



Cable connections up to 35 kV  
FELTOFLEX®  
NTMCWOEU



FELTOFLEX cables constitute a highly flexible connection for minisubs, switch-gear, transformers, generators and motors in the medium voltage range. The cables are in single core screened version for 10 or 20 kV (max. continuous 12 resp. 24 kV) ratings, and can be supplied ready for connection, fitted with plugs or sealing ends. Thanks to their high flexibility they are particularly suitable for confined connection spaces, where small bending radius is required.

**Design:**

The single core cables are manufactured to comply with DIN VDE 0250 chapter 813. The surface of the fine stranded tinned copper conductors is smoothed with a conductive rubber layer. Next to it comes the insulation sheath of quality degree 3GI3 to VDE 0207 chapter 20, based on Ethylene Propylene Rubber (EPR).

The radial electric field is limited by another layer of conductive rubber. Inner layer, insulation and outer layer are brought about by a triple extrusion process. As a result, this arrangement is free of partial discharges.

Screening consists of a close spiral wrap of tinned copper wires. A red polychloroprene jacket of quality degree 5GM3 to DIN VDE 0207 chapter 21 provides the exterior protection.

Standard sizes in both mentioned nominal voltages are shown on the table overleaf, giving all dimensions and technical data.

The short circuit current for 1 s refers to a conductor temperature of 90 deg C before and 250 deg C after the short circuit. This temperature limit is permissible for the insulating material EPR, same as for XLPE. Thermal short circuit capacity of FELTOFLEX is therefore identical to that of XLPE cable. Since differences in terms of rated current are also negligible, FELTOFLEX connection cables can be chosen in same cross-sections as XLPE-cables.

**Accessories:**

FELTOFLEX cables can be fitted and supplied with plug connectors as well as slip-on sealing ends.

Electrical tests to VDE 0278 chapter 4 column 1 have been carried out for 20 kV rated voltage on a cable sample of 35 sqmm fitted with F&G indoor sealing ends. All tests were passed safely.

Under cyclic current load, an AC voltage was applied continuously to the sample. Starting at 35 kV, the voltage was increased weekly by 5 kV, finishing at 85 kV without damage to cable or terminations. During this test the cable was laid in a bend corresponding to 5 times outer diameter.

**Bending radius:**

Minimum values are 5 times overall cable dia, in line with the described test. When laying the cable, care should be taken to keep the cable bending uniform.



**Flexible Cables FELTOFLEX 10 kV and 20 kV  
Dimensions and Technical Data**

	Cross section mm <sup>2</sup>	Wire-∅ mm	Conductor -∅ appr. mm	Insulation thickness mm	∅ of insulated core mm	Sheath thickness mm	Overall-∅ appr. mm	weight appr. kg/m
<b>10 kV</b>	1x 16/16	0,40	5,3	3,4	13,7-14,7	2,2	21,5	0,77
	1x 25/16	0,40	6,5	3,4	14,9-15,9	2,2	23,0	0,88
	1x 35/16	0,40	7,7	3,4	16,1-17,1	2,2	24,0	1,00
	1x 50/16	0,40	9,3	3,4	17,7-18,7	2,2	25,5	1,19
	1x 70/16	0,50	11,2	3,4	19,6-20,6	2,5	28,0	1,46
	1x 95/16	0,50	12,9	3,4	21,3-22,3	2,5	29,5	1,71
	1x120/16	0,50	14,6	3,4	23,0-24,0	2,5	31,5	1,99
	1x150/25	0,50	16,2	3,4	24,6-25,6	3,0	34,5	2,49
	1x185/25	0,50	17,9	3,4	26,3-27,3	3,0	36,0	2,83
1x240/25	0,50	20,6	3,4	29,0-30,0	3,5	39,5	3,38	
<b>20 kV</b>	1x 25/16	0,40	6,5	5,5	19,1-20,1	2,5	27,5	1,14
	1x 35/16	0,40	7,7	5,5	20,3-21,3	2,5	28,5	1,28
	1x 50/16	0,40	9,3	5,5	21,9-22,9	2,5	30,5	1,48
	1x 70/16	0,50	11,2	5,5	23,8-24,8	3,0	33,5	1,82
	1x 95/16	0,50	12,9	5,5	25,5-26,5	3,0	35,0	2,10
	1x120/16	0,50	14,6	5,5	27,2-28,2	3,0	37,0	2,40
	1x150/25	0,50	16,2	5,5	28,8-29,8	3,5	39,5	2,91
	1x185/25	0,50	17,9	5,5	30,5-31,5	3,5	41,0	3,27
	1x240/25	0,50	20,6	5,5	33,2-34,2	3,5	45,0	3,74

	Cross section mm <sup>2</sup>	DC- resistance Ω/km	Operating capacity μF/km	Rated current in air at 30°C A	short circuit current (1s) kA	Test voltage AC/DC kV	Bending radius min. mm
<b>10 kV</b>	1x 16/16	1,24	0,26	138	2,3	17/42,5	110
	1x 25/16	0,795	0,29	183	3,6		115
	1x 35/16	0,565	0,32	228	5,0		120
	1x 50/16	0,393	0,37	283	7,2		130
	1x 70/16	0,277	0,42	349	10,0		140
	1x 95/16	0,210	0,46	421	13,6		150
	1x120/16	0,164	0,51	492	17,2		160
	1x150/25	0,132	0,55	559	21,5		170
	1x185/25	0,108	0,59	630	26,5		180
1x240/25	0,0817	0,67	745	34,3	200		
<b>20 kV</b>	1x 25/16	0,795	0,21	194	3,6	29/72,5	140
	1x 35/16	0,565	0,23	240	5,0		145
	1x 50/16	0,393	0,25	300	7,2		155
	1x 70/16	0,277	0,29	371	10,0		170
	1x 95/16	0,210	0,31	446	13,6		175
	1x120/16	0,164	0,34	520	17,2		185
	1x150/25	0,132	0,37	592	21,5		200
	1x185/25	0,108	0,40	668	26,5		205
	1x240/25	0,0817	0,44	790	34,3		225