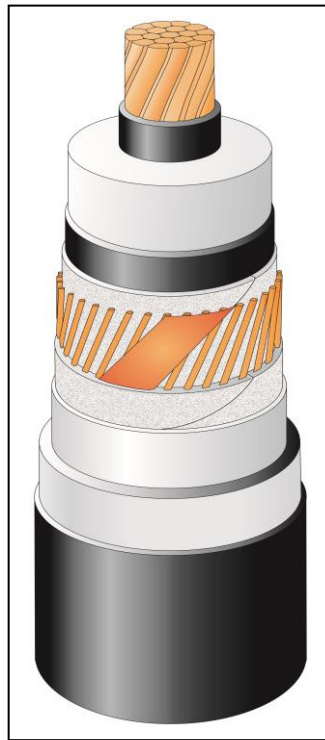


TECHNICAL SPECIFICATION
2XS(FL)2Y-SC 1x630RM/120 76/132(145)kV IEC 60840

CONSTRUCTION ^(x)

- Round conductor, stranded copper wires. 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 – black HDPE type ST7; hardness Shore D >55
- Extruded semi-conducting layer



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 5s)

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

MARKING

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

DESCRIPTION	UNIT	DETAILS	
CONSTRUCTION DATA	U₀/U_m	76/132(145)kV	
Conductor		Copper	
<input type="checkbox"/> Material		58	
<input type="checkbox"/> number of wires	No	630	
Nominal cross sectional area	mm ²	30.0 ^{-0.2+0.5}	
Conductor diameter and tolerance	mm	2 x ~ 0.1	
Thickness of semi-conducting tapes	No x mm	0.8 / 1.2	
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	64.6	
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	70.2	
Mean diameter over metallic screen	mm	2 x ~ 0.35	
Thickness of semi-conducting swelling tape	No x mm	0.2	
Thickness of aluminum foil	mm	71.9	
Diameter over aluminum foil	mm	3.5 / 2.88	
Nominal thickness of outer sheath / min. at any point	mm / mm	~ 0.2	
Thickness of semi-conducting layer	mm	80.0	
Approximate overall diameter completed cable (D _e)	mm	10730	
Weight of complete cable (approx.)	kg/km		
DELIVERY DATA			
Flange diameter of wooden drum	m	3.0	3.2
<input type="checkbox"/> Type		300P	32AS
Maximum length per drum	m	600	1000
Weight of heaviest reel, including cable	kg	8300	12700

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

ELECTRICAL DATA at 50Hz		
Maximum D.C. conductor resistance at 20°C	Ω/km	0.0283
Maximum A.C. conductor resistance at 90°C	Ω/km	0.0390
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.153
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.580
		0.121
Operating inductance		
<input type="checkbox"/> trefoil formation	mH/km	0.384
<input type="checkbox"/> flat formation (*)	mH/km	0.569
Induction reactance		
<input type="checkbox"/> trefoil formation	Ω/km	0.121
<input type="checkbox"/> flat formation (*)	Ω/km	0.179
Capacitance	μF/km	0.195 (+ 8 %)
Capacitance reactance	kΩ/km	16.33
Impedance		
<input type="checkbox"/> trefoil formation	Ω/km	0.127
<input type="checkbox"/> flat formation (*)	Ω/km	0.183
Zero sequence reactance	Ω/km	0.070
Max. electric stress at conductor screen / (at insulation)	kV/mm	6.85 / 3.45
Dielectric losses (tg δ = 0.001) – per phase	W/m	0.354
Partial discharge test – at 1.5U ₀	pC	< 5
Charging current – per phase	A/km	4.65
Charging power	kVA/km	354
Earth fault current – per phase	A/km	13.96
MECHANICAL DATA		
Recommended min. bending radius for laying	m	1.98
Recommended permissible bending radius at final installation	m	1.58
Maximum permissible pulling force:	kN	31.5
SHORT CIRCUIT CURRENTS		
Maximum permissible thermal short-circuit (IEC 60949) <i>current for 1.0s</i>		
Phase conductor 90 → 250 °C	kA	90.8
Metallic screen 80 → 350 °C	kA	24.0
AMPACITY (**) – Bonding of the metallic screens		Single-point / Both-ends
in earth		
<input type="checkbox"/> flat formation (*)	A	965 / 660
<input type="checkbox"/> trefoil formation	A	900 / 805
in air (shaded)		
<input type="checkbox"/> flat formation	A	1275 / 970
<input type="checkbox"/> trefoil formation	A	1120 / 1030
TESTS		
AC voltage test (2.5U ₀ ; 30min.)	kV	190
Impulse voltage (BIL)	kV	650
Partial discharge test (1.5U ₀)	kV	114

Marking: TF-KABLE 5 N2XS(FL)2Y-SC 1x630RM/120 76/132(145)kV IEC 60840 2020

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

(**) Current rating guideline (Calculated with CymCap 7.3 based on IEC Pub. 60287 and the following conditions)

- Ground temperature +20°C; LF=1
- Ground thermal resistivity 1,0 K·m/W
- Load factor 1,0
- Air temperature +35°C

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(⁶) Diameters are calculated values and subject to manufacturing tolerances