PT KABELINDO MURNI Tbk

Indonesia's Leading Wire & Cable Manufacturer

Power Cable

Medium Voltage

Catalogue
XLPE Insulated

Medium Voltage
Power Cable
Catalogue

SUMMARY

Introduction of company

The Company's history was marked by the founding of PT. Kabel Indonesia (Kabelindo) in 1972, a foreign invested Company at the time and one of the first cable manufacturers in Indonesia. In 1979, the Company's ownership was transferred to Indonesians and names was changed to PT. Kabelindo Murni.

The quality assurance of the products is the main issue that the Company emphasizes. The electrical cables produced by the Company has passed the Indonesian National Standard (SNI) and National Power Company Standard (SPLN). The Company completes several international standards such us : Standard International Electrotechnical (IEC), Australian Standard (AS), British Standard (BS), Japanese Industrial Standard (JIS) and Insulated Cable Engineers Association / National Electrical Manufacturers Association (ICEA/NEMA)

To Support the Company's commitment to quality, the Company has the ISO 9001:2008 OHSAS 18001 : 2007 ISO 14001 : 2004 certificate.

GENERAL INFORMATION

Standards

Cables described in this catalogue are standard types SNI IEC, IEC 60502-2 and SPLN standard, and their performance has been proved in operation. Construction and tests are in accordance with the recommendation of IEC publications where ever applicable.

Power Cables in accordance to other standard (e.g. BS, AS, JIS, NEMA) can be manufactured upon customer's request

Voltage

The Standard rated voltage of a cables is denoted by Uo/U (Um)

Where

Uo : is the rated power-frequency voltage between conductor and earth or metallic screen

U : is the rated power-frequency voltage between conductors

Um : is the maximum continuously permessible operating voltage of a cable at time or in any part of the network

Uo/U	(kV)	3.6/6	6/10	8.7/15	12/20	18/30
Um	(kV)	7.2	12	17.5	24	36

Note : Cable design for 6/10, 12/20 and 18/30 kV is applicable for 6.35/11, 12.7/22 and 19/33 kV respectively

Special Features on Request

Special features on request by customer on the cable jacket :

• Flame Retardant Cat. A/B/C • Oil Resistance • UV Resistance • Anti termite

• Anti rodent • Low Smoke Zero Halogen • Nylon Sheath

Weight and Dimension

Weight and dimension are approximate. The deviations are due to manufacturing tolerance

Installation

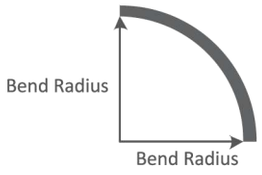
Medium voltage cables with XLPE insulation are suitable for indoor and outdoor applications.

The following recommendations should be followed to achieve the optimal cable service

1. Armoured cables are not recommended for tray applications, as they are heavy in weight and extra loads are exerted on the tray.
2. Unarmoured cables are not recommended for direct buried applications, except if the quoted cables are designed and produced to pass direct burial test requirements
3. A PVC jacket is a very stable material against a wide range of chemicals, while HDPE jacketed cables can serve better in wet locations.

4. A recommended minimum bending radius of cables :

minimum bending radius during installation	minimum bending radius of installed
10x Diameter Cable	9x Diameter Cable



5. Important note for single core cables, The conductors of an A.C. circuit installed in a ferromagnetic enclosure shall be arranged so that all line conductors and the neutral conductor, if any, and the appropriate protective conductor are contained in the same enclosure. When such conductors enter a ferrous enclosure, they shall be arranged such that the conductors are only collectively surrounded by ferrous material.

Due to the wide range of cables in the catalogue, it is advisable, when ordering, to provide as much information as possible. Please use the following table as a guide:

1. Cable standard / specification number.
2. Voltage designation.
3. Number of cores.
4. Load to be carried (Current Carried)
5. Conductor size.
6. Length of cables required and individual drum lengths.
7. Any other special requirement, e.g. special PVC sheath material, drum weight limitation, etc.

Routine Final Test

Final test will be done for every length of product, such as :

- Visual
- Cable Construction
- Dimension
- Conductor resistance
- Insulation resistance
- AC voltage test
- Partial discharge test

All information is believed to be accurate at the time issue, Information contained in this catalogue may be subject to change without notice

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSY / NA2XSY

(Cu XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

NOMINAL VOLTAGE :

1.8/3 (3.6) kV
3.6/6 (7.2) kV
6/10 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV
18/30 (36) kV

FEATURE :

XLPE insulated single core cable are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Metallic Screen

Copper tape applied over the insulation screen. Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSY / NA2XSY 3.6/6 (7.2) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

1 CORE

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
Nominal Insulation thickness	mm		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0	3.2	3.2	3.2
Insulation diameter (approx.)	mm		12.5	13.5	14.7	16.3	18.1	19.5	20.7	22.7	25.1	27.9	31.1	34.4	39.3	43.2
Nominal sheath thickness	mm		1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	2.0	2.0	2.1	2.3	2.4	2.5
Overall Cable diameter (approx.)	mm		18	20	21	23	24	26	27	29	32	35	38	42	48	52
Cable Net. Weight (approx.)	kg/km	Cu	600	700	900	1,100	1,400	1,700	2,000	2,400	3,000	3,600	4,500	5,700	7,300	9,000
		Al	450	500	600	700	800	900	1,100	1,200	1,500	1,700	2,100	2,600	3.300	4,000
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		330	360	380	420	440	470	490	530	580	630	690	760	870	940

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		900	800	700	600	500	500	500	400	400	400	400	300	300	300
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.0470	0.0366	0.0283	0.0221
		Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	µF/km		0.191	0.216	0.240	0.279	0.318	0.349	0.376	0.419	0.459	0.481	0.511	0.540	0.534	0.595
Inductance per-phase	mH/km		0.409	0.391	0.372	0.353	0.333	0.323	0.316	0.306	0.295	0.289	0.283	0.278	0.279	0.272
	mH/km		0.594	0.575	0.556	0.538	0.518	0.508	0.501	0.491	0.480	0.474	0.468	0.463	0.464	0.457
Max. short circuit current of conductor	kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.83	115.23
		Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14	47.60	59.90	75.96
Max. short circuit current of screen	kA/sec		2.26	2.43	2.63	2.90	2.56	2.75	3.63	3.96	4.39	4.82	5.35	5.90	6.84	7.99
Max. current carrying capacity at 30°C — In Air	A	Cu	161	194	233	291	353	406	459	526	620	728	814	920	1,006	1,118
		Al	124	150	180	216	273	316	358	411	488	558	650	743	803	893
		Cu	190	230	276	344	417	480	536	611	715	810	900	1,005	1,087	1,209
		Al	146	117	214	267	326	376	423	484	572	651	740	837	870	967
In Ground	A	Cu	150	179	210	257	307	348	388	438	506	568	637	717	779	831
		Al	115	137	163	200	238	271	302	342	398	449	510	574	622	663
		Cu	171	203	238	290	343	387	422	427	539	601	648	774	818	871
		Al	130	156	185	226	269	304	335	376	434	486	536	614	654	697
AC Test Voltage	kV/5 min								12.5							

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSY / NA2XSY 6/10 (12) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

1 CORE

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
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
Insulation diameter (approx.)	mm		14.3	15.3	16.5	18.1	19.9	21.3	22.5	24.5	26.9	29.1	31.9	37.38	39.7	43.6
Nominal sheath thickness	mm		1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.4	2.5
Overall Cable diameter (approx.)	mm		20	21	23	24	26	28	29	31	34	36	39	42	48	52
Cable Net. Weight (approx.)	kg/km	Cu	700	800	1,000	1,200	1,500	1,700	2,100	2,500	3,100	3,700	4,600	5,700	7,300	9,100
		Al	500	600	700	800	900	1,000	1,200	1,300	1,600	1,800	2,200	2,600	3,300	3,900
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		260	280	310	340	380	410	430	470	520	570	630	690	780	860

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,100	1,000	900	800	700	600	600	500	500	400	400	400	300	300
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.047	0.0366	0.0283	0.0221
		Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	μF/km		0.161	0.181	0.200	0.230	0.261	0.286	0.306	0.341	0.382	0.420	0.467	0.517	0.514	0.572
Inductance per-phase	mH/km		0.430	0.408	0.390	0.367	0.349	0.337	0.331	0.318	0.306	0.296	0.288	0.280	0.280	0.272
	mH/km		0.615	0.593	0.575	0.551	0.534	0.522	0.516	0.503	0.491	0.481	0.473	0.465	0.465	0.457
Max. short circuit current of conductor	kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.83	115.23
		Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14	47.60	59.90	75.96
Max. short circuit currentof screen	kA/sec		2.56	2.73	2.92	2.56	2.8	2.98	3.93	4.26	4.66	4.02	5.48	5.96	5.53	6.05
Max. current carrying capacity at 30°C — In Air	A	Cu	162	195	234	292	354	407	460	527	621	729	815	921	1.007	1,119
		Al	125	151	181	217	275	317	359	412	489	559	651	774	804	894
		Cu	191	231	277	345	418	481	537	612	716	811	901	1,006	1,088	1,210
		Al	147	178	215	268	327	377	424	485	573	652	741	838	871	968
In Ground	A	Cu	151	180	211	258	308	349	389	439	507	569	638	718	780	832
		Al	116	138	164	201	239	272	303	344	399	450	511	574	623	664
		Cu	172	204	239	291	344	388	423	473	540	601	649	774	819	872
		Al	132	157	186	227	270	305	336	377	434	407	507	615	655	690
AC Test Voltage	kV/5 min								21							

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSY / NA2XSY 8.7/15 (17.5) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

1 CORE

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
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
Insulation diameter (approx.)	mm		16.5	17.5	18.7	20.3	22.1	23.5	24.7	26.7	29.1	31.3	34.1	37.0	41.9	45.8
Nominal sheath thickness	mm		1.7	1.7	1.7	1.8	1.8	1.9	1.9	2	2.1	2.1	2.3	2.3	2.5	2.6
Overall Cable diameter (approx.)	mm		23	24	25	27	28	30	31	33	36	38	41	44	50	54
Cable Net. Weight (approx.)	kg/km	Cu	800	900	1,000	1,300	1,600	1,900	2,200	2,600	3,200	3,800	4,800	5,900	7,900	9,300
		Al	600	700	800	900	1,000	1,100	1,300	1,500	1,700	1,900	2,400	2,800	3.500	4,200
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		290	310	330	360	400	430	460	500	550	590	650	710	810	880

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,300	1,200	1,100	1,000	900	800	700	700	600	600	500	500	400	400
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.0470	0.0366	0.0283	0.0221
		Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	µF/km		0.138	0.154	0.170	0.193	0.218	0.238	0.254	0.281	0.314	0.344	0.382	0.421	0.428	0.476
Inductance per-phase	mH/km		0.452	0.428	0.407	0.386	0.365	0.354	345	0.332	0.318	0.308	0.300	0.291	0.280	0.280
	mH/km		0.637	0.613	0.592	0.57	0.55	0.538	0.530	0.517	0.503	0.493	0.485	0.475	0.475	0.465
Max. short circuit current of conductor	kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.83	115.23
		Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14	47.60	59.90	75.96
Max. short circuit current of screen	kA/sec		2.92	2.48	2.63	2.85	3.09	3.28	4.29	4.62	4.02	4.31	5.85	6.33	5.82	6.34
Max. current carrying capacity at 30°C — In Air	A	Cu	162	199	238	296	358	412	466	532	627	715	819	927	1,009	1,121
		Al	125	155	184	229	278	320	363	415	493	563	652	746	806	896
		Cu	191	233	279	347	420	483	540	614	718	813	904	1,011	1,090	1,212
		Al	147	180	217	240	328	378	425	485	513	652	740	838	873	970
In Ground	A	Cu	151	181	214	262	312	353	394	445	513	577	647	720	782	834
		Al	116	139	166	203	242	276	307	348	404	455	517	576	625	666
		Cu	172	205	240	292	347	391	427	478	546	608	659	776	821	874
		Al	132	158	187	228	271	307	339	380	439	491	543	617	657	701
AC Test Voltage	kV/5 min								30.5							

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSY / NA2XSY 12/20 (24) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/ PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

1 CORE

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.7	30.3	34.2
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
Insulation diameter (approx.)	mm		19.7	20.9	22.5	24.3	25.7	26.9	28.9	31.3	33.5	36.3	39.2	44.1	48.0
Nominal sheath thickness	mm		1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.6
Overall Cable diameter (approx.)	mm		26	27	29	31	32	34	36	38	40	44	47	53	58
Cable Net. Weight (approx.)	kg/km	Cu	1,000	1,200	1,400	1,700	2,000	2,300	2,700	3,300	4,000	4,900	6,100	7,700	9,500
		Al	800	900	1,000	1,100	1,300	1,400	1,600	1,800	2,100	2,500	3,000	3,700	4,400
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		330	350	390	420	450	430	520	570	610	670	730	830	920

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	700	700	600	600	500	400
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.0470	0.0366	0.0283	0.0221
		Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	µF/km		0,136	0.149	0.169	0.190	0.206	0.22	0.243	0.270	0.294	0.326	0.358	0.370	0.410
Inductance per-phase	mH/km		0.477	0.426	0.403	0.382	0.368	0.359	0.345	0.330	0.320	0.310	0.301	0.299	0.294
	mH/km		0.632	0.611	0.588	0.556	0.553	0.544	0.53	0.515	0.505	0.495	0.468	0.483	0.479
Max. short circuit current of conductor	kA/sec	Cu	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.83	115.23
		Al	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14	47.60	59.90	75.96
Max. short circuit currentof screen	kA/sec		2,77	2.92	3,14	3.38	3.67	4,66	3.99	4.31	4.60	6.21	6.69	6.11	6.63
Max. current carrying capacity at 30°C — In Air	A	Cu	199	238	296	358	412	466	532	627	715	819	927	1,009	1,121
		Al	155	184	229	278	320	363	415	493	563	652	746	806	896
		Cu	233	279	347	420	483	540	614	718	813	904	1,011	1,090	1,212
		Al	180	217	240	328	378	425	485	513	652	740	838	873	970
Max. current carrying capacity at 30°C — In Ground	A	Cu	181	214	262	312	353	394	445	513	577	647	720	782	834
		Al	139	166	203	242	276	307	348	404	455	517	576	625	666
		Cu	205	240	292	347	391	427	478	546	608	659	776	821	874
		Al	158	187	228	271	307	339	380	439	491	543	617	657	701
AC Test Voltage	kV/5 min								42						

