



TEBAOFLEX CABLE

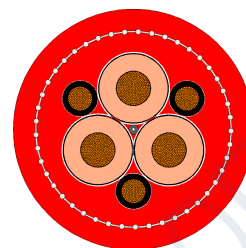
DATA SHEET

Mining&Industrial cable

(N)TSCGEWOEU

Medium voltage reeling cable acc. to DIN VDE 0250, Part 813

Voltage ratings: 1.8/3 kV to 18/30 kV.



APPLICATION

Flexible H.V. reeling cable, also suitable for festoon systems, for high to extreme mechanical stresses, high travel speeds, dynamic tensile loads, multiple changes of direction into different planes, running over rollers and torsional stresses. Mainly for mobile equipment such as fast-moving container cranes, cranes, large mobile equipment and excavators. Also for applications to which DIN VDE 0168 and 0118 apply: opencast and underground mining.

CONSTRUCTION

Component	Description
Conductor	Electrolytic tinned copper, very finely stranded, class 5; refer to DIN VDE 0295.
Insulation	High grade special compound based on EPR, at least 3GI3; refer to DIN VDE 0207, Part 21.
Field control	For designs from 3 to 30 kV: inner semi-conductive layer of EPR and outer semi-conductive layer of modified NBR, capable of being stripped cold.
Core identification	From 3.6/6 kV: natural coloured insulation with black semi-conductive layer.
Core arrangement	Laid up with length of lay $7 \times D$ (core diameter); earth conductor split into 3 parts.
Inner sheath	Double layer inner sheath, special EPR compound at least 5GM3, also serving as water barrier; colour red.
Armour	Anti-torsion braid reinforced with polyester threads in a vulcanized bond between the sheaths.
Outer sheath	Double layer outer sheath with flexible and robust sandwich structure; PCP compound at least 5GM5; bright red.
Identification	Cable designation, number of cores x cross-section, rated voltage, year of manufacture and serial number.

CHARACTERISTICS

- Suitable for reeling and festoon systems.
- Suitable for multiple changes of direction and torsional stresses.
- For high travel speeds and dynamic tensile loads.
- Symmetrical three-core design with low EMC interference.

STANDARDS

Parameter	Value
Cable standard	DIN VDE 0250, Part 813
Conductor	DIN VDE 0295
Insulation and sheath compounds	DIN VDE 0207, Part 21; DIN VDE 0207
Installation guide	DIN VDE 0298, Part 3
Oil resistance	DIN VDE 0473, Part 81121 Para. 10
Water compatibility	HD 2216

TECHNICAL DATA

ELECTRICAL PARAMETERS

Parameter	1.8/3	3.6/6	6/10	8.7/15	12/20	14/25	18/30
Max. AC voltage U ₀ /U	2.1/3.6	4.2/7.2	6.9/12	10.4/18	13.9/24	17.3/30	20.8/36
Max. DC voltage U ₀ /U	2.7/5.4	5.4/10.8	9/18	13.5/27	18/36	22.5/45	27/54
AC test voltage	6.0	11.0	17.0	24.0	29.0	36.0	43.0

Parameter	Value
Current carrying capacity	According to DIN VDE 0298, Part 4. Higher values are permissible in specific cases.
Bus compatibility	A special cable design with fibre optics can be found in the product range.
EMC	Extremely low interference level due to symmetrical three-core design with narrow manufacturing tolerances.

OPERATING CHARACTERISTICS

Parameter	Value
Fully flexible operation	-35 deg C to +90 deg C
Fixed installation	-50 deg C to +90 deg C
Maximum conductor operating temperature	90 deg C
Short-circuit temperature of conductor	250 deg C
Dynamic tensile load at acceleration processes	Up to 30 N/mm ² (acc. to DIN VDE 0298 Part 3: 15 N/mm ²)
Maximum permanent tensile load	Up to 20 N/mm ²
Torsional stresses	+/- 25 deg/m
Minimum bending radius	According to DIN VDE 0298, Part 3
Minimum distance with S-type directional changes	20 x D (cable diameter)
Travel speed - gantry reeling operation	No restriction. For speeds beyond 240 m/min, consult the manufacturer.
Additional tests	Reversed bending test; torsional stress test

CHEMICAL PARAMETERS

Parameter	Value
Resistance to oil	DIN VDE 0473, Part 81121 Para. 10
Weather resistance	Unrestricted use outdoors and indoors; resistant to ozone, UV and moisture.
Water compatibility	According to HD 2216

TECHNICAL DATA

DIMENSIONS

Values are technical parameters only. Cable dimensions may vary due to manufacturing tolerances.

