REPLACEMENT FOR TF KABLE R-(N)TSCGEWÖU | 3.6/6 kV | (N)TSCGEWÖU, DIN VDE 0250-813 | PCP rubber, red | article datasheet

# FC-R-(N)TSCGEWÖU 3×70+3×35/3

## 3.6/6 kV

Medium-Voltage Reeling Cable – polychloroprene rubber compound 5GM5 to DIN VDE 0207-21, red. FeiChun replacement for TF Kable R-(N)TSCGEWÖU: construction, dimensions, weight, current rating, standards and installation guidance.

Document no. FC-TDS-TF0710-2026-0A8D-EN · Revision 0 · Issued 4 November 2026 · Language: English (AU)

## 01 Application and Product Overview

FC-R-(N)TSCGEWÖU 3×70+3×35/3 is a medium-Voltage Reeling Cable rated 3.6/6 kV and the FeiChun replacement for TF Kable R-(N)TSCGEWÖU 3×70+3×35/3. It has an outer diameter of 56.5 – 60.0 mm, weighs about 5,340 kg/km and carries 230 A in free air at 30 °C. The series covers 25 – 300 mm².

### Typical applications

- Medium-voltage supply of ship-to-shore, gantry and bucket-wheel machines through motor-driven reels
- Stackers, reclaimers, ship loaders and dredgers travelling on rails
- Open-cast mining equipment with high torsional and reeling stress
- Outdoor service with UV radiation, ozone and seawater spray

### Design

Three screened power cores rated 3.6/6 kV and a protective conductor split into three parts in the interstices, under a polyester anti-twist braid. Semi-conductive layers keep the electric field inside the insulation.

| 3×70+3×35/3 | 3.6/6 kV | 230 A | Ø 60.0 mm |
|---|---|---|---|
| Cross-section | Rated voltage $U_0/U$ | Current at 30 °C | Outer dimension, max |

### Key features

- Fine-wire class 5 tinned or bare copper conductors to IEC 60228
- Rubber insulation with inner and outer semi-conductive layers extruded in one pass
- Travel speed up to 120 m/min, torsion up to ±25 °/m
- Flame-retardant to IEC 60332-1-2; oil, ozone and UV resistant

### Replacement reference

| REFERENCE PRODUCT | ⇄ | FEICHUN REPLACEMENT |
|---|---|---|
| **TF Kable R-(N)TSCGEWÖU 3×70+3×35/3**<br>(N)TSCGEWÖU, DIN VDE 0250-813 | | **FC-R-(N)TSCGEWÖU 3×70+3×35/3 3.6/6 kV**<br>Medium-Voltage Reeling Cable |

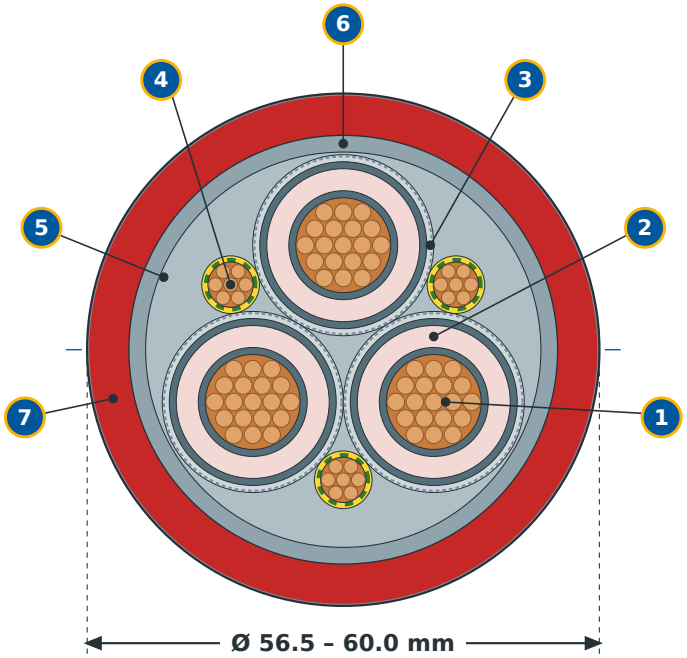
The FeiChun cable has the same core configuration, voltage rating and field of application as the reference product. Dimensions and weights are FeiChun design values; compare them with reels, guides and glands before direct replacement.