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSY / NA2XSY 18/30 (36) kV

(Cu/ XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

1 CORE

Nominal cross sectional area	mm2		50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
Nominal Insulation thickness	mm		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Insulation diameter (approx.)	mm		25.9	27.5	29.3	30.7	31.9	31.9	36.3	38.5	41.3	44.2	49.1	53.0
Nominal sheath thickness	mm		2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8
Overall Cable diameter (approx.)	mm		32	34	36	37	39	41	43	46	49	52	58	62
Cable Net. Weight (approx.)	kg/km	Cu	1,400	1,700	2,000	2,300	2,600	3,100	3,700	4,400	5,300	6,400	8,200	10,000
		Al	1,200	1,300	1,400	1,600	1,700	1,900	2,200	2,500	2,900	3,400	4,200	4,900
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		410	440	480	510	530	570	620	670	730	790	800	960

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,600	1,500	1,300	1,200	1,200	1,100	1,000	900	800	700	600	600
Max. DC conductor resistance at 20°C	Ω/km	Cu	0,387	0,268	0,193	0,153	0,124	0,0991	0,0754	0,0601	0,0470	0,0366	0,0283	0,0221
		Al	0,641	0,443	0,320	0,253	0,206	0,164	0,125	0,100	0,0778	0,0605	0,0469	0,0367
Capacitance per-phase	µF/km		0,121	0,136	0,151	0,163	3,173	0,190	0,209	0,227	0,250	0,274	0,288	0,317
Inductance per-phase	mH/km		0,462	0,435	0,413	0,398	0,388	0,372	0,357	0,345	0,333	0,323	0,318	0,308
	mH/km		0,647	0,620	0,598	0,583	0,573	0,557	0,542	0,53	0,518	0,507	0,503	0,492
Max. short circuit current of conductor	kA/sec	Cu	7,36	10,26	13,88	17,49	21,81	26,86	34,78	43,41	57,79	72,16	90,83	115,23
		Al	4,89	6,81	9,19	11,58	14,43	17,76	22,98	28,67	38,14	47,60	59,90	75,96
Max. short circuit currentof screen	kA/sec		3,59	3,81	4,04	4,23	4,39	4,66	4,97	5,26	5,64	6,02	6,78	7,29
Max. current carrying capacity at 30°C — In Air	A	Cu	241	299	362	416	469	536	630	717	823	929	1,010	1,122
		Al	187	232	281	323	365	418	494	564	654	747	807	897
		Cu	279	348	421	483	540	615	718	812	904	1,011	1,091	1,213
		Al	217	270	328	378	425	485	572	649	737	838	874	971
In Ground	A	Cu	217	265	316	358	398	449	519	584	648	721	783	835
		Al	168	205	246	278	311	351	409	460	518	577	626	667
		Cu	214	294	348	394	431	483	553	615	660	778	822	875
		Al	188	228	273	309	341	384	443	495	544	618	658	703
AC Test Voltage	kV/5 min							63						

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSRY / NA2XSRY

(Cu/XLPE/CTS/AWA/PVC - Al/XLPE/CTS/AWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Aluminium Wire Armoured, PVC Sheathed Cable

NOMINAL VOLTAGE :

1.8/3 (3.6) kV
3.6/6 (7.2) kV
6/10 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV
18/30 (36) kV

FEATURE :

XLPE insulated single core cable are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Metallic Screen

Copper tape applied over the installation. screen. Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Inner Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable.

Thickness of inner sheath as show in table 1.

Table 1. Inner Sheath Thickness

Cores Diameter (mm)		Approx. Thickness of Inner Sheath
>	<	mm
35	45	1.4
45	60	1.6

Armour

Aluminium round wires wrap helically over the surface of inner sheath minimum 95 %,

If necessary applied Polyester Tape with nominal thickness 0.05 mm

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSRY / NA2XSRY 3.6/6 (7.2) kV

(Cu/XLPE/CTS/AWA/PVC - Al/XLPE/CTS/AWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Aluminium Wire Armoured, PVC Sheathed Cable

DIMENSIONAL DATA

1 CORE

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
Nominal Insulation thickness	mm		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0	3.2	3.2	3.2
Insulation diameter (approx.)	mm		12.5	13.5	14.7	16.3	18.1	19.5	20.7	22.7	25.3	27.9	31.1	34.4	39.3	43.2
Wire armour diameter (approx.)	mm		1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.5	2.5	3.2	3.2
Nominal sheath thickness	mm		1.8	1.8	1.8	1.8	1.9	2.0	2.0	2.1	2.2	2.2	2.4	2.5	2.7	2.8
Overall Cable diameter (approx.)	mm		25	26	27	29	30	32	33	36	39	42	47	50	58	62
Cable Net. Weight (approx.)	kg/km	Cu	1,000	1,100	1,300	1,600	1,900	2,200	2,500	3,000	3,700	4,400	5,600	6,800	8,900	10,700
		Al	850	900	1,000	1,100	1,300	1,400	1,700	1,900	2,200	2,500	3,100	3,700	4,900	5,600
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		450	470	490	530	540	580	600	650	710	760	850	900	1,050	1,120

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		900	800	700	600	500	500	500	400	400	400	400	300	300	300
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470	0.0366	0.0283	0.0221
		Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	μF/km		0.250	0.290	0.310	0.360	0.410	0.450	0.460	0.530	0.580	0.600	0.620	0.650	0.730	0.810
Inductance per-phase (trefoil)	mH/km		0.472	0.448	0.426	0.404	0.377	0.367	0.356	0.347	0.336	0.328	0.326	0.315	0.318	0.308
(flat)	mH/km		0.657	0.633	0.611	0.588	0.562	0.552	0.541	0.532	0.520	0.513	0.510	0.500	503	0.492
Max. short circuit current of conductor	kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.63	115.23
		Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.96	28.67	38.14	47.60	59.90	75.96
Max. short circuit current of screen	kA/sec		2.26	2.43	2.63	2.90	2.56	2.75	3.63	3.96	4.39	4.82	5.35	5.90	6.84	5.99
Max. current carrying capacity at 30°C — In Air (trefoil)	A	Cu	159	192	2331	288	349	402	454	521	614	712	806	911	996	1,107
		Al	123	148	178	214	271	313	354	407	483	552	643	735	795	884
In Air (flat)	A	Cu	188	228	273	340	413	475	530	605	706	602	891	995	1,076	1.197
		Al	145	175	218	264	323	372	419	479	566	644	732	828	861	957
In Ground (trefoil)	A	Cu	148	177	208	254	304	344	384	433	501	562	630	710	771	823
		Al	114	135	161	198	235	268	299	339	394	444	505	568	616	656
In Ground (flat)	A	Cu	169	201	235	287	339	383	418	467	533	595	641	766	810	862
		Al	130	154	183	224	266	301	331	372	429	481	530	608	647	690
AC Test Voltage	kV/5 min							12.5								

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSRY / NA2XSRY 6/10 (12) kV

(Cu/XLPE/CTS/AWA/PVC - Al/XLPE/CTS/AWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Aluminium Wire Armoured, PVC Sheathed Cable

DIMENSIONAL DATA — **1 CORE**

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
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
Insulation diameter (approx.)	mm		12.5	13.5	14.7	16.3	18.1	19.5	20.7	22.7	25.3	27.9	31.1	34.4	39.3	43.2
Wire armour diameter (approx.)	mm		1.6	1.6	1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.5	2.5	2.5	3.2	3.2
Nominal sheath thickness	mm		1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.3	2.4	2.5	3.2	3.2
Overall Cable diameter (approx.)	mm		27	28	29	30	32	34	36	38	41	44	47	50	58	62
Cable Net. Weight (approx.)	kg/km	Cu	1,100	1,200	1,400	1,700	2,000	2,300	2,700	3,200	3,800	4,600	5,600	6,800	8,900	10,800
		Al	950	1,000	1,100	1,200	1,400	1,600	1,800	2,000	2,300	2,600	3,200	4,000	4,800	5,700
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		490	510	530	540	580	620	650	690	740	800	850	900	1,050	1,120

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,100	1,000	900	800	700	600	600	500	500	400	400	400	300	300
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470	0.0366	0.0283	0.0221
		Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	μF/km		0.250	0.290	0.310	0.360	0.410	0.450	0.480	0.530	0.580	0.600	0.620	0.650	0.730	0.810
Inductance per-phase	mH/km		0.488	0.463	0.440	0.410	0.390	0.379	0.373	0.358	0.346	0.337	0.326	0.315	0.318	0.308
	mH/km		0.673	0.648	0.625	0.595	0.575	0.564	0.558	0.543	0.530	0.522	0.510	0.500	0.503	0.492
Max. short circuit current of conductor	kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.83	115.23
		Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14	47.60	59.90	75.96
Max. short circuit current of screen	kA/sec		2.56	2.73	2.92	2.56	2.80	2.98	3.93	4.26	4.66	4.02	5.48	5.96	5.53	6.05
Max. current carrying capacity at 30°C — In Air	A	Cu	160	192	232	288	349	403	454	522	614	721	806	911	997	1,107
		Al	124	148	178	215	272	313	355	407	484	553	645	736	1,107	885
		Cu	189	229	273	340	414	475	530	605	708	802	892	996	796	1197
		Al	145	177	214	264	324	374	420	480	567	644	734	830	885	958
In Ground	A	Cu	149	178	208	255	304	345	384	434	501	562	630	711	1,077	824
		Al	115	135	162	199	235	269	299	340	395	445	506	567	1197	656
		Cu	170	202	236	287	341	383	419	467	534	595	642	766	861	864
		Al	130	154	183	225	266	302	332	374	430	481	530	608	958	692
AC Test Voltage	kV/5 min							21								

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSRY / NA2XSRY 8.7/15 (17.5) kV

(Cu/XLPE/CTS/AWA/PVC - Al/XLPE/CTS/AWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Aluminium Wire Armoured, PVC Sheathed Cable

DIMENSIONAL DATA — 1 CORE

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
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
Insulation diameter (approx.)	mm		12.5	13.5	14.7	16.3	18.1	19.5	20.7	22.7	25.3	27.9	31.1	34.4	39.3	43.2
Wire armour diameter (approx.)	mm		1.6	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.5	2.5	2.5	3.2	3.2	3.2
Nominal sheath thickness	mm		1.9	1.9	1.9	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.7	2.8	2.9
Overall Cable diameter (approx.)	mm		29	30	31	33	36	37	39	41	44	47	50	54	61	65
Cable Net. Weight (approx.)	kg/km	Cu	1,300	1,400	1,500	1,800	2,200	2,500	2,900	3,400	4,100	4,900	5,900	7,300	9,100	11.100
		Al	1,000	1,100	1,200	1,500	1,600	1,800	2,000	2,200	2,500	3,000	3,400	4,200	5,100	6,000
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		530	540	560	600	650	670	710	740	800	850	900	980	1,100	1,170

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,300	1,200	1,100	1,000	900	800	700	700	600	600	500	500	400	400
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470	0.0366	0.0283	0.0221
		Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	µF/km		0.250	0.290	0.310	0.360	0.410	0.450	0.480	0.530	0.580	0.600	0.620	0.650	0.730	0.810
Inductance per-phase	mH/km		0.502	0.477	0.453	0.429	0.413	0.396	0.389	0.373	0.360	0.351	0.338	0.330	0.329	0.317
	mH/km		0.687	0.662	0.638	0.614	0.598	0.581	0.574	0.558	0.545	0.536	0.523	0.515	0.513	0.502
Max. short circuit current of conductor	kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.83	115.23
		Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14	47.60	59.90	75.96
Max. short circuit current of screen	kA/sec		2.92	2.48	2.63	2.85	3.09	3.28	4.29	4.62	4.02	4.31	5.85	6.33	5.82	6.34
Max. current carrying capacity at 30°C — In Air	A	Cu	160	197	235	293	354	408	461	527	621	708	811	918	999	1,110
		Al	124	153	182	227	275	317	359	411	488	557	645	738	798	887
		Cu	189	230	276	343	416	478	534	608	711	805	895	1,001	1,079	1,200
		Al	145	178	215	237	325	374	421	480	508	645	732	830	864	960
In Ground	A	Cu	149	179	212	259	309	349	390	440	508	571	640	713	774	826
		Al	115	137	164	201	239	273	304	344	400	450	512	570	619	659
		Cu	170	203	237	289	343	387	423	473	540	602	652	768	813	865
		Al	130	156	185	226	268	304	335	376	434	486	537	611	650	694
AC Test Voltage	kV/5 min							30.5								

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSRY / NA2XSRY 12/20/(24) kV

(Cu/XLPE/CTS/AWA/PVC - Al/XLPE/CTS/AWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Aluminium Wire Armoured, PVC Sheathed Cable

DIMENSIONAL DATA — **1 CORE**

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
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
Insulation diameter (approx.)	mm		19.7	20.9	22.5	24.3	25.7	26.9	28.9	31.3	33.5	36.3	39.2	44.1	48.0
Wire armour diameter (approx.)	mm		1.6	1.6	2.0	2.0	2.0	2.0	2.5	2.5	2.5	3.2	3.2	3.2	4.0
Nominal sheath thickness	mm		2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.8	3.0
Overall Cable diameter (approx.)	mm		32	33	36	38	39	41	44	47	49	54	57	63	69
Cable Net. Weight (approx.)	kg/km	Cu	1,300	1,500	1,800	2,100	2,400	2,800	3,200	3,900	4,500	5,600	6,700	8,500	10,400
		Al	1,200	1,400	1,600	1,700	1,900	2,100	2,400	2,700	3,200	3,700	4,500	5,200	5,900
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500	500
Minimum bending radius	mm		580	600	650	690	710	740	800	850	890	980	1,030	1,140	1,250

