ANHUI FEICHUN SPECIAL CABLE CO., LTD.
安徽飞纯特种电缆有限公司
INDUSTRIAL DRAG CHAIN & SPECIAL CABLE SPECIALIST · WWW.FEICHUNCABLES.COM

DOCUMENT FC-PDS-CF9-12G15-2026-001
REVISION Rev. A1 | **DATE** 2026-02-11
CLASS Product Data Sheet | TPE Heavy-Duty Control Cable
STANDARD DIN EN 60228 | VDE 0295 | DIN EN 60811-404

PRODUCT SPECIFICATION — TPE HEAVY-DUTY HIGH-FLEX CONTROL CABLE FOR E-CHAIN® DRAG CHAIN SYSTEMS, 300/500 V RATED

FC-CF9 (12G1.5)

TPE Heavy-Duty Control Cable | 300/500 V Rated (U_0/U) | 12-Core 12 × 1.5 mm² (Class 6, Ultra-Flex Bare Cu)
TPE/TPE Insulation | Dark Blue (≈ RAL 5011) | Oil-, UV- & Abrasion-Resistant | Halogen-Free | Silicone-Free

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FC 300/500 V | TPE HEAVY-DUTY | 12-CORE + PE | HALOGEN-FREE | SILICONE-FREE | OIL & UV RESISTANT

★ HIGHLIGHTED SPECIFICATION
CF9-15-12
12G1.5 · 0.5 kV · TPE · Heavy-Duty
≡ igus® chainflex® CF9.15.12

↻ CROSS-REFERENCE — DIRECT REPLACEMENT FOR IGUS® CHAINFLEX® CF9

This product is the **Feichun direct replacement** for the `igus® chainflex® CF9.15.12` (also written CF9-15-12) heavy-duty TPE control cable. Identical conductor construction, voltage rating, dimensional profile, and drag chain bending performance. **No design changes required** — drop-in replacement for existing E-Chain® installations.

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FEATURED SPECIFICATION

PRODUCT PARAMETERS — CF9-15-12 (12G1.5)	
Type designation	`FC-CF9 (12G1.5)`
Product series	chainflex® CF9 — TPE heavy-duty control cable
Core configuration	`12 × 1.5 mm² (12-core with PE)`
"G" designation	Green/Yellow PE core included
Conductor construction	`Class 6 (ultra-fine stranded bare Cu)`
AWG equivalent	`≈ 16 AWG`
Rated voltage (U_0/U)	`300 / 500 V (0.5 kV)`
Cable outer diameter (Ø max.)	`14.0 mm`
Copper weight (Cu-index)	`173 kg/km`
Approx. total weight	`≈ 265 kg/km`
Outer sheath colour	`■ Dark Blue (≈ RAL 5011)`
Min. bending radius (chain)	`5 × d ≈ 70 mm`

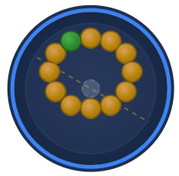
TYPE DESIGNATION DECODE

CF9	**Series:** chainflex® CF9 — TPE heavy-duty control cable for extreme drag chain applications
15	Nominal cross-section: **1.5 mm²** per core
12	Number of cores: **12 conductors** (including 1 × PE green/yellow)

ℹ "G" VS. "×" NAMING CONVENTION

CABLE CONSTRUCTION

- **Conductor:** Ultra-fine stranded bare copper, Class 6 per DIN EN 60228 — total cross-section 1.5 mm² per core (≈ 16 AWG). Optimized strand geometry for maximum bending fatigue resistance.
- **Core insulation:** TPE compound — black cores with white continuous print numbering (1–11); one green/yellow PE core (core 12).
- **Stranding:** 12 cores stranded around a high-tensile-strength central element in torsion-balanced lay. Designed to eliminate internal twisting forces during high-frequency reciprocating motion.
- **Rip cord:** Integrated CFRIP®-type tear strip embedded within the sheath for rapid, tool-free jacket stripping.
- **Outer sheath:** TPE compound — colour ■ dark blue (≈ RAL 5011). Highly abrasion-resistant, oil-resistant, halogen-free, silicone-free.
- **Construction type:** Multi-core, unarmoured, unscreened. For screened version, refer to CF9.D series.



Cross-section (illustrative): 12 × 1.5 mm² stranded cores
11 × black numbered cores + 1 × green/yellow PE
Central tensile element · CFRIP® tear strip (dashed)
TPE outer sheath (dark blue) | Ø 14.0 mm (max.)

