SINGLE CORE MEDIUM VOLTAGE CABLE

NA2XSY

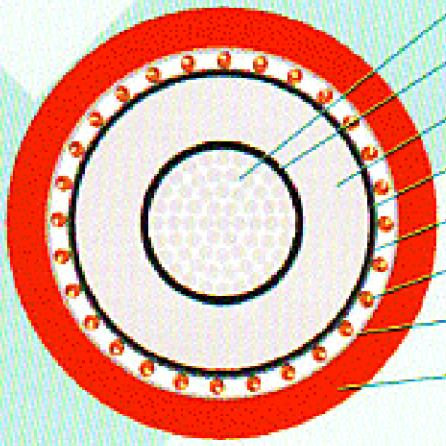
3.6/6 (7.2) ~ 12/20 (24) kV
UNARMOR TO SPLN 43-5 Standard

CABLE CONSTRUCTIONS

- **CONDUCTOR**
  Compacted stranded round water blocked aluminum conductors with cross sectional area 50 ~ 1200 mm2 complying with IEC 60228 Class 2. Water blocked stranded copper conductors are also available; maximum continuous operating temperature: 90C.
- **CONDUCTOR SCREEN**
  Extruded semi-conducting compound bonded to insulation and applied in the same operation as the insulation
- **INSULATION**
  Extruded cross-linked polyethylene (XLPE), triple layers extrusion with bonded semi conductive conductor screen and insulation screen, dry curing process, and suitable for operating at a conductor temperature of 90ºC . Hard ethylene propylene rubber (HEPR) insulation as wet design is available upon requested.
- **INSULATION SCREEN**
  Extruded semi-conducting compound in the same operation as the insulation, fully bonded screens or easy strippable .
- **METALLIC SCREEN**
  Water blocked copper wires screen is applied to provide an earth fault current path.
- **SHEATH**
  Extruded red polyvinyl chloride (PVC) compound is supplied as standard. Alternative materials may be provided where specified e.g. reduced flame propagation PVC (PVC-FR), Low Smoke Zero Halogen compound (LSOH) or Medium/High Density Polyethylene (MD/HD PE). Other colors are available on request.

NOTE

- Also available product in accordance to IEC, ICEA/NEMA, AS std or other customer requirement.
- Detailed cable data are shown in the tables.



1. Aluminum conductor
2. Extruded conductor screen
3. XLPE insulation
4. Extruded insulation screen
5. Semi conductive water swollen tapes
6. Copper wires screen
7. Non conductive water swollen tapes
8. PVC outer sheath

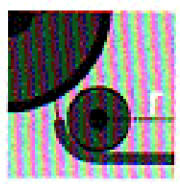
CABLE CHARACTERISTICS

Ambient temperature	Resistance to water	Chemical resistance	Flexibility	Behaviour in flame and fire	Minimum bending radius	Mechanical impact resistance	Resistance to solar radiation and weather
+90ºC −25ºC	Splashes	Very Good	Flexible	C 3	1		Very Good

INSTALLATION CONDITIONS

In duct

In free air



Minimum bending Radius during Installation

PRYSMIAN CABLES & SYSTEMS

SINGLE CORE ALUMINUM INSULATED UNARMOR MEDIUM VOLTAGE CABLE

3.6/6 (7.2) kV to SPLN 43-5 Standard

ALUMINIUM CONDUCTOR, XLPE INSULATION, COPPER WIRES SCREEN, PVC SHEATH

Cross section area	mm2	**50**	**70**	**95**	**120**	**150**	**185**	**240**	**300**	**400**	**500**	**630**	**800**	**1000**	**1200**
Nominal insulation thickness	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0	3.2	3.2	3.2	3.2	3.2
Nominal diameter over insulation	mm	15.41	17.01	18.61	20.11	21.41	23.21	25.61	28.12	31.63	35.44	39.96	44.22	48.42	51.72
Nominal area of copper wires screen	mm2	16	16	16	16	25	25	25	25	35	35	35	35	35	35
Nominal outer sheath thickness	mm	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.2	3.3	3.4
Nominal overall diameter of cable	mm	27	28	30	31	33	34	37	39	43	47	51	56	60	64
Approximate cable weight	kg/km	760	855	970	1080	1260	1410	1621	1900	2330	2755	3370	4005	4700	5420
Nominal drum length	m	2000	2000	2000	2000	2000	2000	2000	2000	2000	1000	1000	1000	1000	1000
Minimum bending radius during installation	mm	540	560	600	620	660	680	740	780	860	940	1020	1120	1200	1280
Minimum bending radius of installed cables	mm	405	420	450	465	495	510	555	585	645	705	765	840	900	960
Nominal internal diameter of ducts	mm	41	42	45	47	50	51	56	59	65	71	77	84	90	96
Maximum DC resistance @ 20 ^{0}C per phase	ohm/km	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367	0.0291	0.0247
Maximum AC resistance @ 90 ^{0}C per phase	ohm/km	0.822	0.568	0.414	0.325	0.265	0.211	0.161	0.130	0.102	0.081	0.064	0.057	0.0482	0.0432
Reactance @ 50 Hz per phase	ohm/km	0.122	0.111	0.109	0.105	0.103	0.100	0.0966	0.0947	0.0925	0.0907	0.0876	0.095	0.0930	0.0910
Impedance @ 50 Hz per phase	ohm/km	0.831	0.579	0.424	0.342	0.284	0.233	0.188	0.161	0.138	0.122	0.108	0.111	0.105	0.101
Nominal capacitance per phase	pF/m	362	406	447	483	532	572	588	624	624	758	758	850	1010	1010
Maximum charging current per phase	mA/m	0.68	0.77	0.84	0.91	1	1.08	1.11	1.18	1.18	1.43	1.43	1.6	1.9	1.9
Continuous Current rating in ground	A	151	187	223	249	285	320	369	423	481	543	605	684	752	803
Continuous Current rating in ducts	A	156	191	227	343	280	312	360	405	454	507	570	763	916	1067
Continuous Current rating in air	A	185	228	285	318	361	413	485	570	556	770	884	1019	1138	1234
Maximum operating conductor temperature	^{0}C	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Short circuit of conductor for 1 sec/core (non adiabatic)	kA	5	6.0	9.0	11.0	14.0	17.0	23.0	28.0	38.0	48.0	60.0	76.0	95.0	114.0
Short circuit of metallic screen for 1 sec/core (non adiabatic)	kA	3	3	3	3	4.6	4.6	4.6	4.6	6.4	4.6	6.4	6.4	4.6	6.4
Final conductor and screen temperature after short circuit	^{0}C	250	250	250	250	250	250	250	250	250	250	250	250	250	250