## 02 Construction

**FEICHUN · CROSS-SECTION A-A · 3.6/6 kV**

**FC-R-(N)TSCGEWÖU**

Sample size 3×70+3×35/3 · Rev 0 · Illustrative, not to scale




| No. | Component | Material |
|---|---|---|
| 1 | Conductor | Fine-wire copper, class 5 to IEC 60228 |
| 2 | Insulation and semi-conductive layers | Rubber insulation between inner and outer semi-conductive layers |
| 3 | Core screen | Copper wire braid |
| 4 | Protective conductor | Green-yellow insulated copper |
| 5 | Filler and anti-twist braid | Rubber compound, polyester braid |
| 6 | Inner sheath | Rubber or elastomer compound |
| 7 | Outer sheath | Polychloroprene rubber compound 5GM5 to DIN VDE 0207-21, red |

The drawing shows 3×70+3×35/3. Other sizes have the same construction with scaled dimensions.

### Construction details

| | |
|---|---|
| **Conductor** | Fine-wire tinned or bare copper, class 5 to IEC 60228 / DIN VDE 0295 |
| **Insulation** | EPR rubber compound 3GI3 to DIN VDE 0207-20, with semi-conductive layers |
| **Core screen** | Copper wire braid, coverage ≥ 80 % |
| **Protective conductor** | Split into three parts in the interstices, green-yellow |
| **Core identification** | Colour coded to HD 308 / DIN VDE 0293 |
| **Inner sheath** | Rubber or elastomer compound |
| **Outer sheath** | Polychloroprene rubber compound 5GM5 to DIN VDE 0207-21, red |

### Sheath material

The red polychloroprene sheath 5GM5 identifies medium-voltage cables on site and combines flame retardancy with high resistance to oil, weather, ozone and abrasion.

## 03 Electrical, Thermal and Mechanical Data

### Electrical data

| | |
|---|---|
| **Rated voltage $U_0/U$** | 3.6/6 kV AC |
| **Test voltage** | 11 kV AC, 5 min |
| **Current-carrying capacity** | DIN VDE 0298-4, 30 °C ambient; see table |
| **Conductor resistance** | Maximum at 20 °C, class 5 to IEC 60228 |

### Thermal and mechanical data

| | |
|---|---|
| **Maximum conductor temperature** | +90 °C |
| **Short-circuit temperature** | +250 °C |
| **Ambient temperature, fixed** | -40 ... +80 °C |
| **Ambient temperature, moving** | -25 ... +80 °C |
| **Minimum bending radius, moving** | See table (12 × D) |
| **Maximum tensile load** | 20 N/mm² of copper cross-section of the power cores |
| **Maximum travel speed** | 120 m/min |
| **Maximum torsion** | ±25 °/m |
| **Flame propagation** | IEC 60332-1-2 |
| **Halogen-free sheath** | No |
| **Oil, ozone and UV resistance** | Resistant |

## 04 Dimensions, Weights and Ratings

The highlighted row is 3×70+3×35/3; the adjacent sizes of the series are shown for comparison.

| Type designation | Article no. | Conductor Ø max mm | Outer Ø min mm | Outer Ø max mm | Min. bend radius mm | Weight approx. kg/km | Max. pull N | $R_{20}$ max Ω/km | Rated current A | $I_k$ (1 s) kA |
|---|---|---|---|---|---|---|---|---|---|---|
| 3×50+3×25/3 | FC-TF0710-3503253 | 9.2 | 52.5 | 56.0 | 672 | 4,310 | 3,000 | 0.386 | 186 | 7.15 |
| **3×70+3×35/3** | **FC-TF0710-3703353** | **10.8** | **56.5** | **60.0** | **720** | **5,340** | **4,200** | **0.272** | **230** | **10.01** |
| 3×95+3×50/3 | FC-TF0710-3953503 | 12.6 | 61.0 | 64.5 | 774 | 6,610 | 5,700 | 0.206 | 278 | 13.59 |

Current-carrying capacity: design values to DIN VDE 0298-4, free air, 30 °C ambient. Pull force = 20 N/mm² × copper cross-section of the power cores. Dimensions and weights are nominal design values within manufacturing tolerances.