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,400	1,300	1,100	1,000	1,000	900	800	700	700	600	600	500	400
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470	0.0366	0.0283	0.0221
		Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	µF/km		0.160	0.170	0.200	0.220	0.220	0.250	0.280	0.310	0.330	0.370	0.400	0.460	0.500
Inductance per-phase	mH/km		0.49	0.466	0.447	0.424	0.424	0.399	0.387	0.373	0.359	0.353	0.341	0.335	0.329
	mH/km		0.675	0.651	0.632	0.609	0.609	0.584	0.572	0.558	0.544	0.538	0.526	0.52	0.514
Max. short circuit current of conductor	kA/sec	Cu	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.83	115.23
		Al	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14	47.60	59.90	75.96
Max. short circuit current of screen	kA/sec		2.77	2.92	3.14	3.38	3.38	4.66	3.89	4.31	4.60	6.21	6.69	6.11	6.63
Max. current carrying capacity at 30°C — In Air	A	Cu	197	235	354	354	408	461	527	621	708	811	918	999	1,110
		Al	153	182	274	274	317	359	411	488	557	645	738	798	887
		Cu	230	276	416	416	478	534	608	711	805	895	1,001	1,079	1,200
		Al	178	215	325	325	374	421	480	508	645	732	830	864	960
In Ground	A	Cu	179	212	309	309	349	390	440	508	571	640	713	774	826
		Al	137	164	239	239	273	304	344	400	450	512	570	619	659
		Cu	203	237	343	343	387	423	473	540	602	652	768	813	865
		Al	156	185	268	268	304	335	376	434	486	537	611	650	694
AC Test Voltage	kV/5 min							42							

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSRY / NA2XSRY 18/30 (36) kV

(Cu/XLPE/CTS/AWA/PVC - Al/XLPE/CTS/AWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Aluminium Wire Armoured, PVC Sheathed Cable

DIMENSIONAL DATA — 1 CORE

Nominal cross sectional area	mm2		50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.2
Nominal Insulation thickness	mm		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Insulation diameter (approx.)	mm		25.9	27.5	29.3	30.7	31.9	33.9	36.3	38.5	41.3	44.2	49.1	53.0
Wire armour diameter (approx.)	mm		2.0	2.0	2.5	2.5	2.5	2.5	2.5	3.15	3.15	3.15	3.15	3.15
Nominal sheath thickness	mm		2.2	2.3	2.4	2.4	2.5	2.5	2.6	2.7	2.8	2.9	3.1	3.2
Overall Cable diameter (approx.)	mm		40	41	44	46	47	49	52	56	59	62	70	75
Cable Net. Weight (approx.)	kg/km	Cu	2,200	2,500	3,000	3,300	3,700	4,200	4,900	5,900	6,900	8,200	10,500	12,600
		Al	1,900	2,100	2,300	2,600	2,800	3,000	3,600	4,000	4,500	5,100	6,500	7,400
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	250	250
Minimum bending radius	mm		720	740	800	830	850	890	940	1,010	1,070	1,120	1,260	1,350

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,600	1,500	1,300	1,200	1,200	1,100	1,000	900	800	700	600	600
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470	0.0366	0.283	0.0221
		Al	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	0.0367
Capacitance per-phase	µF/km		0.120	0.140	0.150	0.160	0.170	0.190	0.210	0.230	0.250	0.270	0.290	0.320
Inductance per-phase	mH/km		0.504	0.473	0.453	0.440	0.427	0.409	0.393	0.386	0.371	0.358	0.356	0.346
	mH/km		0.689	0.658	0.638	0.625	0.611	0.594	0.578	0.571	0.556	0.543	0.541	0.53
Max. short circuit current of conductor	kA/sec	Cu	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79	72.16	90.83	115.23
		Al	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14	47.60	59.90	75.96
Max. short circuit current of screen	kA/sec		3.59	3.81	4.04	4.23	4.39	4.66	4.97	5.26	5.64	6.02	6.78	7.29
Max. current carrying capacity at 30°C — In Air — A		Cu	238	296	358	412	464	530	624	710	815	920	1,000	1,111
		Al	185	230	278	320	361	414	489	558	647	739	799	888
		Cu	276	344	417	478	535	609	711	804	895	1,001	1,080	1,201
		Al	215	267	325	374	421	480	566	642	729	829	865	961
Max. current carrying capacity at 30°C — In Ground — A		Cu	215	262	313	354	394	444	514	579	641	714	775	826
		Al	166	203	243	275	308	347	405	455	513	571	620	660
		Cu	238	291	344	390	427	478	547	609	653	770	814	866
		Al	186	226	270	306	337	380	438	490	538	612	651	695
AC Test Voltage	kV/5 min							63						

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEY / NA2XSEY

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

NOMINAL VOLTAGE :

1.8/3 (3.6) kV
3.6/6 (7.2) kV
6/10 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV
18/30 (36) kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C.The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Metallic Screen

Copper wires and copper tape applied over the insulation screen with overlap minimum 10%. Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Inner Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable.

Thickness of inner sheath as show in table 1.

Table 1. Inner Sheath Thickness

Cores Diameter (mm)		Approx. Thickness of Inner Sheath
>	<	mm
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2.0

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEY / NA2XSEY 3.6/6 (7.2) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0
Insulation diameter (approx.)	mm		12.5	13.5	14.7	16.3	18.1	19.5	20.7	22.7	25.3	27.9	31.1
Nominal sheath thickness	mm		2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.9	3.0	3.2	3.5
Overall Cable (approx.)	mm		37	39	44	47	51	54	56	61	68	72	81
Cable Net. Weight (approx.)	kg/km	Cu	2,100	2,500	3,000	3,800	4,800	5,800	6,700	8,100	10,200	12,500	15,600
		Al	1,600	1,800	2,100	2,500	3,000	3,500	3,900	4,600	6,100	6,700	8,200
Standard length per-reel	m		1,000	1,000	1,000	1,000	500	500	500	500	250	250	250
Minimum bending radius	mm		670	710	760	830	900	960	1,010	1,080	1,300	1,300	1,440

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		900	800	700	600	500	500	500	400	400	400	400
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.191	0.216	0.240	0.279	0.318	0.349	0.376	0.419	0.459	0.481	0.511
Inductance per-phase		mH/km		0.322	0.308	0.298	0.284	0.273	0.266	0.261	0.254	0.249	0.246	0.243
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		1.90	2.05	2.21	2.44	2.69	2.89	3.05	3.33	3.70	4.06	4.51
Max. current carrying	In Air	A	Cu	134	175	207	258	315	362	413	473	557	663	765
capacity at 30°C			Al	103	133	160	200	241	280	317	363	424	484	597
	In Ground	A	Cu	133	172	203	247	297	337	379	428	497	557	629
			Al	102	131	156	192	230	261	294	333	388	416	498
AC Test Voltage		kV/5 min							12.5					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEY / NA2XSEY 6/10 (12) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
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
Insulation diameter (approx.)	mm		14.3	15.3	16.5	18.1	19.9	21.3	22.5	24.5	26.9	29.1	31.9
Nominal sheath thickness	mm		2.1	2.2	2.4	2.5	2.7	2.8	2.9	3.0	3.2	3.3	3.6
Overall Cable diameter (approx.)	mm		41	43	47	50	54	58	61	67	70	75	82
Cable Net. Weight (approx.)	kg/km	Cu	2,400	2,800	3,400	4,200	5,300	6,200	7,200	8,600	10,700	12,900	15,900
		Al	1,900	2,200	2,500	2,900	3,400	3,900	4,400	5,100	6,100	7,100	8,500
Standard length per-reel	m		500	500	500	500	500	500	500	500	500	250	250
Minimum bending radius	mm		740	780	830	900	980	1,030	1,080	1,160	1,260	1,350	1,460

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,100	1,000	900	800	700	600	600	500	500	400	400
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.161	0.181	0.200	0.230	0.261	0.286	0.306	0.341	0.382	0.420	0.467
Inductance per-phase		mH/km		0.346	0.331	0.319	0.303	0.910	0.283	0.277	0.269	0.260	0.254	0.248
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		2.15	2.61	2.77	3.00	3.25	3.44	3.61	3.89	4.23	4.53	4.92
Max. current carrying	In Air	A	Cu	135	175	208	259	316	363	414	474	558	634	766
capacity at 30°C			Al	104	134	161	201	242	281	318	364	425	485	598
	In Ground	A	Cu	134	173	204	248	298	338	380	429	498	558	630
			Al	103	132	157	193	231	262	295	334	389	417	499
AC Test Voltage		kV/5 min							21					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEY / NA2XSEY 8.7/15 (17.5) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
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
Insulation diameter (approx.)	mm		16.5	17.5	18.7	20.3	22.1	23.5	24.7	26.7	29.1	31.3	34.1
Nominal sheath thickness	mm		2.2	2.4	2.6	2.7	2.8	2.9	3.0	3.2	3.3	3.5	3.7
Overall Cable (approx.)	mm		46	48	51	55	59	62	65	69	75	80	87
Cable Net. Weight (approx.)	kg/km	Cu	3,500	3,800	4,400	5,300	6,400	7,400	8,500	10,000	12,200	14,400	17.500
		Al	2,400	2,600	3,000	3,400	4000	4,500	5,000	5,800	6,800	7,900	9,300
Standard length per-reel	m		500	500	500	500	500	500	500	500	250	250	250
Minimum bending radius	mm		830	870	920	990	1,070	1,120	1,170	1,250	1,350	1,440	1,570

ELECTRICAL DATA

				25	35	50	70	95	120	150	185	240	300	400
Min. DC Insulation resistance at 20°C		M.Ω.km		1,300	1,200	1,100	1,000	900	800	700	700	600	600	500
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.138	0.154	0.170	0.193	0.281	0.238	0.306	0.341	0.314	0.344	0.382
Inductance per-phase		mH/km		0.372	0.355	0.341	0.324	310.000	0.301	0.277	0.269	0.275	0.268	0.261
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen				2.46	2.61	2.77	3.00	3.25	3.44	3.61	3.89	4.23	4.53	4.29
Max. current carrying	In Air	A	Cu	135	1.75	208	259	316	363	414	474	558	635	767
capacity at 30°C			Al	104	140	1.62	206	2.47	285	322	364	429	486	599
	In Ground	A	Cu	134	173	204	248	298	338	380	429	497	559	631
			Al	103	133	155	188	225	257	286	334	376	418	500
AC Test Voltage		kV/5 min							30.5					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEY / NA2XSEY 12/20 (24) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)	mm		19.7	20.9	22.5	24.3	25.7	26.9	28.9	31.3	33.5	36.3
Nominal sheath thickness	mm		2.4	2.7	2.9	3.0	3.1	3.2	3.3	3.5	3.6	3.9
Overall Cable diameter (approx.)	mm		54	56	60	64	67	70	75	80	85	91
Cable Net. Weight (approx.)	kg/km	Cu	3,800	4,400	5,300	6,400	7,400	8,500	10,000	12,200	14,400	17,500
		Al	3,100	3,500	4,000	4,600	5,200	5,700	6,500	7,500	8,700	10,200
Standard length per-reel	m		500	500	500	500	500	500	250	250	250	250
Minimum bending radius	mm		960	1,010	1,080	1,160	1,210	1,260	1,350	1,440	1,530	1,638

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	600	700	600
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		μF/km		0.136	0.149	0.169	0.190	0.206	0.220	0.243	0.314	0.294	0.326
Inductance per-phase		mH/km		0.393	0.374	0.353	0.335	0.323	0.315	0.303	0.275	0.283	0.274
Max. short circuit current of conductor		kA/sec	Cu	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		2.77	2.92	3.14	3.38	3.57	4.66	3.89	4.31	4.6	6.21
Max. current carrying	In Air	A	Cu	175	208	259	316	364	414	474	558	635	767
capacity at 30°C			Al	140	163	201	244	283	321	364	429	486	599
	In Ground	A	Cu	173	204	248	298	338	380	429	497	559	631
			Al	133	155	193	230	263	295	334	389	441	500
AC Test Voltage		kV/5 min						42					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEY / NA2XSEY 18/30 (36) kV

(Cu/XLPE/CTS/PVC - Al/XLPE/CTS/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Insulation diameter (approx.)	mm		25.9	27.5	29.3	30.7	31.9	33.9	36.3	38.5	41.3
Nominal sheath thickness	mm		3.1	3.2	3.4	3.5	3.6	3.7	3.9	4.0	4.3
Overall Cable (approx.)	mm		68	71	75	79	81	86	91	97	103
Cable Net. Weight (approx.)	kg/km	Cu	5,800	6,800	8,000	9,000	10,100	11,800	14,000	16,500	19,700
		Al	4,900	5,500	6,100	6,700	7,300	8,300	9,400	10,700	12,300
Standard length per-reel	m		500	500	500	250	250	250	250	250	250
Minimum bending radius	mm		1,230	1,280	1,350	1,430	1,460	1,638	1,638	1,746	1,854

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,600	1,500	1,300	1,200	1,200	1,100	1,000	900	900
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		μF/km		0.138	0.153	0.169	0.182	0.192	0.210	0.213	0.250	0.274
Inductance per-phase		mH/km		0.402	0.381	0.363	0.352	0.343	0.330	0.317	0.308	0.970
Max. short circuit current of conductor		kA/sec	Cu	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		3.77	4.00	4.25	4.45	4.62	4.90	5.23	5.54	5.93
Max. current carrying	In Air	A	Cu	209	260	317	364	415	475	559	636	468
capacity at 30°C			Al	164	207	248	286	323	368	430	487	600
	In Ground	A	Cu	205	249	299	339	381	430	498	560	632
			Al	156	189	226	258	287	325	377	419	501
AC Test Voltage		kV/5 min						63				

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEBY / NA2XSEBY

(Cu/XLPE/CTS/PVC/DSTA/PVC - Al/XLPE/CTS/PVC/DSTA/PVC)

Copper / Aluminium Conductor, XLPE Insulated, Copper Tape Screened, Zinc Coated Double Steel Tape Armoured, PVC Sheathed Cable

NOMINAL VOLTAGE :

1.8/3	(3.6)	kV
3.6/6	(7.2)	kV
6/10	(12)	kV
8.7/15	(17.5)	kV
12/20	(24)	kV
18/30	(36)	kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

- **Indoors**
- **Outdoors**
- **Underground**
- **Cable Tray**

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free from contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Metallic Screen

Copper tape applied over the insulation screen with overlap minimum 10%. Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Inner Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable. Thickness of inner sheath as show in table 1.

Table 1. Inner Sheath Thickness

Cores Diameter (mm)	Approx. Thickness of Inner Sheath
<	mm
45	1.4
60	1.6
80	1.8
-	2.0

Armouring

Double layers of galvanized steel tape applied helically with proper over laping over the inner sheath. Thickness of the steel tape as show in table 2.

