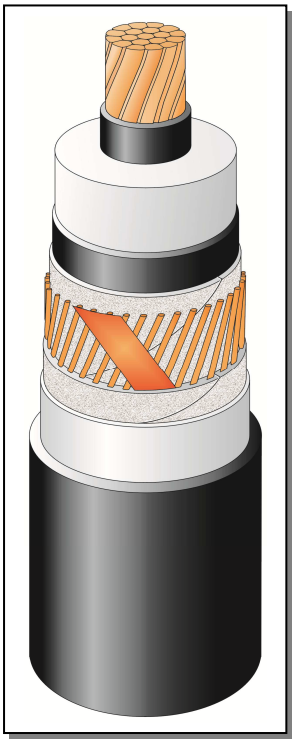
TECHNICAL SPECIFICATION
2XS(FL)2Y 1x300RM/120 76/132 (145)kV IEC 60840

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
- 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 -5ºC, with Tele-Fonika supervising

MARKING

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

DESCRIPTION	UNIT	DETAILS	
CONSTRUCTION DATA			
Conductor ❑ material ❑ number of wires	 No	 Copper 59	
Nominal cross sectional area	mm^2	300	
Conductor diameter and tolerance	mm	$20.5^{-0.2\ +0.3}$	
Min./Nom. thickness semi-conducting XLPE on conductor	mm	0.8 / 1.2	
Nominal insulation thickness XLPE	mm	16.5	
Insulation thickness: minimum at a point	mm	14.85	
Diameter over insulation – nominal	mm	$55.9^{\pm0.5}$	
Min./Nom. thickness semi-conducting XLPE on insulation	mm	0.6 / 1.0	
Thickness of semi-conducting swelling tapes	No x mm	2 x ~ 0.35	
Metallic screen ❑ Copper wires ❑ Copper equalizing tape	mm^2 No x mm No x mm x mm	120 74 x 1.44 2 x 10 x 0.18	
Mean diameter over metallic screen	mm	61.7	
Thickness of semi-conducting swelling tapes	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.15	
Diameter over aluminum foil	mm	63.0	
Nominal outer sheath thickness / min.	mm	3.2 / 2.62	
Approximate overall diameter completed cable (D_e)	mm	69.8	
Weight of complete cable (approx.)	kg/km	6970	
DELIVERY DATA			
Diameter of wooden drum ❑ type	m	2.8 28	3.4 34
Maximum length per drum	m	710	1790
Weight of heaviest reel, including cable	kg	6540	15260

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

ELECTRICAL DATA at 50Hz		
Maximum D.C. conductor resistance at 20 °C Maximum A.C. conductor resistance at 90 °C	Ω/km Ω/km	0.0601 0.0781
Maximum D.C. metallic screen resistance at 20 °C	Ω/km	0.154
Maximum D.C. aluminum foil resistance at 20 °C	Ω/km	0.856
Operating inductance ❑ trefoil formation ❑ flat formation (*)	 mH/km mH/km	 0.434 0.619
Induction reactance ❑ trefoil formation ❑ flat formation (*)	 Ω/km Ω/km	 0.136 0.194
Capacitance	μF/km	0.149 (+ 8 %)
Capacitance reactance	kΩ/km	21.31
Impedance ❑ trefoil formation ❑ flat formation (*)	 Ω/km Ω/km	 0.157 0.209
Zero sequence reactance	Ω/km	0.084
Max. electric stress at conductor screen / (at insulation)	kV/mm	7.44 / 3.05
Dielectric losses (tg δ = 0.001) – per phase	W/m	0.271
Partial discharge test – at 1.5Uo	pC	≤ 5
Charging current – per phase	A/km	3.57
Charging power	kVA/km	271
Earth fault current – per phase	A/km	10.7
MECHANICAL DATA		
Recommended min. bending radius for laying	m	1.75
Recommended permissible bending radius at final installation	m	1.4
Maximum permissible pulling force:	kN	15
SHORT CIRCUIT CURRENTS		
Maximum permissible thermal short-circuit (IEC 60949) *Current for 1.0 sec.* Phase conductor 90 → 250 °C Metallic screen 80 → 350 °C	 kA kA	 43.4 24.1
AMPACITY (**) – Bonding of the metallic screens		**Single-point**
in earth ❑ flat formation (*) ❑ trefoil formation in air ❑ flat formation ❑ trefoil formation	 A A A A	 645 615 815 725
TESTS		
AC – test voltage – (2.5Uo; 30min) Partial discharge test	kV kV	190 114

Marking: TF-KABLE 5 2XS(FL)2Y 1x300RM/120 76/132kV IEC 60840 2019

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

(**) Current rating guideline (Calculated with CymCap 5.3 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
- ❑ Air temperature 35 °C

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Prepared by: Marcin Kocik

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