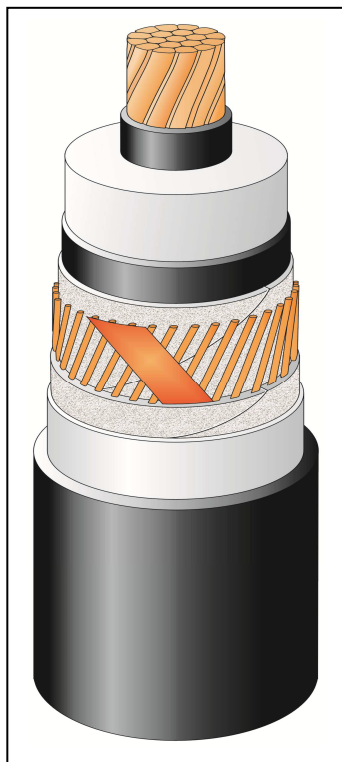


TECHNICAL SPECIFICATION

2XS(FL)2Y 1x300RM/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



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 supervising

MARKING

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

DESCRIPTION	UNIT	DETAILS
CONSTRUCTION DATA	U_o/U/U_m	76/132 (145)kV
Conductor		
<input type="checkbox"/> material		Copper
<input type="checkbox"/> number of wires	No	60
Nominal cross sectional area	mm ²	300
Conductor diameter and tolerance	mm	20.5 ^{+0.2}
Min./Nom. thickness semi-conducting XLPE on conductor	mm	0.6 / 1.0
Nominal insulation thickness XLPE	mm	15.0
Insulation thickness: minimum at a point	mm	13.5
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	mm ²	50
<input type="checkbox"/> Copper wires	No x mm	60 x 1.04
<input type="checkbox"/> Copper equalizing tapes	No x mm x mm	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 _c)	mm	65.4
Weight of complete cable (approx.)	kg/km	5940
DELIVERY DATA		
Diameter of wooden drum	m	3.2
<input type="checkbox"/> type		32
Length per drum	m	1735
Weight of heaviest reel, including cable	kg	12200

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

ELECTRICAL DATA at 50Hz			
Maximum D.C. conductor resistance at 20°C	Ω/km	0.0601	
Maximum A.C. conductor resistance at 90°C	Ω/km	0.0790	
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	mH/km	0.422	
❑ flat formation (*)	mH/km	0.607	
Induction reactance			
❑ trefoil formation	Ω/km	0.133	
❑ flat formation (*)	Ω/km	0.191	
Capacitance	μF/km	0.160 (+ 8 %)	
Capacitance reactance	kΩ/km	20.23	
Impedance			
❑ trefoil formation	Ω/km	0.154	
❑ flat formation (*)	Ω/km	0.206	
Zero sequence reactance	Ω/km	0.081	
Max. electric stress at conductor screen / (at insulation)	kV/mm	7.95 / 3.45	
Dielectric losses (tgδ = 0.001) – per phase	W/m	0.286	
Partial discharge test – at 1.5Uo	pC	≤ 5	
Charging current – per phase	A/km	3.39	
Charging power	kVA/km	286	
Earth fault current – per phase	A/km	11.27	
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	15	
SHORT CIRCUIT CURRENTS			
Maximum permissible thermal short-circuit (IEC 60949)			
Current for 1.0 sec.			
Phase conductor 90 → 250°C	kA	43.4	
Metallic screen 80 → 350°C	kA	10.5	
AMPACITY (**) – Bonding of the metallic screens		Single-point / Both-ends	
in earth			
❑ flat formation (*)	A	648 / 553	
❑ trefoil formation	A	515 / 593	
in air			
❑ flat formation	A	818 / 727	
❑ trefoil formation	A	726 / 707	
TESTS			
AC – test voltage – (2,5Uo; 30min)	kV	190	
Impulse voltage	kV	650	
Partial discharge test	kV	114	

