FEICHUN SPECIAL CABLES · 飞纯特种电缆

TDS · LOW VOLTAGE CABLES | ROUND · FG16OR16 0.6/1 kV | FESTOON · H07VVH6-F 450/750 V

WOODEN DRUMS Ø 600 / Ø 800 mm

Round Cables FG16OR16 0,6/1 kV & Festoon Cables H07VVH6-F 450/750 V

Technical specification for 8 sizes of round flexible copper power and control cables (Cavi tondi – HEPR G16 insulation, PVC R16 sheath, CEI 20-13) and 7 sizes of flat PVC festoon cables for overhead-crane power and control (H07VVH6-F, CEI EN 50214 / CEI 20-22 II), offered against the customer's Round Cables and Festoon Cables lists.

Document code: **FC-TDS-FG16FST-2026-IT16850** Revision: **00** Date: **25.11.2026** Quantity: **16,850 m**

Destination: **Italy**

01 Scope and Application

This specification covers the design, materials, construction, testing, marking and packing of the cables listed below, to be supplied on wooden drums.

- **A · Round cables (Cavi tondi) FG16OR16 0,6/1 kV** – flexible class 5 copper, HEPR rubber insulation G16, PVC sheath R16 grey. For power, signalling and control in industry, building sites and buildings; fixed installation indoors and outdoors, also in wet locations (AD7), direct or indirect burial, on trays, ducts and conduits. Good resistance to oils, industrial greases and UV.
- **B · Festoon cables H07VVH6-F 450/750 V** – flat cables with flexible class 5 copper, PVC insulation R2 and PVC sheath RZ, blue. For power and control of overhead cranes, hoists and moving machinery on festoon (trolley) systems; mobile installation.

ROUND CABLES UO/U
0.6/1 kV

FESTOON CABLES UO/U
450/750 V

SIZES / QUANTITY
15 / 16,850 m

CONDUCTOR
Cu class 5

Item	Customer description	Type	Size	Qty (m)
A1	Cavi tondi – Tripolari	FG16OR16 0,6/1 kV	3 × 1,5	1,500
A2	Cavi tondi – Quadripolari	FG16OR16 0,6/1 kV	4 × 2,5	250
A3	Cavi tondi – Quadripolari	FG16OR16 0,6/1 kV	4 × 4	500
A4	Cavi tondi – Quadripolari	FG16OR16 0,6/1 kV	4 × 6	100
A5	Cavi tondi – Quadripolari	FG16OR16 0,6/1 kV	4 × 10	1,000
A6	Cavi tondi – Pentapolari	FG16OR16 0,6/1 kV	5G1,5	2,000

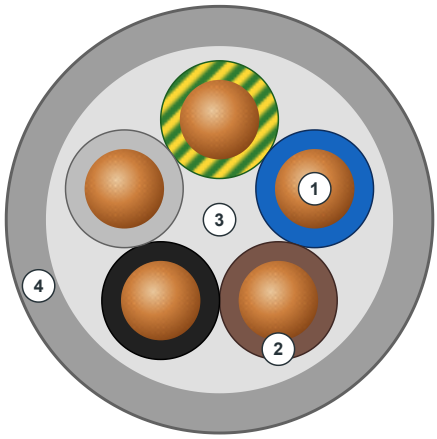
Item	Customer description	Type	Size	Qty (m)
A7	Cavi tondi – Multipolari	FG16OR16 0,6/1 kV	**7G1,5**	**4,000**
A8	Cavi tondi – Multipolari	FG16OR16 0,6/1 kV	**16G1,5**	**500**
B1	Festoon cable	H07VVH6-F 450/750 V	**12G1,5**	**1,000**
B2	Festoon cable	H07VVH6-F 450/750 V	**16G1,5**	**1,000**
B3	Festoon cable	H07VVH6-F 450/750 V	**4G2,5**	**1,000**
B4	Festoon cable	H07VVH6-F 450/750 V	**8G2,5**	**1,000**
B5	Festoon cable	H07VVH6-F 450/750 V	**4G4**	**1,000**
B6	Festoon cable	H07VVH6-F 450/750 V	**4G6**	**1,000**
B7	Festoon cable	H07VVH6-F 450/750 V	**4G10**	**1,000**

Designation: "x" = cores without green/yellow protective conductor; "G" = one core is green/yellow (CEI UNEL 00722).

