



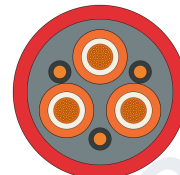
TEBAOFLEX CABLE

DATA SHEET

Mining&Industrial cable

HVR / HVR-D MV EXTRA HEAVY-DUTY REELING RUBBER

Medium-voltage rubber cable for motorized reels and severe dynamic service



APPLICATION

Very resilient medium-voltage round cable for motorized cable reels, container cranes, mining equipment, stackers, reclaimers and ship unloaders. HVR-D versions provide integrated optical-fiber elements for reliable data transmission.

KEY FEATURES

Parameter	Value
Mechanical protection	High torsional rigidity and abrasion resistance from heavy-duty rubber compounds
Anti-twisting	Embedded high-tensile synthetic-yarn braid between inner and outer sheaths
Voltage range	Medium-voltage grades from 3.6/6 kV through 12/20 kV
Fiber option	12 or 24 optical fibers in loose tubes for HVR-D versions

DESIGN

Parameter	Value
Conductor	Highly flexible, finely stranded and tin-plated copper
Insulation	EPR-MV high-voltage sandwich system
Inner sheath	GM1b synthetic rubber
Outer sheath	5GM5 heavy-duty rubber, red

HVR POWER CABLE DATA

Configuration	Outer diameter min.-max. mm	Cu approx. kg/km	Weight approx. kg/km	Tensile load N
3 x 25 + 3 x 25/3	41.0-43.0	1,008	2,540	3,000
3 x 35 + 3 x 25/3	42.0-44.0	1,296	2,825	3,000
3 x 50 + 3 x 25/3	46.0-49.0	1,728	3,460	3,000
3 x 70 + 3 x 35/3	50.0-53.0	2,477	4,400	4,200
3 x 95 + 3 x 50/3	55.0-58.0	3,197	5,570	7,125
3 x 120 + 3 x 70/3	On request	-	-	-
3 x 150 + 3 x 70/3	On request	-	-	-

HVR-D POWER + OPTICAL FIBER DATA

Configuration	Outer diameter min.-max. mm	Cu approx. kg/km	Weight approx. kg/km	Tensile load N
3 x 25 + 2 x 25/2 + 12 FO	42.7-45.7	1,008	2,830	1,500
3 x 35 + 2 x 25/2 + 12 FO	45.5-48.5	1,296	3,390	2,100
3 x 50 + 2 x 25/2 + 24 FO	48.3-51.3	1,728	3,590	3,000
3 x 70 + 2 x 35/2 + 24 FO	53.1-57.1	2,477	5,130	4,200
3 x 95 + 2 x 50/2 + 24 FO	57.0-61.0	3,197	6,120	5,700
3 x 120 + 2 x 70/2 + 24 FO	On request	-	-	-
3 x 150 + 2 x 70/2 + 24 FO	On request	-	-	-

TECHNICAL DATA

ELECTRICAL, THERMAL, MECHANICAL AND MATERIAL DATA

Parameter	Value
Rated voltage grades	3.6/6, 6.0/10, 8.7/15 and 12.0/20 kV
Maximum permitted AC voltage	7.0/12.0; 10.2/18.0; 14.0/24.0 kV
Maximum permitted DC voltage	9.0/18.0; 13.0/26.0; 18.0/36.0 kV
Ampacity	According to table data; otherwise DIN VDE 0298 Part 4
AC test voltage	According to DIN VDE 0250 Part 813
Travel speed	Up to 180 m/min; higher speed on request
Ambient temperature, flexing	-30 deg C to +80 deg C
Ambient temperature, fixed	-50 deg C to +80 deg C
Maximum conductor temperature	90 deg C
Short-circuit temperature	250 deg C
Minimum bending radius	12 x D reel; 15 x D deflection pulley; 20 x D S-type change
Torsional stress	+/- 25 deg/m
Tensile load capacity	20 N/mm ² conductor cross section during flexing
Chemical resistance	Flame retardant, ozone, UV, oil and humidity resistant
Materials	EPR-MV insulation; semi-conductive stress control; synthetic rubber sheaths
Conductor	Finely stranded tin-plated electrolytic copper, beyond Category 5
Sheath	Inner GM1b synthetic rubber; outer 5GM5 heavy-duty rubber, red
Core coding	Black insulation with white numbers
Design code	(N)TSCGEWOEU / (N)TSCGEWOEU-FO
Optical fiber option	12 or 24 fibers in loose tubes

OPTICAL FIBER PERFORMANCE

Fiber type	Attenuation at 850 nm	Attenuation at 1310 nm	Attenuation at 1550 nm	Numerical aperture
E9/125 Mono-Mode	850 nm -	1310 nm <=0.40 dB/km max	1550 nm <=0.28 dB/km max	NA 0.14 +/-0.02
50/125 Multi-Mode	850 nm <=2.6 dB/km nom.	1310 nm <=1.0 dB/km max	1550 nm -	NA 0.20 +/-0.015
62.5/125 Multi-Mode	850 nm <=3.0 dB/km nom.	1310 nm <=1.5 dB/km max	1550 nm -	NA 0.275 +/-0.02

FIBER AND DESIGN NOTES

Parameter	Value
Fiber standards	E9/125 according to ITU-T G.652D; 50/125 and 62.5/125 according to IEC/CEI 60793-2-10
Fiber arrangement	12 fibers in one tube or 24 fibers arranged in two tubes
Fiber colors	12-fiber options: yellow, green or blue; second tube red for 24-fiber option
Outer sheath	Red heavy-duty rubber compound; resistant to atmospheric corrosion
Approvals / basis	Adapted to DIN VDE 0250 Part 814 and IEC 9314T.3; optical fiber adapted to DIN VDE 0888

CERTIFICATIONS



TEBAOFLEX CABLE