Marking: TF-KABLE 5 2XS(FL)2Y 1x300RM/50 76/132kV IEC 60840 2015

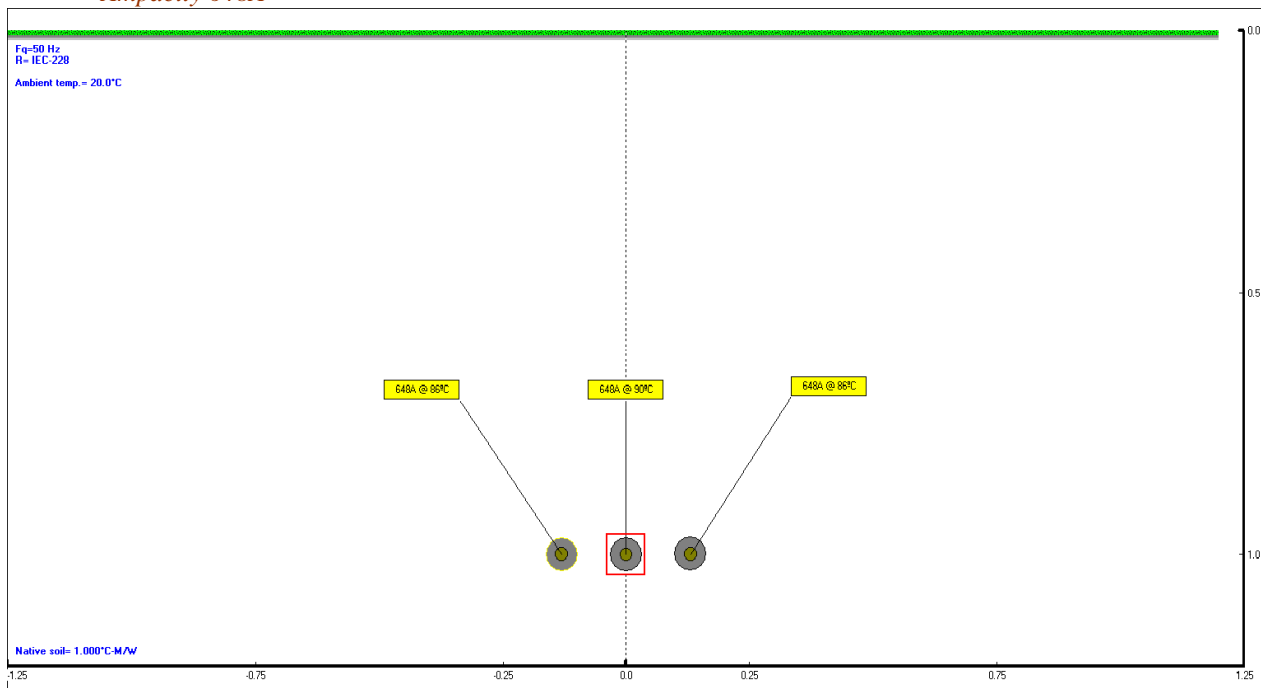
(*) Distance between cable axes laid in flat formation D_e+D_e mm

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

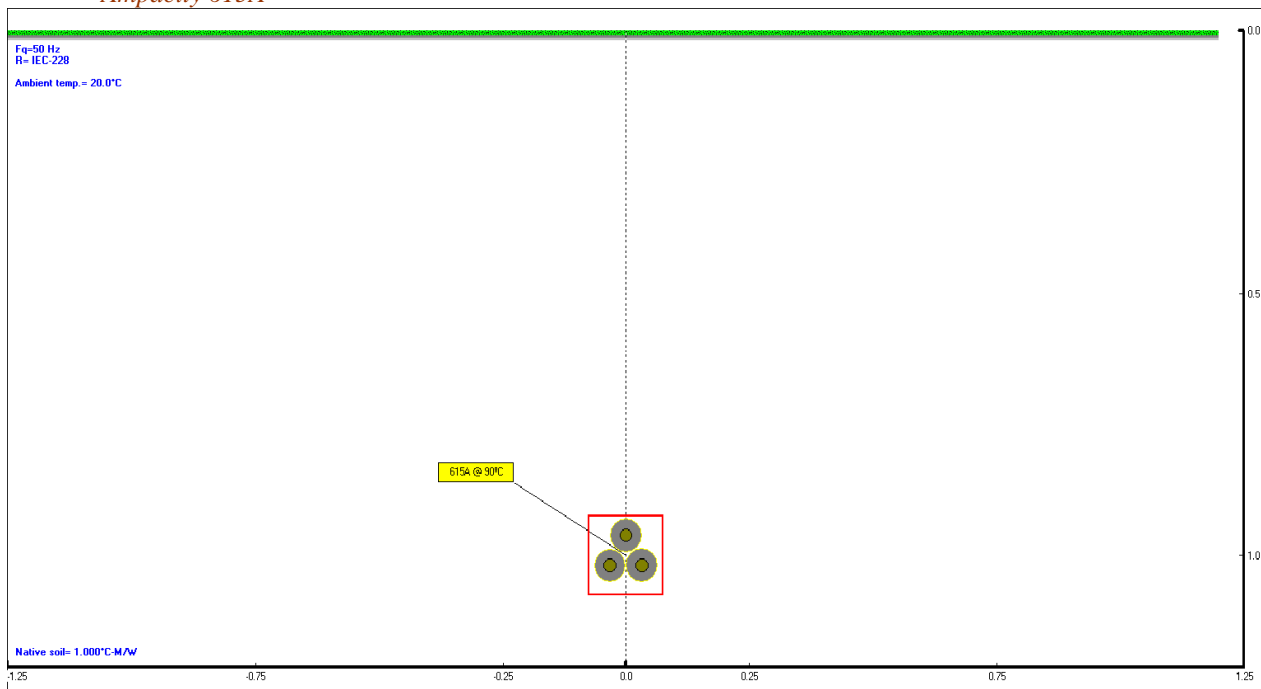
- ☐ Ground temperature 20°C
- ☐ Laying depth 1.0 m
- ☐ Ground thermal resistivity 1.0 K · m/W
- ☐ Air temperature 35°C

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

Cables in earth – single point or cross-bonded
Ampacity 648A



Ampacity 615A



Date: 2015-09-23; Mp15205
Prepared by: Michał Pstrągowski

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