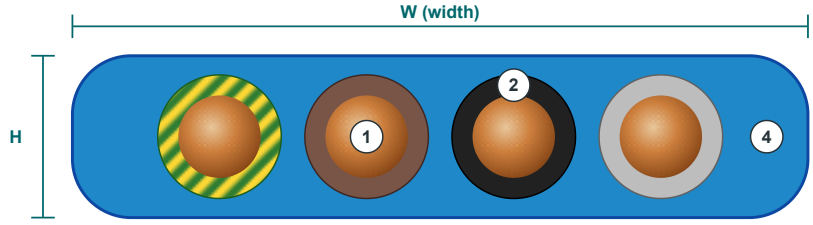
02 Cable Construction — Cross-Sections

Fig. 1 · Cross-sections (schematic, not to scale)

1a · Round cable FG16OR16 0,6/1 kV – e.g. 5G1,5



1b · Festoon cable H07VVH6-F 450/750 V – e.g. 4G2,5



Cores laid parallel in one plane; blue PVC sheath RZ

1 Conductor · 2 Insulation · 3 Filler (round cable only) · 4 Sheath — see legend tables below

FEICHUN CABLES · FG16OR16 / H07VVH6-F		
Doc: FC-TDS-FG16FST-2026-IT16850	Rev. 00	25.11.2026

A · Round cables FG16OR16 0,6/1 kV

Pos.	Component	Material / requirement
1	Conductor	Plain annealed copper, flexible, **class 5** (CEI EN 60228)
2	Insulation	HEPR rubber compound, quality **G16**, 90 °C
3	Filler	Thermoplastic, penetrating between cores (multicore cables)
4	Sheath	PVC compound, quality **R16**, colour **grey**

B · Festoon cables H07VVH6-F 450/750 V

Pos.	Component	Material / requirement
1	Conductor	Plain annealed copper, flexible, **class 5** (CEI EN 60228)
2	Insulation	PVC compound, quality **R2**
—	Lay-up	Cores laid parallel in one plane (flat construction)
4	Sheath	PVC compound, quality **RZ**, colour **blue**

Designation. FG16OR16: F = flexible conductor class 5, G16 = HEPR rubber insulation, O = multicore with filler, R16 = PVC sheath. H07VVH6-F: H = harmonised type, 07 = 450/750 V, V = PVC insulation, V = PVC sheath, H6 = flat cable, F = flexible conductor. The cross-section figures are schematic; final dimensions are confirmed by the manufacturer's production drawing.

03 Applicable Standards

A · Round cables FG16OR16	
CEI 20-13	Rubber-insulated cables, rated voltage 0.6/1 kV – construction and tests
IEC 60502-1	Power cables with extruded insulation up to 1 kV
CEI UNEL 35318 / 35322	FG16(O)R16 – power cables / signalling and control cables
CEI EN 60228	Conductors of insulated cables (class 5)
EN 60332-1-2	Flame propagation – single vertical cable
EN 50575 / EN 13501-6	CPR reaction to fire – class Cca-s3,d1,a3 (see Section 10)
2014/35/EU · 2011/65/EU	Low Voltage Directive · RoHS Directive

B · Festoon cables H07VVH6-F	
CEI EN 50214 (HD 359 S2)	Flat PVC-sheathed flexible cables
CEI 20-22 II	Fire behaviour (as stated in customer data sheet)
CEI EN 50525 (HD 21)	PVC-insulated cables up to 450/750 V
CEI EN 60228 / CEI 20-29	Conductors of insulated cables (class 5)
CEI EN 50363 / CEI 20-11	Insulating and sheathing materials
CEI EN 50267-2-1	Gases evolved during combustion
CEI UNEL 00725 / 00722	Core marking / core colours

04 A · Round Cables FG16OR16 — Dimensions, Weights and Current Ratings

Size n° × mm²	Cond. Ø approx. mm	Insulation avg. mm	Sheath avg. mm	OD max mm	Max. R at 20 °C Ω/km	Weight approx. kg/km	In air 30 °C A	In conduit in air 30 °C A	Buried 20 °C, K=1 A	Min. bending radius (4×OD) mm	Max. pull (50 N/mm²) N
3 × 1,5	1,5	0,7	1,8	12,5	13,3	150	23	19,5	23	50	225
4 × 2,5	2,0	0,7	1,8	14,6	7,98	220	32	26	30	58	500
4 × 4	2,5	0,7	1,8	16,0	4,95	295	42	35	39	64	800
4 × 6	3,0	0,7	1,8	17,5	3,30	385	54	44	50	70	1,200
4 × 10	4,0	0,7	1,8	19,8	1,91	575	75	60	67	79	2,000
5G1,5	1,5	0,7	1,8	14,4	13,3	195	23	19,5	23	58	375
7G1,5	1,5	0,7	1,8	15,4	13,3	260	13	11,5	18,5	62	525
16G1,5	1,5	0,7	1,8	21,1	13,4	480	11	9,5	14,5	84	1,200

