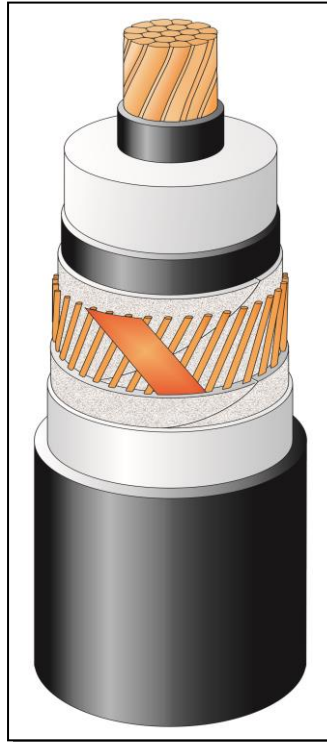


TECHNICAL SPECIFICATION
2XS(FL)2Y 1x240RM/105 36/69 (72.5)kV IEC 60840

CONSTRUCTION (x)

- 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 tape
- Metallic screen:
copper wires screen and copper equalizing tapes
- Semi-conducting swelling tape
- Longitudinal aluminum foil
- Sheath – black HDPE



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	
CONSTRUCTION DATA	U_o/U/U_m	36/69 (72.5)kV	
Conductor		Copper	
<input type="checkbox"/> Material		37	
<input type="checkbox"/> Number of wires	No		
Nominal cross sectional area	mm ²	240	
Conductor diameter and tolerance	mm	18.5 ^{-0.2 +0.3}	
Min./Nom. thickness semi-conducting XLPE on conductor	mm	0.3 / 0.6	
Nominal insulation thickness XLPE	mm	10.0	
Insulation thickness: minimum at a point	Mm	9.0	
Diameter over insulation – nominal	mm	39.7 ^{+0.5}	
Min./Nom. thickness semi-conducting XLPE on insulation	mm	0.3 / 0.6	
Thickness of semi-conducting swelling tape	No x mm	1 x ~ 0.35	
Metallic screen	mm ²	105	
<input type="checkbox"/> Copper wires	No x mm	65 x 1.44	
<input type="checkbox"/> Copper equalizing tape	No x mm x mm	2 x 10 x 0.10	
Mean diameter over metallic screen	mm	44.25	
Thickness of semi-conducting swelling tape	No x mm	1 x ~ 0.35	
Thickness of aluminum foil	mm	0.15	
Diameter over aluminum foil	mm	45.1	
Nominal inside outer sheath thickness / min.	mm	2.6 / 2.11	
Approximate overall diameter completed cable (D _e)	mm	50.7	
Weight of complete cable (approx.)	kg/km	4670	
DELIVERY DATA			
Diameter of wooden drum	m	2.2	3.0
<input type="checkbox"/> type		22AP	30AP
Maximum length per drum	m	670	2000
Weight of heaviest reel, including cable	kg	3811	11140

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

ELECTRICAL DATA at 50Hz			
Maximum D.C. conductor resistance at 20°C	Ω/km	0.0754	
Maximum A.C. conductor resistance at 90°C	Ω/km	0.0975	
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.178	
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	1.183	
Operating inductance			
<input type="checkbox"/> trefoil formation	mH/km	0.390	
<input type="checkbox"/> flat formation (*)	mH/km	0.575	
Induction reactance			
<input type="checkbox"/> trefoil formation	Ω/km	0.123	
<input type="checkbox"/> flat formation (*)	Ω/km	0.181	
Capacitance	μF/km	0.19 (+ 8 %)	
Capacitance reactance	kΩ/km	16.73	
Impedance			
<input type="checkbox"/> trefoil formation	Ω/km	0.157	
<input type="checkbox"/> flat formation (*)	Ω/km	0.205	
Zero sequence reactance	Ω/km	0.069	
Max. electric stress at conductor screen / (at insulation)	kV/mm	5.22 / 2.59	
Dielectric losses (tg δ = 0.001) – per phase	W/m	0.077	
Partial discharge test – at 1.5U ₀	pC	≤ 5	
Charging current – per phase	A/km	2.15	
Charging power	kVA/km	77	
Earth fault current – per phase	A/km	6.46	
MECHANICAL DATA			
Recommended min. bending radius for laying	m	1.27	
Recommended permissible bending radius at final installation	m	1.01	
Maximum permissible pulling force:	kN	12	
SHORT CIRCUIT CURRENTS			
Maximum permissible thermal short-circuit (IEC 60949)			
<i>Current for</i>	<i>sec.</i>	<i>1.0</i>	<i>3.0</i>
Phase conductor 90 → 250°C	kA	34.7	20.2
Metallic screen 80 → 350°C	kA	21.2	13.3
AMPACITY (**) – Bonding of the metallic screens		Single-point	
in earth			
<input type="checkbox"/> flat formation (*)	A	575	
<input type="checkbox"/> trefoil formation	A	545	
in air			
<input type="checkbox"/> flat formation	A	740	
<input type="checkbox"/> trefoil formation	A	635	
TESTS			
AC – Test voltage – (2.5U ₀ ; 30min)	kV	90	
Partial discharge test	kV	54	

Marking: TF-KABLE 5 2XS(FL)2Y 1x240RM/105 36/69(72.5)kV IEC 60840 2022

(*) 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
- Load factor 1.0
- Air temperature 35 °C

Date: 2022-07-28; SA22003

Prepared by: Agnieszka Szambor

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