### Ambient temperature factors

| °C | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
|---|---|---|---|---|---|---|---|
| Factor | 1.08 | 1.04 | 1.00 | 0.96 | 0.91 | 0.87 | 0.82 |

### Short-circuit rating

$I_k$ = 0.143 kA/mm² × conductor cross-section for 1 s; for duration t: $I_{k,t} = I_{k,1s} / \sqrt{t}$.

## 05 Reel Design Data

Rated current for the number of layers on the reel (DIN VDE 0298-4 factors 0.80 / 0.61 / 0.49 / 0.41) and the minimum reel core diameter (2 × bending radius).

| Type designation | Outer Ø max, mm | Min. reel core Ø, mm | Copper, kg/km | 1 layer, A | 2 layers, A | 3 layers, A | 4 layers, A |
|---|---|---|---|---|---|---|---|
| 3×50+3×25/3 | 56.0 | 1,344 | 2,030 | 149 | 113 | 91 | 76 |
| **3×70+3×35/3** | **60.0** | **1,440** | **2,760** | **184** | **140** | **113** | **94** |
| 3×95+3×50/3 | 64.5 | 1,548 | 3,710 | 222 | 170 | 136 | 114 |

## 06 Selection Guide

**Typical use:** 3×70+3×35/3 is a medium MV feeder for gantry cranes, stackers and drills of about 2.4 MVA.

At 6 kV, 3×70+3×35/3 transmits about 2.39 MVA continuously in free air at 30 °C (one layer on a reel: about 1.91 MVA).

For comparison: 3×50+3×25/3 has 56.0 mm, 4,310 kg/km and 186 A; 3×95+3×50/3 has 64.5 mm, 6,610 kg/km and 278 A. Choose the smallest size whose current, after the temperature and reel-layer factors, covers the load.

**Example.** A circuit carries 184 A at 40 °C ambient. Required table current = 184 / 0.91 = 203 A, so 3×70+3×35/3 (230 A) is suitable.

On a reel with 2,500 mm flange diameter, 1,000 mm traverse and 1,440 mm core, about 695 m of 3×70+3×35/3 can be wound (indicative).

## 07 Standards and Testing

| Standard | Scope |
|---|---|
| **IEC 60228 / DIN VDE 0295** | Conductors, class 5 |
| **DIN VDE 0298-3** | Bending radii and tensile loads |
| **DIN VDE 0298-4** | Current-carrying capacity |
| **IEC 60332-1-2** | Flame propagation, single cable |
| **DIN VDE 0250-813** | Design reference for the construction |
| **IEC 60502-2** | Extruded insulation 6 kV to 30 kV, test methods |
| **IEC 60811-404** | Mineral oil resistance |

### Routine and type tests

- AC voltage test on every delivery length: 11 kV, 5 min
- Conductor resistance, dimensions and insulation thickness
- Continuity of all conductors
- Partial-discharge test of the power cores (IEC 60502-2 method)
- Flame propagation, IEC 60332-1-2 (type test)

**Test documentation:** every delivery comes with a test certificate from FeiChun's own laboratory; third-party witnessed tests can be arranged at the buyer's cost.

## 08 Installation, Marking and Delivery

### Installation guidance

- Unwind the cable tangentially from the drum; avoid loops, kinks and pulling over the drum flange.
- Keep the bending radius and tensile load within the values in this datasheet.
- Use a reel core diameter of at least twice the minimum bending radius; fit a guide so that turns do not cross.
- Before first operation, let the cable relax at full length to release torsion from transport.
- Use MV terminations and couplers suitable for screened flexible cores; connect all earth conductors at both ends.

