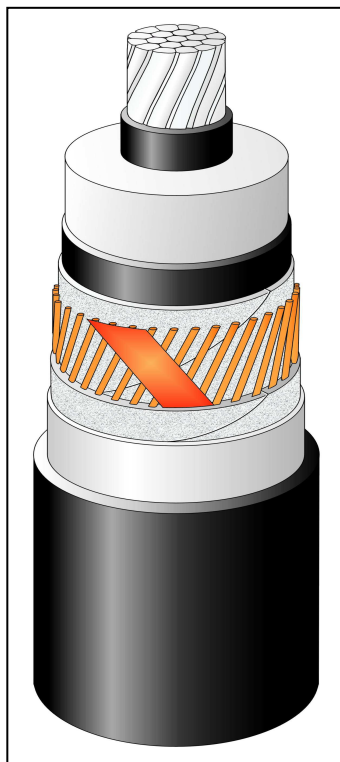


TECHNICAL SPECIFICATION

A2XS(FL)2Y 1x300RM/50 76/132 (145)kV IEC 60840

CONSTRUCTION ^(x)

- ☐ Round, stranded and compressed 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 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		Aluminum
<input type="checkbox"/> number of wires	No	34
Nominal cross sectional area	mm ²	300
Conductor diameter and tolerance	mm	20.5 ^{+0.3}
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	52.0
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	56.7
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	58.5
Nominal outer sheath thickness / min	mm	3.0 / 2.45
Approximate overall diameter completed cable (D _c)	mm	64.6
Weight of complete cable (approx.)	kg/km	4010
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	8800

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

ELECTRICAL DATA at 50Hz			
Maximum D.C. conductor resistance at 20°C	Ω/km	0.1000	
Maximum A.C. conductor resistance at 90°C	Ω/km	0.1290	
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.350	0.231
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.680	
Operating inductance			
❑ trefoil formation	mH/km	0.426	
❑ flat formation (*)	mH/km	0.611	
Induction reactance			
❑ trefoil formation	Ω/km	0.134	
❑ flat formation (*)	Ω/km	0.192	
Capacitance	μF/km	0.160 (+ 8 %)	
Capacitance reactance	kΩ/km	20.54	
Impedance			
❑ trefoil formation	Ω/km	0.186	
❑ flat formation (*)	Ω/km	0.231	
Zero sequence reactance	Ω/km	0.082	
Max. electric stress at conductor screen / (at insulation)	kV/mm	7.95 / 3.30	
Dielectric losses (tgδ = 0.001) – per phase	W/m	0.281	
Partial discharge test – at 1.5Uo	pC	≤ 5	
Charging current – per phase	A/km	3.70	
Charging power	kVA/km	281	
Earth fault current – per phase	A/km	11.10	
MECHANICAL DATA			
Recommended min. bending radius for laying	m	1.62	
Recommended permissible bending radius at final installation	m	1.30	
Maximum permissible pulling force:	kN	9	
SHORT CIRCUIT CURRENTS			
Maximum permissible thermal short-circuit (IEC 60949)			
Current for 1.0 sec.			
Phase conductor 90 → 250°C	kA	28.8	
Metallic screen 80 → 350°C	kA	10.5	
AMPACITY (**) – Bonding of the metallic screens		Single-point / Both-ends	
in earth			
❑ flat formation (*)	A	502 / 457	
❑ trefoil formation	A	477 / 466	
in air			
❑ flat formation	A	631 / 586	
❑ trefoil formation	A	562 / 553	
TESTS			
AC – test voltage – (2,5Uo; 30min)	kV	190	
Impulse voltage	kV	650	
Partial discharge test	kV	114	

