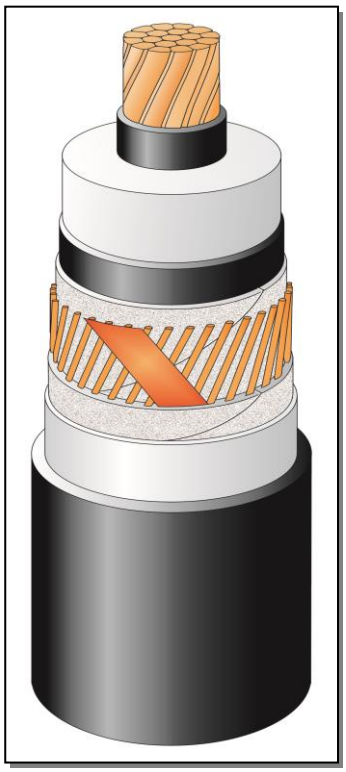
TECHNICAL SPECIFICATION
2XS(FL)2Y-SC 1x630RM/120 76/132(145)kV acc. to IEC 60840

CONSTRUCTION (x)

- Round, stranded, 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 wire screen and copper equalizing tapes
- Semi-conducting swelling tape
- Longitudinal aluminum foil
- Sheath – black HDPE ST7 type
- Extruded semi-conducting coating

MARKING

TF KABLE, product name, year 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
- 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 -5ºC, with Tele-Fonika supervising

DESCRIPTION	UNIT	DETAILS	
CONSTRUCTION DATA	**$U_o/U/U_m$**	**76/132(145)kV**	
Conductor ❑ material ❑ number of wires	 No	 Copper 58	
Nominal cross sectional area	mm^2	630	
Conductor diameter and tolerance	mm	30.0 $^{-0.2+0.5}$	
Min./Nom. thickness semi-conducting XLPE on conductor	mm	0.8 / 1.2	
Nominal insulation thickness XLPE	mm	16.0	
Insulation thickness: minimum at a point	mm	14.4	
Diameter over insulation – nominal	mm	64.6 $^{\pm 0.5}$	
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 ❑ Copper wires ❑ Copper equalizing tapes	mm^2 No x mm No x mm x mm	120 75 x 1.44 2 x 10 x 0.18	
Mean diameter over metallic screen	mm	70.4	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.15	
Nominal outer sheath thickness / min	mm	3.5 / 2.88	
Approximate overall diameter completed cable (D_e)	mm	80.1	
Weight of complete cable (approx.)	kg/km	10690	
DELIVERY DATA			
Diameter of wooden drum ❑ type	m	2.8 28PP	3.2 320P
Length per drum	m	690	1120
Weight of heaviest reel, including cable	kg	9130	14150

(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	0.0283 0.0394
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.152
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.773
Operating inductance ❑ trefoil formation (*) ❑ flat formation (**)	 mH/km mH/km	 0.385 0.57
Induction reactance ❑ trefoil formation (*) ❑ flat formation (**)	 Ω/km Ω/km	 0.121 0.179
Capacitance	μF/km	0.195 (+8%)
Capacitance reactance	kΩ/km	16.33
Impedance ❑ trefoil formation (*) ❑ flat formation (**)	 Ω/km Ω/km	 0.127 0.183
Zero sequence reactance	Ω/km	0.068
Max. electric stress at conductor screen / (at insulation)	kV/mm	6.82 / 3.44
Dielectric losses (tgδ = 0.001) – per phase	W/m	0.354
Partial discharge test – at 1.5Uo	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	2
Recommended permissible bending radius at final installation	m	1.6
Maximum permissible pulling force:	kN	31.5
SHORT CIRCUIT CURRENTS		
Maximum permissible thermal short-circuit (IEC 60949) Phase conductor 90 → 250°C Metallic screen 80 → 350°C	***Current for →*** kA kA	***1.0s*** 90.8 24.4
AMPACITY (*) – Bonding of the metallic screens		**Single-point / Both ends**
In earth ❑ flat formation (*) ❑ trefoil formation In air ❑ flat formation ❑ trefoil formation	 A A A A	 962 / 695 886 / 787 1260 / 948 1108 / 1017
TESTS		
AC – test voltage – (2.5Uo, 60min) Impulse test Partial discharge test	kV kV kV	190 650 114

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(*) Current rating guideline (Calculated with CymCap 8.2 based on IEC Pub. 60287 and the following conditions)
(**) Distance between cable axes laid in trefoil formation D_e mm (D_e – diameter of cable)

Standard 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: 2023-09-01; MO23053A
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