

TECHNICAL SPECIFICATION

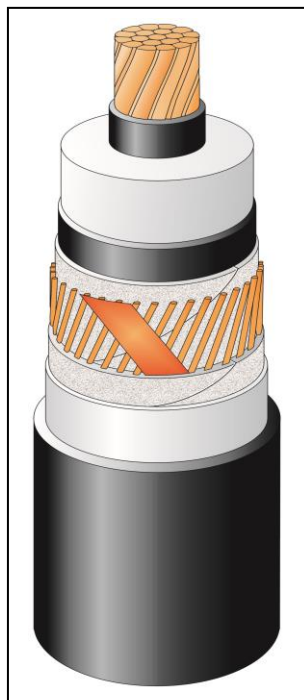
2XS(FL)2Y-SC 1x300RM/120 76/132(145)kV IEC 60840

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 tapes
- ☐ Metallic screen:
 - copper wires screen and
 - copper equalizing tapes
- ☐ Semi-conducting swelling tapes
- ☐ Longitudinal aluminum foil
- ☐ Outer sheath – natural HDPE, type ST7
- ☐ Extruded semi-conducting layer - black

MARKING

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



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
- ☐ 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

DESCRIPTION	UNIT	DETAILS	
CONSTRUCTION DATA	U _o /U/U _m	76/132(145)kV	
Conductor		Copper	
❑ Material		37	
❑ Number of wires			
Nominal cross sectional area	mm ²	300	
Conductor diameter and tolerance	mm	20.3 ^{-0.2 +0.4}	
Min./Nom. thickness semi-conducting XLPE on conductor	mm	0.8 / 1.2	
Nominal insulation thickness XLPE	mm	16.50	
Insulation thickness: minimum at a point	mm	14.85	
Diameter over insulation – nominal	mm	55.7 ^{±0.8}	
Min./Nom. thickness semi-conducting XLPE on insulation	mm	0.6 / 1.0	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Metallic screen	mm ²	120	
❑ Copper wires	No x mm	58 x 1.63	
❑ Copper equalizing tape	No x mm x mm	2 x 10 x 0.18	
Mean diameter over metallic screen	mm	61.9	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.2	
Min./Nom. outer sheath thickness	mm	2.62 / 3.20	
Approximate overall diameter completed cable (D _c)	mm	71.1	
Weight of complete cable (approx.)	kg/km	7050	
DELIVERY DATA			
Diameter of wooden drum	m	2.8	3.2
❑ type		280P	320P
Maximum length per drum	m	670	1440
Weight of heaviest reel, including cable	kg	6310	12330

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

ELECTRICAL DATA at 50Hz		
Maximum D.C. conductor resistance at 20°C	Ω/km	0.0601
Maximum A.C. conductor resistance at 90°C	Ω/km	0.0781
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.150
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.645
Operating inductance		
<input type="checkbox"/> trefoil formation	mH/km	0.439
<input type="checkbox"/> flat formation (*)	mH/km	0.624
Induction reactance		
<input type="checkbox"/> trefoil formation	Ω/km	0.138
<input type="checkbox"/> flat formation (*)	Ω/km	0.196
Capacitance	μF/km	0.149 (+8%)
Capacitance reactance	kΩ/km	21.43
Impedance		
<input type="checkbox"/> trefoil formation	Ω/km	0.159
<input type="checkbox"/> flat formation (*)	Ω/km	0.211
Zero sequence reactance	Ω/km	0.084
Max. electric stress at conductor screen / (at insulation)	kV/mm	7.46 / 3.04
Dielectric losses (tg δ = 0.001) – per phase	W/m	0.27
Partial discharge test – at 1.5U ₀	pC	≤ 5
Charging current – per phase	A/km	3.55
Charging power	kVA/km	270
Earth fault current – per phase	A/km	10.64
MECHANICAL DATA		
Recommended min. bending radius for laying (25 D _e)	m	1.77
Recommended permissible bending radius at final installation (20 D _e)	m	1.42
Maximum permissible pulling force	kN	15
SHORT CIRCUIT CURRENTS		
Maximum permissible thermal short-circuit (IEC 60949)		
<i>Current for 1.0 sec</i>		
Phase conductor 90 → 250°C	kA	43.4
Metallic screen 80 → 350°C (Cu wires)	kA	23.9
AMPACITY (**) – Bonding of the metallic		Single-point / Both ends
in earth		
<input type="checkbox"/> flat formation (*)	A	643 / 533
<input type="checkbox"/> trefoil formation	A	600 / 560
in air		
<input type="checkbox"/> flat formation	A	805 / 688
<input type="checkbox"/> trefoil formation	A	721 / 687
TESTS		
AC – test voltage – (2.5U ₀ ; 30min)	kV	190
Impulse voltage	kV	650
Partial discharge test	kV	114

Marking: TF-KABLE 5 2XS(FL)2Y-SC 1x300RM/120 76/132(145)kV IEC 60840 YEAR

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

(**) Current rating guideline (Calculated with CymCap 8.1 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