Marking: TF-KABLE 5 A2XS(FL)2Y 1x300RM/50 76/132kV IEC 60840 2015

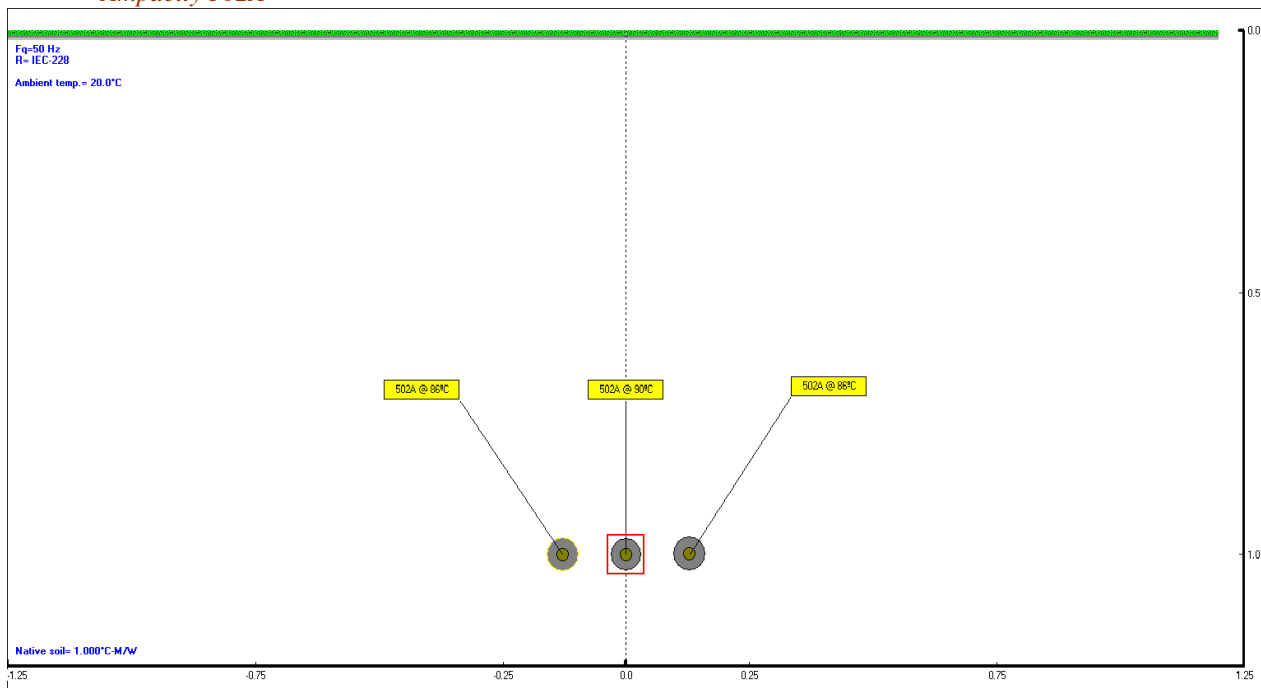
(*) Distance between cable axes laid in flat formation D_e+D_e mm

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

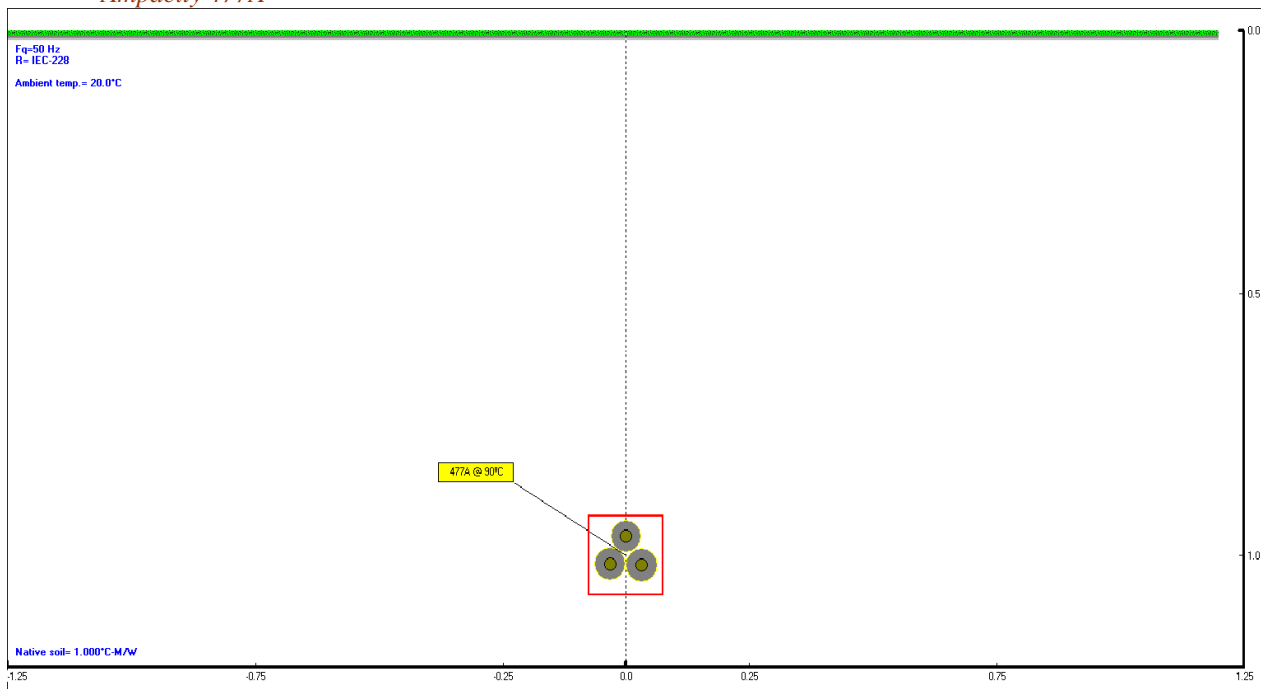
- Ground temperature 20°C
- Laying depth 1.0 m
- Ground thermal resistivity 1.0 K · m/W
- Air temperature 35°C

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

Cables in earth – single point or cross-bonded
Ampacity 502A



Ampacity 477A



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

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