### Sheath marking

```
FEICHUN FC-R-(N)TSCGEWÖU 3×70+3×35/3 3.6/6 kV [year] [metre mark]
```

### Packing and delivery

| | |
|---|---|
| **Packing** | Steel or fumigated wooden drums; cable ends sealed |
| **Delivery length** | As ordered, in one continuous length |
| **Lead time** | 2–3 weeks after technical approval |
| **Warranty** | 1 year, covering failures not caused by human factors |
| **Terms** | FCA buyer's nominated forwarder's warehouse in China (Incoterms 2020); prices subject to LME copper |

**Order example: FC-R-(N)TSCGEWÖU 3×70+3×35/3 3.6/6 kV** – replacement for TF Kable R-(N)TSCGEWÖU 3×70+3×35/3, 500 m on one drum. State type, cross-section, voltage, length per piece and installation conditions when requesting a quotation.

## 09 Certification and Quality

FeiChun holds CE (Low Voltage Directive), EAC and UKCA certificates and an ATEX documentation verification for defined product groups. Whether a certificate scope covers this construction is confirmed per project. All cable is routine-tested over 100 % of the delivered length.

## 10 Related Datasheets

This datasheet in Russian: FC-R-(N)TSCGEWÖU 3×70+3×35/3 3.6/6 kV

- FC-R-(N)TSCGEWÖU 3×50+3×25/3 3.6/6 kV – replacement for TF Kable R-(N)TSCGEWÖU
- FC-R-(N)TSCGEWÖU 3×95+3×50/3 3.6/6 kV – replacement for TF Kable R-(N)TSCGEWÖU
- FC-R-(N)TSCGEWÖU 3×35+3×16/3 3.6/6 kV – replacement for TF Kable R-(N)TSCGEWÖU
- FC-R-(N)TSCGEWÖU 3×120+3×70/3 3.6/6 kV – replacement for TF Kable R-(N)TSCGEWÖU

Library overview: FeiChun replacements for TF Kable

### Frequently asked questions

**Can FC-R-(N)TSCGEWÖU replace TF Kable R-(N)TSCGEWÖU 3×70+3×35/3?**

Yes. It is designed with the same core configuration, voltage rating and field of application. Compare the outer diameter, bending radius and weight with your reel, guides or glands before ordering; FeiChun confirms suitability on request.

### What are the outer diameter and minimum bending radius of 3×70+3×35/3?

Outer diameter 56.5 – 60.0 mm; minimum bending radius in moving operation 720 mm (12 × D).

### What current can 3×70+3×35/3 carry?

230 A in free air at 30 °C ambient. Apply the temperature factors in section 04 and the layer factors when wound on a reel.

### Is the cable halogen-free?

No. The PCP rubber, red sheath contains halogen; a halogen-free PUR version can be offered.

## 11 Trademark Notice and Intellectual Property

TF Kable is a trademark of Grupa TF Kable. Type designations such as (N)TSCGEWÖU or NSHTÖU are standard designations. They are named only to identify the reference product for technical comparison. FeiChun Cables is not affiliated with or endorsed by the trademark owners.

**© 2026 Anhui FeiChun Special Cable Co., Ltd. — All rights reserved.** This document, including drawings, tables and layout, is protected under the Copyright Law and the Anti-Unfair Competition Law of the People's Republic of China and the Copyright Act 1968 (Cth) of Australia. Reproduction or modification without written consent is prohibited. Technical data may change without notice.

### Technical and commercial contacts

**Anhui FeiChun Special Cable Co., Ltd.**
International Business Department · Hefei National Economic and Technological Development Zone, Hefei, Anhui, China
Technical support: Tech@feichuncables.com
Mining and heavy industry: mining@feichuncables.com
Zihao Yang, Global Sales Manager: zihao.yang@feichuncables.com
WhatsApp: +86 138 5512 3218
Web: www.feichuncables.com

### Document control

**Document no.** FC-TDS-TF0710-2026-0A8D-EN
**Revision** 0
**Date** 4 November 2026
**Product** FC-R-(N)TSCGEWÖU 3×70+3×35/3 3.6/6 kV