



 **CABLEL[®]**

HELLENIC CABLES S.A.
HELLENIC CABLE INDUSTRY S.A.

**High Voltage
Power Cables**

Power Cables



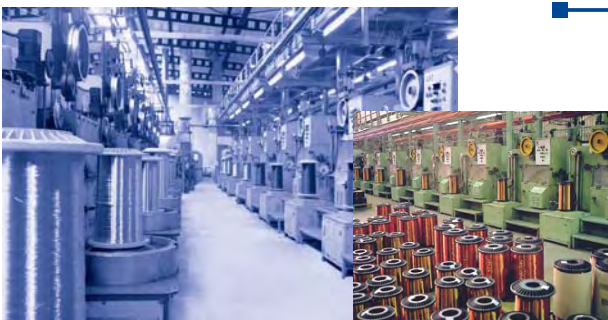
Telecommunication Cables



Rubber and Plastic Compounds



Enamelled Wires



HELLENIC CABLES S.A. is a leading manufacturer of cables for over fifty five years, and is the sole producer of enamelled copper wire in Greece. The company's wide product range, which is sold internationally under the **CABLEL®** trademark, extends to PVC, EPR and XLPE insulated cables, rated up to 400 kV and includes the manufacture of copper telecommunication cables and fibre optic cables. Wires and cables can be supplied to a variety of international standards, such as: EC, VDE, CEI, NF, SEN, BS, UL, NEMA, JIS, ASTM, DIN and ELOT. Many of the company's products carry quality marks from: VDE, IMQ, NF-USE, HAR, BASEC, DNV, ELOT and CE.

All **CABLEL®** enamelled wires are manufactured and tested to IEC 60317-0-1; customers may also request any other recognised international standard.

Technical know-how from world-leaders such as FURUKAWA Electric combines with continuous investment in state-of-the-art machinery to ensure levels of efficiency and quality which meet the strictest standards.

The company's Quality Management System is certified to ISO 9001 and its Environmental Management System to ISO 14001. This commitment to quality has been a key factor in enabling **HELLENIC CABLES S.A.** to establish a strong market position internationally. **CABLEL®** enamelled wires have gained a firm reputation and are used worldwide in the most demanding electromechanical applications.

The company's highly experienced technical and managerial staff have a strong commitment to technological excellence and outstanding quality, which ensures that the user of **CABLEL®** products has made a **reliable choice**.



CONTENTS

HIGH VOLTAGE POWER CABLES

XLPE/Pb/PVC, 26/45	2
XLPE/Pb/PVC, 36/63	4
XLPE/Pb/PVC, 64/110	6
XLPE/Pb/PVC, 76/132	8
XLPE/Pb/PVC, 87/150	10
XLPE/Pb/PVC, 130/225	12
XLPE/Pb/PVC, 230/400	14
XLPE/CWS/PVC, 26/45	16
XLPE/CWS/PVC, 36/63	18
XLPE/CWS/PVC, 64/110	20
XLPE/CWS/PVC, 76/132	22
XLPE/CWS/PVC, 87/150	24
XLPE/CWS/PVC, 130/225	26
XLPE/CWS/PVC, 230/400	28

XLPE INSULATED CABLES WITH LEAD ALLOY SHEATH* AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Semi-conductive tape (optional)
3. Inner extruded semi-conductive XLPE
4. XLPE insulation
5. Outer extruded semi-conductive XLPE
6. Semi-conductive tape
7. Lead sheath*
8. PVC or PE oversheath

8 7 6 5 4 3 2 1

CABLE TYPE: XLPE/Pb*/PVC
NOMINAL VOLTAGE: 26/45 (U_{max}: 52 kV)
SPECIFICATION: IEC 60840

Copper or Aluminium conductor, XLPE insulated, lead sheathed and PVC outsheathed. The conductor and lead sheath can be constructed with protection against longitudinal penetration of water. Additionally the lead sheath provides protection against radial penetration of water. The outsheath can also consist of MDPE or HDPE compound.

* A welded smooth or corrugated aluminium sheath can be provided in place of the lead sheath

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
95	7,0	1,6	39	3700	205	320	335	365	415
120	7,0	1,7	41	4300	220	365	380	410	480
150	7,0	1,7	43	4600	235	410	425	470	545
185	7,0	1,8	45	5300	255	460	480	540	625
240	7,0	1,8	47	6100	280	535	560	635	740
300	7,0	1,9	50	7000	300	600	630	725	845
400	7,0	2	53	8300	330	675	720	835	985
500	7,0	2,1	56	9800	360	760	820	955	1145
630	7,0	2,2	60	11700	395	855	940	1100	1335
800	7,0	2,3	66	14200	440	975	1050	1280	1525
1000	7,0	2,4	70	16900	485	1070	1170	1430	1735
1200	7,0	2,5	76	19400	535	1245	1340	1695	2015
1600	7,0	2,7	83	24400	590	1400	1550	1890	2350
2000	7,0	2,8	89	29200	650	1515	1740	2140	2740