Number of conductors & cross-section	Power/Earth conductor dia. (mm)	OD min (mm)	OD max (mm)	Weight (kg/km)	Max tensile force (N)
0.6/1 kV					
3x70+3x35/3	12.0/5.0	39.7	42.7	3920	6300
3x95+3x50/3	14.0/6.0	44.3	47.3	5020	8550
3x120+3x70/3	15.8/7.2	51.0	55.0	6630	10800
3x150+3x70/3	17.5/7.2	53.9	57.9	7690	13500
3x185+3x95/3	19.7/8.1	58.9	62.9	9310	16650
3x240+3x120/3	22.5/9.3	67.4	71.4	12200	21600
Number of conductors & cross-section	Power/Earth conductor dia. (mm)	OD min (mm)	OD max (mm)	Weight (kg/km)	Max tensile force (N)
1.8/3 kV					
3x25+3x25/3	7.1/4.2	40.4	43.4	2680	1500 (2250)
3x35+3x25/3	8.3/4.2	43.0	46.0	3150	2100 (3150)
3x50+3x25/3	9.9/4.2	46.4	49.4	3840	3000 (4500)
3x70+3x35/3	11.8/5.0	45.9	48.9	4240	4200 (6300)
3x95+3x50/3	13.8/5.9	58.5	62.5	6490	5700 (8550)
3x120+3x70/3	15.4/7.0	63.8	67.8	8010	7200 (10800)
3x150+3x70/3	17.2/7.0	67.7	71.7	9240	9000 (13500)
3x185+3x95/3	19.0/8.0	71.6	75.6	10750	11100 (16650)
3x240+3x120/3	21.8/9.0	79.4	83.4	13640	14400 (21600)
3x300+3x150/3	24.4/10.0	84.7	89.7	16230	18000 (27000)
Number of conductors & cross-section	Power/Earth conductor dia. (mm)	OD min (mm)	OD max (mm)	Weight (kg/km)	Max tensile force (N)
3.6/6 (7.2) kV					
3x25+3x25/3	7.1/4.2	36.1	39.1	2190	1500 (2250)
3x35+3x25/3	8.3/4.2	39.6	42.6	2710	2100 (3150)
3x50+3x16	9.9/4.2	42.4	45.4	3360	3000 (4500)
3x70+3x35/3	11.8/5.0	46.4	49.4	4290	4200 (6300)
3x95+3x50/3	13.8/5.9	51.4	55.5	5520	5700 (8550)
3x120+3x35	15.4/7.0	55.0	59.0	6680	7200 (10800)
3x150+3x35	17.2/7.0	58.8	62.8	7830	9000 (13500)
3x185+3x95/3	19.0/8.0	65.1	69.1	9480	11100 (16650)
3x240+3x120/3	21.8/9.0	72.5	76.5	12120	14400 (21600)
3x300+3x150/3	24.4/10.0	78.2	82.2	14580	18000 (27000)

TECHNICAL DATA

DIMENSIONS CONTINUED

Values are technical parameters only. Cable dimensions may vary due to manufacturing tolerances.

