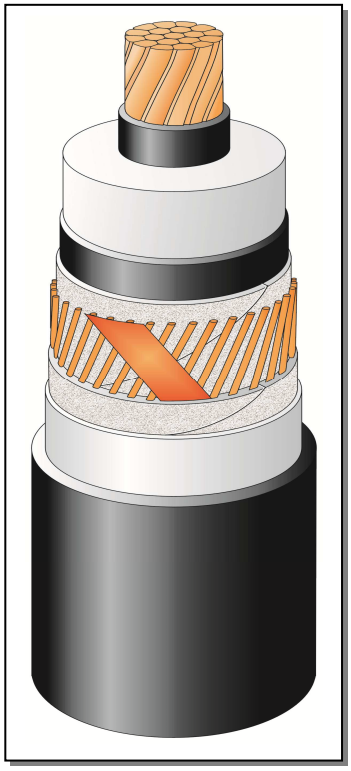
TECHNICAL SPECIFICATION
2XS(FL)2Y 1x240RM/50 76/132 (145)kV IEC 60840

CONSTRUCTION [x]

- Round, stranded and compressed 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 wire screen and
  copper equalizing tapes
- Semi-conducting swelling tapes
- Longitudinal aluminum foil
- Sheath – Black HDPE ST7

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	**$U_0/U/U_m$**	**76/132 (145)kV**
Conductor ❑ material ❑ number of wires	 No	 Copper 60
Nominal cross sectional area	mm^2	240
Conductor diameter and tolerance	mm	$18.5^{+0.3}$
Min./Nom. thickness semi-conducting XLPE on conductor	mm	0.6 / 1.0
Nominal insulation thickness XLPE	mm	16.0
Insulation thickness: minimum at a point	mm	14.4
Diameter over insulation – nominal	mm	52.5
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	50 60 x 1.04 2 x 10 x 0.18
Mean diameter over metallic screen	mm	57.2
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35
Thickness of aluminum foil	mm	0.2
Diameter over aluminum foil	mm	59.0
Nominal outer sheath thickness / min	mm	3.1 / 2.53
Approximate overall diameter completed cable (D_e)	mm	65.4
Weight of complete cable (approx.)	kg/km	5440
DELIVERY DATA		
Diameter of wooden drum ❑ type	m	3.2 32
Length per drum	m	1735
Weight of heaviest reel, including cable	kg	11300

[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	0.0754 0.0972	
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.350	0.233
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.695	
Operating inductance ❑ trefoil formation ❑ flat formation (*)	 mH/km mH/km	 0.443 0.628	
Induction reactance ❑ trefoil formation ❑ flat formation (*)	 Ω/km Ω/km	 0.139 0.197	
Capacitance	μF/km	0.150 (+ 8 %)	
Capacitance reactance	kΩ/km	22.45	
Impedance ❑ trefoil formation ❑ flat formation (*)	 Ω/km Ω/km	 0.170 0.220	
Zero sequence reactance	Ω/km	0.087	
Max. electric stress at conductor screen / (at insulation)	kV/mm	7.9 / 3.1	
Dielectric losses (tgδ = 0.001) – per phase	W/m	0.257	
Partial discharge test – at 1.5Uo	pC	≤ 5	
Charging current – per phase	A/km	3.39	
Charging power	kVA/km	257	
Earth fault current – per phase	A/km	10.16	
MECHANICAL DATA			
Recommended min. bending radius for laying	m	1.64	
Recommended permissible bending radius at final installation	m	1.32	
Maximum permissible pulling force:	kN	12	
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	 34.8 10.5	
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	 573 / 506 545 / 529 712 / 649 636 / 623	
TESTS			
AC – test voltage – (2,5Uo; 30min) Impulse voltage Partial discharge test	kV kV kV	190 650 114	