Standard current rating conditions

Ground temperature	^{0}C	30
Ambient temperature (air)	^{0}C	30
Depth of burial	m	0.8
Thermal resistivity of soil	^{0}C m/W	1.2

Single core cables in trefoil, bonded and earthed at both ends

Average variation in soil thermal resistivity for cables

		Soil thermal resistivity			
	^{0}C m/W	0.8	1	2	2.5
in ground	1 core	1.17	1.08	0.79	0.72
	3 core	1.13	1.07	0.84	0.77
in ducts	1 core	1.15	1.07	0.83	0.76
	3 core	1.16	1.07	0.80	0.73

Multiple circuits

		Number of circuits		
	Spacing	2	3	4
3 core cable	0.30m	0.88	0.79	0.76
	0.45m	0.90	0.83	0.79
	0.60m	0.92	0.86	0.83
1 core cables	0.30m	0.85	0.76	0.72
(Trefoil formation)	0.45m	0.88	0.80	0.76
	0.60m	0.90	0.83	0.80

Variation in temperature

	Temperature ^{0}C						
	15	20	25	30	35	40	50
Multiple in air rating			1.05	1.00	0.96	0.90	0.77
Multiple of laid direct and duct rating	1.12	0.09	1.04	1.00	0.97	0.92	0.82

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PRYSMIAN CABLES & SYSTEMS

SINGLE CORE ALUMINUM INSULATED UNARMOR MEDIUM VOLTAGE CABLE

6/10 (12) kV to SPLN 43-5 Standard
ALUMINIUM CONDUCTOR, XLPE INSULATION, COPPER WIRES SCREEN, PVC SHEATH

Cross section area	mm2	**50**	**70**	**95**	**120**	**150**	**185**	**240**	**300**	**400**	**500**	**630**	**800**	**1000**	**1200**
Nominal insulation thickness	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Nominal diameter over insulation	mm	17.24	18.84	20.44	21.94	23.24	25.04	27.24	29.34	32.44	35.84	40.36	44.62	48.82	52.12
Nominal area of copper wires screen	mm2	16	16	16	16	25	25	25	25	35	35	35	35	35	35
Nominal outer sheath thickness	mm	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.2	3.3	3.4
Nominal overall diameter of cable	mm	28	30	32	33	34	36	38	40	44	47	52	56	61	64
Approximate cable weight	kg/km	770	870	975	1085	1270	1410	1635	1955	2360	2755	3375	4020	4720	5430
Nominal drum length	m	2000	2000	2000	2000	2000	2000	2000	2000	2000	1000	1000	1000	1000	1000
Minimum bending radius during installation	mm	560	600	640	660	680	720	760	800	880	940	1040	1120	1220	1280
Minimum bending radius of installed cables	mm	420	450	480	495	510	540	570	600	660	705	780	840	915	960
Nominal internal diameter of ducts	mm	42	45	48	50	51	54	57	60	66	71	78	84	92	96
Maximum DC resistance @ 20 ^{0}C per phase	ohm/km	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367	0.0291	0.0247
Maximum AC resistance @ 90 ^{0}C per phase	ohm/km	0.822	0.568	0.414	0.325	0.265	0.211	0.161	0.130	0.102	0.081	0.064	0.057	0.0482	0.0432
Reactance @ 50 Hz per phase	ohm/km	0.122	0.111	0.109	0.105	0.103	0.100	0.0966	0.0947	0.0925	0.0907	0.0876	0.095	0.0930	0.0910
Impedance @ 50 Hz per phase	ohm/km	0.831	0.579	0.424	0.342	0.284	0.233	0.188	0.161	0.138	0.122	0.108	0.111	0.105	0.101
Nominal capacitance per phase	pF/m	282	315	345	372	408	453	495	558	558	717	717	804	955	955
Maximum charging current per phase	mA/m	0.89	0.99	1.08	1.17	1.28	1.42	1.56	1.75	1.75	2.25	2.25	2.53	3	3
Continuous Current rating in ground	A	151	187	223	249	285	320	369	423	481	543	605	684	752	803
Continuous Current rating in ducts	A	156	191	227	343	280	312	360	405	454	507	570	763	916	1067
Continuous Current rating in air	A	185	228	285	318	361	413	485	570	556	770	884	1019	1138	1234
Maximum operating conductor temperature	^{0}C	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Short circuit of conductor for 1 sec/core (non adiabatic)	kA	5	6.0	9.0	11.0	14.0	17.0	23.0	28.0	38.0	48.0	60.0	76.0	95.0	114.0
Short circuit of metallic screen for 1 sec/core (non adiabatic)	kA	3	3	3	3	4.6	4.6	4.6	4.6	6.4	4.6	6.4	6.4	4.6	6.4
Final conductor and screen temperature after short circuit	^{0}C	250	250	250	250	250	250	250	250	250	250	250	250	250	250