CABLES WITH ALUMINIUM CONDUCTOR

NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
						A	A	A	A
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
95	7,0	1,6	39	3200	205	250	260	280	325
120	7,0	1,7	41	3500	220	285	295	325	375
150	7,0	1,7	43	3700	235	320	330	370	425
185	7,0	1,8	45	4100	250	365	375	420	475
240	7,0	1,8	47	4600	275	415	435	500	585
300	7,0	1,9	50	5100	300	470	490	570	665
400	7,0	2	53	5800	325	535	565	660	775
500	7,0	2,1	56	6700	355	610	645	770	905
630	7,0	2,2	60	7700	395	695	745	890	1055
800	7,0	2,3	65	8900	430	790	845	1035	1220
1000	7,0	2,4	70	10300	475	880	950	1175	1400
1200	7,0	2,5	76	11800	530	950	1025	1285	1540
1600	7,0	2,7	83	14400	590	1145	1240	1545	1885
2000	7,0	2,8	89	16700	650	1280	1405	1805	2220

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- The PB sheath thickness can be adjusted to meet client's demands.
- Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1	1,2	1,5	2	2,5
Correction coefficient	1,0	0,93	0,84	0,75	0,67

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH LEAD ALLOY SHEATH* AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Semi-conductive tape (optional)
3. Inner extruded semi-conductive XLPE
4. XLPE insulation
5. Outer extruded semi-conductive XLPE
6. Semi-conductive tape
7. Lead sheath*
8. PVC or PE oversheath

8 7 6 5 4 3 2 1

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/Pb*/PVC
36/63 (U_{max}: 72,5 kV)
IEC 60840

Copper or Aluminium conductor, XLPE insulated, lead sheathed and PVC outsheathed. The conductor and lead sheath can be constructed with protection against longitudinal penetration of water. Additionally the lead sheath provides protection against radial penetration of water. The outsheath can also consist of MDPE or HDPE compound.

* A welded smooth or corrugated aluminium sheath can be provided in place of the lead sheath

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
120	8	1,7	43	4500	200	365	380	410	475
150	8	1,8	45	5100	215	410	425	470	540
185	8	1,8	47	5600	230	460	480	540	620
240	8	1,9	50	6500	250	535	560	635	735
300	8	2	52	7500	270	600	630	725	840
400	8	2	55	8600	295	675	720	835	980
500	8	2,1	59	10100	320	760	820	950	1135
630	8	2,2	63	12100	350	850	935	1095	1325
800	8	2,3	68	14500	395	975	1050	1275	1515
1000	8	2,4	73	17300	430	1070	1165	1425	1720
1200	8	2,5	78	19800	480	1240	1335	1685	1995
1600	8	2,7	85	24900	525	1390	1545	1890	2345
2000	8	2,9	91	30000	575	1510	1735	2130	2725

CABLES WITH ALUMINIUM CONDUCTOR

NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
						A	A	A	A
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
120	8	1,7	43	3800	200	285	295	325	370
150	8	1,8	45	4100	210	320	330	370	420
185	8	1,8	47	4400	225	360	375	420	485
240	8	1,9	50	5000	250	415	435	495	570
300	8	2	52	5600	270	470	490	570	660
400	8	2	55	6200	290	535	565	660	770
500	8	2,1	59	7000	320	610	645	770	900
630	8	2,2	63	8100	350	690	740	890	1050
800	8	2,3	67	9300	385	790	840	1035	1210
1000	8	2,4	72	10700	425	880	945	1175	1390
1200	8	2,5	78	12200	475	945	1025	1280	1525
1600	8	2,7	85	14800	525	1145	1235	1545	1880
2000	8	2,9	91	17500	575	1270	1405	1800	2210

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- The PB sheath thickness can be adjusted to meet client's demands.
- Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below..
- Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1	1,2	1,5	2	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH LEAD ALLOY SHEATH* AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Semi-conductive tape (optional)
3. Inner extruded semi-conductive XLPE
4. XLPE insulation
5. Outer extruded semi-conductive XLPE
6. Semi-conductive tape
7. Lead sheath*
8. PVC or PE oversheath

8 7 6 5 4 3 2 1

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/Pb*/PVC
64/110 (U_{max}: 72,5 kV)
IEC 60840

Copper or Aluminium conductor, XLPE insulated, lead sheathed and PVC outsheathed. The conductor and lead sheath can be constructed with protection against longitudinal penetration of water. Additionally the lead sheath provides protection against radial penetration of water. The oversheath can also consist of MDPE or HDPE compound.

* A welded smooth or corrugated aluminium sheath can be provided in place of the lead sheath

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
240	13	2,2	61	8700	175	535	560	635	735
300	13	2,3	64	9800	190	600	630	725	840
400	12	2,3	65	10600	215	675	720	835	980
500	12	2,4	68	12200	235	760	820	950	1135
630	12	2,5	72	12100	255	850	935	1095	1325
800	12	2,6	77	14300	280	975	1050	1275	1515
1000	12	2,7	82	16900	305	1070	1165	1425	1720
1200	12	2,8	88	19800	340	1240	1335	1685	1995
1600	12	3	94	27700	370	1385	1535	1880	2285
2000	12	3,1	100	32700	405	1490	1710	2080	2580

CABLES WITH ALUMINIUM CONDUCTOR

NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
						A	A	A	A
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
240	13	2,2	61	7200	175	415	435	495	570
300	13	2,3	64	7900	190	470	490	570	660
400	12	2,3	65	8100	215	535	565	660	770
500	12	2,4	68	9100	235	610	645	770	900
630	12	2,5	72	10300	255	690	740	890	1050
800	12	2,6	77	11600	280	790	840	1035	1210
1000	12	2,7	82	13100	305	880	945	1175	1390
1200	12	2,8	88	14800	340	945	1025	1280	1525
1600	12	3	94	17700	370	1135	1230	1535	1830
2000	12	3,1	100	20200	405	1250	1385	1725	2090