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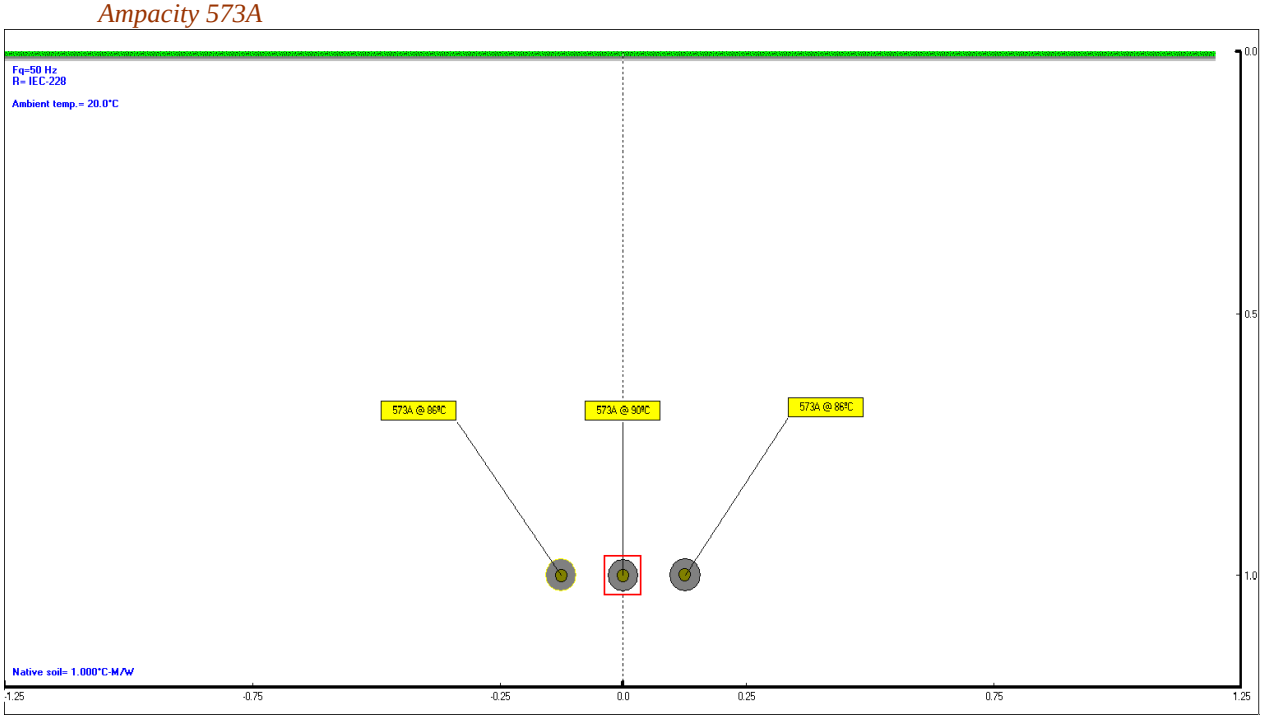
(*) Distance between cable axes laid in flat formation D_e+D_e mm

(**) Current rating guideline (Calculated with Cymcap 5.3 based on IEC Pub. 60287 and the following conditions)

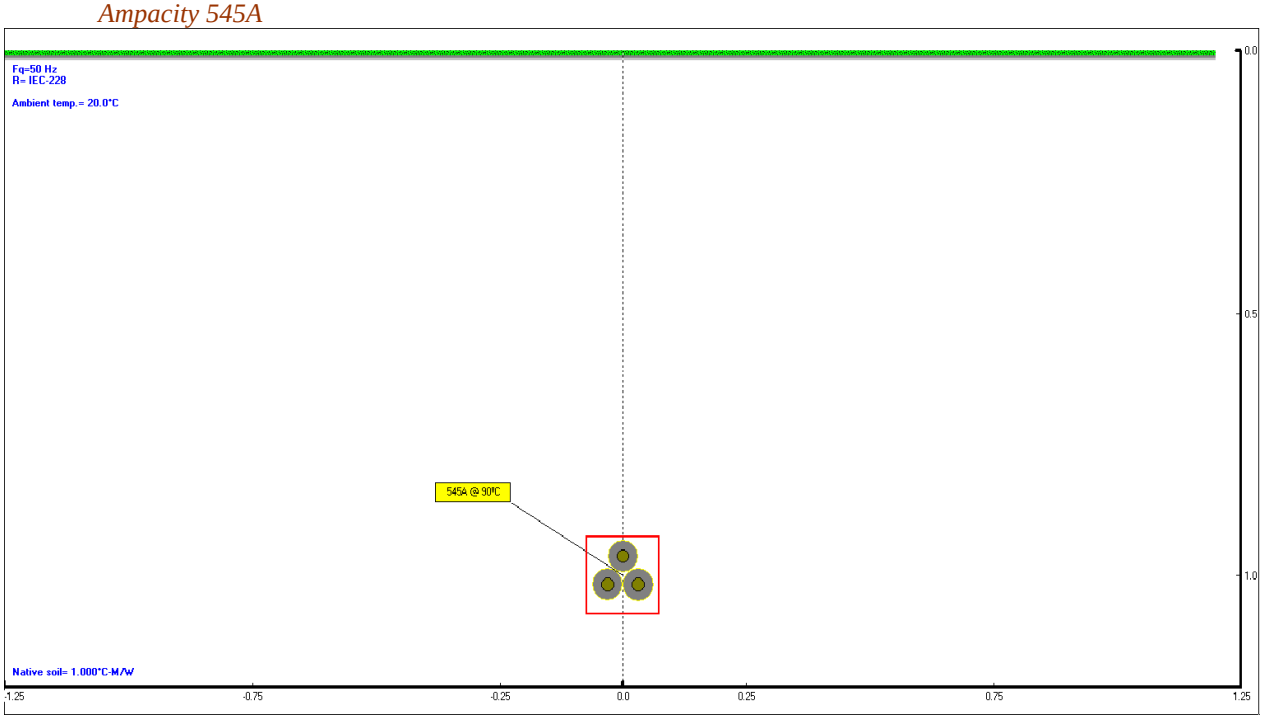
- ❑ Ground temperature 20°C
- ❑ Laying depth 1.0 m
- ❑ Ground thermal resistivity 1.0 K · m/W
- ❑ Air temperature 35°C

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

Cables in earth – single point or cross-bonded
Ampacity 573A



Ampacity 545A



Date: 2015-09-22; Mp15205
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