Standard current rating conditions

Ground temperature	^{0}C	30
Ambient temperature (air)	^{0}C	30
Depth of burial	m	0.8
Thermal resistivity of soil	^{0}C m/W	1.2

Single core cables in trefoil, bonded and earthed at both ends

Average variation in soil thermal resistivity for cables

		Soil thermal resistivity			
	^{0}C m/W	0.8	1	2	2.5
in ground	1 core	1.17	1.08	0.79	0.72
	3 core	1.13	1.07	0.84	0.77
in ducts	1 core	1.15	1.07	0.83	0.76
	3 core	1.16	1.07	0.80	0.73

Multiple circuits

		Number of circuits		
	Spacing	2	3	4
3 core cable	0.30m	0.88	0.79	0.76
	0.45m	0.90	0.83	0.79
	0.60m	0.92	0.86	0.83
1 core cables	0.30m	0.85	0.76	0.72
(Trefoil formation)	0.45m	0.88	0.80	0.76
	0.60m	0.90	0.83	0.80

Variation in temperature

	Temperature ^{0}C						
	15	20	25	30	35	40	50
Multiple in air rating			1.05	1.00	0.96	0.90	0.77
Multiple of laid direct and duct rating	1.12	0.09	1.04	1.00	0.97	0.92	0.82

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PRYSMIAN CABLES & SYSTEMS

SINGLE CORE ALUMINUM INSULATED UNARMOR MEDIUM VOLTAGE CABLE

8.7/15 (17.5) kV to SPLN 43-5 Standard

ALUMINIUM CONDUCTOR, XLPE INSULATION, COPPER WIRES SCREEN, PVC SHEATH

Cross section area	mm2	**50**	**70**	**95**	**120**	**150**	**185**	**240**	**300**	**400**	**500**	**630**	**800**	**1000**	**1200**
Nominal insulation thickness	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Nominal diameter over insulation	mm	19.48	21.08	22.68	24.18	25.48	27.28	29.48	31.58	34.68	38.08	42.60	46.86	51.06	54.36
Nominal area of copper wires screen	mm2	16	16	16	16	25	25	25	25	35	35	35	35	35	35
Nominal outer sheath thickness	mm	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.3	3.4	3.5
Nominal overall diameter of cable	mm	31	32	34	35	37	38	41	43	46	49	54	59	63	67
Approximate cable weight	kg/km	915	1020	1140	1260	1450	1610	1825	2090	2510	2920	3575	4230	4930	5650
Nominal drum length	m	2000	2000	2000	2000	2000	2000	2000	2000	2000	1000	1000	1000	1000	1000
Minimum bending radius during installation	mm	620	640	680	700	740	760	820	860	920	980	1080	1180	1260	1340
Minimum bending radius of installed cables	mm	465	480	510	525	555	570	615	645	690	735	810	885	945	1005
Nominal internal diameter of ducts	mm	47	48	51	53	56	57	62	65	69	74	81	89	95	101
Maximum DC resistance @ 20 ^{0}C per phase	ohm/km	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367	0.0291	0.0247
Maximum AC resistance @ 90 ^{0}C per phase	ohm/km	0.822	0.568	0.414	0.325	0.265	0.211	0.161	0.130	0.102	0.081	0.064	0.057	0.0482	0.0432
Reactance @ 50 Hz per phase	ohm/km	0.122	0.111	0.109	0.105	0.103	0.100	0.0966	0.0947	0.0925	0.0907	0.0876	0.095	0.0930	0.0910
Impedance @ 50 Hz per phase	ohm/km	0.831	0.579	0.424	0.342	0.284	0.233	0.188	0.161	0.138	0.122	0.108	0.111	0.105	0.101
Nominal capacitance per phase	pF/m	227	252	276	296	323	357	389	437	437	558	558	623	737	737
Maximum charging current per phase	mA/m	1.07	1.19	1.3	1.39	1.52	1.68	1.83	2.06	2.06	2.63	2.63	2.94	3.47	3.47
Continuous Current rating in ground	A	151	187	223	249	285	320	369	423	481	543	605	684	752	803
Continuous Current rating in ducts	A	156	191	227	343	280	312	360	405	454	507	570	763	916	1067
Continuous Current rating in air	A	185	228	285	318	361	413	485	570	556	770	884	1019	1138	1234
Maximum operating conductor temperature	^{0}C	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Short circuit of conductor for 1 sec/core (non adiabatic)	kA	5	6.0	9.0	11.0	14.0	17.0	23.0	28.0	38.0	48.0	60.0	76.0	95.0	114.0
Short circuit of metallic screen for 1 sec/core (non adiabatic)	kA	3	3	3	3	4.6	4.6	4.6	4.6	6.4	4.6	6.4	6.4	4.6	6.4
Final conductor and screen temperature after short circuit	^{0}C	250	250	250	250	250	250	250	250	250	250	250	250	250	250

