



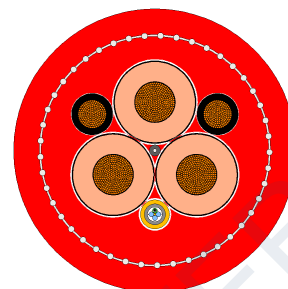
TEBAOFLEX CABLE

DATA SHEET

Mining&Industrial cable

R-(N)TSCGEWOU FO REELING CABLE

3.6/6 kV to 20/35 kV medium voltage reeling cable with optical fibers



APPLICATION

Medium voltage reeling cable for connection of large material handling machines such as excavators, dumpers and mobile crushers in open-cast mines. Designed for high mechanical stresses with monospiral and cylindrical reels in heavy-duty reeling service, with an integrated optical fiber unit for signal and data transmission.

CONSTRUCTION

Parameter	Value
Conductors	Bare electrolytic copper, very finely stranded flexible conductor
Insulation	High-grade lead-free special EPR-based compound with improved mechanical and electrical characteristics
Electrical field control	Inner and outer semi-conductive rubber layers, cold strippable core screen
Core identification	Natural colored cores with black semi-conductive rubber and white numbers
Core arrangement	Three-core design with split earth conductor in the interstices
Optical fiber unit	Integrated FO unit; 6, 12, 18 or 24 fibers available on request, with G62.5, G50 and E9 fiber types
Inner sheath	EPR-based compound
Torsion protection	Polyester braid in a vulcanized bond between inner and outer sheath
Outer sheath	High-grade chloroprene compound CR/PCP
Outer jacket colour	Red; other colours available on request

OPERATING CHARACTERISTICS

Parameter	Value
Rated voltage U _o /U	3.6/6 kV; 6/10 kV; 8.7/15 kV; 12/20 kV; 14/25 kV; 18/30 kV; 20/35 kV
Maximum conductor temperature	+90 deg C
Short-circuit conductor temperature	+250 deg C
Fixed installation temperature	-40 deg C to +90 deg C
Fully flexible operation temperature	-35 deg C to +90 deg C
Bending radius	According to DIN VDE 0298 part 3; S-type directional changes 20 x D
Travel speed	In operation up to 60 m/min; on rewinding up to 100 m/min; reeling operation up to 120 m/min
Mechanical performance	Torsional stress +/-100 deg/m; tensile load up to 20 N/mm ² , 25 N/mm ² during acceleration

STANDARDS AND PERFORMANCE

- Based on DIN VDE 0250-813
- IEC 60332-1-2 flame performance
- IEC 60811-404 oil resistance
- EN 50525-2-21 water resistance
- Unrestricted indoor and outdoor use; resistant to ozone, UV and moisture

TECHNICAL DATA

Nominal data. Internal product codes have been omitted.

Dimensions and Electrical Data (3.6/6 kV)										
Voltage kV	Cross- section	Cond. dia. mm	Outer min. mm	Outer max. mm	Weight kg/km	R20 ohm/km	Cap. uF/km	Ind. mH/km	Amp. A	Short kA
3.6/6	3x25+2x25/2+FO	7.1	40.0	43.0	2590	0.7839	0.37	0.35	131	3.58
3.6/6	3x25+2x50/2+FO	7.1	42.6	45.6	2900	0.7839	0.37	0.38	131	3.58
3.6/6	3x35+2x25/2+FO	8.4	41.6	44.6	2960	0.554	0.43	0.32	162	5.01
3.6/6	3x35+2x50/2+FO	8.4	44.5	47.5	3300	0.554	0.43	0.35	162	5.01
3.6/6	3x50+2x25/2+FO	10.1	42.8	45.8	3430	0.386	0.49	0.28	202	7.15
3.6/6	3x50+2x50/2+FO	10.1	46.4	49.4	3950	0.386	0.49	0.31	202	7.15
3.6/6	3x70+2x35/2+FO	11.8	46.4	49.4	4350	0.272	0.55	0.27	250	10.01
3.6/6	3x70+2x50/2+FO	11.8	49.8	53.8	4700	0.272	0.55	0.29	250	10.01
3.6/6	3x95+2x50/2+FO	13.8	51.5	55.5	5630	0.206	0.63	0.26	301	13.59
3.6/6	3x120+2x70/2+FO	15.5	55.2	59.2	6800	0.161	0.70	0.25	352	17.16
3.6/6	3x150+2x70/2+FO	17.4	59.2	63.2	7970	0.129	0.76	0.25	404	21.45
3.6/6	3x185+2x95/2+FO	19.2	64.4	68.4	9630	0.106	0.82	0.24	461	26.46
3.6/6	3x240+2x120/2+FO	22.1	70.6	74.6	12160	0.0801	0.93	0.24	540	34.32
3.6/6	3x300+2x150/2+FO	24.7	77.5	81.5	14880	0.0641	1.03	0.23	620	42.9

