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

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N2XSEY / NA2XSEY 12/20 (24) kV

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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 capacity at 30°C	In Air	A	Cu	173	221	207	335	380	430	492	580	669	775
			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					