ANHUI FEICHUN SPECIAL CABLE CO., LTD.
安徽飞纯特种电缆有限公司
MEDIUM & HIGH VOLTAGE REELING CABLE SPECIALIST

DOCUMENT FC-DS-NTSCGEWOEU-2025-001
REVISION Rev. A | **DATE** 2025-06-20
CLASS Technical Data Sheet | **10 kV MV**
STANDARD DIN VDE 0250-813

PRODUCT SPECIFICATION — MEDIUM VOLTAGE REELABLE POWER CABLE

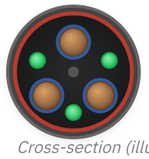
(N)TSCGEWOEU

Flexible MV Reeling Cable | Rubber-Sheathed, Tinned Copper, Extreme-Duty | 6/10 kV
Brand Reference: PROTOLON (SMK) | Contact: Tech@feichuncables.com

★ FEATURED SPECIFICATION
3×50 + 3×25/3
6/10 kV — Rated Voltage

FEATURED SPECIFICATION — 3×50+3×25/3

PRODUCT PARAMETERS	
No. of cores × Cross-section	3 × 50 + 3 × 25/3 mm²
Configuration	3 main cores + 3 split earth conductors
Rated Voltage U_0/U	6/10 kV (U_m = 12 kV)
Conductor	Tinned Cu, VDE Class 5 (finely stranded)
AWG Equiv. — main cores	1/0 AWG ≈ 50 mm²
AWG Equiv. — earth (total)	4 AWG ≈ 25 mm²
Approx. Outer Diameter	56.0 – 59.0 mm (typ. 58.7)
Copper Weight	1,764 kg/km
Approx. Total Weight	4,750 kg/km



Cross-section (illustrative): 3 main (blue insulation) + 3 split earth in interstices
Red outer sheath = MV identification

ELECTRICAL RATINGS

VOLTAGE & CURRENT PARAMETERS	
Rated Voltage U_0/U	6/10 kV
Max. system voltage U_m	12 kV
Continuous current capacity (free air, 30 °C)	202 A
Short-circuit current (50 mm², 1s)	7.15 kA

THERMAL PARAMETERS

Max. conductor temperature	90 °C
Max. short-circuit temperature	250 °C
Ambient — fixed installation	−50 °C to +80 °C

CABLE CONSTRUCTION

- **Conductor:** Copper, tinned, finely stranded acc. to DIN VDE 0295 Class 5 / IEC 60228 Class 5
- **Core insulation:** EPR (Ethylene Propylene Rubber), compound type 3GI3, rated for 10 kV MV service with appropriate wall thickness
- **Core identification:** Colour coded for 3-core configuration acc. to DIN VDE 0293-308
- **Protective conductor (G):** Green-Yellow (GN-YE), positioned in outer layer
- **Split earth design (3×25/3):** The earth conductor is divided into 3 sub-conductors (each ≈ 8.3 mm²), symmetrically placed in the interstices between main cores. This split-earth configuration minimizes overall diameter and ensures structural symmetry, preventing twisting deformation during high-speed reeling
- **Lay-up:** Cores stranded in layers with optimized lay lengths for reeling flexibility
- **Textile bandage:** Applied over stranded core assembly
- **Inner sheath:** Chloroprene rubber (PCP)
- **Anti-torsion layer:** Braided protective layer between inner and outer sheaths to prevent corkscrew effect under extreme tensile loads
- **Outer sheath:** PCP (Chloroprene) or 5GM5 rubber compound, dual-layer structure — abrasion-resistant, oil-resistant, flame-retardant, UV-resistant
- **Sheath colour:** Red (MV identification per standard practice)

CHEMICAL & ENVIRONMENTAL RESISTANCE

Oil-resistant	Ozone-resistant
UV-resistant	Moisture-resistant
Abrasion-resistant	Weather-resistant

Oil resistance	Acc. to DIN EN 60811-404 and DIN VDE 0473-811-404, §10
Weather resistance	Unrestricted use outdoors & indoors; ozone, UV, moisture resistant
Water resistance	According to HD 2216