Dimensions and Electrical Data (6/10 kV)										
Voltage kV	Cross- section	Cond. dia. mm	Outer min. mm	Outer max. mm	Weight kg/km	R20 ohm/km	Cap. uF/km	Ind. mH/km	Amp. A	Short kA
6/10	3x25+2x25/2+FO	7.1	41.3	44.3	2660	0.7839	0.33	0.35	131	3.58
6/10	3x25+2x50/2+FO	7.1	43.6	46.6	2900	0.7839	0.33	0.38	131	3.58
6/10	3x35+2x25/2+FO	8.4	42.9	45.9	3070	0.554	0.38	0.33	162	5.01
6/10	3x35+2x50/2+FO	8.4	45.2	48.2	3500	0.554	0.38	0.35	162	5.01
6/10	3x50+2x25/2+FO	10.1	44.1	47.1	3560	0.386	0.43	0.29	202	7.15
6/10	3x50+2x50/2+FO	10.1	47.8	50.8	3900	0.386	0.43	0.32	202	7.15
6/10	3x70+2x35/2+FO	11.8	47.7	50.7	4480	0.272	0.49	0.28	250	10.01
6/10	3x70+2x50/2+FO	11.8	51.2	55.2	5010	0.272	0.49	0.30	250	10.01
6/10	3x95+2x50/2+FO	13.8	52.8	56.8	5770	0.206	0.56	0.27	301	13.59
6/10	3x120+2x70/2+FO	15.5	56.4	60.4	6950	0.161	0.62	0.25	352	17.16
6/10	3x150+2x70/2+FO	17.4	61.9	65.9	8350	0.129	0.67	0.25	404	21.45
6/10	3x185+2x95/2+FO	19.2	65.7	69.7	9810	0.106	0.73	0.24	461	26.46
6/10	3x240+2x120/2+FO	22.1	73.3	77.3	12600	0.0801	0.82	0.24	540	34.32
6/10	3x300+2x150/2+FO	24.7	78.7	82.7	15090	0.0641	0.91	0.23	620	42.9

Dimensions and Electrical Data (8.7/15 kV)										
Voltage kV	Cross- section	Cond. dia. mm	Outer min. mm	Outer max. mm	Weight kg/km	R20 ohm/km	Cap. uF/km	Ind. mH/km	Amp. A	Short kA
8.7/15	3x25+2x25/2+FO	7.1	43.6	46.6	2910	0.7839	0.26	0.36	139	3.58
8.7/15	3x25+2x50/2+FO	7.1	45.9	48.9	3250	0.7839	0.26	0.38	139	3.58
8.7/15	3x35+2x25/2+FO	8.4	43.9	46.9	3180	0.554	0.29	0.33	172	5.01
8.7/15	3x35+2x50/2+FO	8.4	47.5	50.5	3600	0.554	0.29	0.35	172	5.01
8.7/15	3x50+2x25/2+FO	10.1	47.5	50.5	3900	0.386	0.33	0.31	215	7.15
8.7/15	3x50+2x50/2+FO	10.1	51.0	55.0	4500	0.386	0.33	0.32	215	7.15
8.7/15	3x70+2x35/2+FO	11.8	52.0	56.0	5020	0.272	0.37	0.30	265	10.01
8.7/15	3x70+2x50/2+FO	11.8	52.0	56.0	5130	0.272	0.37	0.30	265	10.01
8.7/15	3x95+2x50/2+FO	13.8	56.2	60.2	6180	0.206	0.41	0.28	319	13.59
8.7/15	3x120+2x70/2+FO	15.5	61.3	65.3	7600	0.161	0.45	0.27	371	17.16
8.7/15	3x150+2x70/2+FO	17.4	65.3	69.3	8820	0.129	0.50	0.27	428	21.45
8.7/15	3x185+2x95/2+FO	19.2	69.1	73.1	10300	0.106	0.54	0.26	488	26.46
8.7/15	3x240+2x120/2+FO	22.1	76.6	80.6	13140	0.0801	0.60	0.25	574	34.32
8.7/15	3x300+2x150/2+FO	24.7	83.5	88.5	16040	0.0641	0.66	0.25	660	42.9

TECHNICAL DATA

Nominal data. Internal product codes have been omitted.