Standard current rating conditions

Ground temperature	^{0}C	30
Ambient temperature (air)	^{0}C	30
Depth of burial	m	0.8
Thermal resistivity of soil	^{0}C m/W	1.2

Single core cables in trefoil, bonded and earthed at both ends

Average variation in soil thermal resistivity for cables

		Soil thermal resistivity			
	^{0}C m/W	0.8	1	2	2.5
in ground	1 core	1.17	1.08	0.79	0.72
	3 core	1.13	1.07	0.84	0.77
in ducts	1 core	1.15	1.07	0.83	0.76
	3 core	1.16	1.07	0.80	0.73

Multiple circuits

		Number of circuits		
	Spacing	2	3	4
3 core cable	0.30m	0.88	0.79	0.76
	0.45m	0.90	0.83	0.79
	0.60m	0.92	0.86	0.83
1 core cables	0.30m	0.85	0.76	0.72
(Trefoil formation)	0.45m	0.88	0.80	0.76
	0.60m	0.90	0.83	0.80

Variation in temperature

	Temperature ^{0}C						
	15	20	25	30	35	40	50
Multiple in air rating			1.05	1.00	0.96	0.90	0.77
Multiple of laid direct and duct rating	1.12	0.09	1.04	1.00	0.97	0.92	0.82

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PRYSMIAN CABLES & SYSTEMS

SINGLE CORE ALUMINUM INSULATED UNARMOR MEDIUM VOLTAGE CABLE

12/20 (24) kV to SPLN 43-5 Standard

ALUMINIUM CONDUCTOR, XLPE INSULATION, COPPER WIRES SCREEN, PVC SHEATH

Cross section area	mm2	**50**	**70**	**95**	**120**	**150**	**185**	**240**	**300**	**400**	**500**	**630**	**800**	**1000**	**1200**
Nominal insulation thickness	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Nominal diameter over insulation	mm	21.52	23.12	24.72	26.22	27.52	29.32	31.52	33.62	36.72	40.12	44.64	48.90	53.10	56.40
Nominal area of copper wires screen	mm2	16	16	16	16	25	25	25	25	35	35	35	35	35	35
Nominal outer sheath thickness	mm	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.3	3.5	3.6
Nominal overall diameter of cable	mm	33	34	36	37	39	40	43	45	48	51	56	61	65	69
Approximate cable weight	kg/km	1005	1115	1240	1365	1555	1725	1940	2215	2645	3065	3735	4405	5160	5900
Nominal drum length	m	2000	2000	2000	2000	2000	2000	2000	2000	2000	1000	1000	1000	1000	1000
Minimum bending radius during installation	mm	660	680	720	740	780	800	860	900	960	1020	1120	1220	1300	1380
Minimum bending radius of installed cables	mm	495	510	540	555	585	600	645	675	720	765	840	915	975	1035
Nominal internal diameter of ducts	mm	50	51	54	56	59	60	65	68	72	77	84	92	98	104
Maximum DC resistance @ 20 ^{0}C per phase	ohm/km	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367	0.0291	0.0247
Maximum AC resistance @ 90 ^{0}C per phase	ohm/km	0.822	0.568	0.414	0.325	0.265	0.211	0.161	0.130	0.102	0.081	0.064	0.057	0.0482	0.0432
Reactance @ 50 Hz per phase	ohm/km	0.122	0.111	0.109	0.105	0.103	0.100	0.0966	0.0947	0.0925	0.0907	0.0876	0.095	0.0930	0.0910
Impedance @ 50 Hz per phase	ohm/km	0.831	0.579	0.424	0.342	0.284	0.233	0.188	0.161	0.138	0.122	0.108	0.111	0.105	0.101
Nominal capacitance per phase	pF/m	196	217	236	253	275	303	330	369	369	468	468	522	615	615
Maximum charging current per phase	mA/m	1.23	1.36	1.48	1.59	1.73	1.9	2.07	2.32	2.32	2.94	2.94	3.28	3.86	3.86
Continuous Current rating in ground	A	151	187	223	249	285	320	369	423	481	543	605	684	752	803
Continuous Current rating in ducts	A	156	191	227	343	280	312	360	405	454	507	570	763	916	1067
Continuous Current rating in air	A	185	228	285	318	361	413	485	570	556	770	884	1019	1138	1234
Maximum operating conductor temperature	^{0}C	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Short circuit of conductor for 1 sec/core (non adiabatic)	kA	5	6.0	9.0	11.0	14.0	17.0	23.0	28.0	38.0	48.0	60.0	76.0	95.0	114.0
Short circuit of metallic screen for 1 sec/core (non adiabatic)	kA	3	3	3	3	4.6	4.6	4.6	4.6	6.4	4.6	6.4	6.4	4.6	6.4
Final conductor and screen temperature after short circuit	^{0}C	250	250	250	250	250	250	250	250	250	250	250	250	250	250