Table 2. Galvanized Steel Tape Thickness

Inner Diameter (mm)	Thickness of Galv. Steel Tape
<	mm
30	0.2
70	0.5
-	0.8

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEBY / NA2XSEBY 3.6/6 (7.2) kV (Cu/XLPE/CTS/PVC/DSTA/PVC - Al/XLPE/CTS/PVC/DSTA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Double Steel Tape Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (appox.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	3.4	3.4
Insulation diameter (appox.)	mm		12.5	13.5	14.7	16.3	18.1	19.5	20.7	22.7	25.3	27.9	31.1
Nominal armour thickness	mm		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8
Nominal sheath thickness	mm		2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.1	3.3	3.6
Overall Cable diameter (approx.)	mm		39	42	45	49	53	56	59	64	70	76	85
Cable Net. Weight (appox.)	kg/km	Cu	2,800	3,200	3,800	4,700	5,300	6,800	7,900	9,400	11,700	14,100	18,300
		Al	2,300	2,600	2,900	3,400	3,400	4,600	5,100	5,900	7,000	8,300	10,900
Standard length per-reel	m		1,000	1,000	1,000	1,000	500	500	500	500	250	250	250
Minimum bending radius	mm		710	760	810	890	960	1,010	1,070	1,160	1,260	1,370	1,530

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		900	800	700	600	500	500	500	400	400	400	400
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.191	0.216	0.240	0.279	0.318	0.349	0.376	0.419	0.459	0.481	0.511
Inductance per-phase		mH/km		0.322	0.308	0.298	0.284	0.273	0.266	0.261	0.254	0.249	0.246	0.243
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		190	2.05	2.21	2.44	2.69	2.89	3.05	3.33	3.70	4.06	4.51
Max. current carring	In Air	A	Cu	133	172	205	256	312	359	409	468	552	627	758
capacity at 30°C			Al	102	132	159	198	239	277	314	360	420	479	591
	In Ground	A	Cu	132	170	201	245	294	334	375	424	492	552	623
			Al	101	130	155	190	228	259	291	330	384	412	493
AC Test Voltage		kV/5 min							12.5					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEBY / NA2XSEBY 6/10 (12) kV (Cu/XLPE/CTS/PVC/DSTA/PVC - Al/XLPE/CTS/PVC/DSTA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Double Steel Tape Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
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
Insulation diameter (approx.)	mm		14.3	15.3	16.5	18.1	19.9	21.3	22.5	24.5	26.9	29.1	31.9
Nominal armour thickness	mm		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8
Nominal sheath thickness	mm		2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.3	3.4	3.7
Overall Cable (approx.)	mm		44	46	49	53	57	61	64	68	74	79	87
Cable Net. Weight (approx.)	kg/km	Cu	3,200	3,700	4,300	5,200	6,400	7,400	8,500	10,000	12,300	14,600	18,700
		Al	2,700	3,00	3,400	3,900	4,600	5,200	5,700	6,500	7,600	8,800	11,300
Standard length per-reel			1,000	1,000	1,000	500	500	500	500	500	250	250	250
Minimum bending radius			800	830	890	960	1,030	1,100	1,160	1,230	1,340	1,430	1,570

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,100	1,000	900	800	700	600	600	500	500	400	400
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.161	0.181	0.200	0.230	0.261	0.286	0.306	0.341	0.382	0.420	0.467
Inductance per-phase		mH/km		0.346	0.331	0.319	0.303	0.291	0.283	0.277	0.269	0.260	0.254	0.248
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		2.15	2.30	2.46	2.69	2.94	3.14	3.31	3.58	3.92	4.23	4.62
Max. current carrying capacity at 30°C	In Air	A	Cu	134	173	206	257	313	360	410	469	553	628	759
			Al	103	133	160	199	240	278	315	361	421	480	592
	In Ground	A	Cu	133	171	202	246	295	335	376	425	493	553	624
			Al	102	131	156	191	229	260	292	331	385	413	494
AC Test Voltage		kV/5 min							21					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEBY / NA2XSEBY 8.7/15 (17.5) kV

(Cu/XLPE/CTS/PVC/DSTA/PVC - Al/XLPE/CTS/PVC/DSTA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Double Steel Tape Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
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
Insulation diameter (approx.)	mm		16.5	17.5	18.7	20.3	22.1	23.5	24.7	26.7	29.1	31.3	34.1
Nominal armour thickness	mm		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8
Nominal sheath thickness	mm		2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.3	3.4	3.6	3.9
Overall Cable (approx.)	mm		49	51	54	58	62	66	69	74	79	86	93
Cable Net. Weight (approx.)	kg/km	Cu	3,800	4,300	4,900	5,900	7,100	8,100	9,200	10,900	13,100	16,400	19,700
		Al	3,300	3,600	4,000	4,600	5,300	5,900	6,400	7,400	8,500	10,600	12,300
Standard length per-reel	m		1,000	1,000	1,000	500	500	500	500	250	250	250	250
Minimum bending radius	mm		890	920	980	1,050	1,120	1,190	1,250	1,340	1,430	1,550	1,674

ELECTRICAL DATA

				25	35	50	70	95	120	150	185	240	300	400
Min. DC Insulation resistance at 20°C		M.Ω.km		1,300	1,200	1,100	1,000	900	800	700	700	600	600	500
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.138	0.154	0.170	0.193	0.218	0.238	0.254	0.281	0.314	0.344	0.382
Inductance per-phase		mH/km		0.372	0.355	0.341	0.324	0.310	0.301	0.294	0.285	0.275	0.268	0.261
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		2.61	2.77	3.00	3.25	3.44	3.61	3.89	4.23	4.53	4.92	5.33
Max. current carrying	In Air	A	Cu	134	173	206	257	313	360	410	469	553	629	760
capacity at 30°C			Al	103	139	161	204	245	282	319	365	425	481	593
	In Ground	A	Cu	132	171	202	246	295	335	376	425	492	554	625
			Al	102	132	154	186	223	255	283	321	372	414	495
AC Test Voltage		kV/5 min							30.5					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEBY / NA2XSEBY 12/20 (24) kV (Cu/XLPE/CTS/PVC/DSTA/PVC - Al/XLPE/CTS/PVC/DSTA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Double Steel Tape Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)	mm		19.7	20.9	22.5	24.3	25.7	26.9	28.9	31.3	33.5	36.3
Nominal armour thickness	mm		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.8	0.8	0.8
Nominal sheath thickness	mm		2.7	2.9	3.0	3.1	3.2	3.3	3.4	3.6	3.8	4.0
Overall Cable (approx.)	mm		57	60	64	68	71	74	79	86	91	98
Cable Net. Weight (approx.)	kg/km	Cu	4,900	5,600	6,600	7,800	8,900	10,100	11,700	14,900	17,400	20,800
		Al	4,200	4,700	5,300	6,000	6,600	7,200	8,200	10,200	11,600	13,400
Standard length per-reel	m		500	500	500	500	250	250	250	250	250	250
Minimum bending radius	mm		1,030	1,080	1,160	1,224	1,280	1,340	1,430	1,550	1,638	1,764

ELECTRICAL DATA

				35	50	70	95	120	150	185	240	300	400
Min. DC Insulation resistance at 20°C		M.Ω.km		1,400	1,300	1,100	1,000	900	600	800	700	700	600
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.136	0.149	0.169	0.190	0.206	0.306	0.243	0.270	0.294	0.326
Inductance per-phase		mH/km		0.377	0.362	0.344	0.328	0.318	0.310	0.300	0.289	0.281	0.273
Max. short circuit current of conductor		kA/sec	Cu	5.18	7.36	10.26	13.88	21.81	21.81	26.86	34.78	43.41	57.79
			Al	3.45	4.89	6.81	9.19	14.43	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		2.92	3.08	3.31	3.56	3.92	3.31	4.2	4.53	4.84	5.23
Max. current carrying capacity at 30°C	In Air	A	Cu	173	206	257	313	410	410	469	553	629	760
			Al	139	161	199	242	318	315	365	425	481	593
	In Ground	A	Cu	171	202	246	295	376	376	425	492	554	625
			Al	132	154	191	228	292	292	331	385	437	495
AC Test Voltage		kV/5 min						42					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEBY / NA2XSEBY 18/30 (36) k V (Cu/XLPE/CTS/PVC/DSTA/PVC - Al/XLPE/CTS/PVC/DSTA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Double Steel Tape Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Insulation diameter (approx.)	mm		25.9	27.5	29.3	30.7	31.9	33.9	36.3	38.5	41.3
Nominal armour thickness	mm		0.5	0.5	0.5	0.8	0.8	0.8	0.8	0.8	0.8
Nominal sheath thickness	mm		3.2	3.3	3.5	3.6	3.7	3.9	4.0	4.2	4.4
Overall Cable (approx.)	mm		72	75	80	84	87	92	98	103	110
Cable Net. Weight (approx.)	kg/km	Cu	7,300	8,400	9,700	11,700	12,900	14,800	17,300	20,000	23,500
		Al	6,400	7,100	7,900	9,400	10,100	11,300	12,600	14,100	16,000
Standard length per-reel	m		500	500	500	250	250	250	250	250	250
Minimum bending radius	mm		1,300	1,350	1,440	1,520	1,570	1,656	1,764	1,854	1,980

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,600	1,500	1,300	1,200	1,200	1,100	1,000	900	800
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		μF/km		0.121	0.136	0.151	0.163	0.173	0.190	0.209	0.227	0.250
Inductance per-phase		mH/km		0.402	0.381	0.363	0.325	0.343	0.330	0.317	0.308	0.297
Max. short circuit current of conductor		kA/sec	Cu	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		3.77	4.00	4.25	4.45	4.62	4.90	5.23	5.54	5.93
Max. current carrying capacity at 30°C	In Air	A	Cu	207	257	313	360	410	469	553	629	766
			Al	161	199	242	280	318	365	425	481	594
	In Ground	A	Cu	202	246	295	335	376	425	492	554	626
			Al	154	187	224	256	284	331	373	415	496
AC Test Voltage		kV/5 min						63				

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEFGbY / NA2XSEFGbY
(Cu/XLPE/CTS/PVC/SFA/PVC - Al/XLPE/CTS/PVC/SFA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Flat Steel Wire Armoured,
PVC Sheathed Cable

NOMINAL VOLTAGE :

1.8/3 (3.6) kV
3.6/6 (7.2) kV
6/10 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV
18/30 (36) kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C.The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Metallic Screen

Copper tape applied over the insulation screen with overlap minimum 10%. Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Inner Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable. Thickness of inner sheath as show in table 1.

Table 1. Inner Sheath Thickness

Cores Diameter (mm)		Approx. Thickness of Inner Sheath
>	<	mm
35	45	1.4
45	60	1.6
60	80	1.8
80	-	2.0

Armouring

Galvanized flat steel wires with thickness 0.8 mm wrap helically over the surface of inner sheath minimum 95 %. And galvanized steel tape with nominal thickness 0.3 mm wrap helically minimum 50% cover the surface of the flat wires.

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEFGbY / NA2XSEFGbY 3.6/6 (7.2) kV (Cu/XLPE/CTS/PVC/SFA/PVC - Al/XLPE/CTS/PVC/SFA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Flat Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3
Insulation diameter (approx.)	mm		11.5	12.5	13.7	15.3	17.1	18.5	19.7	21.7	24.1	26.3	29.1
Nominal flat armour thickness	mm		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Nominal sheath thickness	mm		1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.8	3.0	3.2
Overall Cable (approx.)	mm		31	33	36	40	44	47	50	55	60	66	73
Cable Net. Weight (approx.)	kg/km	Cu	2,000	2,500	2,900	3,800	4,800	5,800	6,800	8,200	10,300	12,500	15,600
		Al	1,600	1,800	2,100	2,500	3,000	3,500	4,000	4,700	5,700	6,800	8,200
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	500	500	500	250	250	250
Minimum bending radius	mm		560	600	650	720	780	850	900	990	1080	1190	1320

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		900	700	700	600	500	400	400	400	300	300	300
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		μF/km		0.261	0.299	0.334	0.393	0.453	0.499	0.539	0.606	0.685	0.758	0.851
Inductance per-phase		mH/km		0.295	0.282	0.272	0.259	0.250	0.244	0.240	0.234	0.229	0.225	0.221
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		1.9	2.05	2.21	2.44	2.69	2.89	3.05	3.33	3.70	4.06	4.51
Max. current carrying capacity at 30°C	In Air	A	Cu	133	172	205	256	312	359	409	468	552	627	758
			Al	102	132	159	198	239	277	314	360	420	479	591
	In Ground	A	Cu	132	170	201	245	294	334	375	424	492	552	623
			Al	101	130	155	190	228	259	291	330	384	412	493
AC Test Voltage		kV/5 min							12.5					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEFGbY / NA2XSEFGbY 6/10 (12) kV (Cu/XLPE/CTS/PVC/SFA/PVC - Al/XLPE/CTS/PVC/SFA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Flat Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
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
Insulation diameter (approx.)	mm		14.3	15.3	16.5	18.1	19.9	21.3	22.5	24.5	26.9	29.1	31.9
Nominal armour thickness	mm		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.8
Nominal sheath thickness	mm		2.3	2.4	2.5	2.6	2.7	2.9	3.0	3.1	3.3	3.4	3.6
Overall Cable diameter (approx.)	mm		44	46	49	53	57	61	64	68	74	79	87
Cable Net. Weight (approx.)	kg/km	Cu	3,300	3,800	4,400	5,400	6,500	7,600	8,700	10,200	12,500	14,900	18,000
		Al	2,800	3,100	3,500	4,100	4,700	5,300	5,900	6,800	7,900	9,100	10,600
Standard length per-reel	m		1,000	1,000	1,000	500	500	500	500	500	250	250	250
Minimum bending radius	mm		800	830	890	960	1030	1100	1160	1230	1340	1430	1510

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,100	1,000	900	800	700	600	600	500	500	400	400
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.204	0.227	0.249	0.284	0.320	0.349	0.373	0.431	0.461	0.505	0.561
Inductance per-phase		mH/km		0.382	0.362	0.346	0.326	0.310	0.300	0.29.	0.283	0.273	0.265	0.258
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		2.15	2.30	2.46	2.69	2.94	3.14	3.31	3.58	3.92	4.23	4.62
Max. current carrying capacity at 30°C	In Air	A	Cu	134	173	206	257	313	360	410	469	553	628	759
			Al	103	133	160	199	240	278	315	361	421	480	592
	In Ground	A	Cu	133	171	202	246	295	335	376	425	493	553	624
			Al	102	131	156	191	229	260	292	331	385	413	494
AC Test Voltage		kV/5 min							21					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEFGbY / NA2XSEFGbY 8.7/15 (17.5) kV (Cu/XLPE/CTS/PVC/SFA/PVC - Al/XLPE/CTS/PVC/SFA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Flat Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area		mm2		25	35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)		mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
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
Insulation diameter (approx.)		mm		16.5	17.5	18.7	20.3	22.1	23.5	24.7	26.7	29.1	31.3	34.1
Nominal flat armour thickness		mm		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Nominal sheath thickness		mm		2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.3	3.4	3.6	3.9
Overall Cable (approx.)		mm		49	51	55	58	63	66	69	74	79	86	91
Cable Net. Weight (approx.)		kg/km	Cu	3,900	4,400	5,100	6,000	7,300	8,300	9,200	11,100	13,400	15,800	19,000
			Al	3,400	3,800	4,200	4,700	5,400	6,100	6,400	7,600	8,700	10,000	11,600
Standard length per-reel		m		1,000	1,000	1,000	500	500	500	500	250	250	250	250
Minimum bending radius		mm		890	920	990	1050	1140	1190	1250	1340	1430	1550	1640