Dimensions and Electrical Data (12/20 kV)										
Voltage kV	Cross- section	Cond. dia. mm	Outer min. mm	Outer max. mm	Weight kg/km	R20 ohm/km	Cap. uF/km	Ind. mH/km	Amp. A	Short kA
12/20	3x25+2x25/2+FO	7.1	44.1	47.1	2980	0.7839	0.23	0.36	139	3.58
12/20	3x25+2x50/2+FO	7.1	47.0	50.0	3300	0.7839	0.23	0.39	139	3.58
12/20	3x35+2x25/2+FO	8.4	46.8	49.8	3480	0.554	0.26	0.34	172	5.01
12/20	3x35+2x50/2+FO	8.4	50.3	54.3	4000	0.554	0.26	0.36	172	5.01
12/20	3x50+2x25/2+FO	10.1	51.3	55.3	4370	0.386	0.30	0.32	215	7.15
12/20	3x50+2x50/2+FO	10.1	51.3	55.3	4450	0.386	0.30	0.32	215	7.15
12/20	3x70+2x35/2+FO	11.8	55.0	59.0	5370	0.272	0.33	0.31	265	10.01
12/20	3x70+2x50/2+FO	11.8	55.0	59.0	5480	0.272	0.33	0.31	265	10.01
12/20	3x95+2x50/2+FO	13.8	59.2	63.2	6550	0.206	0.37	0.30	319	13.59
12/20	3x120+2x70/2+FO	15.5	64.2	68.2	8000	0.161	0.41	0.29	371	17.16
12/20	3x150+2x70/2+FO	17.4	68.2	72.2	9240	0.129	0.44	0.28	428	21.45
12/20	3x185+2x95/2+FO	19.2	73.4	77.4	11010	0.106	0.48	0.27	488	26.46
12/20	3x240+2x120/2+FO	22.1	79.6	83.6	13650	0.0801	0.54	0.26	574	34.32
12/20	3x300+2x150/2+FO	24.7	86.4	91.4	16590	0.0641	0.59	0.26	660	42.9

Dimensions and Electrical Data (14/25 kV)										
Voltage kV	Cross- section	Cond. dia. mm	Outer min. mm	Outer max. mm	Weight kg/km	R20 ohm/km	Cap. uF/km	Ind. mH/km	Amp. A	Short kA
14/25	3x25+2x25/2+FO	7.1	47.9	50.9	3360	0.7839	0.20	0.38	139	3.58
14/25	3x25+2x50/2+FO	7.1	47.9	50.9	3440	0.7839	0.20	0.40	139	3.58
14/25	3x35+2x25/2+FO	8.4	51.5	55.5	4050	0.554	0.22	0.36	172	5.01
14/25	3x35+2x50/2+FO	8.4	51.5	55.5	4130	0.554	0.22	0.36	172	5.01
14/25	3x50+2x25/2+FO	10.1	55.2	59.2	4830	0.386	0.26	0.34	215	7.15
14/25	3x50+2x50/2+FO	10.1	55.2	59.2	4900	0.386	0.26	0.34	215	7.15
14/25	3x70+2x35/2+FO	11.8	58.8	62.8	5840	0.272	0.28	0.32	265	10.01
14/25	3x70+2x50/2+FO	11.8	58.8	62.8	5950	0.272	0.28	0.32	265	10.01
14/25	3x95+2x50/2+FO	13.8	64.4	68.4	7280	0.206	0.31	0.31	319	13.59
14/25	3x120+2x70/2+FO	15.5	68.0	72.0	8530	0.161	0.35	0.30	371	17.16
14/25	3x150+2x70/2+FO	17.4	73.4	77.4	10080	0.129	0.37	0.29	428	21.45
14/25	3x185+2x95/2+FO	19.2	77.3	81.3	11630	0.106	0.40	0.28	488	26.46
14/25	3x240+2x120/2+FO	22.1	84.7	89.7	14690	0.0801	0.45	0.27	574	34.32
14/25	3x300+2x150/2+FO	24.7	90.2	95.2	17310	0.0641	0.50	0.26	660	42.9