Standard current rating conditions

Ground temperature	^{0}C	30
Ambient temperature (air)	^{0}C	30
Depth of burial	m	0.8
Thermal resistivity of soil	^{0}C m/W	1.2

Single core cables in trefoil, bonded and earthed at both ends

Average variation in soil thermal resistivity for cables

		Soil thermal resistivity			
	^{0}C m/W	0.8	1	2	2.5
in ground	1 core	1.17	1.08	0.79	0.72
	3 core	1.13	1.07	0.84	0.77
in ducts	1 core	1.15	1.07	0.83	0.76
	3 core	1.16	1.07	0.80	0.73

Multiple circuits

		Number of circuits		
	Spacing	2	3	4
3 core cable	0.30m	0.88	0.79	0.76
	0.45m	0.90	0.83	0.79
	0.60m	0.92	0.86	0.83
1 core cables	0.30m	0.85	0.76	0.72
(Trefoil formation)	0.45m	0.88	0.80	0.76
	0.60m	0.90	0.83	0.80

Variation in temperature

	Temperature ^{0}C						
	15	20	25	30	35	40	50
Multiple in air rating			1.05	1.00	0.96	0.90	0.77
Multiple of laid direct and duct rating	1.12	0.09	1.04	1.00	0.97	0.92	0.82

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PRYSMIAN CABLES & SYSTEMS

SINGLE CORE COPPER INSULATED UNARMOR MEDIUM VOLTAGE CABLE

3.6/6 (7.2) kV to SPLN 43-5 Standard

COPPER CONDUCTOR, XLPE INSULATION, COPPER WIRES SCREEN, PVC SHEATH

Cross section area	mm2	**50**	**70**	**95**	**120**	**150**	**185**	**240**	**300**	**400**	**500**	**630**	**800**	**1000**	**1200**
Nominal insulation thickness	mm	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0	3.2	3.2	3.2	3.2	3.2
Nominal diameter over insulation	mm	15.41	17.01	18.61	20.11	21.41	23.21	25.61	28.12	31.63	35.44	39.96	44.22	48.42	51.72
Nominal area of copper wires screen	mm2	16	16	16	16	25	25	25	25	35	35	35	35	35	35
Nominal outer sheath thickness	mm	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.2	3.3	3.4
Nominal overall diameter of cable	mm	27	28	30	31	33	34	37	39	43	47	51	56	60	64
Approximate cable weight	kg/km	1045	1262	1533	1797	2147	2517	3084	3712	4635	5696	7278	9044	11116	12694
Nominal drum length	m	2000	2000	2000	2000	2000	2000	2000	2000	2000	1000	1000	1000	1000	1000
Minimum bending radius during installation	mm	540	560	600	620	660	680	740	780	860	940	1020	1120	1200	1280
Minimum bending radius of installed cables	mm	405	420	450	465	495	510	555	585	645	705	765	840	900	960
Nominal internal diameter of ducts	mm	41	42	45	47	50	51	56	59	65	71	77	84	90	96
Maximum DC resistance @ 20 ^{0}C per phase	ohm/km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047	0.0366	0.0283	0.0367	0.0291	0.0247
Maximum AC resistance @ 90 ^{0}C per phase	ohm/km	0.494	0.343	0.248	0.196	0.159	0.128	0.098	0.080	0.064	0.057	0.042	0.057	0.0482	0.0432
Reactance @ 50 Hz per phase	ohm/km	0.123	0.115	0.109	0.105	0.103	0.100	0.0966	0.0947	0.0925	0.0907	0.088	0.095	0.0930	0.0910
Impedance @ 50 Hz per phase	ohm/km	0.509	0.362	0.424	0.222	0.284	0.162	0.138	0.124	0.112	0.107	0.098	0.111	0.105	0.101
Nominal capacitance per phase	pF/m	362	406	447	483	532	572	588	624	624	758	758	850	1010	1010
Maximum charging current per phase	mA/m	0.68	0.77	0.84	0.91	1	1.08	1.11	1.18	1.18	1.43	1.43	1.6	1.9	1.9
Continuous Current rating in ground	A	196	240	285	320	365	409	472	534	605	668	739	821	887	933
Continuous Current rating in ducts	A	200	240	285	320	356	392	449	498	543	605	668	920	1098	1276
Continuous Current rating in air	A	238	295	356	409	466	532	627	722	836	950	1083	1220	1345	1435
Maximum operating conductor temperature	^{0}C	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Short circuit of conductor for 1 sec/core (non adiabatic)	kA	7	10.0	13.0	17.0	21.0	27.0	34.0	43.0	57.0	72.0	91.0	115.0	144.0	172.0
Short circuit of metallic screen for 1 sec/core (non adiabatic)	kA	3	3	3	3	4.6	4.6	4.6	4.6	6.4	4.6	6.4	6.4	4.6	6.4
Final conductor and screen temperature after short circuit	^{0}C	250	250	250	250	250	250	250	250	250	250	250	250	250	250