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- The PB sheath thickness can be adjusted to meet client's demands.
- Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1	1,2	1,5	2	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH LEAD ALLOY SHEATH* AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Semi-conductive tape (optional)
3. Inner extruded semi-conductive XLPE
4. XLPE insulation
5. Outer extruded semi-conductive XLPE
6. Semi-conductive tape
7. Lead sheath*
8. PVC or PE oversheath

8 7 6 5 4 3 2 1

CABLE TYPE: XLPE/Pb*/PVC
NOMINAL VOLTAGE: 76/132 (U_{max}: 72,5 kV)
SPECIFICATION: IEC 60840

Copper or Aluminium conductor, XLPE insulated, lead sheathed and PVC outsheathed. The conductor and lead sheath can be constructed with protection against longitudinal penetration of water. Additionally the lead sheath provides protection against radial penetration of water. The oversheath can also consist of MDPE or HDPE compound.

* A welded smooth or corrugated aluminium sheath can be provided in place of the lead sheath

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
240	17	2,4	70	10600	145	535	560	635	735
300	16	2,4	70	11100	165	600	630	725	840
400	16	2,5	74	12600	175	675	720	835	980
500	15	2,5	74	13600	200	760	820	950	1135
630	14	2,6	76	15400	225	850	935	1095	1325
800	14	2,7	81	18000	250	975	1050	1275	1515
1000	14	2,8	86	21000	270	1070	1165	1425	1720
1200	14	2,9	92	23800	300	1240	1335	1685	1995
1600	14	3,1	98	29100	325	1380	1535	1870	2260
2000	14	3,2	105	34200	355	1500	1705	2070	2545

CABLES WITH ALUMINIUM CONDUCTOR

NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
						A	A	A	A
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
240	17	2,4	70	9100	145	415	435	495	570
300	16	2,4	70	9200	160	470	490	570	660
400	16	2,5	74	10200	175	535	565	660	770
500	15	2,5	74	10500	195	610	645	770	900
630	14	2,6	76	11400	225	690	740	890	1050
800	14	2,7	81	12800	245	790	840	1035	1210
1000	14	2,8	86	14300	270	880	945	1175	1390
1200	14	2,9	92	16100	295	945	1025	1280	1525
1600	14	3,1	98	19100	325	1130	1230	1525	1810
2000	14	3,2	105	21700	355	1245	1380	1715	2060

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- The PB sheath thickness can be adjusted to meet client's demands.
- Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1	1,2	1,5	2	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH LEAD ALLOY SHEATH* AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Semi-conductive tape (optional)
3. Inner extruded semi-conductive XLPE
4. XLPE insulation
5. Outer extruded semi-conductive XLPE
6. Semi-conductive tape
7. Lead sheath*
8. PVC or PE oversheath

8 7 6 5 4 3 2 1

CABLE TYPE: XLPE/Pb*/PVC
NOMINAL VOLTAGE: 87/150 (U_{max}: 170 kV)
SPECIFICATION: IEC 60840

Copper or Aluminium conductor, XLPE insulated, lead sheathed and PVC outsheathed. The conductor and lead sheath can be constructed with protection against longitudinal penetration of water. Additionally the lead sheath provides protection against radial penetration of water. The oversheath can also consist of MDPE or HDPE compound.

* A welded smooth or corrugated aluminium sheath can be provided in place of the lead sheath

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
400	19,0	2,7	80	14400	155	660	710	815	930
500	18,0	2,7	81	15400	175	745	810	935	1075
630	17,0	2,8	83	17200	195	830	925	1070	1250
800	16,0	2,8	86	19200	225	965	1035	1245	1425
1000	16,0	2,9	91	22300	245	1060	1150	1400	1615
1200	16,0	3	97	25100	270	1215	1315	1635	1875
1600	16,0	3,2	103	30500	295	1375	1530	1865	2230
2000	16,0	3,4	110	36100	320	1490	1700	2055	2515

CABLES WITH ALUMINIUM CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
400	19,0	2,7	80	12000	155	525	560	645	730
500	18,0	2,7	81	12400	175	600	640	745	850
630	17,0	2,8	83	13200	195	675	730	860	990
800	16,0	2,8	86	13900	220	780	830	1020	1140
1000	16,0	2,9	91	15600	240	870	935	1135	1305
1200	16,0	3	97	17400	265	935	1010	1,240	1430
1600	16,0	3,2	103	20500	295	1125	1225	1520	1790
2000	16,0	3,4	110	23600	320	1240	1370	1705	2035

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- a) The PB sheath thickness can be adjusted to meet client's demands.
- b) Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- c) Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- d) Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)



XLPE INSULATED CABLES WITH LEAD ALLOY SHEATH* AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Semi-conductive tape (optional)
3. Inner extruded semi-conductive XLPE
4. XLPE insulation
5. Outer extruded semi-conductive XLPE
6. Semi-conductive tape
7. Lead sheath*
8. PVC or PE oversheath

8 7 6 5 4 3 2 1

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/Pb*/PVC
130/225 (U_{max}: 245 kV)
IEC 62067

Copper or Aluminium conductor, XLPE insulated, lead sheathed and PVC outsheathed. The conductor and lead sheath can be constructed with protection against longitudinal penetration of water. Additionally the lead sheath provides protection against radial penetration of water. The outsheath can also consist of MDPE or HDPE compound.

