polypropylene fillers and wrapped with binder tape, covered with a layer of PVC compound as bedding, steel tape armored and PVC sheathed.

- Cables are produced according to IEC 60502.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Ground	Laid in free air (Shaded)		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	mm	Kg/Km
3 Core - Cu/XLPE/STA/PVC								
150	0.124	0.1591	0.2	0.11	355	365	90	11750
185	0.0991	0.1276	0.21	0.11	385	395	95	13200
240	0.0754	0.0979	0.24	0.1	445	460	99	15560
300	0.0601	0.0790	0.26	0.1	480	525	105	17950
400	0.047	0.0630	0.28	0.1	545	590	111	21500
500	0.0366	0.0508	0.32	0.09	680	730	117	25500
3 Core - AL/XLPE/STA/PVC								
150	0.206	0.2647	0.2	0.11	260	295	90	9050
185	0.164	0.2110	0.21	0.11	300	340	95	9900
240	0.125	0.1613	0.24	0.1	340	365	99	11100
300	0.1	0.1297	0.26	0.1	385	405	105	12300
400	0.0778	0.1017	0.28	0.1	430	470	111	14400
500	0.0605	0.0802	0.32	0.09	560	600	117	16200

The above data is approximate and subjected to manufacturing tolerance.
Cable constructed are based on:

Insulation thickness	8.0mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

18/30 (36) KV Multi Core SWA Cables

Three Core Cables, with stranded Circular copper or Aluminum conductors, XLPE insulated, copper tape or wire as metallic insulation screen, cores are assembled together with non-hygroscopic polypropylene fillers and wrapped with binder tape, covered with a layer of PVC compound as bedding, steel wire armored and PVC sheathed.

- Cables are produced according to IEC 60502 or BS 6622.

Nominal Cross-sectional area	Max. Conductor Resistance		Capacitance	Reactance	Current Rating		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 90 °C			Ground	Laid in free air (Shaded)		
mm^2	Ω/Km	Ω/Km	µf/km	Ω/Km	A	A	mm	Kg/Km
3 Core - Cu/XLPE/SWA/PVC								
150	0.124	0.1591	0.2	0.11	355	365	96	14100
185	0.0991	0.1276	0.21	0.11	385	395	99	15800
240	0.0754	0.0979	0.24	0.1	445	460	105	18800
300	0.0601	0.0790	0.26	0.1	480	525	110	21700
400	0.047	0.0630	0.28	0.1	545	590	116	25080
500	0.0366	0.0508	0.32	0.09	680	730	123	29100
3 Core - AL/XLPE/SWA/PVC								
150	0.206	0.2647	0.2	0.11	260	295	96	11400
185	0.164	0.2110	0.21	0.11	300	340	99	12500
240	0.125	0.1613	0.24	0.1	340	365	105	14300
300	0.1	0.1297	0.26	0.1	385	405	110	16050
400	0.0778	0.1017	0.28	0.1	430	470	116	17950
500	0.0605	0.0802	0.32	0.09	560	600	123	19800

The above data is approximate and subjected to manufacturing tolerance.
Cable constructed are based on:

Insulation thickness	8.0mm
PVC ST2 90 °C	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	80 cm
Trefoil Formation	

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

Power Cables

High Voltage

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

38/66 (72.5) KV (Cu/XLPE/Lead/HDPE)

Single core Copper conductor, (Stranded circular or segmental compacted) copper conductor, semi-conducting layer as conductor screen, XLPE insulated, semi-conducting layer as non-metallic insulation screen, semi conductive water blocking tape to protect the screen area from longitudinal water penetration, lead sheathed with suitable thickness to withstand the required earth fault current and HDPE sheathed with graphite coating or extruded semi-conducting layer.

- Cables are designed and tested to comply with IEC 60228, 60840 and 60811.