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,300	1,200	1,100	1,000	900	800	700	700	600	600	500
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.169	0.186	0.203	0.230	0.258	0.280	0.298	0.329	0.365	0.399	0.442
Inductance per-phase		mH/km		0.408	0.386	0.369	0.347	0.330	0.319	0.310	0.299	0.288	0.279	0.271
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen				2.46	2.61	2.77	3.00	3.25	3.44	3.61	3.89	4.23	4.53	4.92
Max. current carrying	In Air	A	Cu	134	173	206	257	313	360	410	469	553	629	760
capacity at 30°C			Al	103	139	161	204	245	282	319	365	425	481	593
	In Ground	A	Cu	132	171	202	246	295	335	376	425	492	554	625
			Al	102	132	154	186	223	255	283	321	372	414	495
AC Test Voltage		kV/5 min							30.5					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEFGbY / NA2XSEFGbY 12/20 (24) kV
(Cu/XLPE/CTS/PVC/SFA/PVC - Al/XLPE/CTS/PVC/SFA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Flat Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)	mm		19.7	20.9	22.5	24.3	25.7	26.9	28.9	31.3	33.5	36.3
Nominal armour thickness	mm		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Nominal sheath thickness	mm		2.7	2.8	2.9	3.1	3.2	3.3	3.4	3.6	3.7	4.0
Overall Cable diameter (approx.)	mm		57	60	64	68	71	74	79	85	90	97
Cable Net. Weight (approx.)	kg/km	Cu	5,000	5,700	6,800	8,000	9,100	10,300	11,900	14,300	16,700	20,100
		Al	4,400	4,800	5,400	6,200	6,800	7,500	8,400	9,600	10,900	12,700
Standard length per-reel	m		500	500	500	500	500	250	250	250	250	250
Minimum bending radius	mm		1030	1080	1160	1230	1280	1340	1430	1530	1620	1750

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	700	700	600
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		µF/km		0.161	0.175	0.197	0.219	0.237	0.252	0.277	0.307	0.334	0.368
Inductance per-phase		mH/km		0.408	0.389	0.367	0.348	0.335	0.327	0.314	0.302	0.292	0.282
Max. short circuit current of conductor		kA/sec	Cu	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	2.92	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		2.92	3.08	3.31	3.56	3.75	3.92	4.2	4.53	4.84	5.23
Max. current carrying	In Air	A	Cu	173	206	257	313	360	410	469	553	629	760
capacity at 30°C			Al	139	161	199	242	280	318	365	425	481	593
	In Ground	A	Cu	171	202	246	295	335	376	425	492	554	625
			Al	132	154	191	228	260	292	331	385	437	495
AC Test Voltage		kV/5 min						42					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSEFGbY / NA2XSEFGbY 18/30 (36) kV
(Cu/XLPE/CTS/PVC/SFA/PVC - Al/XLPE/CTS/PVC/SFA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Flat Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Insulation diameter (approx.)	mm		25.9	27.5	29.3	30.7	31.9	33.9	36.3	38.5	41.3
Nominal armour thickness	mm		0.80	0.80	0.80	0.8	0.80	0.80	0.80	0.80	0.80
Nominal sheath thickness	mm		3.2	3.3	3.5	3.6	3.7	3.7	4.0	4.1	4.4
Overall Cable (approx.)	mm		72	76	80	83	86	91	98	102	109
Cable Net. Weight (approx.)	kg/km	Cu	7,500	8,600	10,000	11,200	12,400	14,400	16,600	19,200	22,700
		Al	6,600	7,300	8,100	8,900	9,500	10,600	11,900	13,400	15,300
Standard length per-reel	m		500	500	500	250	250	250	250	250	250
Minimum bending radius	mm		1,300	1,370	1,440	1,500	1,550	1,640	1,760	1,840	1,960

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,600	1,500	1,300	1,200	1,200	1,100	1,000	900	800
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778
Capacitance per-phase		μF/km		0.121	0.136	0.151	0.163	0.173	0.190	0.209	0.227	0.250
Inductance per-phase		mH/km		0.402	0.381	0.363	0.325	0.343	0.330	0.317	0.308	0.297
Max. short circuit current of conductor		kA/sec	Cu	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41	57.79
			Al	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67	38.14
Max. short circuit current of screen		kA/sec		3.77	4.00	4.25	4.45	4.62	4.90	5.23	5.54	5.93
Max. current carrying capacity at 30°C	In Air	A	Cu	207	257	313	360	410	469	553	629	766
			Al	161	205	246	283	320	365	425	481	594
	In Ground	A	Cu	202	246	295	335	376	425	492	554	626
			Al	154	187	224	256	284	331	373	415	496
AC Test Voltage		kV/5 min						63				

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSERGbY / NA2XSERGbY
(Cu/XLPE/CTS/PVC/SWA/PVC -
Al/XLPE/CTS/PVC/SWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Round Steel Wire Armoured,
PVC Sheathed Cable

NOMINAL VOLTAGE :

1.8/3	(3.6)	kV
3.6/6	(7.2)	kV
6/10	(12)	kV
8.7/15	(17.5)	kV
12/20	(24)	kV
18/30	(36)	kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Metallic Screen

Copper tape applied over the insulation screen with overlap minimum 10%.Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Inner Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable.

Thickness of inner sheath as show in table 1.

Table 1. Inner Sheath Thickness

Cores Diameter (mm)		Approx. Thickness of Inner Sheath
>	<	mm
35	45	1.4
45	60	1.6
60	80	1.8

Armour

Galvanized round steel wires wrap helically over the surface of inner sheath minimum 95 %.

And galvanized steel tape with nominal thickness 0.3 mm wrap helically minimum 50% cover the surface of the round wires.

Table 2. Nominal Diameter of Round Armour Wires

Inner Diameter (mm)		Diameter of Armour wire
>	<	mm
-	10	0.8
10	15	1.25
15	25	1.6
25	35	2.0

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSERGbY / NA2XSERGbY 3.6/6 (7.2) kV

(Cu/XLPE/CTS/PVC/SWA/PVC - Al/XLPE/CTS/PVC/SWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Round Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9
Nominal Insulation thickness	mm		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8
Insulation diameter (approx.)	mm		12.5	13.5	14.7	16.3	18.1	19.5	20.7	22.7	25.3	27.9
Steel wire armour diameter (approx.)	mm		2.00	2.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.15
Nominal sheath thickness	mm		2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.1	3.4	3.6
Overall Cable (approx.)	mm		43	45	49	53	57	60	63	68	76	82
Cable Net. Weight (approx.)	kg/km	Cu	3,660	4,175	5,260	6,330	7,555	8,640	9,840	11,510	14,490	17,587
		Al	3,185	3,520	4,410	5,040	5,774	6,398	7,088	8,040	9,924	11,880
Standard length per-reel	m		1,000	1,000	500	500	500	500	500	250	250	250
Minimum bending radius	mm		780	810	890	960	1,030	1,080	1,140	1,230	1,370	1,480

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		900	800	700	600	500	500	500	400	400	400
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100
Capacitance per-phase		μF/km		0.255	0.286	0.314	0.361	0.410	0.448	0.480	0.534	0.578	0.596
Inductance per-phase		mH/km		0.358	0.339	0.325	0.307	0.293	0.284	0.277	0.268	0.261	0.258
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67
Max. short circuit current of screen		kA/sec		1.9	2.05	2.21	2.44	2.69	2.89	3.05	3.33	3.70	4.06
Max. current carrying	In Air	A	Cu	133	172	205	256	312	359	409	468	552	627
capacity at 30°C			Al	102	132	159	198	239	277	314	360	420	479
	In Ground	A	Cu	132	170	201	245	294	334	375	424	492	552
			Al	101	130	155	190	228	259	291	330	384	412
AC Test Voltage		kV/5 min							12.5				

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSERGbY / NA2XSERGbY 6/10 (12) kV

(Cu/XLPE/CTS/PVC/SWA/PVC - Al/XLPE/CTS/PVC/SWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Round Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		25	35	50	70	95	120	150	185	240	300
Conductor diameter (approx.)	mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9
Nominal Insulation thickness	mm		3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Insulation diameter (approx.)	mm		14.3	15.3	16.5	18.1	19.9	21.3	22.5	24.5	26.9	29.1
Steel wire armour diameter (approx.)	mm		2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.15	3.15	3.15
Nominal sheath thickness	mm		2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.3	3.5	3.7
Overall Cable diameter (approx.)	mm		48	51	54	57	62	65	68	75	78	85
Cable Net. Weight (approx.)	kg/km	Cu	4,600	5,220	5,925	6,985	8,310	9,415	10,572	13,015	15,424	18,210
		Al	4,130	4,575	2,028	5,700	6,520	7,173	7,817	9,565	10,858	12,498
Standard length per-reel	m		1,000	500	500	500	500	500	250	250	250	250
Minimum bending radius	mm		870	920	980	1,030	1,120	1,170	1,230	1,350	1,410	1,530

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,100	1,000	900	800	700	600	600	500	500	400
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100
Capacitance per-phase		µF/km		0.204	0.227	0.249	0.284	0.320	0.349	0.373	0.413	0.461	0.505
Inductance per-phase		mH/km		0.382	0.362	0.346	0.326	0.310	0.300	0.29.	0.283	0.273	0.265
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67
Max. short circuit current of screen		kA/sec		2.15	2.30	2.46	2.69	2.94	3.14	3.31	3.58	3.92	4.23
Max. current carrying	In Air	A	Cu	134	173	206	257	313	360	410	469	553	628
capacity at 30°C			Al	103	133	160	199	240	278	315	361	421	480
	In Ground	A	Cu	133	171	202	246	295	335	376	425	493	553
			Al	102	131	156	191	229	260	292	331	385	413
AC Test Voltage		kV/5 min						21					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSERGbY / NA2XSERGbY 8.7/15 (17.5) kV

(Cu/XLPE/CTS/PVC/SWA/PVC - Al/XLPE/CTS/PVC/SWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Round Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area		mm2		25	35	50	70	95	120	150	185	240	300
Conductor diameter (approx.)		mm		6.05	7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9
Nominal Insulation thickness		mm		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Insulation diameter (approx.)		mm		16.5	17.5	18.7	20.3	22.1	23.5	24.7	26.7	29.1	31.3
Steel wire armour diameter (approx.)		mm		2.50	2.50	2.50	2.50	2.50	2.50	2.50	3.15	3.15	3.15
Nominal sheath thickness		mm		2.7	2.7	2.8	3.0	3.1	3.2	3.3	3.5	3.7	3.8
Overall Cable (approx.)		mm		54	56	59	63	67	70	73	79	84	90
Cable Net. Weight (approx.)		kg/km	Cu	5,432	5,992	6,723	7,922	9,210	10,355	11,530	14,275	16,650	19,354
			Al	4,957	5,334	5,825	6,627	7,427	8,177	8,780	10,803	12,087	13,642
Standard length per-reel		m		500	500	500	500	250	250	250	250	250	250
Minimum bending radius		mm		980	1,010	1,070	1,140	1,210	1,260	1,320	1,430	1,520	1,620

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,300	1,200	1,100	1,000	900	800	700	700	600	600
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601
			Al	1.200	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100
Capacitance per-phase		μF/km		0.169	0.186	0.203	0.230	0.258	0.280	0.298	0.298	0.365	0.399
Inductance per-phase		mH/km		0.408	0.386	0.369	0.347	0.330	0.319	0.310	0.310	0.288	0.279
Max. short circuit current of conductor		kA/sec	Cu	3.73	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41
			Al	2.49	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67
Max. short circuit current of screen		kA/sec		2.46	2.61	2.77	3.00	3.25	3.44	3.61	3.61	4.23	4.53
Max. current carrying	In Air	A	Cu	134	173	206	257	313	360	410	469	553	629
capacity at 30°C			Al	103	139	161	204	245	282	319	365	425	481
	In Ground	A	Cu	132	171	202	246	295	335	376	425	492	554
			Al	102	132	154	186	223	255	283	321	372	414
AC Test Voltage		kV/5 min							30.5				

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSERGbY / NA2XSERGbY 12/20 (24) kV

(Cu/XLPE/CTS/PVC/SWA/PVC - Al/XLPE/CTS/PVC/SWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Zinc Coated Round Steel Wire Armoured,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9
Nominal Insulation thickness	mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)	mm		19.7	20.9	22.5	24.3	25.7	26.9	28.9	31.3	33.5
Steel wire armour diameter (approx.)	mm		2.50	2.50	2.50	2.50	3.15	3.15	3.15	3.15	3.15
Nominal sheath thickness	mm		2.9	3.0	3.1	3.3	3.4	3.5	3.7	3.8	4.0
Overall Cable diameter (approx.)	mm		61	64	68	72	76	79	84	89	95
Cable Net. Weight (approx.)	kg/km	Cu	6,748	7,588	8,720	10,075	12,082	13,325	15,310	17,685	20,480
		Al	6,105	6,698	7,428	8,289	9,847	10,565	13,120	14,775	14,838
Standard length per-reel	m		500	500	250	250	250	250	250	250	250
Minimum bending radius	mm		1,100	1,160	1,230	1,300	1,370	1,430	1,520	1,602	1,710