* A welded smooth or corrugated aluminium sheath can be provided in place of the lead sheath

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
400	23,0	2,9	89	16800	140	660	710	815	925
500	22,0	3,0	90	18200	150	745	810	935	1070
630	21,0	3,0	92	19800	170	830	920	1065	1040
800	20,0	3,0	95	21800	190	890	1035	1100	1410
1000	19,0	3,1	98	24500	215	950	1150	1240	1600
1200	19,0	3,2	103	27400	235	1210	1320	1610	1880
1600	19,0	3,4	110	33000	255	1350	1515	1840	2190
2000	19,0	3,5	116	38300	280	1470	1680	2030	2465
2500	19,0	3,7	124	45300	305	1570	1840	2220	2750

CABLES WITH ALUMINIUM CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
400	23,0	2,9	89	14400	140	525	560	645	720
500	22,0	3,0	90	15100	150	600	640	745	840
630	21,0	3,0	92	15800	170	675	730	860	980
800	20,0	3,0	95	16500	190	740	830	1000	1130
1000	19,0	3,1	98	17800	215	810	935	1135	1300
1200	19,0	3,2	103	19700	235	975	1045	1290	1495
1600	19,0	3,4	110	23000	255	1110	1215	1500	1755
2000	19,0	3,5	116	25800	280	1225	1360	1685	1995
2500	19,0	3,7	124	29500	305	1310	1475	1830	2200

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- a) The PB sheath thickness can be adjusted to meet client's demands.
- b) Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- c) Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- d) Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH LEAD ALLOY SHEATH* AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Semi-conductive tape (optional)
3. Inner extruded semi-conductive XLPE
4. XLPE insulation
5. Outer extruded semi-conductive XLPE
6. Semi-conductive tape
7. Lead sheath*
8. PVC or PE oversheath

8 7 6 5 4 3 2 1

CABLE TYPE: XLPE/Pb*/PVC
NOMINAL VOLTAGE: 230/400 (U_{max}: 420 kV)
SPECIFICATION: IEC 62067

Copper or Aluminium conductor, XLPE insulated, lead sheathed and PVC outsheathed. The conductor and lead sheath can be constructed with protection against longitudinal penetration of water. Additionally the lead sheath provides protection against radial penetration of water. The oversheath can also consist of MDPE or HDPE compound

* A welded smooth or corrugated aluminium sheath can be provided in place of the lead sheath.

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
630	31,0	3,6	115	27500	130	790	900	1080	1200
800	29,0	3,6	115	29100	145	860	1010	1210	1370
1000	28,0	3,6	118	31600	160	910	1120	1360	1550
1200	27,0	3,7	122	34100	180	1170	1285	1550	1790
1600	27,0	3,9	128	40100	195	1305	1475	1785	2090
2000	27,0	4,0	135	45900	215	1410	1635	1965	2350
2500	27,0	4,2	142	53200	230	1505	1790	2150	2615

CABLES WITH ALUMINIUM CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
630	31,0	3,6	115	23500	130	680	720	860	950
800	29,0	3,6	115	23800	145	720	810	980	1100
1000	28,0	3,6	118	24800	160	780	910	1110	1250
1200	27,0	3,7	122	26500	180	945	1020	1250	1425
1600	27,0	3,9	128	30100	195	1070	1180	1455	1675
2000	27,0	4,0	135	33400	215	1180	1320	1630	1900
2500	27,0	4,2	142	37400	230	1255	1435	1775	2095

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- a) The PB sheath thickness can be adjusted to meet client's demands.
- b) Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- c) Trefoil formation (cables touching): Cables are single point earthed or cross bonded.
- d) Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

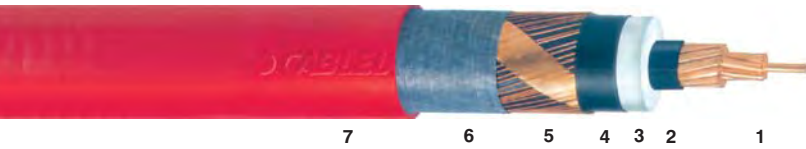
Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH COPPER WIRE SCREEN AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Extruded semi-conductive conductor screen
3. XLPE insulation
4. Extruded semi-conductive conductor screen
5. Copper wires wrapped with a copper tape layed with an open helix over core
6. Plastic tape
7. PVC outersheath

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/CWS/PVC
26/45 (U_{max}: 52 kV)
IEC 60840

Copper or Aluminium conductor, XLPE insulated, copper wire screened and PVC outersheathed. The conductor and screen can be constructed with protection against longitudinal penetration of water. Additionally the cable screen can be constructed with protection against radial penetration of water by use of Al foil bonded to outersheath.

The outersheath can also consist of MDPE or HDPE compound.

