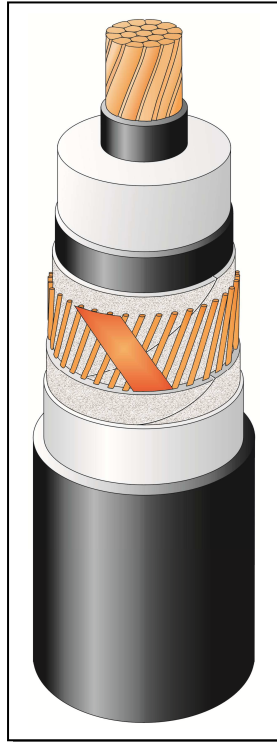


TECHNICAL SPECIFICATION
2XS(FL)2Y 1x500RM/120 76/132 (145)kV IEC 60840

CONSTRUCTION (x)

- 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
- Metallic screen:
 - copper wires screen and copper equalizing tapes
- Semi-conducting swelling tape
- Longitudinal aluminum foil
- Sheath – black HDPE



The picture is informative only
 – not in scale

APPLICATION

- Laying in ground (wet or dry locations)
- Laying in air
- Laying in ducts

Highest permissible conductor temperature

- Continuous operation 90°C
- Overload 105°C
- Short circuit 250°C (duration max 5 s)

Laying is possible without any special measures at natural cable temperatures and ambient temperature not lower than -5°C, with Tele-Fonika supervising

MARKING

TF KABLE, product name, date of manufacture, standard, meter marking

| DESCRIPTION | UNIT | DETAILS | |
|--|--------------------------------------|---------------------------|-------|
| CONSTRUCTION DATA | U₀/U/U_m | 76/132 (145)kV | |
| Conductor | | Copper | |
| <input type="checkbox"/> Material | | 60 | |
| <input type="checkbox"/> Number of wires | No | 500 | |
| Nominal cross sectional area | mm ² | 26.3 ^{-0.2 +0.5} | |
| Conductor diameter and tolerance | mm | 0.6 / 1.0 | |
| Min./Nom. thickness semi-conducting XLPE on conductor | mm | 16.0 | |
| Nominal insulation thickness XLPE | mm | 14.4 | |
| Insulation thickness: minimum at a point | mm | 60.3 ^{±0.5} | |
| Diameter over insulation – nominal | mm | 0.6 / 1.0 | |
| Min./Nom. thickness semi-conducting XLPE on insulation | mm | 2 x ~ 0.35 | |
| Thickness of semi-conducting swelling tape | No x mm | 120 | |
| Metallic screen | mm ² | 74 x 1.44 | |
| <input type="checkbox"/> Copper wires | No x mm | 2 x 10 x 0.18 | |
| <input type="checkbox"/> Copper equalizing tape | No x mm x mm | 66.1 | |
| Mean diameter over metallic screen | mm | 2 x ~ 0.35 | |
| Thickness of semi-conducting swelling tape | No x mm | 0.15 | |
| Thickness of aluminum foil | mm | 3.4 / 2.79 | |
| Nominal inside outer sheath thickness / min. | mm | 74.6 | |
| Approximate overall diameter completed cable (D _e) | mm | 8980 | |
| Weight of complete cable (approx.) | kg/km | | |
| DELIVERY DATA | | | |
| Diameter of wooden drum | m | 3.0 | 3.2 |
| <input type="checkbox"/> type | | 30 | 32 |
| Maximum length per drum | m | 740 | 1400 |
| Weight of heaviest reel, including cable | kg | 8770 | 14760 |

^(x) Diameters are calculated values and subject to manufacturing tolerances

| ELECTRICAL DATA at 50Hz | | |
|--|--------|-----------------------------|
| Maximum D.C. conductor resistance at 20°C | Ω/km | 0.0366 |
| Maximum A.C. conductor resistance at 90°C | Ω/km | 0.0492 |
| Maximum D.C. metallic screen resistance at 20°C | Ω/km | 0.154 |
| Maximum D.C. aluminum foil resistance at 20°C | Ω/km | 0.802 |
| Operating inductance | | |
| <input type="checkbox"/> trefoil formation | mH/km | 0.396 |
| <input type="checkbox"/> flat formation (*) | mH/km | 0.581 |
| Induction reactance | | |
| <input type="checkbox"/> trefoil formation | Ω/km | 0.125 |
| <input type="checkbox"/> flat formation (*) | Ω/km | 0.183 |
| Capacitance | μF/km | 0.176 (+ 8 %) |
| Capacitance reactance | kΩ/km | 18.06 |
| Impedance | | |
| <input type="checkbox"/> trefoil formation | Ω/km | 0.134 |
| <input type="checkbox"/> flat formation (*) | Ω/km | 0.189 |
| Zero sequence reactance | Ω/km | 0.072 |
| Max. electric stress at conductor screen / (at insulation) | kV/mm | 7.1 / 3.33 |
| Dielectric losses (tg δ = 0.001) – per phase | W/m | 0.32 |
| Partial discharge test – at 1.5U ₀ | pC | ≤ 5 |
| Charging current – per phase | A/km | 4.21 |
| Charging power | kVA/km | 320 |
| Earth fault current – per phase | A/km | 12.63 |
| MECHANICAL DATA | | |
| Recommended min. bending radius for laying | m | 1.87 |
| Recommended permissible bending radius at final installation | m | 1.49 |
| Maximum permissible pulling force: | kN | 25 |
| SHORT CIRCUIT CURRENTS | | |
| Maximum permissible thermal short-circuit (IEC 60949) - adiabatic | | <i>Current for 1.0 sec.</i> |
| Phase conductor 90 → 250 °C | kA | 72.2 |
| Metallic screen 80 → 350 °C | kA | 24.1 |
| AMPACITY (**) – Bonding of the metallic screens | | Single-point |
| in earth | | |
| <input type="checkbox"/> flat formation (*) | A | 845 |
| <input type="checkbox"/> trefoil formation | A | 795 |
| in air | | |
| <input type="checkbox"/> flat formation | A | 1100 |
| <input type="checkbox"/> trefoil formation | A | 970 |
| TESTS | | |
| AC – Test voltage – (2.5U ₀ ; 30min) | kV | 190 |
| Partial discharge test | kV | 114 |

Marking: TF-KABLE 5 2XS(FL)2Y 1x500RM/120 76/132(145)kV IEC 60840 2018

(*) Distance between cable axes laid in flat formation D_e+D_e mm (for information)

(**) Current rating guideline (Calculated with Cymcap 7.2 based on IEC Pub. 60287 and the following conditions)

- Ground temperature 20°C
- Laying depth 1.0 m
- Ground thermal resistivity 1.0 K · m/W
- Load factor 1.0
- Air temperature 35°C

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(^s) Diameters are calculated values and subject to manufacturing tolerances