



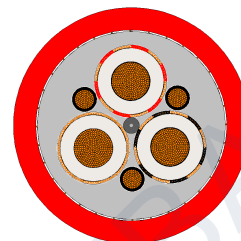
TEBAOFLEX CABLE

DATA SHEET

Mining&Industrial cable

(N)TSCGECW0EU

6/10 kV to 18/30 kV MV reeling cable for TBMs



APPLICATION

Flexible medium-voltage reeling power supply cable for tunnel boring machines (TBM), underground mines and tunnel construction sites. Suitable for severe tunnelling duty with reel operation, directional changes, mechanical stress and indoor or outdoor use where ozone, moisture, oil resistance and reliable power transmission are required.

CONSTRUCTION

Component	Description
Conductor	Finely stranded tinned copper conductor, class 5
Protective earth conductor	Single concentric copper/textile mixed braid over every core
Insulation	EPR based special rubber compound
Electrical field control	Inner and outer semiconductive rubber layers
Core identification	Main cores natural with black semiconductive rubber; control cores black
Core arrangement	Three main conductors laid up with three control cores in the outer interstices
Inner sheath	Vulcanized EPR rubber compound, GM1B type
Monitoring conductor	Overall concentric lay of copper wire spinning
Outer sheath	Synthetic elastomer rubber compound, 5GM5 type, red

CHARACTERISTICS

- Designed for TBM reeling applications and frequent direction changes.
- Maximum tensile load: 15 N/mm² for reeling duty; 30 N/mm² for TBM duty.
- Flame retardant according to IEC 60332-1-2.
- Oil resistant according to IEC 60811-404.
- Weather, ozone and moisture resistant for indoor and outdoor use.
- Torsional stress capability: +/- 25 °/m; travel speed max. 30 m/min.

OPERATING CHARACTERISTICS

Parameter	Value
Rated voltage Uo/U	6/10 kV; 8.7/15 kV; 12/20 kV; 14/25 kV; 18/30 kV
Max. operating voltage AC	6.9/12 kV; 10.4/18 kV; 13.9/24 kV; 17.3/30 kV; 20.8/36 kV
Max. operating voltage DC	9/18 kV; 13.5/27 kV; 18/36 kV; 22.5/45 kV; 27/54 kV
AC test voltage	17 kV; 24 kV; 29 kV; 36 kV; 43 kV
AC test voltage, control cores	2 kV
Max. conductor temperature	+90 °C
Max. short circuit temperature	+250 °C
Ambient temperature	Fixed -40 °C to +90 °C; fully flexible -20 °C to +90 °C
Minimum bending radius	According to DIN VDE 0298 part 3
S-type direction changes	Minimum distance 20 x D

STANDARDS

Parameter	Value
Cable standard	Based on DIN VDE 0250-813
Fire performance	IEC 60332-1-2
Oil resistance	IEC 60811-404