TESTS & CERTIFICATIONS

- **Flame-retardant** acc. to DIN VDE 0482-332-1-2 / IEC 60332-1-2
- **Oil resistance** acc. to DIN EN 60811-404 / DIN VDE 0473-811-404
- **Reversed bending test** — validated for MV reeling service

CURRENT CARRYING CAPACITY & DERATING

MEDIUM VOLTAGE — 6/10 KV RATED
Base ampacity data is referenced to **30 °C ambient**, single cable freely suspended in air (not wound on reel). Three-phase balanced load assumed.

REEL DERATING FACTORS

WINDING CONFIGURATION	DERATING FACTOR	EFFECTIVE CURRENT (A)
Free air / single layer	1.00	202
2 layers on drum	0.61	≈ 123
3 layers on drum	0.49	≈ 99
4 layers on drum	0.42	≈ 85

AMBIENT TEMPERATURE CORRECTION

Reference: **30 °C**. Apply correction factor to base ampacity:

30 °C	35 °C	40 °C	45 °C	50 °C	55 °C
1.00	0.95	0.91	0.85	0.80	0.74

CONSTRUCTION LAYER SUMMARY

LAYER	MATERIAL / STANDARD
Conductor	Tinned Cu, finely stranded — VDE 0295 Cl. 5
Core insulation	EPR (3GI3) — MV grade wall thickness
Core identification	VDE 0293-308 — colour coded
Bandage	Textile wrapping
Inner sheath	Chloroprene rubber (PCP)
Anti-torsion	Braided protective layer
Outer sheath	PCP / 5GM5 rubber — dual-layer
Colour	Red (MV standard)

APPLICABLE STANDARDS

- DIN VDE 0250-813 — Reelable MV cables
- DIN VDE 0295 Cl. 5 / IEC 60228 Cl. 5 — Conductor
- DIN VDE 0207-20 — Insulation compound (3GI3)

Ambient — fully flexible operation	**−35 °C to +80 °C**

MECHANICAL PARAMETERS

Max. tensile load on conductor	**20 N/mm²**
Max. tensile load during acceleration	**Up to 30 N/mm²**
(per DIN VDE 0298-3: 15 N/mm²)	
Torsional stress	**± 25 °/m**
Min. bending radius	**Acc. to DIN VDE 0298-3**
Min. S-type directional change distance	**20 × D (cable diameter)**
Travel speed — Gantry (reeling)	**No restriction***

* For speeds beyond **240 m/min**, consultation with the manufacturer is recommended.

- **Torsional stress test** — validated for ±25 °/m
- **Water resistance** acc. to `HD 2216`
- **Brand certification:** `PROTOLON (SMK)`

APPLICATION

Flexible medium-voltage reeling cable designed for applications under **high to extreme mechanical stress** — including high travel speeds, dynamic tensile loads, multiple changes of direction into different planes, churning over rollers, and torsional stresses. Primarily intended for mobile equipment such as **fast-moving container cranes** and large-scale moving machinery. Suitable for installation in dry, damp, and wet environments as well as outdoor use without restriction.

- `DIN VDE 0207-21` — Sheath compound (5GM5)
- `DIN VDE 0293-308` — Core identification
- `DIN VDE 0298-3` — Mechanical parameters for reeling
- `IEC 60332-1-2` — Flame retardancy (single cable)
- `DIN EN 60811-404` — Oil resistance
- `HD 2216` — Water resistance

ORDER REFERENCE & CONTACT

For inquiries and orders, please reference: **`(N)TSCGEWOEU 3×50+3×25/3 6/10 kV`**
Brand: PROTOLON (SMK) | Contact: **Tech@feichuncables.com**
Custom drum configurations and project-specific engineering support available upon request.

⚠ MEDIUM VOLTAGE SAFETY NOTICE

This cable is rated for **6/10 kV (U_m 12 kV)** medium-voltage service. All installation, testing, termination, and maintenance must comply with applicable national and local