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL PB SHEATH THICKNESS	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm	mm	kg/km	nF/km	A	A	A	A
95	7,0	50	39	2200	205	315	335	355	410
120	7,0	50	41	2500	220	360	380	405	470
150	7,0	50	42	2800	235	400	425	460	535
185	7,0	50	44	3200	255	450	480	525	610
240	7,0	50	47	3800	280	515	560	615	725
300	7,0	50	49	4500	300	575	630	700	830
400	7,0	50	52	5300	330	650	720	800	965
500	7,0	50	55	6400	360	725	820	905	1115
630	7,0	50	59	7900	395	805	930	1035	1300
800	7,0	50	64	9700	440	955	1045	1215	1490
1000	7,0	50	68	11900	485	1040	1160	1350	1690
1200	7,0	50	74	13600	535	1210	1320	1580	1955
1600	7,0	50	80	17500	590	1340	1540	1825	2360
2000	7,0	50	86	21400	650	1450	1700	2020	2665

CABLES WITH ALUMINIUM CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
95	7,0	50	39	1600	205	245	260	275	315
120	7,0	50	41	1800	220	280	295	320	365
150	7,0	50	42	1900	235	315	330	360	415
185	7,0	50	44	2100	250	355	375	415	480
240	7,0	50	47	2300	275	405	435	485	565
300	7,0	50	49	2600	300	460	490	555	650
400	7,0	50	52	2900	325	520	560	640	755
500	7,0	50	55	3300	355	590	640	740	885
630	7,0	50	59	3900	395	665	735	845	1030
800	7,0	50	63	4500	430	780	835	1000	1195
1000	7,0	50	67	5300	475	865	940	1130	1365
1200	7,0	50	73	6000	530	930	1015	1225	1505
1600	7,0	50	80	7500	590	1115	1235	1510	1905
2000	7,0	50	86	8900	650	1230	1380	1705	2170

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- a) The screen cross section can be adjusted to meet client's demands.
- b) Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- c) Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- d) Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

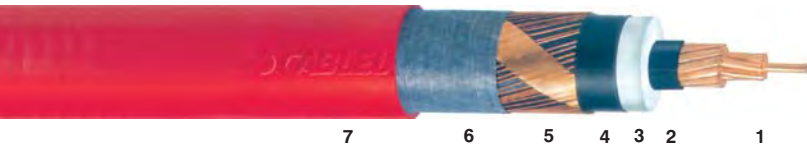
Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH COPPER WIRE SCREEN AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Extruded semi-conductive conductor screen
3. XLPE insulation
4. Extruded semi-conductive conductor screen
5. Copper wires wrapped with a copper tape layed with an open helix over core
6. Plastic tape
7. PVC outersheath

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/CWS/PVC
36/63 (U_{max}: 72,5 kV)
IEC 60840

Copper or Aluminium conductor, XLPE insulated, copper wire screened and PVC outersheathed. The conductor and screen can be constructed with protection against longitudinal penetration of water. Additionally the cable screen can be constructed with protection against radial penetration of water by use of Al foil bonded to outersheath.

The outersheath can also consist of MDPE or HDPE.

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
120	8,0	70	43	2800	200	355	380	405	470
150	8,0	70	44	3100	215	395	425	460	530
185	8,0	70	46	3500	230	445	480	525	610
240	8,0	70	49	4200	250	510	555	610	720
300	8,0	70	51	4800	270	570	630	690	820
400	8,0	70	54	5700	295	640	715	790	955
500	8,0	70	57	6800	320	710	815	895	1110
630	8,0	70	61	8300	350	790	925	1025	1285
800	8,0	70	66	10100	395	945	1040	1205	1475
1000	8,0	70	70	12300	430	1035	1150	1335	1670
1200	8,0	70	76	14000	480	1200	1310	1560	1940
1600	8,0	70	82	18000	525	1310	1525	1790	2325
2000	8,0	70	88	21900	575	1415	1690	1980	2620

CABLES WITH ALUMINIUM CONDUCTOR

NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
						A	A	A	A
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
120	8,0	70	43	2100	200	280	295	320	365
150	8,0	70	44	2200	210	310	330	360	415
185	8,0	70	46	2400	225	355	370	410	475
240	8,0	70	49	2700	250	405	430	480	560
300	8,0	70	51	2900	270	455	490	550	645
400	8,0	70	54	3300	290	515	560	635	750
500	8,0	70	57	3700	320	580	640	730	875
630	8,0	70	61	4300	350	655	730	835	1015
800	8,0	70	65	4900	385	775	830	990	1180
1000	8,0	70	70	5700	425	860	935	1115	1350
1200	8,0	70	76	6500	475	920	1010	1210	1485
1600	8,0	70	82	7900	525	1095	1225	1490	1880
2000	8,0	70	88	9400	575	1205	1375	1675	2145

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- The screen cross section can be adjusted to meet client's demands.
- Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

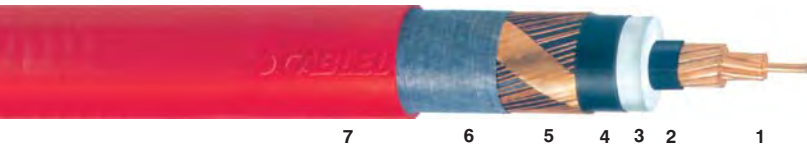
Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH COPPER WIRE SCREEN AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Extruded semi-conductive conductor screen
3. XLPE insulation
4. Extruded semi-conductive conductor screen
5. Copper wires wrapped with a copper tape layed with an open helix over core
6. Plastic tape
7. PVC outersheath

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/CWS/PVC
64/110 (U_{max}: 72,5 kV)
IEC 60840

Copper or Aluminium conductor, XLPE insulated, copper wire screened and PVC outersheathed. The conductor and screen can be constructed with protection against longitudinal penetration of water. Additionally the cable screen can be constructed with protection against radial penetration of water by use of Al foil bonded to outersheath. The outersheath can also consist of MDPE or HDPE.