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	700	700
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601
			Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100
Capacitance per-phase		μF/km		0.161	0.175	0.197	0.219	0.237	0.252	0.277	0.307	0.334
Inductance per-phase		mH/km		0.408	0.389	0.367	0.348	0.335	0.327	0.314	0.302	0.292
Max. short circuit current of conductor		kA/sec	Cu	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41
			Al	3.45	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67
Max. short circuit current of screen		kA/sec		2.92	3.08	3.31	3.56	3.75	3.92	4.2	4.53	4.84
Max. current carrying	In Air	A	Cu	173	206	257	313	360	410	469	553	629
capacity at 30°C			Al	139	161	199	242	280	318	365	425	481
	In Ground	A	Cu	171	202	246	295	335	376	425	492	554
			Al	132	154	191	228	260	292	331	385	437
AC Test Voltage		kV/5 min						42				

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : IEC 60502-2 / SNI IEC 60502-2

N2XSERGbY / NA2XSERGbY 18/30 (36) kV (Cu/XLPE/CTS/PVC/SWA/PVC - Al/XLPE/CTS/PVC/SWA/PVC)

Copper / Aluminium Conductor, XLPE Insulated, Copper Tape Screened, Zinc Coated Round Steel Wire Armoured, PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		50	70	95	120	150	185	240	300
Conductor diameter (approx.)	mm		8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9
Nominal Insulation thickness	mm		8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Insulation diameter (approx.)	mm		25.9	27.5	29.3	30.7	31.9	33.9	36.3	38.5
Steel wire armour diameter (approx.)	mm		3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15
Nominal sheath thickness	mm		3.5	3.6	3.7	3.8	3.9	4.1	4.2	4.4
Overall Cable (approx.)	mm		78	82	86	89	92	97	101	107
Cable Net. Weight (approx.)	kg/km	Cu	10,645	12,000	13,465	14,760	16,070	18,075	20,550	23,615
		Al	9,755	10,720	11,685	12,525	13,315	14,600	15,980	17,910
Standard length per-reel	m		250	250	250	250	250	200	200	200
Minimum bending radius	mm		1,404	1,476	1,548	1,602	1,656	1,746	1,818	1,926

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,600	1,500	1,300	1,200	1,200	1,100	1,000	900
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601
			Al	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100
Capacitance per-phase		μF/km		0.121	0.136	0.151	0.163	0.173	0.190	0.209	0.227
Inductance per-phase		mH/km		0.402	0.381	0.363	0.325	0.343	0.330	0.317	0.308
Max. short circuit current of conductor		kA/sec	Cu	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41
			Al	4.89	6.81	9.19	11.58	14.43	17.76	22.98	28.67
Max. short circuit current of screen		kA/sec		3.77	4.00	4.25	4.45	4.62	4.90	5.23	5.54
Max. current carrying	In Air	A	Cu	207	257	313	360	410	469	553	629
capacity at 30°C			Al	161	205	246	283	320	365	425	481
	In Ground	A	Cu	202	246	295	335	376	425	492	554
			Al	154	187	224	256	284	331	373	415
AC Test Voltage		kV/5 min					63				

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSY / NA2XSY

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Water Blocking, PVC Sheathed Cable

NOMINAL VOLTAGE :

3.6/6 (7.2) kV
6/10 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV

FEATURE :

XLPE insulated single core cable are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors. All internal interstices of conductor filled with water blocking compound which is specified to prevent ingress of water through conductor during storage, handling, installation and operating of the cable.

Conductor Screen

Extruded fully bonded semi conducting compound. Minimum thickness 0.5 mm and the maximum volume resisrivity of 5000 ohm-cm at 20 C and 25000ohm-cm at 90C.

Insulation

Extruded XLPE with high degree of cross-linking, free frol contaminants, air voids and heat resistant by dry cured.

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Conducting Water Blocking Layer

Semi-conductive water blocking tape provided over the insulation screen which will swell up under the influence of moisture or water.

Metallic Screen

Copper wires and copper tape applied over the conducting water blocking layer .Copper tapes with minimum thickness 0.1 mm and maximum 0.3 mm

Table 1. Minimum Total Cross Section of Metallic Screen

Nominal Cross Section of Cables (mm^2)	Minimum Cross Section of Metallic Screen (mm^2)
Up to 120	16
150 – 300	25
400 – 500	35

Water Blocking layer

Non-conducting water blocking tape provided over the metallic screen which will swell up under the influence of moisture or water.

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

SINGLE CORE COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSY / NA2XSY 12/20 (24) kV

Copper / Aluminium Conductor, XLPE Insulated,
Copper Tape Screened, Water Blocking, PVC Sheathed Cable

DIMENSIONAL DATA — **1 CORE**

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300	400	500	630	800
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7	26.6	30.3	34.3
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
Insulation diameter (approx.)	mm		19.7	21.5	23.1	24.7	26.4	27.6	29.4	31.5	33.7	36.8	40.2	44.6	49.5
Nominal area of copper screen	mm2		16	16	16	16	16	25	25	25	25	35	35	35	35
Nominal sheath thickness	mm		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.3
Overall Cable diameter (approx.)	mm		31	33	34	36	37	39	40	43	46	48	51	56	61
Cable Net. Weight (approx.)	kg/km	Cu	1,000	1,290	1,522	1,810	2,095	2,445	2,842	3,410	4,030	4,950	6,010	7,650	9,460
		Al	800	1,005	1,115	1,250	1,375	1,560	1,742	1,945	2,200	2,645	3,070	3,740	4,415
Standard length per-reel	m		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	500	500	500
Minimum bending radius	mm		330	492	510	545	548	590	605	652	680	725	770	845	915

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	700	700	600	600	500	400
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.542	0,367	0,268	0,193	0,153	0,124	0,0991	0,0754	0,0601	0,0470	0,0366	0,0283	0,0221
		Al	0,868	0,641	0,443	0,320	0,253	0,206	0,164	0,125	0,100	0,0778	0,0605	0,0469	0,0367
Capacitance per-phase	µF/km		0,125	0,133	0,151	0,171	0,182	0,194	0,217	0,245	0,267	0,290	0,390	0,331	0,346
Inductance per-phase	mH/km		0,393	0,380	0,358	0,338	0,329	0,320	0,307	0,293	0,284	0,277	0,271	0,266	0,263
	mH/km		0,785	0,760	0,716	0,676	0,658	0,640	0,613	0,586	0,568	0,553	0,542	0,532	0,525
Max. short circuit current of conductor	kA/sec	Cu	5,18	7,36	10,26	13,88	17,49	21,81	26,68	34,78	43,41	57.79	72,16	90,83	115,23
		Al	3,45	4,89	6,81	9,19	11,58	14,43	17,76	22,98	28,67	38.14	47,60	59,90	75,96
Max. short circuit currentof screen	kA/sec		2,77	2,92	3,14	3,38	3,67	4,66	3,99	4,31	4,60	6,21	6,69	6,11	6,63
Max. current carrying capacity at 30°C — In Air	A	Cu	199	238	296	358	412	466	532	627	715	819	927	1,009	1,121
		Al	155	184	347	278	320	363	415	493	563	652	746	806	896
		Cu	233	279	240	420	483	540	614	718	813	904	1,011	1,090	1,212
		Al	180	217	262	328	378	425	485	513	652	740	838	873	970
In Ground	A	Cu	181	214	262	312	353	394	445	513	577	647	720	782	834
		Al	139	166	203	242	276	307	348	404	455	517	576	625	666
		Cu	205	240	292	347	391	427	478	546	608	659	776	821	874
		Al	158	187	228	271	307	339	380	439	491	543	617	657	701
AC Test Voltage	kV/5 min								30						

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSEY / NA2XSEY

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape,
PVC Sheathed Cable

NOMINAL VOLTAGE :

3.6/6 (7.2) kV
6/10 (12) kV
8,7/15 (17.5) kV
12/20 (24) kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors. All internal interstice of three conductor filled with water blocking compound which is specified to prevent ingress of water through conductor during storage , handling, installation and operating of the cable

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C.

The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Conducting Water Blocking Layer

Semi-conductive water blocking tape provided over the insulation screen which will swell up under the influence of moisture or water

Metallic Screen

Copper wire and copper tape applied over the conducting water blocking layer. Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Table 1. Minimum Total Cross Section of Metallic Screen

Nominal Cross Section of Cables (mm2)	Minimum Cross Section of Metallic Screen (mm2)
Up to 120	16
150-300	25
400-500	35

Water Blocking Layer

Non conducting water blocking tape provided over the metallic screen which will swell up under the influence of moisture or water.

Outer Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSEY / NA2XSEY 12/20 (24) kV

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape,
PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)	mm		20.2	21.5	23.1	24.7	26.3	27.5	29.3	31.5	33.6	36.7
Nominal area of copper screen	mm		16	16	16	16	16	25	25	25	25	35
Nominal sheath thickness	mm		3.4	3.5	3.6	3.7	3.8	3.9	4.1	4.3	4.4	4.6
Overall Cable diameter (approx.)	mm		62	66	69	72	77	79	84	90	95	101
Cable Net. Weight (approx.)	kg/km	Cu	4,576	5,358	6,250	7,360	8,415	9,685	11,192	13,285	15,730	19,014
		Al	3,930	4,490	5,030	5,650	6,255	7,005	7,850	8,885	10,268	12,080
Standard length per-reel	m		500	500	500	500	250	250	250	250	250	250
Minimum bending radius	mm		850	995	1,030	1,095	1,160	1,195	1,265	1,340	1,430	1,515

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	700	700	600
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.102	0.0788
Capacitance per-phase		µF/km		0.160	0.175	0.196	0.217	0.238	0.254	0.275	0.305	0.332	0.369
Inductance per-phase		mH/km		0.406	0.380	0.358	0.338	0.328	0.319	0.306	0.293	0.284	0.276
Max. short circuit current of conductor		kA/sec	Cu	5.18	7.10	10.26	13.88	17.35	21.43	27.00	34.78	43.41	57.00
			Al	3.45	5.02	6.1	6.81	10.95	14.02	17.05	22.79	28.03	38.01
Max. short circuit current of screen		kA/sec		2.9	3.1	3.0	3.0	3.0	4.6	4.6	4.6	4.6	6.4
Max. current carrying	In Air	A	Cu	173	221	207	335	380	430	492	580	669	775
capacity at 30°C			Al	130	134	160	237	279	315	336	438	470	544
	In Ground	A	Cu	165	183	203	264	297	338	380	440	496	562
			Al	121	142	156	203	238	264	295	339	389	430
AC Test Voltage		kV/5 min						30					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSEYBY / NA2XSEYBY

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape,
Zinc-coated Double Steel Tape Armoured, PVC Sheathed Cable

NOMINAL VOLTAGE :

3.6/6 (7.2) kV
6/10 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors. All internal interstices of three conductor filled with water blocking compound which is specified to prevent ingress of water through conductor during storage, handling, installation and operating of the cable

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to installation to exclude all air void and can be easily hand stripped on site.

Conducting Water Blocking Layer

Semi-conductive water blocking tape provided over the installation. screen which will swell up under the influence of moisture or water.

Metallic Screen

Copper wire and copper tape applied over the conducting water blocking layer .Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Table 1. Minimum Total Cross Section of Metallic Screen

Nominal Cross Section of Cables (mm^2)	Minimum Cross Section of Metallic Screen (mm^2)
Up to 120	16
150 – 300	25
400 – 500	35

Water Blocking layer

Non-conducting water blocking tape provided over the metallic screen which will swell up under the influence of moisture or water.

Inner Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable

Armour

Double layers of galvanized steel tape applied helically with proper over laping over the inner sheath.

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES COPPER / ALUMINIUM XLPE INSULATED ARMOURED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSEYBY / NA2XSEYBY 12/20 (24) kV

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape,
Zinc-coated Double Steel Tape Armoured, PVC Sheathed Cable

DIMENSIONAL DATA

3 CORES

Nominal cross sectional area	mm2		35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)	mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness	mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)	mm		20.3	21.5	23.1	24.7	26.3	27.5	29.3	31.5	33.6	36.7
Nominal area of copper screen	mm		16	16	16	16	16	25	25	25	25	35
Nominal sheath thickness	mm		3.4	3.5	3.7	3.8	3.8	4.1	4.2	4.4	4.6	4.8
Overall Cable (approx.)	mm		65	68	72	76	79	84	88	93	101	107
Cable Net. Weight (approx.)	kg/km	Cu	5,865	6,362	7,345	8,510	9,627	12,498	13,323	15,565	18,198	21,671
		Al	5,198	5,500	6,124	6,808	7,474	9,065	9,990	11,160	12,740	14,740
Standard length per-reel	m		500	500	500	250	250	250	250	250	200	200
Minimum bending radius	mm		975	1,020	1,080	1,140	1,185	1,260	1,320	1,395	1,500	1,602

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C			1,400	1,300	1,100	1,000	900	900	800	700	700	600
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
		Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.102	0.0788
Capacitance per-phase	µF/km		0.123	0.175	0.196	0.217	0.238	0.254	0.275	0.305	0.332	0.369
Inductance per-phase	mH/km		0.399	0.380	0.358	0.338	0.328	0.319	0.306	0.293	0.284	0.276
Max. short circuit current of conductor	kA/sec	Cu	5.18	7.10	10.26	13.88	17.35	21.43	27.00	34.78	43.41	57.00
		Al	3.45	5.02	6.10	8.89	10.95	14.02	17.05	22.79	28.03	38.01
Max short circuit current of screen	kA/sec		2.92	3.05	3.00	3.00	3.00	4.60	4.60	4.60	4.60	6.40
Max. current carrying In Air	A	Cu	173	221	275	335	380	430	492	580	669	775
capacity at 30°C		Al	139	134	205	237	279	315	366	428	470	544
In Ground	A	Cu	171	183	223	264	297	338	380	440	496	562
		Al	132	142	174	203	238	264	295	339	389	430
AC Test Voltage	kV/5 min						30.5					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSEYFGbY / NA2XSEYFGbY

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape
Zinc-coated Flat Steel Armoured, PVC Sheathed Cable

NOMINAL VOLTAGE :

3.6/6 (7.2) kV
6/10 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors. All internal interstices of three conductor filled with water blocking compound which is specified to prevent ingress of water through conductor during storage, handling, installation and operating of the cable

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to installation to exclude all air void and can be easily hand stripped on site.

Conducting Water Blocking Layer

Semi-conductive water blocking tape provided over the installation screen which will swell up under the influence of moisture or water.

Metallic Screen

Copper wires and copper tape applied over the conducting water blocking layer .Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Table 1. Minimum Total Cross Section of Metallic Screen

Nominal Cross Section of Cables (mm^2)	Minimum Cross Section of Metallic Screen (mm^2)
Up to 120	16
150 – 300	25
400 – 500	35

Water Blocking layer

Non-conducting water blocking tape provided over the metallic screen which will swell up under the influence of moisture or water.