CORE IDENTIFICATION

Cores 1–11 — Black with white printed numerals "1" through "11"
Core 12 (PE) — Green/Yellow bicolour — protective earth conductor

ELECTRICAL CHARACTERISTICS

KEY ELECTRICAL DATA	
Rated voltage (U_0/U)	`300 / 500 V`
Test voltage	`2 000 V AC (routine)`
Conductor resistance @ 20 °C	`≤ 13.3 Ω/km`
Current capacity (single core ref.)	`16 – 21 A`
Current capacity (12-core bundled)	`≈ 10.5 A`

DYNAMIC PERFORMANCE — DRAG CHAIN DATA

MIN. BEND RADIUS	MAX. ACCELERATION	MAX. SPEED	TRAVEL DISTANCE
`5 × d`	`100 m/s²`	`10 m/s`	`400 m+`
≈ 70 mm (in chain)	High-dynamic rated	Gliding / hanging	Ultra-long stroke

✓ EXTREME DRAG CHAIN PERFORMANCE

The CF9 series is designed for the most demanding drag chain applications with **5 × d minimum bend radius**, supporting millions of bending cycles at accelerations up to **100 m/s²**. The torsion-balanced stranding and high-tensile central element enable **ultra-long travel distances of 400 m and beyond**, making this cable ideal for port cranes, stacker cranes, and large gantry systems.

TYPICAL APPLICATIONS

APPLICATION	ENVIRONMENT	KEY REQUIREMENT
Port & harbour cranes	Marine / heavy industrial	Long travel, oil, UV, salt
Stacker cranes (AS/RS)	Automated warehousing	400 m+ stroke, high speed
Semiconductor cleanroom	ISO class cleanrooms	Halogen- & silicone-free
CNC & machine tools	Industrial manufacturing	Oil-resistant, high flex
Gantry & outdoor conveyors	Exposed / semi-outdoor	UV, weather, bio-oil

✓ CLEANROOM & SENSITIVE ENVIRONMENT COMPATIBILITY

The TPE jacket is **halogen-free and silicone-free**, making this cable suitable for semiconductor fabrication cleanrooms and paint-line environments where silicone contamination is prohibited. The dark blue colour provides visual identification distinct from standard grey PVC control cables.

APPLICABLE STANDARDS & PROPERTIES

- `DIN EN 60228` / `VDE 0295` — Conductor Class 6 (ultra-flexible)
- `DIN EN 60811-404` — Oil resistance (mineral oil & bio-oil)
- `IEC 60332-1-2` — Flame retardance (single cable vertical)
- Halogen-free per `IEC 60754` | Silicone-free
- Voltage: `300/500 V` | Temp: `-40 °C to +100 °C`
- UV-resistant for outdoor / semi-exposed installations

300/500 V | TPE / TPE | Oil-Resistant | Flame Retardant

12G1.5 = 12 cores including a green/yellow PE earth conductor. The CF9 series defaults to the "G" (with ground) configuration. Always verify PE requirements for your application. The standard notation **CF9.15.12** is equivalent to the dash notation **CF9-15-12**.

KEY ADVANTAGES

300/500 V Rated	TPE Oil-Resistant
Halogen-Free	Silicone-Free
UV & Weather Resistant	Bio-Oil Resistant
igus® CF9 Drop-In	5×d Ultra-Flex Bend
400 m+ Travel Distance	100 m/s² Acceleration

Reference ambient temperature	30 °C

⚠ AMPACITY DE-RATING REQUIRED

The 10.5 A figure applies to **12-core bundled operation at 30 °C ambient**. Single-core rating is 16–21 A. When multiple cables are grouped in trays or the ambient temperature exceeds 30 °C, additional de-rating factors must be applied per IEC 60364-5-52 / VDE 0298-4.

TEMPERATURE RANGE

MOVING (DRAG CHAIN)	FIXED INSTALLATION	MAX. CONDUCTOR
-35 / +100 °C	-40 / +100 °C	+100 °C
Dynamic flex use	Stationary routing	Continuous

-40 °C … +100 °C

Halogen-Free | Silicone-Free | UV-Resistant | Bio-Oil Resistant

Abrasion & Oil Resistance: The TPE outer sheath offers superior abrasion resistance compared to standard PVC and PUR jackets. Oil resistance conforms to **DIN EN 60811-404**, including resistance to bio-oils and biodegradable lubricants increasingly used in environmentally sensitive applications.

📋 ORDER REFERENCE & CONTACT

For inquiries and orders, please reference:

FC-CF9 (12G1.5) ≡ igus® chainflex® CF9.15.12 / CF9-15-12

Voltage class: **0.5 kV (300/500 V)** | 12 × 1.5 mm² + PE

Contact: **Tech@feichuncables.com** | **+86 138 5512 3218**

CF9 series available in 2–61 cores · 0.5–16 mm² · Custom lengths on request.