Conductor		continuous current ratings (load factor = 100%) for one circuit in operation (Amperes)				Approx. outer diameter of cable	Approx. weight of cable	Max. DC conductor resistance at 20 °C	Capacitance
		Laying conditions: Trefoil formation		Laying conditions: Flat formation					
Nominal Cross-sectional area	Shape	Direct burial	In air (Shaded)	Direct burial	In air (Shaded)				
mm^2		A	A	A	A	mm	Kg/Km	Ω/Km	µf/km
400 R	Compact round standard (R)	528	670	660	790	76	12400	0.0470	0.16
500 R		638	760	750	910	80	13800	0.0366	0.169
630 R		721	920	895	1060	86	15600	0.0283	0.198
800 R		814	1050	1005	1230	88	17500	0.0221	0.219
1000 S		920	1260	1150	1450	95	21450	0.0176	0.251
1200 S	Segment standard (Milliken) (S)	1150	1350	1260	1600	99	23500	0.0151	0.259
1600 S		1200	1650	1450	1850	105	27800	0.0113	0.284
2000 S		1300	1740	1580	2010	113	32800	0.0090	0.309

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	17.0mm
HDPE	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	120 cm

Type of Earthing Cross or Single point bonding

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

Power Cables

Ultra-High Voltage

EGYPTIAN CHINESE CO.
For Ultra High Voltage Networks

127/220 (245) KV (Cu/XLPE/Lead/HDPE)

Single core Copper conductor, (Stranded circular or segmental compacted) copper conductor, semi-conducting layer as conductor screen, XLPE insulated, semi-conducting layer as non-metallic insulation screen, semi conductive water blocking tape to protect the screen area from longitudinal water penetration, lead sheathed with suitable thickness to withstand the required earth fault current and HDPE sheathed with graphite coating or extruded semi-conducting layer.

- Cables are designed and tested to comply with IEC 60228, 62067 and 60811.

Conductor		continuous current ratings (load factor = 100%) for one circuit in operation (Amperes)				Approx. outer diameter of cable	Approx. weight of cable	Max. DC conductor resistance at 20 °C	Capacitance
		Laying conditions: Trefoil formation		Laying conditions: Flat formation					
Nominal Cross-sectional area	Shape	Direct burial	In air (Shaded)	Direct burial	In air (Shaded)				
mm^2		A	A	A	A	mm	Kg/Km	Ω/Km	µf/km
800 R	Compact round Standard (R)	835	974	875	1250	111	26400	0.0221	0.1685
1000 S		920	1177	1058	1350	116	28000	0.0176	0.178
1200 S	Segment	994	1274	1104	1408	123	30800	0.0151	0.192
1600 S	standard	1125	1490	1260	1705	128	38200	0.0113	0.2148
2000 S	(Milliken) (S)	1200	1650	1407	2000	134	42200	0.0090	0.229

The above data is approximate and subjected to manufacturing tolerance.

Cable constructed are based on:

Insulation thickness	25.0mm
HDPE	Sheath
Ambient temperature	45 °C
Ground temperature	30 °C
Thermal resistivity of soil	120 °C cm/w
Depth of laying	120 cm

Type of Earthing Cross or Single point bonding

General Information

Electrical and physical properties of Metals:

Table 1. Electrical properties

Metal	IACS 100 %	Electrical resistivity @ 20 ˚C Ω.m (10-8)	temperature coefficient of resistance per ˚C
Copper (annealed)	100	1.7241	0.00393
Aluminum	61	2.8264	0.00403
Lead	8	21.4	0.004

Table 2. Electrical properties

Property	Units	Copper	Aluminum	Lead
Density at 20 ˚C	gm./cm^3	8.890	2.703	11.34
Thermal conductivity	W/cm ˚C	3.8	2.4	0.34

rating Factors:

Table 3. Air temperature rating factors

Air temperature	25	30	35	40	45	50	55
XLPE cables rated 90˚C	1.2	1.15	1.1	1.05	1.0	0.95	0.91

Table 4. Ground temperature rating factors

Air temperature	25	30	35	40	45	50	55
XLPE cables rated 90˚C	1.05	1	0.95	0.9	0.85	0.8	0.76

Table 5. Burial depth rating factors

Depth (cm)	50	80	100	125	150	175	200
Single Core	1.04	1	0.97	0.96	0.94	0.92	0.9
Multi Cores	1.05	1	0.98	0.97	0.95	0.93	0.92

Table 6. Soil thermal resistivity rating factors

soil thermal resistivity K.˚C/watt	0.8	0.9	1	1.2	1.5	2	2.5	3
rating factors	1.18	1.13	1.08	1	0.9	0.8	0.7	0.65

General Information

7. Rating Factors Corrections in Ground According to No. Of Groups

Table 7.1 Single Core Cables (Trefoil Formation):