Inner Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable

Armour

Flat steel wires with thickness 0.8 mm wrap helically over the surface of inner sheath minimum 90%. And galvanized steel tape with nominal thickness 0.3 mm wrap helically minimum 50% cover the surface of the flat wires.

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSEYFGbY / NA2XSEYFGbY 12/20 (24) kV

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape
Zinc-coated Flat Steel Armoured, PVC Sheathed Cable

DIMENSIONAL DATA — **3 CORES**

Nominal cross sectional area		mm2		35	50	70	95	120	150	185	240	300	400
Conductor diameter (approx.)		mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9	23.7
Nominal Insulation thickness		mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)		mm		20.1	21.5	23.1	24.7	26.3	27.5	29.3	31.5	33.6	36.7
Nominal area of copper screen		mm^2		16	16	16	16	16	25	25	25	25	35
Nominal armour thickness		mm		0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Nominal sheath thickness		mm		3.5	3.6	3.7	3.8	3.8	4.1	4.2	4.4	4.6	4.8
Overall Cable (approx.)		mm		65	68	72	76	79	84	88	93	101	107
Cable Net. Weight (approx.)		kg/km	Cu	6,172	6,362	7,435	8,510	9,627	12,498	13,323	15,565	18,198	21,671
			Al	5,498	5,500	6,124	6,808	7,474	9,065	9,990	11,160	12,740	14,740
Standard length per-reel		m		500	500	500	250	250	250	250	250	200	200
Minimum bending radius		mm		970	1,020	1,080	1,140	1,185	1,260	1,320	1,395	1,500	1,602

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	700	700	600
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601	0.0470
			Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.102	0.0788
Capacitance per-phase		µF/km		0.160	0.175	0.196	0.217	0.238	0.254	0.275	0.305	0.332	0.369
Inductance per-phase		mH/km		0.406	0.388	0.364	0.364	0.333	0.323	0.313	0.301	0.291	0.281
Max. short circuit current of conductor		kA/sec	Cu	5.18	7.10	10.26	13.88	17.35	21.43	27.00	34.78	43.41	57.00
			Al	3.45	5.02	6.10	8.89	10.95	14.02	17.05	22.79	28.03	38.01
Max short circuit current of screen		kA/sec		2.93	3.05	3.00	3.00	3	4.6	4.6	4.6	4.6	6.4
Max. current carrying	In Air	A	Cu	173	221	275	335	380	430	492	580	669	775
capacity at 30°C			Al	138	134	205	237	279	315	366	428	570	544
	In Ground	A	Cu	164	183	223	264	297	338	380	440	496	562
			Al	127	142	174	203	238	264	295	339	389	430
AC Test Voltage		kV/5 min						30					

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSEYRGbY / NA2XSEYRGbY

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape
Zinc-coated Round Steel Armoured, PVC Sheathed Cable

NOMINAL VOLTAGE :

3.6/6 (7.2) kV
6/10 (12) kV
8.7/15 (17.5) kV
12/20 (24) kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors. All internal interstices of three conductor filled with water blocking compound which is specified to prevent ingress of water through conductor during storage, handling, installation and operating of the cable

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to installation to exclude all air void and can be easily hand stripped on site.

Conducting Water Blocking Layer

Semi-conductive water blocking tape provided over the installation screen which will swell up under the influence of moisture or water.

Metallic Screen

Copper wires and copper tape applied over the conducting water blocking layer.

Copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Table 1. Minimum Total Cross Section of Metallic Screen

Nominal Cross Section of Cables (mm^2)	Minimum Cross Section of Metallic Screen (mm^2)
Up to 120	16
150 – 300	25
400 – 500	35

Water Blocking layer

Non-conducting water blocking tape provided over the metallic screen which will swell up under the influence of moisture or water.

Inner Sheath

Extruded black PVC, capable for operating continuously maximum temperature of the cable

Armour

Galvanized round steel wires wrap helically over the surface of inner sheath minimum 95% and galvanized steel tape with nominal thickness 0.3 mm wrap helically minimum 50% cover the surface of the flat wires.

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

N2XSEYRGbY / NA2XSEYRGbY 12/20 (24) kV

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape
Zinc-coated Round Steel Armoured, PVC Sheathed Cable

DIMENSIONAL DATA — **3 CORES**

Nominal cross sectional area		mm2		35	50	70	95	120	150	185	240	300
Conductor diameter (approx.)		mm		7.1	8.25	9.9	11.7	13.1	14.3	16.3	18.7	20.9
Nominal Insulation thickness		mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)		mm		19.7	21.5	23.1	24.7	26.3	27.5	29.3	31.5	33.6
Nominal area of copper screen		mm^2		16	16	16	16	16	25	25	25	25
Nominal armour thickness		mm		2.50	2.50	2.50	3.15	3.15	3.15	3.15	3.15	3.15
Nominal sheath thickness		mm		3.6	3.7	3.8	4.0	4.1	4.2	4.4	4.5	4.7
Overall Cable (approx.)		mm		68	71	75	81	84	87	92	96	102
Cable Net. Weight (approx.)		kg/km	Cu	7,960	8,750	9,842	12,230	13,599	15,018	16,889	19,312	22,086
			Al	7,285	7,864	8,654	10,408	11,185	12,226	13,412	14,753	16,484
Standard length per-reel		m		500	500	500	250	250	250	200	200	200
Minimum bending radius		mm		1,230	1,280	1,350	1,460	1,520	1,570	1,656	1,728	1,836

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C		M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	700	700
Max. DC conductor resistance at 20°C		Ω/km	Cu	0.524	0.387	0.268	0.193	0.153	0.124	0.099	0.0754	0.0601
			Al	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.102
Capacitance per-phase		µF/km		0.154	0.175	0.196	0.217	0.238	0.254	0.275	0.305	0.332
Inductance per-phase		mH/km		0.408	0.389	0.367	0.348	0.335	0.327	0.314	0.302	0.292
Max. short circuit current of conductor		kA/sec	Cu	5.2	7.1	10.26	13.88	17.35	21.43	27.00	34.78	43.41
			Al	3.46	5.02	6.10	8.89	10.95	14.02	17.05	22.79	28.03
Max short circuit current of screen		kA/sec		2.93	3.05	3.00	3.00	3.00	4.6	4.6	4.6	4.6
Max. current carrying	In Air	A	Cu	173	206	258	313	216	410	469	553	631
capacity at 30°C			Al	138	162	198	245	282	318	365	425	481
	In Ground	A	Cu	170	204	246	295	332	376	425	493	553
			Al	131	152	192	228	258	294	332	384	438
AC Test Voltage		kV/5 min						30				

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

NF2XSEY / NFA2XSEY

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape, PVC Sheathed Cable

NOMINAL VOLTAGE :

12/20 (24) kV

FEATURE :

XLPE insulated three cores cables are applied for installation :

Indoors
Outdoors
Underground
Cable Tray

CONSTRUCTION

Conductor

Stranded compacted circular copper or aluminium conductors. All internal interstices of three conductor filled with water blocking compound which is specified to prevent ingress of water through conductor during storage, handling, installation and operating of the cable

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Conducting Water Blocking Layer

Semi-conductive water blocking tape provided over the insulation screen which will swell up under the influence of moisture or water.

Metallic Screen

Copper wires and copper tape applied over the conducting water blocking layer copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Table 1. Minimum Total Cross Section of Metallic Screen

Nominal Cross Section of Cables (mm^2)	Minimum Cross Section of Metallic Screen (mm^2)
Up to 120	16
150 – 300	25
400 – 500	35

Water Blocking layer

Non-conducting water blocking tape provided over the metallic screen which will swell up under the influence of moisture or water.

Outer Sheath

Extruded red PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES COPPER / ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

NF2XSEY / NFA2XSEY 12/20 (24) kV

Copper / Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, Water Blocking Tape,
PVC Sheathed Cable

DIMENSIONAL DATA — **3 CORES**

Nominal cross sectional area	mm2		3x35	3x50	3x70	3x95	3x120	3x150	3x185	3x240	3x300
Conductor diameter (approx.)	mm		7.1	8.20	10.1	11.8	13.2	14.5	16.3	18.5	20.9
Nominal Insulation thickness	mm		5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)	mm		19.7	20.9	22.5	24.3	25.7	26.9	28.9	31.3	33.5
Nominal area of copper screen	mm^2		16	16	16	16	16	25	25	25	25
Nominal sheath thickness	mm		1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2
Overall Cable diameter (approx.)	mm		58	63	66	69	72	77	81	84	88
Cable Net. Weight (approx.)		Cu	3,120	3,685	4,290	5,200	6,104	7,392	8,368	10,391	12,100
		Al	2,461	2,792	3,064	3,445	3,785	4,785	4,939	5,785	6,300
Standard length per-reel	m		500	500	500	500	500	500	500	500	250
Minimum bending radius	mm		470	500	540	580	620	660	700	760	820

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	M.Ω.km		1,400	1,300	1,100	1,000	900	900	800	700	700
Max. DC conductor resistance at 20°C	Ω/km	Cu	0.512	0.387	0.268	0.193	0.153	0.124	0.099	0.075	0.075
		Al	0.868	0.641	0443	0.32	0.253	0.206	0.164	0.125	0.125
Capacitance per-phase	µF/km		0.107	0.117	0.130	0.144	0.154	0.162	0.178	0.196	0.210
Inductance per-phase	mH/km		0.416	0.399	0.38	0.362	0.351	0.343	0.331	0.318	0.309
Max. short circuit current of	kA/sec	Cu	5.18	7.36	10.26	13.88	17.49	21.81	26.86	34.78	43.41
Conductor		Al	3.45	4.39	6.81	9.19	11.58	14.43	17.76	22.98	28.67
Max. short circuit current of screen	kA/sec		2.77	2.92	3.14	3.38	3.57	4.66	3.99	4.31	4.6
Max. current carrying capacity at 30°C	A	Cu	178	207	252	306	345	387	436	502	568
		Al	135	158	199	235	265	299	338	396	447
AC Test Voltage	kV/5 min						30				

THREE CORES ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

NFA2XSY-T

Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, PVC Sheathed Cable
With Zinc-coated Round Steel Wire Messenger

NOMINAL VOLTAGE :

12/20 (24) kV

FEATURE :

XLPE insulated three cores cables are applied for installation Outdoors (Aerial Cable)

CONSTRUCTION

Conductor

Stranded compacted circular alumunium conductors. All internal interstices of three conductor filled with water blocking compound which is specified to prevent ingress of water through conductor during storage, handling, installation and operating of the cable

Conductor Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C

Insulation

Extruded XLPE with high degree of cross-linking, free form contaminants, air voids and heat resistant by dry cured process

Insulation Screen

Extruded semi-conducting compound. Minimum thickness 0.5 mm and the maximum volume resistivity of 5000 ohm-cm at 20°C and 25000 ohm-cm at 90°C. The screen is tightly fitted to insulation to exclude all air void and can be easily hand stripped on site.

Metallic Screen

Copper tape applied over the Insulation screen copper tape with minimum thickness 0.1 mm and maximum 0.3 mm

Table 1. Minimum Total Cross Section of Metallic Screen

Nominal Cross Section of Cables (mm^2)	Minimum Cross Section of Metallic Screen (mm^2)
Up to 120	16
150 – 300	25
400 – 500	35

Outer Sheath

Extruded black PVC, suitable for exposure to sun-light or other local atmospheric environments and for the operating temperature of the cable.

THREE CORES ALUMINIUM XLPE INSULATED MEDIUM VOLTAGE CABLE

SPECIFICATION : SPLN 43-5

NFA2XSY-T 12/20 (24) kV

Aluminium Conductor, XLPE Insulated,
Copper Wire / Tape Screened, PVC Sheathed Cable
With Zinc-coated Round Steel Wire Messenger

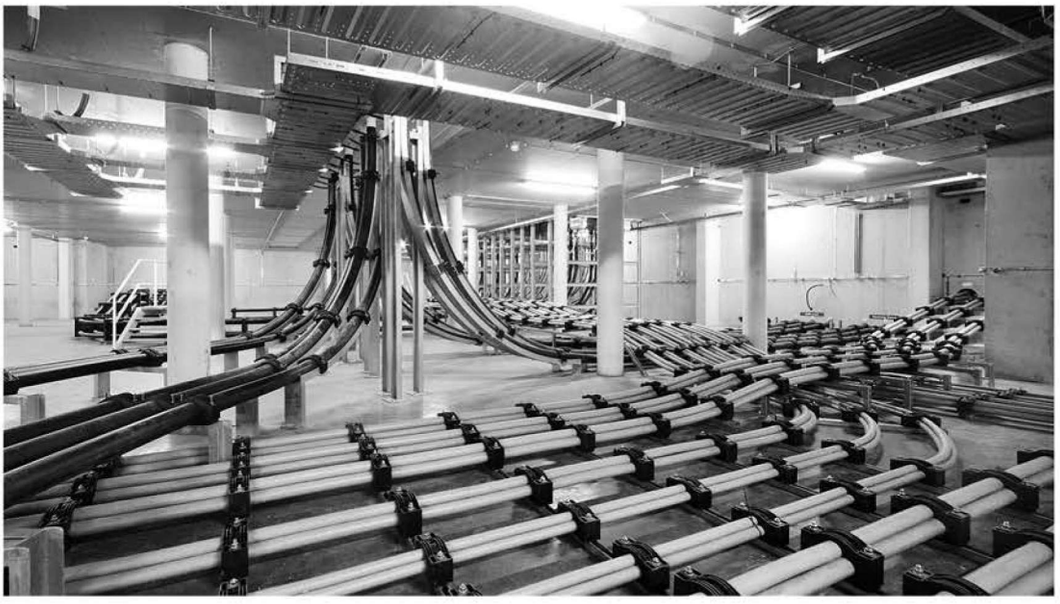
DIMENSIONAL DATA — **3 CORES**

Nominal cross sectional area	mm2	3x35+50	3x50+50	3x70+50	3x95+50	3x120+50	3x150+50	3x185+50	3x240+50	3x300+50
Conductor diameter (approx.)	mm	7.1	8.20	10.1	11.8	13.2	14.2	16.1	18.3	20.8
Messenger conductor diameter (approx.)	mm	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Nominal Insulation thickness	mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Insulation diameter (approx.)	mm	19.7	20.9	22.5	24.3	25.7	26.8	28.8	30.9	33.1
Nominal area of copper screen	mm^2	16	16	16	16	16	16	16	16	16
Nominal sheath thickness	mm	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.2
Overall Cable diameter (approx.)	mm	55	57	62	65	71	74	78	84	88
Cable Net. Weight (approx.)	Kg/km	2,800	3,100	3,520	3,895	4,290	4,800	5,200	6,010	6,815
Standard length per-reel	m	500	500	500	500	250	250	250	250	250
Minimum bending radius	mm	470	500	905	580	620	650	700	760	820

