

TECHNICAL SPECIFICATION DOCUMENT

Anhui Feichun Special Cable Co., Ltd.

安徽飞纯特种电缆有限公司

PROTOLON (M) R-(N)TSCGEW0EU

Medium Voltage Reeling Cable: 6 - 35 KV

CABLE TYPE

Flexible MV Reeling Cable

VOLTAGE RANGE

3.6/6 kV - 20/35 kV

CONSTRUCTION

9-Layer Design

CORE CONFIGURATION

3-Core with Split Earth

DOCUMENT DATE

February 2026

APPLICATION

This cable series is specifically engineered for connection of large material handling machines including excavators, dumpers, and mobile crushers operating in opencast mines. The PROTOLON (M) R-(N)TSCGEW0EU represents a flexible medium voltage reeling cable designed to withstand high mechanical stresses in conjunction with mono spiral reels and cylindrical reels in demanding mining environments. The robust construction and specialized compound materials ensure reliable performance under continuous flexing, torsional stress, and exposure to harsh environmental conditions typical of surface mining operations.

KEY FEATURES

MECHANICAL STRENGTH

Designed for high torsional stress ($\pm 100^\circ/\text{m}$) and dynamic tensile strength up to 25 N/mm²

ENVIRONMENTAL RESISTANCE

Oil, ozone, UV, and sea water resistant with flame retardant properties

OPERATING SPEED

Reeling operation up to 120 m/min, rewinding up to 100 m/min

STANDARDS / APPROVALS

DIN VDE 0250-813 General standards for medium voltage cables	EN 50525-2-21 Electrical parameters and performance requirements
DIN VDE 0207-21 Compound material specifications and testing	DIN VDE 0298-3 Mechanical parameters and stress requirements
DIN EN 60811-404 / IEC 60811-404 Chemical behaviour and resistance testing	GOST -R/ -K/ -B Fire Certificate - Russian Federation
DIN EN 60332-1-2 / IEC 60332-1-2 Fire performance and flame retardant properties	

THERMAL PARAMETERS

MAX CONDUCTOR TEMP 90 °C	MAX TEMP SHORT CIRCUIT 250 °C	AMBIENT FIXED MIN -40 °C	AMBIENT FIXED MAX 80 °C	AMBIENT FLEX MIN -30 °C	AMBIENT FLEX MAX 80 °C
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CHEMICAL PARAMETERS

FLAME RETARDANT EN/IEC 60332-1-2	OIL RESISTANT Yes
OZONE RESISTANCE Yes	UV RESISTANCE Yes
SEA WATER RESISTANCE Yes	

MECHANICAL PARAMETERS

TORSIONAL STRESS +/- 100 °/m	TENSILE (STATIC) 20 N/mm²
TENSILE (DYNAMIC) 25 N/mm²	SPEED (REWINDING) 100 m/min
SPEED (REELING OPERATION) 120 m/min	

Bending Radius Requirements (VDE 0298-3): Fixed installation: 6 × D (cable diameter) | Flexible operation: 10 × D | S-type directional changes: 20 × D minimum distance

ELECTRICAL PARAMETERS

RATED VOLTAGE U _o /U (UM)	3.6/6 KV (7.2)	6/10 KV (12)	8.7/15 KV (17.5)	12/20 KV (24)	14/25 KV (29)	18/30 KV (36)	20/35 KV (42)
Test Voltage	11 kV	17 kV	24 kV	29 kV	36 kV	43 kV	50 kV
Nominal Voltage U	6,000 V	10,000 V	15,000 V	20,000 V	25,000 V	30,000 V	35,000 V

CABLE CONSTRUCTION - 9 LAYER DESIGN

1	Conductor Very finely stranded copper, bare, class FS PE: Very finely stranded copper, bare, class FS
2	Inner Semi-conducting Layer Semi-conductive EPR
3	Core Insulation EPR rubber PROTOLON Special compound 3GI3
4	Three Core Design Three core design, with split earth conductor in three interstices
5	Outer Semi-conducting Layer Semi-conductive NBR easy-strip
6	Split Earth Conductors Located in interstices between cores for enhanced grounding
7	Inner Sheath Rubber - Special compound 5GM3 for mechanical protection
8	Armoring / Reinforcement Braiding Material - Polyester for tensile strength
9	Outer Sheath Rubber - polychloroprene (PCP), Special compound 5GM5 for environmental protection



TECHNICAL SPECIFICATIONS - 3.6/6 KV SERIES

BASIC CONSTRUCTION (MM²)	CONDUCTOR Ø (MM)	CABLE Ø MIN (MM)	CABLE Ø MAX (MM)	WEIGHT (KG/KM)	MAX TENSILE (N)	NOMINAL CAPACITANCE (NF/KM)	OPERATION INDUCTANCE (MH/KM)	CONDUCTOR RESISTANCE (Ω/KM)	CURRENT CAPACITY (A)
3x25+3x25/3	7.1	35.5	38.5	2,300	1,500	370	0.31	0.7839	131
3x35+3x50/3	7.1	39.9	42.9	2,760	1,500	370	0.25	0.7839	131
3x35+3x25/3	8.4	39.3	42.3	2,870	2,100	430	0.3	0.554	162
3x35+3x50/3	8.4	42.2	45.2	3,190	2,100	430	0.32	0.554	162
3x50+3x25/3	10.1	42.8	45.8	3,350	3,000	490	0.28	0.386	202
3x50+3x50/3	10.1	42.8	45.8	3,620	3,000	490	0.3	0.386	202
3x70+3x35/3	11.8	46.4	49.4	4,340	4,200	550	0.27	0.272	250
3x70+3x50/3	11.8	46.6	49.6	4,450	4,200	550	0.27	0.272	250
3x95+3x50/3	13.8	51.5	55.5	5,790	5,700	630	0.26	0.206	301
3x120+3x70/3	15.5	55.2	59.2	6,950	7,200	700	0.25	0.161	352
3x150+3x70/3	17.4	59.2	63.2	8,260	9,000	760	0.25	0.129	406
3x185+3x95/3	19.2	64.4	68.4	9,800	11,100	820	0.24	0.106	461
3x240+3x120/3	22.1	70.6	74.6	12,490	14,400	930	0.24	0.0801	540
3x300+3x150/3	24.7	77.5	81.5	15,270	18,000	1,030	0.23	0.0641	620

VARIANTS WITH STEEL REINFORCEMENT (+10ST)

BASIC CONSTRUCTION (MM²)	CONDUCTOR Ø (MM)	CABLE Ø MIN (MM)	CABLE Ø MAX (MM)	WEIGHT (KG/KM)	MAX TENSILE (N)	NOMINAL CAPACITANCE (NF/KM)	OPERATION INDUCTANCE (MH/KM)	CONDUCTOR RESISTANCE (Ω/KM)	CURRENT CAPACITY (A)
3x50+3x25/3+10ST	10.1	42.8	45.8	3,660	3,000	490	0.28	0.386	202
3x70+2x25/2+10ST	11.8	46.6	49.6	4,550	4,200	550	0.27	0.272	250
3x95+3x50/3+10ST	13.8	51.5	55.5	5,650	5,700	630	0.26	0.206	301
3x120+2x70/2+10ST	15.5	56.1	60.1	7,190	7,200	700	0.25	0.161	352
3x185+2x95/2+10ST	19.2	64.4	68.4	9,859	11,100	820	0.24	0.106	461

CONTACT INFORMATION

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PROTOLON (M) R-(N)TSCGEWOEU Technical Specification | Document Version 1.0 | February 2026

This technical specification is subject to updates and modifications. Please contact our technical team for the most current information and custom cable configurations.