Number of conductors & cross-section	Power/Earth conductor dia. (mm)	OD min (mm)	OD max (mm)	Weight (kg/km)	Max tensile force (N)
6/10 kV					
3x25+3x25/3	7.1/4.2	37.8	40.8	2410	1500 (2250)
3x35+3x25/3	8.3/4.2	40.9	43.9	2880	2100 (3150)
3x50+3x25/3	9.9/4.2	43.7	46.7	3480	3000 (4500)
3x70+3x35/3	11.8/5.0	47.7	50.7	4570	4200 (6300)
3x95+3x50/3	13.8/5.9	52.8	56.8	5710	5700 (8550)
3x120+3x70/3	15.4/7.0	56.2	60.2	6830	7200 (10800)
3x150+3x70/3	17.2/7.0	61.5	65.5	8180	9000 (13500)
3x185+3x95/3	19.0/8.0	65.3	69.3	9660	11100 (16650)
3x240+3x120/3	21.8/9.0	73.8	77.8	12310	14400 (21600)
3x300+3x150/3	24.4/10.0	79.5	83.5	14780	18000 (27000)
Number of conductors & cross-section	Power/Earth conductor dia. (mm)	OD min (mm)	OD max (mm)	Weight (kg/km)	Max tensile force (N)
12/20 kV					
3x25+3x25/3	7.1/4.2	41.1	47.1	2940	1500 (2250)
3x35+3x25/3	8.3/4.2	43.7	49.6	3420	2100 (3150)
3x50+3x25/3	9.9/4.2	47.1	55.8	4300	3000 (4500)
3x70+3x35/3	11.8/5.0	52.0	59.9	5300	4200 (6300)
3x95+3x50/3	13.8/5.9	57.2	63.2	6500	5700 (8550)
3x120+3x70/3	15.4/7.0	62.1	69.1	7870	7200 (10800)
3x150+3x70/3	17.2/7.0	65.9	73.0	9060	9000 (13500)
3x185+3x95/3	19.0/8.0	69.8	78.3	10850	11100 (16650)
3x240+3x120/3	21.8/9.0	77.3	84.3	13340	14400 (21600)
3x300+3x150/3	24.4/10.0	84.2	92.2	16250	18000 (27000)
Number of conductors & cross-section	Power/Earth conductor dia. (mm)	OD min (mm)	OD max (mm)	Weight (kg/km)	Max tensile force (N)
14/25 kV					
3x25+3x25/3	7.1/4.2	49.6	53.6	3490	1500 (2250)
3x35+3x25/3	8.3/4.2	52.2	56.2	3990	2100 (3150)
3x50+3x25/3	9.9/4.2	55.7	59.7	4740	3000 (4500)
3x70+3x35/3	11.8/5.0	61.2	65.2	5990	4200 (6300)
3x95+3x50/3	13.8/5.9	65.5	69.5	7170	5700 (8550)
3x120+3x70/3	15.4/7.0	69.0	73.0	8410	7200 (10800)
3x150+3x70/3	17.2/7.0	74.3	78.3	9890	9000 (13500)
3x185+3x95/3	19.0/8.0	78.2	82.2	11460	11100 (16650)
3x240+3x120/3	21.8/9.0	85.5	90.5	14380	14400 (21600)
3x300+3x150/3	24.4/10.0	91.1	96.1	16970	18000 (27000)

TECHNICAL DATA

DIMENSIONS CONTINUED

Values are technical parameters only. Cable dimensions may vary due to manufacturing tolerances.

Number of conductors & cross-section	Power/Earth conductor dia. (mm)	OD min (mm)	OD max (mm)	Weight (kg/km)	Max tensile force (N)
18/30 kV					
3x25+3x25/3	7.1/4.2	53.1	57.1	3860	1500 (2250)
3x35+3x25/3	8.3/4.2	55.7	59.7	4390	2100 (3150)
3x50+3x25/3	9.9/4.2	59.1	63.1	5140	3000 (4500)
3x70+3x35/3	11.8/5.0	64.7	68.7	6440	4200 (6300)
3x95+3x50/3	13.8/5.9	69.0	73.0	7660	5700 (8550)
3x120+3x70/3	15.4/7.0	73.8	77.8	9160	7200 (10800)
3x150+3x70/3	17.2/7.0	77.7	81.7	10420	9000 (13500)
3x185+3x95/3	19.0/8.0	81.6	85.6	12020	11100 (16650)
3x240+3x120/3	21.8/9.0	89.0	94.0	15010	14400 (21600)
3x300+3x150/3	24.4/10.0	95.6	100.6	17900	18000 (27000)

NOTES

Cable dimensions may vary due to manufacturing tolerances. Current carrying capacity values depend on operating conditions and installation method.

CERTIFICATIONS



TEBAOFLEX CABLE