ELECTRICAL DATA

Min. DC Insulation resistance at 20°C	Ω/km	1,400	1,300	1,100	1,000	900	900	800	700	700
Max. DC conductor resistance at 20°C	Ω/km	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100
Capacitance per-phase	µF/km	0.106	0.116	0.128	0.141	0.152	0.160	0.175	0.189	0.206
Inductance per-phase	mH/km	0.418	0.400	0.382	0.365	0.354	0.346	0.333	0.324	0.312
Max. short circuit current of	kA/sec conductor	3.45	4.89	6.81	9.19	11.58	14.43	17.68	22.98	28.68
	screen	2.77	2.92	3.14	3.38	3.57	4.66	3.95	4.35	4.62
Max. current carrying capacity at 30°C	A	142	165	204	247	287	326	375	438	485
AC Test Voltage	kV/5 min					30				

Derating Factors



DERATING FACTORS

I.Cables laid in the ground

Table I-1

Derating factor for variation in ground temperature

Ground Temperature (°C)	20	25	30	35	40
XLPE Cables	1.08	1.04	1.00	0.95	0.91
PVC Cables	1.12	1.07	1.00	0.94	0.87

Table I-2

Derating factors for variation thermal resistivity of soil

Thermal Resistivity of Soil (°C)	70	100	150	250
XLPE Cables	1.12	1.00	0.87	0.78
PVC Cables	1.11	1.00	0.82	0.70

Table I-3

Derating factor for variation in depth of laying

Depth of Laying (cm)	50	70	100	120	150	200
XLPE Cables	1.02	1.00	0.98	0.97	0.95	0.94
PVC Cables	1.01	1.00	0.99	0.98	0.97	0.95

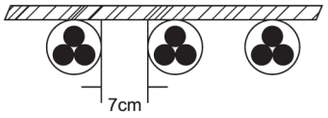


Table I-4-1

Derating factor for grouping multi core cables

NUMBER OF GROUP	1	2	3	4	5	6	8	10
XLPE Cables	1	0.86	0.76	0.71	0.67	0.64	0.60	0.57
PVC Cables	1	0.85	0.75	0.68	0.64	0.60	0.56	0.53

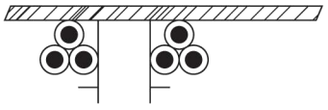


Table I-4-2

Derating factor for grouping single core cables in trefoil formation

NUMBER OF GROUP	1	2	3	4	5	6	8	10
XLPE Cables	1	0.89	0.82	0.78	0.75	0.73	0.70	0.68
PVC Cables	1	0.90	0.82	0.78	0.76	0.74	0.71	0.69

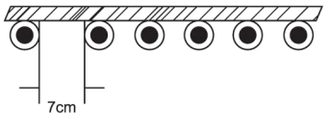


Table I-4-3

Derating factor for grouping single core cables in trefoil formation

NUMBER OF GROUP	1	2	3	4	5	6	8	10
XLPE Cables	1	0.87	0.77	0.73	0.70	0.68	0.65	0.63
PVC Cables	1	0.87	0.78	0.74	0.70	0.68	0.65	0.63

DERATING FACTORS

II.Cables laid in the air

Table II-1

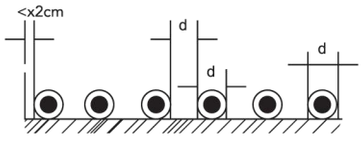
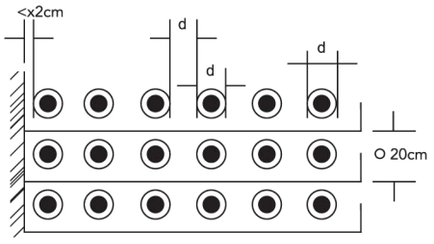
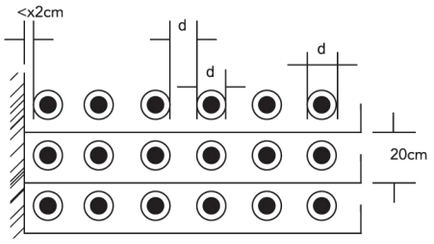
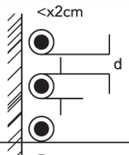
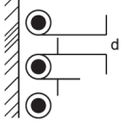
Derating factor for variation in air temperature

Air Temperature (°C)	20	25	30	35	40	45	50
XLPE Cables	1.08	1.04	1.00	0.95	0.91	0.87	0.82
PVC Cables	1.12	1.07	1.00	0.93	0.87	0.79	0.71

Grouping in Air

Table II-2 Single Core Cables in Three-phase Systems

These factors are valid only under the condition that the ambient temperature is not perceptibly increased by the heat generated by the cable (see note*)

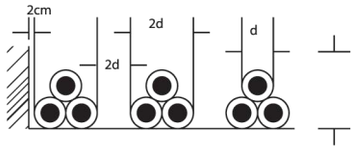
Distance from the wall ≥ 2cm Clearance between cables - diameter d	Number of System Rating Factors	1	2	3
Cables laid on the ground in flat formation				
		0.92	0.89	0.88
Cables laid on troughs (circulation of air is restricted)				
	Number at troughs			
	1	0.92	0.89	0.89
	2	0.87	0.84	0.83
	3	0.84	0.82	0.81
	5	0.82	0.80	0.73
Cables laid on racks in flat formation				
	Number of racks			
	1	1	0.97	0.95
	2	0.97	0.94	0.93
	3	0.95	0.93	0.92
	5	0.94	0.91	0.80
Cables arranged on structures or on the wall				
		0.94	0.91	0.89
	Touching the wall	0.89	0.85	0.84

Note : * If the ambient temperature is change, apply the derating factor in the table II-1

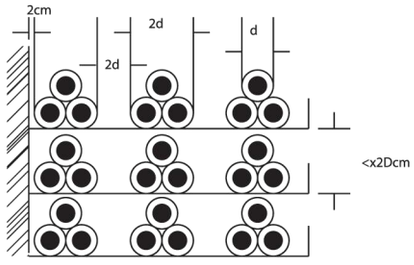
DERATING FACTORS

Distance from the wall ≥ 2cm Clearance between system = 2d	Cable laid trefoil formation Number of System Rating Factors	1	2	3

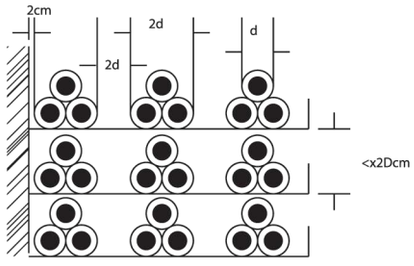
Cables laid on the ground in flat formation

	0.95	0.9	0.88

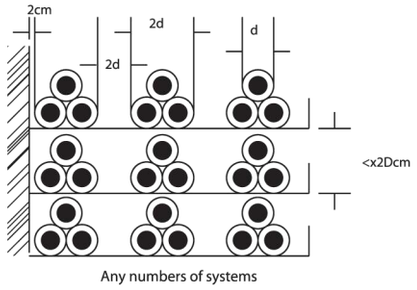
Cables laid on troughs (circulation of air is restricted)

	Number at troughs			
	1	0.92	0.89	0.88
	2	0.87	0.84	0.83
	3	0.84	0.82	0.81
	6	0.82	0.80	0.73

Cables laid on racks in flat formation

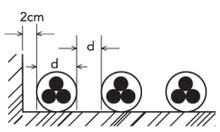
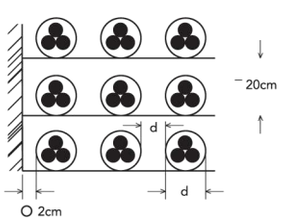
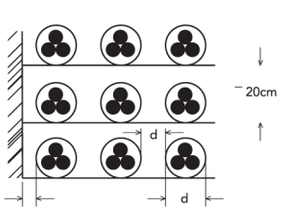
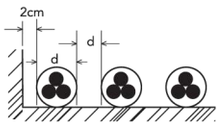
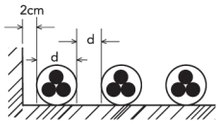
	Number of racks			
	1	1	0.98	0.96
	2	1	0.95	0.93
	3	1	0.94	0.92
	5	1	0.93	0.9

Arrangements for which a reduction of the current rating is not necessary

In the case of flat formation which increased distance the r eduction in the manual heating is offset by gr eater sheath losses. It is impossible, therefor e, to give data about arrangement for which a reduction is not necessary	 Any numbers of systems

DERATING FACTORS

Table II - 3. Multi-Core Cables in Three-phase Systems and Single-core Cable in D.C. System. These factors are valid only under the condition that ambient temperature is not perceptibly increased by the heat generated by the cable (see note*)

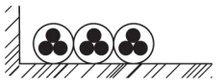
Distance from the wall ≥ 2cm Clearance between cables - diameter d	Number of System Rating Factors	1	2	3	4	5
Cables laid on the ground in flat formation						
		0.95	0.9	0.88	0.85	0.84
Cables laid on troughs (circulation of air is restricted)						
	Number at troughs					
	1	0.95	0.9	0.88	0.85	0.84
	2	0.9	0.85	0.83	0.81	0.8
	3	0.88	0.83	0.81	0.79	0.79
	4	0.85	0.81	0.79	0.77	0.75
Cables laid on racks in flat formation						
	Number of racks					
	1	1	0.98	0.95	0.93	0.92
	2	1	0.95	0.93	0.9	0.89
	3	1	0.94	0.92	0.89	0.88
	4	1	0.93	0.9	0.87	0.86
Cables arranged on structure or on wall						
		1	0.93	0.9	0.87	0.86
Arrangements for which a reduction of the current rating is nor necessary						
	Any number of cables					

Note : * If the ambient temperature is change, apply the derating factor in the table II-1

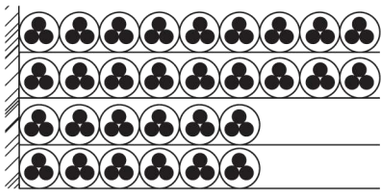
DERATING FACTORS

Cables touching throughout and n contact with the wall	Number of System Rating Factors	1	2	3	4	5

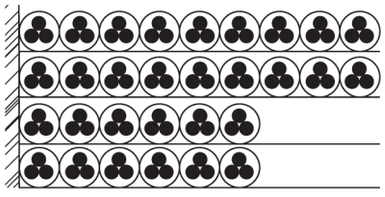
Cables laid on the ground in flat formation

		0.9	0.84	0.8	0.75	0.73

Cables laid on the ground in flat formation

	Number at troughs					
 30cm	1	0.95	0.84	0.8	0.75	0.73
	2	0.95	0.8	0.75	0.71	0.59
	3	0.95	0.78	0.74	0.7	0.58
	4	0.95	0.75	0.72	0.58	0.55

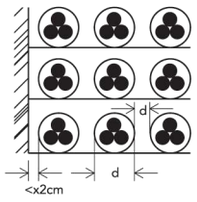
Cables laid on the ground in flat formation

	Number at troughs					
 30cm	1	0.95	0.84	0.8	0.75	0.73
	2	0.95	0.8	0.75	0.71	0.59
	3	0.95	0.78	0.74	0.7	0.58
	4	0.95	0.75	0.72	0.58	0.55

Cables laid on the ground in flat formation

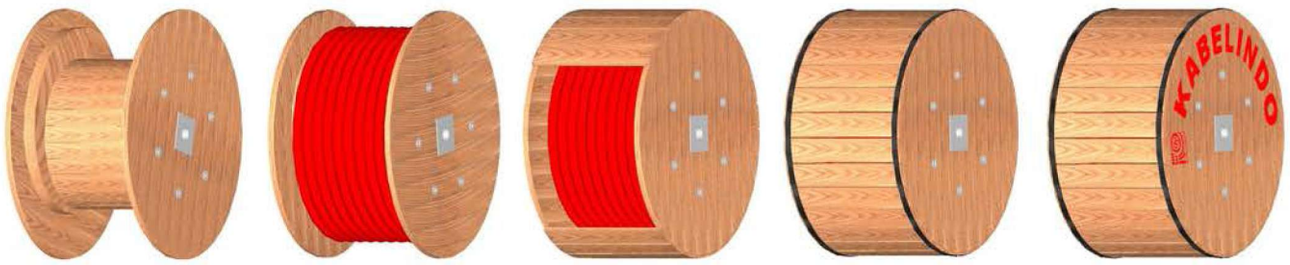
		0.85	0.78	0.73	0.68	0.66

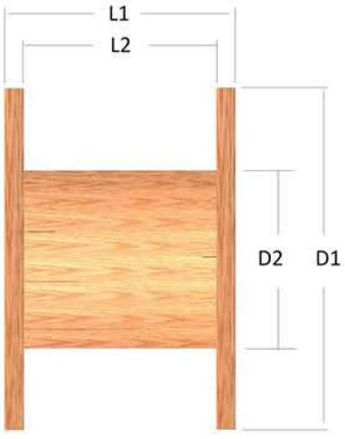
Arrangements for which a reduction of the current rating is not necessary

 30cm Distance from wall > 2cm Clearance between cables 2d	Any numbers of systems

Note : * If the ambient temperature is change, apply the derating factor in the table II-1

DRUM PACKING





Drum Dimension (Wooden Drum)

Drum Type	D1 (mm)	D2 (mm)	L1 (mm)	L2 (mm)	Volume Drum (m^3)	Weight (kg) Approx.
09C	900	350	690	600	0.56	65
11A	1100	450	690	600	0.83	94
14B	1400	600	1060	920	2.08	260
15A	1500	600	690	550	1.58	192
16B	1600	850	1060	920	2.71	315
18A	1800	850	1060	920	3.45	350
20A	2000	850	1060	920	4.25	395
20B	2000	1100	1450	1240	5.80	506
24C	2400	1500	1470	1200	8.50	780
24D	2400	1600	1770	1500	10.20	990

* Also Available in semi-steel drum and full steel drum, by request

DRUM HANDLING

Notes

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