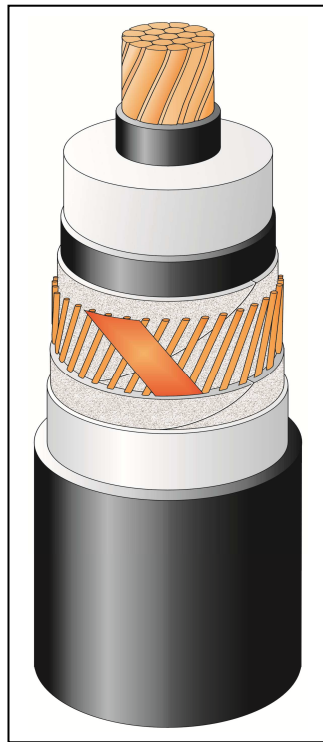


## TECHNICAL SPECIFICATION

### N2XS(FL)2Y 1x300RM/50 76/132 (145)kV DIN VDE 0276-632

#### CONSTRUCTION <sup>(x)</sup>

- Round, stranded and compacted 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 wires screen and
  - copper equalizing tapes
- Semi-conducting swelling tapes
- Longitudinal aluminum foil
- Sheath – HDPE, black



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 5 s )

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, date of manufacture, standard, meter marking

DESCRIPTION	UNIT	DETAILS	
<b>CONSTRUCTION DATA</b>			
Conductor		Copper	
<input type="checkbox"/> Material		37	
<input type="checkbox"/> Number of wires	No		
Nominal cross sectional area	mm <sup>2</sup>	300	
Conductor diameter and tolerance	mm	20.3 <sup>-0.2 +0.3</sup>	
Min. / Nom. thickness semi-conducting XLPE on conductor	mm	0.6 / 1.0	
Nominal insulation thickness XLPE	mm	18.5	
Insulation thickness: minimum at a point	mm	16.65	
Diameter over insulation – nominal	mm	60.1 <sup>±0.8</sup>	
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 <sup>2</sup>	50	
<input type="checkbox"/> Copper wires	No x mm	60 x 1.04	
<input type="checkbox"/> Copper equalizing tape	No x mm x mm	2 x 10 x 0.18	
Mean diameter over metallic screen	mm	65.1	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.2	
Nominal outer sheath thickness / min.	mm	3.3 / 2.7	
Approximate overall diameter completed cable (D <sub>c</sub> )	mm	73.5	
Weight of complete cable (approx.)	kg/km	6730	
<b>DELIVERY DATA</b>			
Diameter of wooden drum	m	2.5	2.8
<input type="checkbox"/> type		25	28
Maximum length per drum	m	340	550
Weight of heaviest reel, including cable	kg	3380	5290

<sup>(x)</sup> Diameters are calculated values and subject to manufacturing tolerances

<b>ELECTRICAL DATA at 50Hz</b>		
Maximum D.C. conductor resistance at 20°C	Ω/km	0.0601
Maximum A.C. conductor resistance at 90°C	Ω/km	0.078
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.351
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.614
Operating inductance		
<input type="checkbox"/> trefoil formation	mH/km	0.446
<input type="checkbox"/> flat formation (*)	mH/km	0.631
Induction reactance		
<input type="checkbox"/> trefoil formation	Ω/km	0.14
<input type="checkbox"/> flat formation (*)	Ω/km	0.198
Capacitance	μF/km	0.139 (+ 8 %)
Capacitance reactance	kΩ/km	22.83
Impedance		
<input type="checkbox"/> trefoil formation	Ω/km	0.16
<input type="checkbox"/> flat formation (*)	Ω/km	0.213
Zero sequence reactance	Ω/km	0.088
Max. electric stress at conductor screen / (at insulation)	kV/mm	6.88 / 2.65
Dielectric losses (tg δ = 0.001) – per phase	W/m	0.253
Partial discharge test – at 2.5U <sub>0</sub>	pC	≤ 5
Charging current – per phase	A/km	3.33
Charging power	kVA/km	253
Earth fault current – per phase	A/km	9.99
<b>MECHANICAL DATA</b>		
Recommended min. bending radius for laying	m	1.84
Recommended permissible bending radius at final installation	m	1.47
Maximum permissible pulling force:	kN	20
<b>SHORT CIRCUIT CURRENTS</b>		
Maximum permissible thermal short-circuit ( IEC 60949 ) <i>Current for 1.0 sec.</i>		
Phase conductor 90 → 250°C	kA	43.4
Metallic screen 80 → 350°C	kA	10.5
<b>AMPACITY (**)</b> – Bonding of the metallic screens		<b>Single-point / Both-ends</b>
in earth		
<input type="checkbox"/> flat formation (*)	A	645 / 525
<input type="checkbox"/> trefoil formation	A	615 / 580
in air		
<input type="checkbox"/> flat formation	A	815 / 705
<input type="checkbox"/> trefoil formation	A	725 / 700
<b>TESTS</b>		
AC Test voltage – ( 2.5U <sub>0</sub> ; 30min)	kV	160
Partial discharge test	kV	96

**Marking: TF-KABLE 5 N2XS(FL)2Y-WTC 1x300RM/50 64/110(123)kV DIN VDE 0276-632 2020**

(\*) Distance between cable axes laid in flat formation D<sub>c</sub>+D<sub>c</sub> 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
- Load factor 1.0
- Air temperature 35 °C

Date: 2020-05-28; MK20100

Prepared by: Marcin Kocik

<sup>(s)</sup> Diameters are calculated values and subject to manufacturing tolerances