Standard current rating conditions

Ground temperature	^{0}C	30
Ambient temperature (air)	^{0}C	30
Depth of burial	m	0.8
Thermal resistivity of soil	^{0}C m/W	1.2

Single core cables in trefoil, bonded and earthed at both ends

Average variation in soil thermal resistivity for cables

		Soil thermal resistivity			
	^{0}C m/W	0.8	1	2	2.5
in ground	1 core	1.17	1.08	0.79	0.72
	3 core	1.13	1.07	0.84	0.77
in ducts	1 core	1.15	1.07	0.83	0.76
	3 core	1.16	1.07	0.80	0.73

Multiple circuits

		Number of circuits		
	Spacing	2	3	4
3 core cable	0.30m	0.88	0.79	0.76
	0.45m	0.90	0.83	0.79
	0.60m	0.92	0.86	0.83
1 core cables	0.30m	0.85	0.76	0.72
(Trefoil formation)	0.45m	0.88	0.80	0.76
	0.60m	0.90	0.83	0.80

Variation in temperature

	Temperature ^{0}C						
	15	20	25	30	35	40	50
Multiple in air rating			1.05	1.00	0.96	0.90	0.77
Multiple of laid direct and duct rating	1.12	0.09	1.04	1.00	0.97	0.92	0.82

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PRYSMIAN CABLES & SYSTEMS

SINGLE CORE COPPER INSULATED UNARMOR MEDIUM VOLTAGE CABLE

6/10 (12) kV to SPLN 43-5 Standard
COPPER CONDUCTOR, XLPE INSULATION, COPPER WIRES SCREEN, PVC SHEATH

Cross section area	mm2	50	70	95	120	150	185	240	300	400	500	630	800	1000	1200
Nominal insulation thickness	mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Nominal diameter over insulation	mm	17.24	18.84	20.44	21.94	23.24	25.04	27.24	29.34	32.44	35.84	40.36	44.62	48.82	52.12
Nominal area of copper wires screen	mm2	16	16	16	16	25	25	25	25	35	35	35	35	35	35
Nominal outer sheath thickness	mm	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.2	3.3	3.4
Nominal overall diameter of cable	mm	28	30	32	33	34	36	38	40	44	47	52	56	61	64
Approximate cable weight	kg/km	1045	1265	1530	1795	2150	2510	3090	3760	4660	5690	7275	9050	11125	12695
Nominal drum length	m	2000	2000	2000	2000	2000	2000	2000	1000	1000	1000	500	500	500	500
Minimum bending radius during installation	mm	560	600	640	660	680	720	760	800	880	940	1040	1120	1220	1280
Minimum bending radius of installed cables	mm	420	450	480	495	510	540	570	600	660	705	780	840	915	960
Nominal internal diameter of ducts	mm	42	45	48	50	51	54	57	60	66	71	78	84	92	96
Maximum DC resistance @ 20 ^{0}C per phase	ohm/km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047	0.0366	0.0283	0.0367	0.0291	0.0247
Maximum AC resistance @ 90 ^{0}C per phase	ohm/km	0.494	0.343	0.248	0.196	0.159	0.128	0.098	0.080	0.064	0.057	0.042	0.057	0.0482	0.0432
Reactance @ 50 Hz per phase	ohm/km	0.123	0.115	0.109	0.105	0.103	0.100	0.0966	0.0947	0.0925	0.0907	0.088	0.095	0.0930	0.0910
Impedance @ 50 Hz per phase	ohm/km	0.509	0.362	0.424	0.222	0.284	0.162	0.138	0.124	0.112	0.107	0.098	0.111	0.105	0.101
Nominal capacitance per phase	pF/m	282	315	345	372	408	453	495	558	558	717	717	804	955	955
Maximum charging current per phase	mA/m	0.89	0.99	1.08	1.17	1.28	1.42	1.56	1.75	1.75	2.25	2.25	2.53	3	3
Continuous Current rating in ground	A	196	240	285	320	365	409	472	534	605	668	739	821	887	933
Continuous Current rating in ducts	A	200	240	285	320	356	392	449	498	543	605	668	920	1098	1276
Continuous Current rating in air	A	238	295	356	409	466	532	627	722	836	950	1083	1220	1345	1435
Maximum operating conductor temperature	^{0}C	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Short circuit of conductor for 1 sec/core (non adiabatic)	kA	7	10.0	13.0	17.0	21.0	27.0	34.0	43.0	57.0	72.0	91.0	115.0	144.0	172.0
Short circuit of metallic screen for 1 sec/core (non adiabatic)	kA	3	3	3	3	4.6	4.6	4.6	4.6	6.4	4.6	6.4	6.4	4.6	6.4
Final conductor and screen temperature after short circuit	^{0}C	250	250	250	250	250	250	250	250	250	250	250	250	250	250

Standard current rating conditions

Ground temperature	^{0}C	30
Ambient temperature (air)	^{0}C	30
Depth of burial	m	0.8
Thermal resistivity of soil	^{0}C m/W	1.2

Single core cables in trefoil, bonded and earthed at both ends

Average variation in soil thermal resistivity for cables

		Soil thermal resistivity			
	^{0}C m/W	0.8	1	2	2.5
in ground	1 core	1.17	1.08	0.79	0.72
	3 core	1.13	1.07	0.84	0.77
in ducts	1 core	1.15	1.07	0.83	0.76
	3 core	1.16	1.07	0.80	0.73

