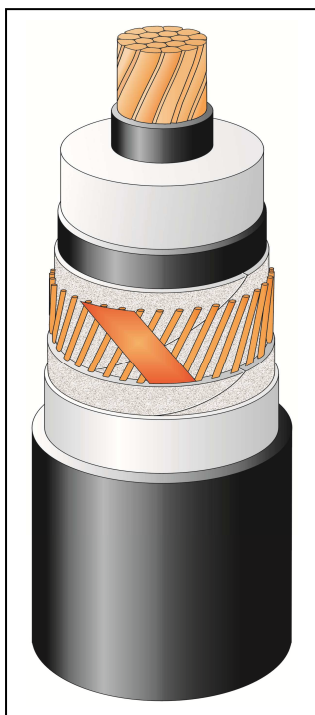


TECHNICAL SPECIFICATION
2XS(FL)2Y 1x500RM/120 76/132 (145)kV IEC 60840

CONSTRUCTION (x)

- Round, stranded and compacted aluminum 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 -5°C, with Tele-Fonika supervising

MARKING

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

DESCRIPTION	UNIT	DETAILS	
CONSTRUCTION DATA			
Conductor		Copper	
<input type="checkbox"/> material		60	
<input type="checkbox"/> number of wires	No	60	
Nominal cross sectional area	mm ²	500	
Conductor diameter and tolerance	mm	26.3 ^{-0.2 +0.5}	
Min. / Nom. thickness semi-conducting XLPE on conductor	mm	0.6 / 1.0	
Nominal insulation thickness XLPE	mm	17.0	
Insulation thickness: minimum at a point	mm	15.3	
Diameter over insulation – nominal	mm	62.3 ^{±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	
<input type="checkbox"/> Copper wires	No x mm	74 x 1.44	
<input type="checkbox"/> Copper equalizing tape	No x mm x mm	2 x 10 x 0.18	
Mean diameter over metallic screen	mm	68.1	
Thickness of semi-conducting swelling tapes	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.2	
Nominal outer sheath thickness / min.	mm	3.4 / 2.79	
Approximate overall diameter completed cable (D _e)	mm	76.7	
Weight of complete cable (approx.)	kg/km	9240	
DELIVERY DATA			
Diameter of wooden drum	m	2.8	3.2
<input type="checkbox"/> type		28	32
Maximum length per drum	m	520	1160
Weight of heaviest reel, including cable	kg	6390	12900

^(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	0.153
Maximum D.C. aluminum foil resistance at 20 °C	Ω/km	0.589
Operating inductance		
<input type="checkbox"/> trefoil formation	mH/km	0.403
<input type="checkbox"/> flat formation (*)	mH/km	0.588
Induction reactance		
<input type="checkbox"/> trefoil formation	Ω/km	0.127
<input type="checkbox"/> flat formation (*)	Ω/km	0.185
Capacitance	μF/km	0.169 (+ 8 %)
Capacitance reactance	kΩ/km	18.84
Impedance		
<input type="checkbox"/> trefoil formation	Ω/km	0.136
<input type="checkbox"/> flat formation (*)	Ω/km	0.191
Zero sequence reactance	Ω/km	0.074
Max. electric stress at conductor screen / (at insulation)	kV/mm	6.81 / 3.09
Dielectric losses (tg δ = 0.001) – per phase	W/m	0.307
Partial discharge test – at 2.5U ₀	pC	≤ 5
Charging current – per phase	A/km	4.03
Charging power	kVA/km	307
Earth fault current – per phase	A/km	12.1
MECHANICAL DATA		
Recommended min. bending radius for laying	m	1.92
Recommended permissible bending radius at final installation	m	1.53
Maximum permissible pulling force:	kN	25
SHORT CIRCUIT CURRENTS		
Maximum permissible thermal short-circuit (IEC 60949) <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 2020

(*) 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
- Load factor 1.0
- Air temperature 35 °C

Date: 2020-09-18; MK20186

Prepared by: Marcin Kocik

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