REPLACEMENT FOR TF KABLE (N)TSKCGEWÖU | 3.6/6 kV | (N)TSKCGEWÖU | PCP rubber | article datasheet

FC-(N)TSKCGEWÖU 3×50+2×25/2+1×16 3.6/6 kV

Medium-Voltage Mining Trailing Cable – polychloroprene (PCP/CR) rubber compound 5GM5 to DIN VDE 0207-21, black. FeiChun replacement for TF Kable (N)TSKCGEWÖU: construction, dimensions, weight, current rating, standards and installation guidance.

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01 Application and Product Overview

FC-(N)TSKCGEWÖU 3×50+2×25/2+1×16 is a medium-Voltage Mining Trailing Cable rated 3.6/6 kV and the FeiChun replacement for TF Kable (N)TSKCGEWÖU 3×50+2×25/2+1×16. It has an outer diameter of 52.5 – 56.0 mm, weighs about 4,460 kg/km and carries 186 A in free air at 30 °C. The series covers 25 – 185 mm².

Typical applications

- Trailing supply of draglines, shovels, drills and dredges in open-cast mines
- Heavy mobile equipment with high mechanical stress and abrasion
- Earth-continuity monitoring with a ground-check or pilot conductor where fitted
- Outdoor service with UV radiation, ozone, mud and water

Design

Three screened power cores rated 3.6/6 kV, a protective conductor split into two parts and one pilot core in the interstices, under an anti-twist braid.

3×50+2×25/2+1×16	3.6/6 kV	186 A	Ø 56.0 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
- Flame-retardant to IEC 60332-1-2; oil, ozone and UV resistant

Replacement reference

REFERENCE PRODUCT		FEICHUN REPLACEMENT
TF Kable (N)TSKCGEWÖU 3×50+2×25/2+1×16 (N)TSKCGEWÖU	⇄	**FC-(N)TSKCGEWÖU 3×50+2×25/2+1×16 3.6/6 kV** Medium-Voltage Mining Trailing Cable

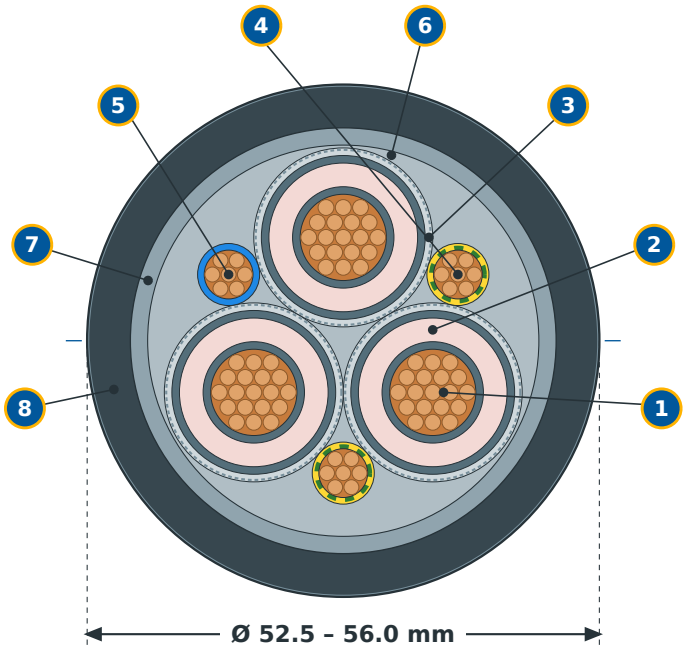
The FeiChun cable has the same core configuration, voltage rating and field of application as the reference product. Dimensions and weights are FeiChun design values; compare them with reels, guides and glands before direct replacement.

02 Construction

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

FC-(N)TSKCGEWÖU

Sample size 3×50+2×25/2+1×16 · 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	Pilot cores	Insulated copper, blue/white
6	Filler and anti-twist braid	Rubber compound, polyester braid
7	Inner sheath	Rubber or elastomer compound
8	Outer sheath	Polychloroprene (PCP/CR) rubber compound 5GM5 to DIN VDE 0207-21, black

The drawing shows 3×50+2×25/2+1×16. 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 two parts in the interstices, green-yellow
Pilot / ground-check	1 × 16 mm², blue/white insulation
Core identification	Colour coded to HD 308 / DIN VDE 0293
Inner sheath	Rubber or elastomer compound
Outer sheath	Polychloroprene (PCP/CR) rubber compound 5GM5 to DIN VDE 0207-21, black

Sheath material

Polychloroprene (PCP/CR) rubber 5GM5 is the classic heavy-duty sheath of DIN VDE 0250 cables: flame-retardant, resistant to oil, weather, ozone and UV radiation, and elastic under repeated bending.