Multiple circuits

		Number of circuits		
	Spacing	2	3	4
3 core cable	0.30m	0.88	0.79	0.76
	0.45m	0.90	0.83	0.79
	0.60m	0.92	0.86	0.83
1 core cables	0.30m	0.85	0.76	0.72
(Trefoil formation)	0.45m	0.88	0.80	0.76
	0.60m	0.90	0.83	0.80

Variation in temperature

	Temperature ^{0}C						
	15	20	25	30	35	40	50
Multiple in air rating			1.05	1.00	0.96	0.90	0.77
Multiple of laid direct and duct rating	1.12	0.09	1.04	1.00	0.97	0.92	0.82

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PRYSMIAN CABLES & SYSTEMS

SINGLE CORE COPPER INSULATED UNARMOR MEDIUM VOLTAGE CABLE

8.7/15 (17.5) kV to SPLN 43-5 Standard
COPPER CONDUCTOR, XLPE INSULATION, COPPER WIRES SCREEN, PVC SHEATH

Cross section area	mm2	50	70	95	120	150	185	240	300	400	500	630	800	1000	1200
Nominal insulation thickness	mm	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Nominal diameter over insulation	mm	19.48	21.08	22.68	24.18	25.48	27.28	29.48	31.58	34.68	38.08	42.60	46.86	51.06	54.36
Nominal area of copper wires screen	mm2	16	16	16	16	25	25	25	25	35	35	35	35	35	35
Nominal outer sheath thickness	mm	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.3	3.4	3.5
Nominal overall diameter of cable	mm	31	32	34	35	37	38	41	43	46	49	54	59	63	67
Approximate cable weight	kg/km	1200	1427	1703	1977	2337	2717	3288	3902	4815	5861	7483	9269	11346	12924
Nominal drum length	m	2000	2000	2000	2000	2000	2000	1000	1000	1000	1000	500	500	500	500
Minimum bending radius during installation	mm	620	640	680	700	740	760	820	860	920	980	1080	1180	1260	1340
Minimum bending radius of installed cables	mm	465	480	510	525	555	570	615	645	690	735	810	885	945	1005
Nominal internal diameter of ducts	mm	47	48	51	53	56	57	62	65	69	74	81	89	95	101
Maximum DC resistance @ 20 ^{0}C per phase	ohm/km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047	0.0366	0.0283	0.0367	0.0291	0.0247
Maximum AC resistance @ 90 ^{0}C per phase	ohm/km	0.494	0.343	0.248	0.196	0.159	0.128	0.098	0.080	0.064	0.057	0.042	0.057	0.0482	0.0432
Reactance @ 50 Hz per phase	ohm/km	0.123	0.115	0.109	0.105	0.103	0.100	0.0966	0.0947	0.0925	0.0907	0.088	0.095	0.0930	0.0910
Impedance @ 50 Hz per phase	ohm/km	0.509	0.362	0.424	0.222	0.284	0.162	0.138	0.124	0.112	0.107	0.098	0.111	0.105	0.101
Nominal capacitance per phase	pF/m	227	252	276	296	323	357	389	437	437	558	558	623	737	737
Maximum charging current per phase	mA/m	1.07	1.19	1.3	1.39	1.52	1.68	1.83	2.06	2.06	2.63	2.63	2.94	3.47	3.47
Continuous Current rating in ground	A	196	240	285	320	365	409	472	534	605	668	739	821	887	933
Continuous Current rating in ducts	A	200	240	285	320	356	392	449	498	543	605	668	920	1098	1276
Continuous Current rating in air	A	238	295	356	409	466	532	627	722	836	950	1083	1220	1345	1435
Maximum operating conductor temperature	^{0}C	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Short circuit of conductor for 1 sec/core (non adiabatic)	kA	7	10	13	17	21	27	34	43	57	72	91	115	144	172
Short circuit of metallic screen for 1 sec/core (non adiabatic)	kA	3	3	3	3	4.6	4.6	4.6	4.6	6.4	4.6	6.4	6.4	4.6	6.4
Final conductor and screen temperature after short circuit	^{0}C	250	250	250	250	250	250	250	250	250	250	250	250	250	250

Standard current rating conditions

Ground temperature	^{0}C	30
Ambient temperature (air)	^{0}C	30
Depth of burial	m	0.8
Thermal resistivity of soil	^{0}C m/W	1.2

Single core cables in trefoil, bonded and earthed at both ends

Average variation in soil thermal resistivity for cables

		Soil thermal resistivity			
	^{0}C m/W	0.8	1	2	2.5
in ground	1 core	1.17	1.08	0.79	0.72
	3 core	1.13	1.07	0.84	0.77
in ducts	1 core	1.15	1.07	0.83	0.76
	3 core	1.16	1.07	0.80	0.73

Multiple circuits

		Number of circuits		
	Spacing	2	3	4
3 core cable	0.30m	0.88	0.79	0.76
	0.45m	0.90	0.83	0.79
	0.60m	0.92	0.86	0.83
1 core cables	0.30m	0.85	0.76	0.72
(Trefoil formation)	0.45m	0.88	0.80	0.76
	0.60m	0.90	0.83	0.80