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
240	13	70	59	5000	175	510	555	610	720
300	13	70	62	5700	190	570	630	690	820
400	12	70	63	6400	215	640	715	790	955
500	12	70	66	7600	235	710	815	895	1110
630	12	70	69	9100	255	790	925	1025	1285
800	12	70	74	11000	280	945	1040	1205	1475
1000	12	70	79	13200	305	1035	1150	1335	1670
1200	12	70	85	15100	340	1200	1310	1560	1940
1600	12	70	91	19000	370	1310	1515	1790	2280
2000	12	70	97	23100	340	1420	1680	1980	2565

CABLES WITH ALUMINIUM CONDUCTOR

NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
						A	A	A	A
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
240	13	70	59	3500	175	405	430	480	560
300	13	70	62	3800	185	455	490	550	645
400	12	70	62	4000	215	515	560	635	750
500	12	70	66	4500	235	580	640	730	875
630	12	70	69	5100	255	655	730	835	1015
800	12	70	74	5800	275	775	830	990	1180
1000	12	70	78	6600	305	860	935	1115	1350
1200	12	70	84	7500	335	920	1010	1210	1485
1600	12	70	91	9000	370	1090	1220	1480	1840
2000	12	70	97	10600	405	1200	1365	1665	2090

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- The screen cross section can be adjusted to meet client's demands.
- Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

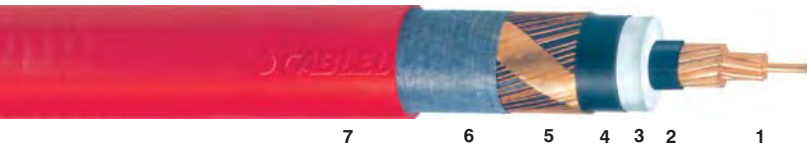
Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH COPPER WIRE SCREEN AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Extruded semi-conductive conductor screen
3. XLPE insulation
4. Extruded semi-conductive conductor screen
5. Copper wires wrapped with a copper tape layed with an open helix over core
6. Plastic tape
7. PVC outersheath

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/CWS/PVC
76/132 (U_{max}: 72,5 kV)
IEC 60840

Copper or Aluminium conductor, XLPE insulated, copper wire screened and PVC outersheathed. The conductor and screen can be constructed with protection against longitudinal penetration of water. Additionally the cable screen can be constructed with protection against radial penetration of water by use of Al foil bonded to outersheath.

The outersheath can also consist of MDPE or HDPE.

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
240	17	95	68	6100	145	510	555	610	720
300	16	95	68	6500	165	570	630	690	820
400	16	95	71	7500	175	640	715	790	955
500	15	95	72	8400	200	710	815	895	1110
630	14	95	74	9800	225	790	925	1025	1285
800	14	95	79	11700	250	945	1040	1205	1475
1000	14	95	83	14000	270	1035	1150	1335	1670
1200	14	95	89	15800	300	1200	1310	1560	1940
1600	14	95	95	19900	325	1275	1520	1750	2250
2000	14	95	101	23900	355	1375	1665	1930	2515

CABLES WITH ALUMINIUM CONDUCTOR

NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
						A	A	A	A
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
240	17	95	68	4500	145	405	430	480	560
300	16	95	68	4700	160	455	490	550	645
400	16	95	71	5100	175	515	560	635	750
500	15	95	72	5400	195	580	640	730	875
630	14	95	74	5800	225	655	730	835	1015
800	14	95	78	6500	245	775	830	990	1180
1000	14	95	82	7400	270	860	935	1115	1350
1200	14	95	88	8200	295	920	1010	1210	1485
1600	14	95	95	9900	325	1065	1225	1455	1815
2000	14	95	101	11400	355	1170	1355	1635	2055

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- The screen cross section can be adjusted to meet client's demands.
- Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

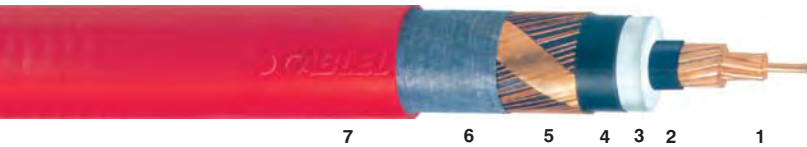
Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD
(D cable overall diameter)

XLPE INSULATED CABLES WITH COPPER WIRE SCREEN AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Extruded semi-conductive conductor screen
3. XLPE insulation
4. Extruded semi-conductive conductor screen
5. Copper wires wrapped with a copper tape layed with an open helix over core
6. Plastic tape
7. PVC oversheath

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/CWS/PVC
87/150 (U_{max}: 170 kV)
IEC 60840

Copper or Aluminium conductor, XLPE insulated, copper wire screened and PVC outsheathed. The conductor and screen can be constructed with protection against longitudinal penetration of water. Additionally the cable screen can be constructed with protection against radial penetration of water by use of Al foil bonded to outsheath.