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
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 3×50+2×25/2+1×16; 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
3×35+2×16/2+1×16	FC-TF0992-3352162116	7.7	49.0	52.0	624	3,670	2,100	0.554	149	5.00
3×50+2×25/2+1×16	**FC-TF0992-3502252116**	**9.2**	**52.5**	**56.0**	**672**	**4,460**	**3,000**	**0.386**	**186**	**7.15**
3×70+2×35/2+1×16	FC-TF0992-3702352116	10.8	56.5	60.0	720	5,490	4,200	0.272	230	10.01

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 Selection Guide

Typical use: 3×50+2×25/2+1×16 is a medium MV feeder for gantry cranes, stackers and drills of about 1.9 MVA.

At 6 kV, 3×50+2×25/2+1×16 transmits about 1.93 MVA continuously in free air at 30 °C (one layer on a reel: about 1.55 MVA).

For comparison: 3×35+2×16/2+1×16 has 52.0 mm, 3,670 kg/km and 149 A; 3×70+2×35/2+1×16 has 60.0 mm, 5,490 kg/km and 230 A. Choose the smallest size whose current, after the temperature factors, covers the load.

Example. A circuit carries 148 A at 40 °C ambient. Required table current = 148 / 0.91 = 163 A, so 3×50+2×25/2+1×16 (186 A) is suitable.

06 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.

07 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.
- Protect trailing cables from being run over; use cable bridges or hangers where vehicles cross.
- Use MV terminations and couplers suitable for screened flexible cores; connect all earth conductors at both ends.

Sheath marking

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FEICHUN FC-(N)TSKCGEWÖU 3×50+2×25/2+1×16 3.6/6 kV [year] [metre mark]
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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-(N)TSKCGEWÖU 3×50+2×25/2+1×16 3.6/6 kV – replacement for TF Kable (N)TSKCGEWÖU 3×50+2×25/2+1×16, 500 m on one drum. State type, cross-section, voltage, length per piece and installation conditions when requesting a quotation.

08 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.

09 Related Datasheets

This datasheet in Russian: FC-(N)TSKCGEWÖU 3×50+2×25/2+1×16 3.6/6 kV

- FC-(N)TSKCGEWÖU 3×35+2×16/2+1×16 3.6/6 kV – replacement for TF Kable (N)TSKCGEWÖU
- FC-(N)TSKCGEWÖU 3×70+2×35/2+1×16 3.6/6 kV – replacement for TF Kable (N)TSKCGEWÖU
- FC-(N)TSKCGEWÖU 3×25+2×25/2+1×16 3.6/6 kV – replacement for TF Kable (N)TSKCGEWÖU
- FC-(N)TSKCGEWÖU 3×95+2×50/2+1×16 3.6/6 kV – replacement for TF Kable (N)TSKCGEWÖU
- FC-(N)TMCGETMPU 3×70+2×35/2+10 6/10 kV – replacement for TF Kable (N)TMCGETMPU
- FC-(N)TMCETMPU 3×50+2×25/2+10 6/10 kV – replacement for TF Kable (N)TMCETMPU
- FC-(N)TMCGETMPU 3×70+2×35/2+10 8.7/15 kV – replacement for TF Kable (N)TMCGETMPU
- FC-(N)TMCETMPU 3×50+2×25/2+10 8.7/15 kV – replacement for TF Kable (N)TMCETMPU

Library overview: FeiChun replacements for TF Kable

Frequently asked questions

Can FC-(N)TSKCGEWÖU replace TF Kable (N)TSKCGEWÖU 3×50+2×25/2+1×16?
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 3×50+2×25/2+1×16?
Outer diameter 52.5 – 56.0 mm; minimum bending radius in moving operation 672 mm (12 × D).

What current can 3×50+2×25/2+1×16 carry?
186 A in free air at 30 °C ambient. Apply the temperature factors in section 04.

Is the cable halogen-free?
No. The PCP rubber sheath contains halogen; a halogen-free PUR version can be offered.

10 Trademark Notice and Intellectual Property

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Document control

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