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GTK – Ground Wearer



- 1. Aluminum plated wire
- 2. Central strength element (aluminum plated power wire)
- 3. Optical fiber

Application

The corrosion-resistant overhead ground-wire cable is designed to protect the high-voltage line from direct lightning strikes, it is used for suspension on overhead power lines with a voltage of 35 kV and above.

Technical characteristics

Parameter	Value						
Wearer parameters	GTK20-0/35-7,6mm 9 kA2's45kN	GTK20-0/50-9,1mm18kA 2's64kN	GTK20-0/70-11,1mm36kA 2's91kN	GTK20-0/90-12,1mm53kA 2's111kN	GTK20-0/100-13,2mm74kA 2's131kN	GTK20-0/120-14,2mm99kA 2's152kN	GTK20-0/300-22,6mm637kA 2's383kN
Cable diameter, mm	7,6	9,1	11,1	12,1	13,2	14,2	22,6
Cable weight, kg/km	230	328	469	574	675	783	1990
Rated breaking strength (RBS), kN	45,4	64,9	91,5	111,7	131,9	152,2	383,5
Maximum rated design tension (MRDT), kN	28,4	40,6	57,3	69,9	82,6	95,3	240,3
Average operating load, kN	13,6	19,5	27,5	33,5	39,6	45,6	115,0
Sectional area of steel elements, mm ²	35,0	50,0	70,7	86,3	101,7	117,8	298,5
Total sectional area, mm ²	35,0	50,0	70,7	86,3	101,7	117,8	298,5
DC resistance at 20°C, Om/km	2,472	1,730	1,221	1,000	0,848	0,733	0,290
Thermal withstand of s/c current, kA2·s	8,7	17,7	35,8	53,4	74,2	99,4	636,7
Coefficient of linear thermal expansion, 10 ⁻⁶ 1/K	12,6	12,6	12,6	12,6	12,6	12,6	12,6
Elasticity modulus (final), kN/mm ²	157,8	157,9	156,6	156,4	156,7	156,2	155,5
Elasticity modulus (initial, mounting), kN/mm ²	139,8	139,9	138,7	138,5	138,9	138,4	137,7
Elasticity modulus (exhaust), kN / mm ²	123,1	123,2	122,2	122,0	122,3	121,9	121,3
Operating temperature	-60°C...+85°C						
Installation temperature	-30°C...+50°C						
Transportation and storage temperature	-60°C...+70°C						
Minimum bending radius	Not less than 20 cable diameters						
Factory length, km	4						

Technical characteristics of optical fiber

Type of optical fiber	Corning SMF 28 Ultra	Corning SMF28e+BB
ITU-T recommendations	G.657A1 G.652D	G.657A1 G.652D
Deviation from the concentricity of the core, microns, not more	0,5	
Diameter of fiber sheath, microns	125±0,7	
Deviation from the roundness of the sheath,%, not more	0,7	
The diameter of the protective covering, microns	242±5	
Maximum attenuation at wavelength 1310 nm	0,32	0,34
Maximum attenuation at wavelength 1550 nm	0,18	0,20

Full name example

GTK20- 0/35- 7,6mm-9 kA2's45kN

Code Description:

GTK20 –overhead ground-wire cable corrosion-resistant with plated wire 20SA;

0 – sectional area of aluminum wires, mm²;

90 – sectional area of aluminum plated steel wires, mm²;

12,1 – nominal outer diameter of the GTK, mm;

53 – Thermal withstand of s/c current, kA²·s;

111 – mechanical tensile strength, kN

GTK20 consist of the central strength element made of aluminum plated steel wire 20SA type. Around the central element is twisted one or few layers consisting of aluminum plated steel wire, 20SA type.

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