The outsheath can also consist of MDPE or HDPE.

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
400	19,0	140	78	8600	155	660	710	815	930
500	18,0	140	79	9600	175	745	810	935	1075
630	17,0	140	80	10900	195	830	925	1070	1250
800	16,0	140	83	12600	225	965	1035	1245	1425
1000	16,0	140	88	15000	245	1060	1150	1400	1615
1200	16,0	140	93	16800	270	1215	1315	1635	1875
1600	16,0	140	102	22800	305	1225	1485	1700	2190
2000	16,0	140	105	25000	320	1315	1640	1865	2450

CABLES WITH ALUMINIUM CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
400	19,0	140	77	6200	155	525	560	645	730
500	18,0	140	79	6500	175	600	640	745	850
630	17,0	140	80	6900	195	675	730	860	990
800	16,0	140	82	7400	220	780	830	1020	1140
1000	16,0	140	87	8300	240	870	935	1135	1305
1200	16,0	140	93	9300	265	935	1010	1240	1430
1600	16,0	140	102	13500	305	1035	1205	1420	1775
2000	16,0	140	105	12500	320	1135	1340	1590	2015

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- a) The screen cross section can be adjusted to meet client's demands.
- b) Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- c) Trefoil formation (cables touching): Cables with conductor cross section up to and including 630 mm² are assumed with screens solidly bonded at both ends. Cables with conductor cross section greater than 630 mm² are assumed single point or cross bonded.
- d) Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

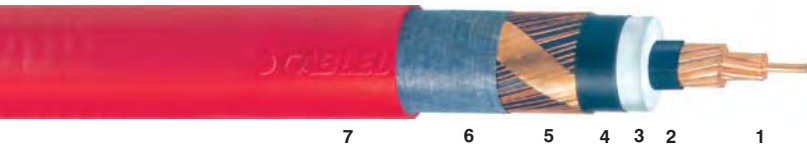
Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD

(D cable overall diameter)

XLPE INSULATED CABLES WITH COPPER WIRE SCREEN AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Extruded semi-conductive conductor screen
3. XLPE insulation
4. Extruded semi-conductive conductor screen
5. Copper wires wrapped with a copper tape layed with an open helix over core
6. Plastic tape
7. PVC oversheath

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/CWS/PVC
130/225 (U_{max}: 245 kV)
IEC 62067

Copper or Aluminium conductor, XLPE insulated, copper wire screened and PVC outsheathed. The conductor and screen can be constructed with protection against longitudinal penetration of water. Additionally the cable screen can be constructed with protection against radial penetration of water by use of Al foil bonded to outsheath.

The outsheath can also consist of MDPE or HDPE compound.

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
400	23,0	140	86	9700	140	610	705	770	920
500	22,0	140	87	10600	150	680	810	890	1060
630	21,0	140	89	12000	170	750	910	1000	1220
800	20,0	140	92	13800	190	930	1020	1180	1400
1000	19,0	140	94	15800	215	1030	1130	1390	1580
1200	19,0	140	100	17800	235	1150	1280	1480	1815
1600	19,0	140	106	21900	255	1220	1475	1690	2155
2000	19,0	140	112	26100	280	1310	1630	1860	2415
2500	19,0	140	119	26700	305	1395	1780	2025	2685

CABLES WITH ALUMINIUM CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
400	23,0	140	86	7200	135	510	560	630	720
500	22,0	140	87	7600	150	570	640	720	840
630	21,0	140	89	8000	170	675	730	850	980
800	20,0	140	91	8500	190	770	830	980	1120
1000	19,0	140	93	9200	215	850	935	1090	1280
1200	19,0	140	99	10200	235	910	1010	1180	1410
1600	19,0	140	106	11900	255	1030	1195	1410	1750
2000	19,0	140	112	13600	280	1125	1335	1580	1980
2500	19,0	140	119	14200	305	1225	1485	1755	2240

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- a) The screen cross section can be adjusted to meet client's demands.
- b) Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- c) Trefoil formation (cables touching): Cables single point earthed or cross bonded.
- d) Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

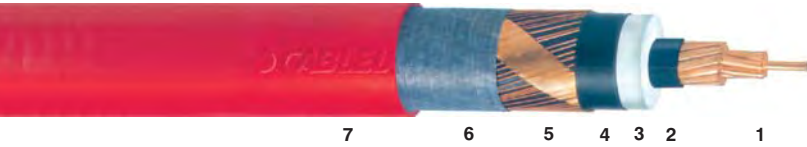
Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD

(D cable overall diameter)

XLPE INSULATED CABLES WITH COPPER WIRE SCREEN AND PVC OVERSHEATH



1. Round stranded compacted conductor*
2. Extruded semi-conductive conductor screen
3. XLPE insulation
4. Extruded semi-conductive conductor screen
5. Copper wires wrapped with a copper tape layed with an open helix over core
6. Plastic tape
7. PVC oversheath

CABLE TYPE:
NOMINAL VOLTAGE:
SPECIFICATION:

XLPE/CWS/PVC
230/400 (U_{max}: 420 kV)
IEC 62067

Copper or Aluminium conductor, XLPE insulated, copper wire screened and PVC outsheathed. The conductor and screen can be constructed with protection against longitudinal penetration of water. Additionally the cable screen can be constructed with protection against radial penetration of water by use of Al foil bonded to outsheath.