Variation in temperature

	Temperature ^{0}C						
	15	20	25	30	35	40	50
Multiple in air rating			1.05	1.00	0.96	0.90	0.77
Multiple of laid direct and duct rating	1.12	0.09	1.04	1.00	0.97	0.92	0.82

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PRYSMIAN CABLES & SYSTEMS

SINGLE CORE COPPER INSULATED UNARMOR MEDIUM VOLTAGE CABLE

12/20 (24) kV to SPLN 43-5 Standard

COPPER CONDUCTOR, XLPE INSULATION, COPPER WIRES SCREEN, PVC SHEATH

Cross section area	mm2	**50**	**70**	**95**	**120**	**150**	**185**	**240**	**300**	**400**	**500**	**630**	**800**	**1000**	**1200**
Nominal insulation thickness	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Nominal diameter over insulation	mm	21.52	23.12	24.72	26.22	27.52	29.32	31.52	33.62	36.72	40.12	44.64	48.90	53.10	56.40
Nominal area of copper wires screen	mm2	16	16	16	16	25	25	25	25	35	35	35	35	35	35
Nominal outer sheath thickness	mm	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.3	3.5	3.6
Nominal overall diameter of cable	mm	33	34	36	37	39	40	43	45	48	51	56	61	65	69
Approximate cable weight	kg/km	1290	1522	1803	2082	2442	2832	3403	4027	4950	6006	7643	9444	11576	13174
Nominal drum length	m	2000	2000	2000	2000	2000	2000	1000	1000	1000	1000	500	500	500	500
Minimum bending radius during installation	mm	660	680	720	740	780	800	860	900	960	1020	1120	1220	1300	1380
Minimum bending radius of installed cables	mm	495	510	540	555	585	600	645	675	720	765	840	915	975	1035
Nominal internal diameter of ducts	mm	50	51	54	56	59	60	65	68	72	77	84	92	98	104
Maximum DC resistance @ 20 ^{0}C per phase	ohm/km	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047	0.0366	0.0283	0.0367	0.0291	0.0247
Maximum AC resistance @ 90 ^{0}C per phase	ohm/km	0.494	0.343	0.248	0.196	0.159	0.128	0.098	0.080	0.064	0.057	0.042	0.057	0.0482	0.0432
Reactance @ 50 Hz per phase	ohm/km	0.123	0.115	0.109	0.105	0.103	0.100	0.0966	0.0947	0.0925	0.0907	0.088	0.095	0.0930	0.0910
Impedance @ 50 Hz per phase	ohm/km	0.509	0.362	0.424	0.222	0.284	0.162	0.138	0.124	0.112	0.107	0.098	0.111	0.105	0.101
Nominal capacitance per phase	pF/m	196	217	236	253	275	303	330	369	369	468	468	522	615	615
Maximum charging current per phase	mA/m	1.23	1.36	1.48	1.59	1.73	1.9	2.07	2.32	2.32	2.94	2.94	3.28	3.86	3.86
Continuous Current rating in ground	A	196	240	285	320	365	409	472	534	605	668	739	821	887	933
Continuous Current rating in ducts	A	200	240	285	320	356	392	449	498	543	605	668	920	1098	1276
Continuous Current rating in air	A	238	295	356	409	466	532	627	722	836	950	1083	1220	1345	1435
Maximum operating conductor temperature	^{0}C	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Short circuit of conductor for 1 sec/core (non adiabatic)	kA	7	10	13	17	21	27	34	43	57	72	91	115	144	172
Short circuit of metallic screen for 1 sec/core (non adiabatic)	kA	3	3	3	3	4.6	4.6	4.6	4.6	6.4	4.6	6.4	6.4	4.6	6.4
Final conductor and screen temperature after short circuit	^{0}C	250	250	250	250	250	250	250	250	250	250	250	250	250	250

Standard current rating conditions

Ground temperature	^{0}C	30
Ambient temperature (air)	^{0}C	30
Depth of burial	m	0.8
Thermal resistivity of soil	^{0}C m/W	1.2

Single core cables in trefoil, bonded and earthed at both ends

Average variation in soil thermal resistivity for cables

		Soil thermal resistivity			
	^{0}C m/W	0.8	1	2	2.5
in ground	1 core	1.17	1.08	0.79	0.72
	3 core	1.13	1.07	0.84	0.77
in ducts	1 core	1.15	1.07	0.83	0.76
	3 core	1.16	1.07	0.80	0.73

Multiple circuits

		Number of circuits		
	Spacing	2	3	4
3 core cable	0.30m	0.88	0.79	0.76
	0.45m	0.90	0.83	0.79
	0.60m	0.92	0.86	0.83
1 core cables	0.30m	0.85	0.76	0.72
(Trefoil formation)	0.45m	0.88	0.80	0.76
	0.60m	0.90	0.83	0.80

Variation in temperature

	Temperature ^{0}C						
	15	20	25	30	35	40	50
Multiple in air rating			1.05	1.00	0.96	0.90	0.77
Multiple of laid direct and duct rating	1.12	0.09	1.04	1.00	0.97	0.92	0.82

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PRYSMIAN CABLES & SYSTEMS