

TECHNICAL SPECIFICATION

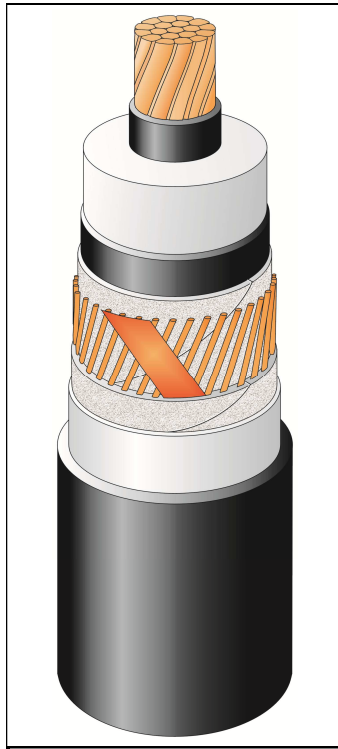
N2XS(FL)2Y 1x630RM/120 76/132(145)kV IEC 60840

CONSTRUCTION[Ⓜ]

- Round, stranded and compacted, copper conductor - class 2
- Extruded semi-conducting conductor screen
- Insulation XLPE- dry cured
- Extruded semi-conducting insulation screen
- Semi-conducting swelling tape(s)
- Metallic screen:
 - copper wire screen
 - copper equalizing tape(s)
- Semi-conducting swelling tape(s)
- Longitudinal aluminium tape
- Outer sheath - black PE

MARKING

Cable manufacturer, product name, standard, year of manufacture, meter marking



The picture is informative only - not in scale

Highest permissible conductor temperature

- Continuous operation 90°C
- Short circuit 250°C
(duration max 5 sec.)

APPLICATION

- Laying in ground
- Laying in ducts
- Laing in air

Laying under Tele-Fonika supervising. Ambient laying temperature not lower than - 5°C, cable temperature during laying not lower than 0°C.

| DESCRIPTION | UNIT | DETAILS |
|---|-----------------|---------------|
| CONSTRUCTION DATA | | |
| Conductor | | |
| <input type="checkbox"/> material | | Cu |
| <input type="checkbox"/> number of wires | No | 58 |
| Conductor nominal cross sectional area | mm ² | 630 |
| Conductor diameter and tolerance | mm | 30,3 +0,4 |
| Min./Nom. thickness of semi-conducting screen on conductor | mm | 0,8 / 1,2 |
| Aproximate diameter over screen on conductor | mm | 32,6 |
| XLPE Insulation thickness: nominal | mm | 15,0 |
| XLPE Insulation thickness: minimum at point | mm | 13,5 |
| Nominal diameter over insulation | mm | 63,0 |
| Min./Nom. thickness of semi-conducting screen on insulation | mm | 0,6 / 1,0 |
| Aproximate diameter over screen on insulation | mm | 64,6 |
| Thickness of semi-conducting swelling tape | No x mm | 2 x ~ 0,35 |
| Metallic screen | mm ² | 120 |
| <input type="checkbox"/> copper wires | No x mm | 58 x 1,63 |
| <input type="checkbox"/> copper equalizing tapes | No x mm x mm | 2 x 0,18 x 10 |
| Nominal diameter over metallic screen | mm | 69,2 |
| Thickness of semi-conducting swelling tape | No x mm | 2 x ~ 0,35 |
| Thickness of aluminium tape | mm | 0,2 |
| Nominal diameter over aluminium tape | mm | 70,6 |
| Outer sheath thickness nominal / minimum at point | mm | 3,50 / 2,88 |
| Approximate overall diameter c (Dk) | mm | 78,0 |
| Approximate weight of complete cable | kg/km | 10372 |
| DELIVERY DATA | | |
| Diameter of wooden drum | m | 3,0 |
| <input type="checkbox"/> type | | 30 |
| Maximum lenght per drum | m | 830 |
| Overall weight (drum + cable) | kg | 11000 |

[Ⓜ] all dimensions are calculated values

| ELECTRICAL DATA at 50 [Hz] | | |
|---|--------|---------------------------------|
| Maximum D.C. conductor resistance at 20°C | Ω/km | 0,0283 |
| Maximum A.C. conductor resistance at 90°C | Ω/km | 0,0389 |
| Maximum D.C. metallic screen resistance at 20°C | Ω/km | 0,149 |
| Maximum D.C. longitudinal aluminium tape resistance at 20°C | Ω/km | 0,589 |
| Inductance | | |
| <input type="checkbox"/> flat formation (*) | mH/km | 0,564 |
| <input type="checkbox"/> trefoil formation | mH/km | 0,379 |
| Induction reactance | | |
| <input type="checkbox"/> flat formation (*) | Ω/km | 0,177 |
| <input type="checkbox"/> trefoil formation | Ω/km | 0,119 |
| Capacitance | μF/km | 0,198 |
| Capacitance reactance | kΩ/km | 16,11 |
| Impedance | | |
| <input type="checkbox"/> flat formation (*) | Ω/km | 0,182 |
| <input type="checkbox"/> trefoil formation | Ω/km | 0,125 |
| Zero sequence reactance | Ω/km | 0,068 |
| Max. electric stress on conductor screen / insulation | kV/mm | 7,12 / 3,73 |
| Dielectric losses (tg = 0.001) - per phase | W/m | 0,359 |
| Partial discharges level - at 1.5 U ₀ | pC | ≤5 |
| Charging current - per phase | A/km | 4,72 |
| Charging power - per phase | kVA/km | 358,6 |
| Capacitive earth fault current | A/km | 14,15 |
| MECHANICAL DATA | | |
| Recommended min. bending radius for laying | m | 1,95 |
| Recommended permissible bending radius at final installation | m | 1,56 |
| Maximum permissible pulling force | kN | 31,5 |
| SHORT CIRCUIT CURRENTS | | |
| Maximum permissible short circuit current (acc. to IEC 60949) | | |
| Duration time 1.0 sec. | | |
| Conductor 90 → 250°C | kA | 90,9 |
| Metallic screen 80 → 350°C | kA | 23,5 |
| AMPACITY(**) - bonding of metallic screen | | Single-point / Both-ends |
| In earth | | |
| <input type="checkbox"/> flat formation (*) | A | 967 / 648 |
| <input type="checkbox"/> trefoil formation | A | 902 / 794 |
| In air | | |
| <input type="checkbox"/> flat formation (*) | A | 1284 / 959 |
| <input type="checkbox"/> trefoil formation | A | 1122 / 1022 |
| ELECTRICAL TESTS | | |
| AC voltage test (2.5 U ₀ / 30 minutes) | kV | 190 |
| Partial discharge test at 1.5 U ₀ | kV | 114 |

Marking: **TF KABLE 5 N2XS(FL)2Y 1x630RM/120 76/132(145)kV IEC 60840 2013**

(*) Distance between cable axes laid in flat formation D_k+D_k mm

(**) Current rating guideline (Calculated by CymCap 5.3 according to IEC Pub. 60287)

Natural operating conditions:

- ground temperature 20°C
- laying depth 1.0 m
- ground thermal resistivity 1.0 K•m/W
- ambient air temperature 35°C

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