The outsheath can also consist of MDPE or HDPE compound.

CABLES WITH COPPER CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
630	31,0	140	110	15200	130	820	890	1020	1180
800	29,0	140	111	16700	150	900	1000	1140	1340
1000	28,0	140	113	18800	165	990	1100	1280	1510
1200	27,0	140	117	20500	185	1110	1240	1440	1740
1600	27,0	140	123	24900	195	1195	1445	1665	2075
2000	27,0	140	129	29200	215	1285	1595	1835	2330
2500	27,0	140	136	30000	230	1370	1745	2005	2590

CABLES WITH ALUMINIUM CONDUCTOR									
NOMINAL CONDUCTOR CROSS SECTION	NOMINAL INSULATION THICKNESS	NOMINAL COPPER WIRE SCREEN CROSS SECTION	CABLE EXTERNAL DIAMETER (APPROX.)	CABLE NET WEIGHT (APPROX.)	CAPACITANCE nF/km	CONTINUOUS CURRENT RATING DIRECT IN GROUND		CONTINUOUS CURRENT RATING IN AIR	
						TREFOIL	FLAT	TREFOIL	FLAT
mm ²	mm	mm ²	mm	kg/km	nF/km	A	A	A	A
630	31,0	140	110	11200	130	660	710	830	940
800	29,0	140	110	11400	145	740	800	940	1080
1000	28,0	140	112	12100	160	820	900	1060	1220
1200	27,0	140	116	12900	180	880	970	1150	1350
1600	27,0	140	123	14800	195	1005	1165	1380	1675
2000	27,0	140	129	16700	215	1100	1305	1545	1900
2500	27,0	140	136	17500	230	1195	1450	1720	2150

* For larger cross sections the conductor has a stranded segmental construction (Milliken)

Notes:

- a) The screen cross section can be adjusted to meet client's demands.
- b) Current ratings assuming soil temperature 20°C, burial depth 1,3m, soil thermal resistivity 1,0 K.m/W, air temperature 30°C and continuous conductor temperature 90°C. Correction factors for different conditions are given below.
- c) Trefoil formation (cables touching): Cables single point earthed or cross bonded.
- d) Flat formation: Cables are assumed single point or cross bonded. Cables spacing between cable centres of twice the overall diameter.

Ambient temperature °C:	5	10	15	20	25	30	35	40	45	50
Correction coefficient	1,2	1,17	1,13	1,09	1,04	1,0	0,95	0,9	0,85	0,8

Soil temperature °C:	5	10	15	20	25	30	35	40
Correction coefficient	1,1	1,07	1,03	1,0	0,96	0,92	0,88	0,84

Soil thermal resistivity KM/W:	1,0	1,2	1,5	2,0	2,5
Correction coefficient	1,0	0,93	0,85	0,75	0,69

Laying depth m:	1,0	1,3	1,5	2,0	2,5	3,0
Correction coefficient	1,03	1,0	0,98	0,95	0,93	0,91

Minimum bending radius during installation 30XD

(D cable overall diameter)



CABLEL®



HELLENIC CABLES S.A.

Cable Plant: 69th klm Athens - Thiva Old National Road, Thiva 322 00, Viotia, GREECE
Tel.: +30 22620 86616, Fax: +30 22620 86606

Enamelled wires Plant: 110th klm Athens - Livadia Old National Road, Livadia 321 00, Viotia, GREECE
Tel.: +30 22610 43232, Fax: +30 22610 43038

Compounds Plant: 53rd klm Athens - Lamia National Road, Inofita 320 11, Viotia, GREECE
Tel.: +30 22620 32578, Fax: +30 22620 32578

e-mail: info@cablel.vionet.gr **http:** <http://www.cablel.com>

GENECOS S.A.:

19, Rue de Passy, 75016 Paris, FRANCE
Tel: +33 1 4527 0754, Fax: +33 1 4527 0708
e-mail: genecos@genecos.vionet.gr

Metal Agencies:

London Office: Suite 4, Cobb House, 2 - 4 Oyster Lane, Byfleet,
Surrey KT14 7DU, ENGLAND
Tel: 0044 1932 33 11 11, Fax: 0044 1932 33 11 90
e-mail: sales@metalagencies.com, www.metalagencies.com

STEELMET S.A.

119 Ilienci blvd., Sofia 1220 BULGARIA
Tel: +359 2921 9111, Fax: +359 2931 1239
e-mail: salescu@steelmet.bg

TEPRO METALL VERTRIEBS GmbH:

Ursulastrasse 33 - 41, D-50354 HERTH
Tel: 0049 2233 396211, Fax: 0049 2233 396250
e-mail: info@teprometall.vionet.gr

ICME ECAB S.A.:

42, Drumul intre Tarlale, 3rd sector, 032982 Bucharest ROMANIA
Tel.: +40 21 2090200, Fax: +40 21 2561476
email: icmeecab@icme.vionet.gr

METAL GLOBE D.o.o.:

Blvd. Mihaila Pupina, 10a,
YUBC kompleks-blok 12
11 070 Novi Beograd, SERBIA
Tel: +38 111 3015876-7, Fax: +38 111 3015878
e-mail: metalglobe@verat.net