TECHNICAL DATA

DIMENSIONS AND ELECTRICAL PARAMETERS

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

Voltage kV	Cross section mm2	Cond. dia. mm	Min OD mm	Max OD mm	Weight kg/km	Tensile N	Res. Ω/km	Cap. pF/km	Ind. mH/km	Current A	Short kA
6/10 kV											
6/10	3x25 + 3x16/3E + 3x2.5ST + 6UELKON	6.4	43	46	3030	1125	0.795	0.31	0.33	131	3.58
6/10	3x35 + 3x25/3E + 3x2.5ST + 6UELKON	7.6	45.7	48.7	3600	1575	0.565	0.35	0.32	162	5.01
6/10	3x50 + 3x25/3E + 3x2.5ST + 6UELKON	9.1	47.9	51.9	4190	2250	0.393	0.40	0.30	202	7.15
6/10	3x70 + 3x35/3E + 3x2.5ST + 6UELKON	10.9	54.6	58.6	5550	3150	0.277	0.46	0.29	250	10.01
6/10	3x95 + 3x50/3E + 3x2.5ST + 6UELKON	12.6	58.3	62.3	6630	4275	0.210	0.52	0.27	301	13.59
6/10	3x120 + 3x70/3E + 3x2.5ST + 6UELKON	14.2	62.1	66.1	7840	5400	0.164	0.57	0.27	352	17.16
6/10	3x150 + 3x70/3E + 3x2.5ST + 6UELKON	15.8	66.6	70.6	8490	6750	0.129	0.63	0.26	404	21.45
6/10	3x185 + 3x95/3E + 3x2.5ST + 6UELKON	17.8	73.1	77.1	10860	8325	0.106	0.64	0.26	461	26.46
6/10	3x240 + 3x120/3E + 3x2.5ST + 6UELKON	20.4	80.7	84.7	13820	10800	0.0801	0.64	0.25	540	34.32
8.7/15 kV											
8.7/15	3x25 + 3x16/3E + 3x2.5ST + 6UELKON	6.4	46.4	49.4	3210	1125	0.795	0.24	0.36	139	3.58
8.7/15	3x35 + 3x25/3E + 3x2.5ST + 6UELKON	7.6	48.7	52.7	3730	1575	0.565	0.27	0.34	172	5.01
8.7/15	3x50 + 3x25/3E + 3x2.5ST + 6UELKON	9.1	53.7	57.7	4700	2250	0.393	0.30	0.32	215	7.15
8.7/15	3x70 + 3x35/3E + 3x2.5ST + 6UELKON	10.9	58	62	5990	3150	0.277	0.34	0.31	265	10.01
8.7/15	3x95 + 3x50/3E + 3x2.5ST + 6UELKON	12.6	61.6	65.6	7080	4275	0.210	0.38	0.29	319	13.59
8.7/15	3x120 + 3x70/3E + 3x2.5ST + 6UELKON	14.2	67.2	71.2	8490	5400	0.164	0.42	0.29	371	17.16
12/20 kV											
12/20	3x25 + 3x16/3E + 3x2.5ST + 6UELKON	6.4	48.8	52.8	3740	1125	0.795	0.22	0.37	139	3.58
12/20	3x35 + 3x25/3E + 3x2.5ST + 6UELKON	7.6	51.3	55.3	4270	1575	0.565	0.24	0.35	172	5.01
12/20	3x50 + 3x25/3E + 3x2.5ST + 6UELKON	9.1	56.7	60.7	5270	2250	0.393	0.27	0.33	215	7.15
12/20	3x70 + 3x35/3E + 3x2.5ST + 6UELKON	10.9	61.3	65.3	6390	3150	0.277	0.31	0.32	265	10.01
12/20	3x95 + 3x50/3E + 3x2.5ST + 6UELKON	12.6	66.4	70.4	7770	4275	0.210	0.34	0.30	319	13.59
12/20	3x120 + 3x70/3E + 3x2.5ST + 6UELKON	14.2	70.2	74.2	9160	5400	0.164	0.38	0.29	371	17.16
12/20	3x150 + 3x70/3E + 3x2.5ST + 6UELKON	15.8	71.1	75.1	9820	6750	0.129	0.42	0.28	428	21.45
12/20	3x185 + 3x95/3E + 3x2.5ST + 6UELKON	17.8	71.2	75.2	10200	8325	0.106	0.64	0.26	488	26.46
12/20	3x240 + 3x120/3E + 3x2.5ST + 6UELKON	20.4	74.5	78.5	11800	10800	0.0801	0.69	0.25	574	34.32

Nominal current carrying capacity is stated for rubber cables laid on a surface at 30 °C ambient temperature.

TECHNICAL DATA

DIMENSIONS AND ELECTRICAL PARAMETERS

Voltage kV	Cross section mm2	Cond. dia. mm	Min OD mm	Max OD mm	Weight kg/km	Tensile N	Res. Ω/km	Cap. µF/km	Ind. mH/km	Current A	Short kA
14/25 kV											
14/25	3x25 + 3x16/3E + 3x2.5ST + 6UELKON	6.4	54.6	58.6	4100	1125	0.795	0.19	0.40	139	3.58
14/25	3x35 + 3x25/3E + 3x2.5ST + 6UELKON	7.6	57.1	61.1	4640	1575	0.565	0.21	0.37	172	5.01
14/25	3x50 + 3x25/3E + 3x2.5ST + 6UELKON	9.1	61	65	5550	2250	0.393	0.23	0.35	215	7.15
14/25	3x70 + 3x35/3E + 3x2.5ST + 6UELKON	10.9	66.6	70.6	6860	3150	0.277	0.26	0.33	265	10.01
14/25	3x95 + 3x50/3E + 3x2.5ST + 6UELKON	12.6	70.2	74.2	8110	4275	0.210	0.29	0.32	319	13.59
14/25	3x120 + 3x70/3E + 3x2.5ST + 6UELKON	14.2	73.9	77.9	9450	5400	0.164	0.32	0.31	371	17.16
18/30 kV											
18/30	3x25 + 3x16/3E + 3x2.5ST + 6UELKON	6.4	58	62	4490	1125	0.795	0.17	0.42	139	3.58
18/30	3x35 + 3x25/3E + 3x2.5ST + 6UELKON	7.6	60.7	64.7	5060	1575	0.565	0.18	0.39	172	5.01
18/30	3x50 + 3x25/3E + 3x2.5ST + 6UELKON	9.1	66.1	70.1	6220	2250	0.393	0.20	0.37	215	7.15
18/30	3x70 + 3x35/3E + 3x2.5ST + 6UELKON	10.9	70	74	7330	3150	0.277	0.23	0.35	265	10.01
18/30	3x95 + 3x50/3E + 3x2.5ST + 6UELKON	12.6	73.9	77.9	8660	4275	0.210	0.25	0.33	319	13.59
18/30	3x120 + 3x70/3E + 3x2.5ST + 6UELKON	14.2	78.6	83.6	10250	5400	0.164	0.27	0.32	371	17.16

NOTES

- Cable dimensions and weights are technical reference values and may vary due to manufacturing tolerances.
- Resistance values are stated at 20 °C. Current carrying capacity values follow the operating conditions shown above.

CERTIFICATIONS



TEBAOFLEX CABLE