No. of Group	1	2	3	4	5	6
Group Touching	1	0.78	0.66	0.59	0.55	0.52
Group at 0.15 m bet. centers	1	0.82	0.71	0.65	0.61	0.58
Group at 0.30 m bet. centers	1	0.86	0.77	0.72	0.68	0.66
Group at 0.45 m bet. centers	1	0.89	0.80	0.77	0.74	0.72

Table 7.2 Single Core Cables (In Flat Formation):

No. of Group	1	2	3	4	5	6
Group at 0.15 m bet. centers	1	0.80	0.69	0.63	0.59	0.56
Group at 0.30 m bet. centers	1	0.84	0.75	0.70	0.66	0.64
Group at 0.45 m bet. centers	1	0.87	0.79	0.75	0.72	0.70

Table 7.3 Multicore Cables:

No. of Group	1	2	3	4	5	6
Group Touching	1	0.80	0.68	0.62	0.57	0.54
Group at 0.15 m bet. Centers	1	0.85	0.76	0.71	0.66	0.64
Group at 0.30 m bet. Centers	1	0.89	0.81	0.77	0.73	0.71
Group at 0.45 m bet. Centers	1	0.91	0.84	0.81	0.78	0.77

Continuous Current Ratings

Methods of installation

Current ratings are tabulated in this catalogue for cables installed in the following conditions.

1. Cables in free air

The cables are assumed to be spaced at least 0.5 times the cable diameter from any vertical surface and installed on brackets or ladder racks as follows:

1-Three cables in trefoil formation touching throughout their length Fig. (a).
2-Three cables in horizontal flat formation with axial spacing 2De Fig. (b).

Fig. (a)

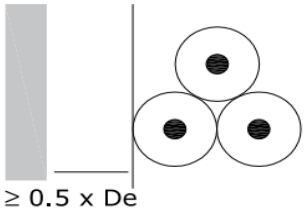
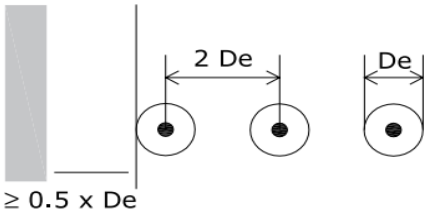


Fig. (b)



2. Cables buried direct in ground

Current ratings are given for cables buried direct in the ground at a depth of 0.8 or 1.2 m under the following conditions:

1-Three cables in trefoil formation touching throughout their length Fig. (c).
2-Three cables in horizontal flat formation with axial spacing 2De Fig. (d).

Fig. (c)

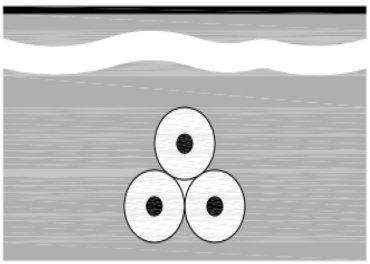
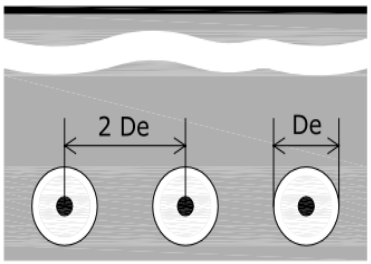


Fig. (d)



The cable depth is measured to the cable axis or to the center of the trefoil group.

Cable loading

The tabulated ratings relate to circuits carrying a balanced three-phase load at a rated frequency of 50 Hz.

Short-circuit Capacity

B.1 Permissible short-circuit current

Short-circuit currents in an electric network are a result of the accidental connecting of one or more phase conductors, either together, or with ground. It happens frequently that the conductor size necessary for an installation is dictated by its ability to carry short-circuit current rather than sustained current.

The short-circuit capacity of a current carrying component of a cable is determined by the following factors:

- The temperature prior to the short-circuit, generally taken to be that corresponding with the maximum conductor operating temperature under normal conditions
- The energy produced by the short-circuit, a function of both the magnitude and the duration of the current
- The limiting final temperature, generally determined by all materials in direct contact with the conducting component

In accordance with IEC 60949 standard, short-circuit ratings can be calculated using either:

a. The adiabatic method, which assumes that all of the heat generated remains trapped within the current carrying component.

b. The non-adiabatic method, which allows for heat transfer from the current carrying component to adjacent materials.