Dimensions and Electrical Data (18/30 kV)										
Voltage kV	Cross- section	Cond. dia. mm	Outer min. mm	Outer max. mm	Weight kg/km	R20 ohm/km	Cap. uF/km	Ind. mH/km	Amp. A	Short kA
18/30	3x25+2x25/2+FO	7.1	52.2	56.2	3900	0.7839	0.18	0.40	139	3.58
18/30	3x25+2x50/2+FO	7.1	52.2	56.2	3980	0.7839	0.18	0.40	139	3.58
18/30	3x35+2x25/2+FO	8.4	55.0	59.0	4450	0.554	0.20	0.38	172	5.01
18/30	3x35+2x50/2+FO	8.4	55.0	59.0	4530	0.554	0.20	0.38	172	5.01
18/30	3x50+2x25/2+FO	10.1	58.6	62.6	5250	0.386	0.22	0.35	215	7.15
18/30	3x50+2x50/2+FO	10.1	58.6	62.6	5320	0.386	0.22	0.35	215	7.15
18/30	3x70+2x35/2+FO	11.8	63.6	67.6	6510	0.272	0.25	0.34	265	10.01
18/30	3x70+2x50/2+FO	11.8	63.6	67.6	6610	0.272	0.25	0.34	265	10.01
18/30	3x95+2x50/2+FO	13.8	67.8	71.8	7770	0.206	0.27	0.33	319	13.59
18/30	3x120+2x70/2+FO	15.5	72.8	76.8	9230	0.161	0.29	0.31	371	17.16
18/30	3x150+2x70/2+FO	17.4	76.9	80.9	10630	0.129	0.32	0.30	428	21.45
18/30	3x185+2x95/2+FO	19.2	80.6	84.6	12190	0.106	0.34	0.30	488	26.46
18/30	3x240+2x120/2+FO	22.1	88.1	93.1	15310	0.0801	0.38	0.28	574	34.32
18/30	3x300+2x150/2+FO	24.7	94.6	99.6	18220	0.0641	0.42	0.28	660	42.9

TECHNICAL DATA

Nominal data. Internal product codes have been omitted.

Dimensions and Electrical Data (20/35 kV)										
Voltage kV	Cross- section	Cond. dia. mm	Outer min. mm	Outer max. mm	Weight kg/km	R20 ohm/km	Cap. uF/km	Ind. mH/km	Amp. A	Short kA
20/35	3x25+2x25/2+FO	7.1	56.8	60.8	4450	0.7839	0.16	0.42	139	3.58
20/35	3x35+2x25/2+FO	8.4	61.1	65.1	5260	0.554	0.18	0.40	172	5.01
20/35	3x50+2x25/2+FO	10.1	64.6	68.6	6080	0.386	0.20	0.37	215	7.15
20/35	3x50+2x35/2+FO	10.1	64.6	68.6	6160	0.386	0.20	0.37	215	7.15
20/35	3x70+2x35/2+FO	11.8	68.2	72.2	7160	0.272	0.23	0.36	265	10.01

PHYSICAL PARAMETERS

Parameter	Value
Maximum conductor temperature	+90 deg C
Maximum short-circuit temperature	+250 deg C
Fixed installation temperature	min. -40 deg C; max. +90 deg C
Flexible operation temperature	min. -35 deg C; max. +90 deg C
Maximum tensile load on conductor	20 N/mm2
Maximum tensile load during acceleration	25 N/mm2
Torsional stress	+/-100 deg/m
Minimum bending radius	According to DIN VDE 0298 part 3
Minimum S-type directional change distance	20 x D
Travel speed	In operation up to 60 m/min; on rewinding up to 100 m/min; reeling operation up to 120 m/min

ELECTRICAL AND CHEMICAL PARAMETERS

Parameter	Value
Current carrying capacity	Nominal current carrying capacity for rubber cables laid on a surface at 30 deg C ambient temperature
AC test voltage - main cores	11 kV for 3.6/6 kV; 17 kV for 6/10 kV; 24 kV for 8.7/15 kV; 29 kV for 12/20 kV; 36 kV for 14/25 kV; 43 kV for 18/30 kV; 50 kV for 20/35 kV
Performance against fire	IEC 60332-1-2
Resistance to oil	IEC 60811-404
Water resistance	EN 50525-2-21
Weather resistance	Unrestricted indoor and outdoor use, resistant to ozone, UV and moisture

Values are nominal. Cable dimensions may vary due to manufacturing tolerances.

CERTIFICATIONS



TEBAOFLEX CABLE