

GUARANTEED CHARACTERISTICS OF XLPE INSULATED MEDIUM VOLTAGE CABLE

1x500/35mm² NA2XS2Y 6/10(12)kV

GENERAL

• Cable Code	:	NA2XS2Y
• Applied Standards	:	IEC 60502-2
• Voltage Rate (U ₀)	(kV) :	6
• Voltage Rate (U)	(kV) :	10
• Max Operating Voltage (U _m)	(kV) :	12

STRUCTURAL PROPERTIES

CONDUCTOR

• Material	:	Aluminium
• Cross-Section Area	(mm ²) :	500
• Number & Diameter of Wires	(No x mm) :	58x3,40
• Type of Stranding	:	CIRCULAR COMPACTED
• Outer Diameter (Approx.)	(mm) :	26,90
• Number of Core	(No) :	1

CONDUCTOR SCREEN

• Material	:	Semiconductive XLPE
• Nominal Thickness	(mm) :	0,50
• Minimum Thickness	(mm) :	0,30
• Outer Diameter (Approx.)	(mm) :	28,20

INSULATION

• Material	:	XLPE
• Nominal Thickness	(mm) :	3,40
• Minimum Thickness	(mm) :	2,96
• Outer Diameter (Approx.)	(mm) :	35,00

INSULATION SCREEN

• Material	:	Semiconductive XLPE
• Nominal Thickness	(mm) :	0,50
• Minimum Thickness	(mm) :	0,30
• Outer Diameter (Approx.)	(mm) :	36,00
• Semi Conductive Tape	:	S.C. Tape
• Tape Thickness	(mm) :	0,20

METALLIC SCREEN

• Material	:	Copper
• Type	:	Wire&Tape
• Number & Diameter of Wires	(No x mm) :	102x0,67 or 72x0,80 or 42x1,04
• Thickness & Width of Copper Tape	(mm x mm) :	0,10x10
• Tape for Protection	(mm) :	0,05
• Outer Diameter (Approx.)	(mm) :	39,00
• Total Cross Section Area	(mm ²) :	35,00

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INNER SHEATH (Filler+Bedding)

• Filler Material		:	-
• Bedding Material		:	-
• Nominal Thickness	(mm)	:	-
• Minimum Thickness	(mm)	:	-

METALLIC ARMOUR

• Material		:	-
• Number & Diameter of Wires	(No x mm)	:	-
• Thickness of Steel Tape	(mm)	:	-
• Width of Steel Tape	(mm)	:	-
• Binding Ratio	(%)	:	-

OUTER SHEATH

• Material		:	HDPE
• Colour		:	Black
• Nominal Thickness	(mm)	:	2,40
• Minimum Thickness	(mm)	:	1,72

ELECTRICAL PROPERTIES

• Test Voltage of 5 Minute Duration	(kV-rms)	:	21
• Impulse Test Voltage	(kV-Peak)	:	75
• Continuous Current Carrying Capacity in Air at 30 °C	(A)	:	753 ^{**} / 838 ^{***}
• Continuous Current Carrying Capacity in Ground at 20 °C	(A)	:	606 ^{**} / 630 ^{***}
• Continuous Current Carrying Capacity in Duct	(A)	:	575 ^{**} / 579 ^{***}

^{**} Trefoil Formation, ^{***} Flat Formation

Above current carrying capacities are calculated at the following laying conditions:

- Ambient Temperature of Air	30 °C
- Soil Temperature	20 °C
- Depth of Laying	0,8 m
- Thermal Resistivity of Soil	1,5 K m /W

• Inductance	(mH/km)	:	0,287 ^{**} / 0,333 ^{***}
• Capacitance	(µF/km)	:	0,613
• Insulation Resistance	(MΩ/km)	:	5137

• Dielectric Losses (at 90 °C, 3 phases)	(W/km)	:	83,194
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• Max. Continuous Conductor Temperature	(°C)	:	90
• Max. Conductor Temperature at Short Circuit Condition	(°C)	:	250 (5 s max. duration)

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Maximum Short-Circuit Current

(Start Temperature 90 °C, End Temperature 250 °C)

• Duration of 5 seconds	(kA)	:	21,02
• Duration of 1 seconds	(kA)	:	47,00
• Duration of 0,5 seconds	(kA)	:	66,47

Maximum Short-Circuit Current at Metallic Screen

(Start Temperature 80 °C, End Temperature 200 °C)

• Duration of 1 seconds	(kA)	:	4,480
• Duration of 0,5 seconds	(kA)	:	6,336

Dielectric Loss Factor

• At 90 °C (Maximum Operating Temperature)		:	40x10 ⁻⁴
• Conductor Resistance at 20 °C	(Ω/km)	:	0,0605
• Conductor Resistance at 90 °C	(Ω/km)	:	0,0776
• Charging Current	(A/km)	:	1,16
• Partial Discharge (at 2 U ₀)	(pC)	:	5,00

OTHER PROPERTIES

• Outer Diameter of Cable (Approx.)	(mm)	:	43,60
• Minimum Bending Radius (During Installation)	(mm)	:	654
• Lowest Laying Temperature	(°C)	:	-5,00
• Weight of Cable (Approx.)	(kg/km)	:	2470
• Weight of Aluminium (Conductor) (Approx.)	(kg/km)	:	1350
• Weight of Armour (Approx.)	(kg/km)	:	-

Drums

• Type		:	Wooden
• Flange (Wheel) Diameter	(mm)	:	2100
• Barrel Diameter	(mm)	:	1000
• Barrel Length	(mm)	:	920
• Length of Cable	(m)	:	1000
• Gross Weight	(kg)	:	2870

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XLPE Insulated, HDPE Sheated Single-Core Cable with Aluminium Conductor



DESCRIPTION

Application

They are used in cable ducts, outdoor and indoor installations, under ground where the short circuit levels are high such as urban and industrial areas fed by electrical energy.

Design

1. Aluminium Conductor
2. Semi-Conductive Tape
3. Conductor Screen
4. XLPE Insulation
5. Insulation Screen
6. Semi-Conductive Tape
7. Copper Wire and Tape Screen
8. Polyester Tape
9. HDPE Outer Sheath