The short circuit-current ratings given below in Tables B.1 and B.2 are calculated in accordance with the following formula as given in IEC 60949, assuming adiabatic conditions (i.e. neglecting heat loss):

$$I_{AD} = \frac{K \times S}{\sqrt{t}} \sqrt{Ln\left(\frac{\theta_f + \beta}{\theta_i + \beta}\right)}$$

Where,

I_{AD}	:	Permissible adiabatic short circuit current (A)
t	:	Duration of short circuit (seconds)
S	:	Cross-sectional area of the current-carrying component (mm^2)
K	:	Constant depending on the material of the current-carrying component ($As^{½} / mm^2$)
θ_i	:	Initial temperature before short circuit in (°C)
θ_f	:	Final temperature at short circuit in (°C)
β	:	Reciprocal of temperature coefficient of resistance of the current carrying component at 0 °C

Short-Circuit Capacity

Table B.1

Short-circuit current (kA) - Copper conductor - XLPE Insulated

Nominal area of conductor	Short-circuit duration Sec.							
mm^2	0.2	0.4	0.5	1.0	2.0	3.0	4.0	5.0
150	48.0	33.9	30.4	21.5	15.2	12.4	10.7	9.6
185	59.2	41.9	37.4	26.5	18.7	15.3	13.2	11.8
240	76.8	54.3	48.6	34.3	24.3	19.8	17.2	15.4
300	96.0	67.9	60.7	42.9	30.4	24.8	21.5	19.2
400	128.0	90.5	80.9	57.2	40.5	33.0	28.6	25.6
500	160.0	113.1	101.2	71.5	50.6	41.3	35.8	32.0
630	201.6	142.5	127.5	90.1	63.7	52.0	45.1	40.3
800	256.0	181.0	161.9	114.5	80.9	66.1	57.2	51.2
1000	319.9	226.2	202.4	143.1	101.2	82.6	71.5	64.0
1200	383.9	271.5	242.8	171.7	121.4	99.1	85.9	76.8
1400	447.9	316.7	283.3	200.3	141.6	115.7	100.2	89.6
1600	511.9	362.0	323.8	228.9	161.9	132.2	114.5	102.4
1800	575.9	407.2	364.2	257.6	182.1	148.7	128.8	115.2
2000	639.9	452.5	404.7	286.2	202.4	165.2	143.1	128.0

Short-Circuit Capacity

Table B.2

Short-circuit current (kA) - Aluminum conductor - XLPE Insulated

Nominal area of conductor	Short-circuit duration Sec.							
mm2	0.2	0.4	0.5	1.0	2.0	3.0	4.0	5.0
150	31.7	22.4	20.0	14.2	10.0	8.2	7.1	6.3
185	39.1	27.6	24.7	17.5	12.4	10.1	8.7	7.8
240	50.7	35.9	32.1	22.7	16.0	13.1	11.3	10.1
300	63.4	44.8	40.1	28.3	20.0	16.4	14.2	12.7
400	84.5	59.8	53.4	37.8	26.7	21.8	18.9	16.9
500	105.6	74.7	66.8	47.2	33.4	27.3	23.6	21.1
630	133.1	94.1	84.2	59.5	42.1	34.4	29.8	26.6
800	169.0	119.5	106.9	75.6	53.4	43.6	37.8	33.8
1000	211.3	149.4	133.6	94.5	66.8	54.6	47.2	42.3
1200	253.5	179.3	160.3	113.4	80.2	65.5	56.7	50.7
1400	295.8	209.1	187.1	132.3	93.5	76.4	66.1	59.2
1600	338.0	239.0	213.8	151.2	106.9	87.3	75.6	67.6
1800	380.3	268.9	240.5	170.1	120.3	98.2	85.0	76.1
2000	422.5	298.8	267.2	189.0	133.6	109.1	94.5	84.5

Note 1: The short-circuit current ratings given in Tables B.1 and B.2 are the symmetrical currents which will cause the conductor temperature to rise from the normal operating value of 90 °C to the maximum short circuit temperature of 250 °C in the time stated, assuming adiabatic conditions (i.e. neglecting heat loss).

Note 2: The metallic screens short-circuit current ratings are calculated in accordance with IEC 60949 or ICEA P-45-482 (when required), and they are the asymmetrical currents which will cause the screen temperature to rise from the normal operating value to the maximum short-circuit temperature. The final temperature used in the calculation varies depending upon the nature of the screen material itself and also on the other materials in direct contact with the screen.

The screen constructions detailed in this catalogue represent the nationalized standard but can be tailored in size to meet the specific fault requirements of any operating system.