Current ratings refer to 3 loaded conductors (7G1,5 and 16G1,5: all conductors loaded except green/yellow); laying depth 0.8 m for buried cables; soil thermal resistivity 1.0 K·m/W. Ratings must be derated for actual ambient temperature, grouping and installation method. Dimensions and weights are approximate and confirmed by the routine test report.

05 A · Round Cables — Electrical Characteristics, Installation and Core Colours

Parameter	Value
Rated voltage Uo/U	**600/1000 V AC · 1500 V DC**
Max. voltage Um	**1200 V AC · 1800 V DC (also to earth)**
Test voltage	**4000 V AC**
Max. conductor temp., operation	**90 °C**
Min. operating temperature	**−15 °C (without mechanical stress)**
Max. short-circuit temperature	**250 °C**

Installation	Value
Min. installation temperature	**0 °C**
Min. bending radius (recommended)	**4 × cable diameter**
Max. pulling force (recommended)	**50 N/mm² of copper cross-section**
Laying	**Fixed, indoor / outdoor, wet locations (AD7), direct or indirect burial, trays, ducts**
Special properties	**Oil and grease resistant, good low-temperature behaviour, UV resistant**

Core identification

Size	Core colours
3 × 1,5	brown · black · grey (without green/yellow)
4 × 2,5 / 4 × 4 / 4 × 6 / 4 × 10	blue · brown · black · grey (without green/yellow)
5G1,5	green/yellow · blue · brown · black · grey
7G1,5 / 16G1,5	black cores with white printed numbers 1, 2, 3 … + one green/yellow core

Core colours per CEI UNEL 00722 and the customer data sheet. If green/yellow is also required in the 3 × 1,5 and 4 × … cables (i.e. 3G1,5 / 4G…), please advise before production.

06 B · Festoon Cables H07VVH6-F — Dimensions and Weights

Size n° × mm²	External dimensions W × H mm	Insulation avg. mm	Sheath avg. mm	Max. R at 20 °C Ω/km	Weight approx. kg/km	Min. bending radius (10×H) mm	Max. tensile (15 N/mm²) N
12G1,5	41,00 × 5,50	0,70	1,00	13,30	≈ 430	55	270
16G1,5	54,00 × 5,50	0,70	1,00	13,30	≈ 560	55	360
4G2,5	20,00 × 6,00	0,80	1,00	7,98	≈ 225	60	150
8G2,5	32,00 × 6,00	0,80	1,00	7,98	≈ 400	60	300
4G4	21,00 × 7,00	0,80	1,20	4,95	≈ 300	70	240
4G6	23,50 × 8,00	0,80	1,20	3,30	≈ 410	80	360
4G10	30,00 × 9,50	1,00	1,40	1,91	≈ 660	95	600

Dimensions, insulation and sheath thicknesses and conductor resistance as per customer data sheet H07VVH6-F CEI 20-22 II. Weights are FeiChun design estimates and are confirmed by the routine test report.

07 B · Festoon Cables — Electrical Characteristics, Installation and Core Colours

Parameter	Value
Rated voltage Uo/U	**450/750 V**
Test voltage	**2500 V**
Working temperature	**−5 °C … +70 °C**
Max. short-circuit temperature	**160 °C**
Sheath colour	**Blue**

Installation	Value
Laying	**Mobile, on festoon / trolley systems**

Installation	Value
Max. free suspension length	**35 m**
Max. travel speed	**1.6 m/s**
Min. bending radius	**10 × cable thickness (H)**
Max. tensile stress	**15 N/mm² of copper cross-section**
Min. installation temperature	**0 °C**

Core identification

Size	Core colours
4G2,5 / 4G4 / 4G6 / 4G10	green/yellow · brown · black · grey
8G2,5 / 12G1,5 / 16G1,5	black cores with white printed numbers 1, 2, 3 … + one green/yellow core (outer position)

Core colours and numbering per CEI UNEL 00722 / 00725 (HD 308).

08 Packing on Wooden Drums and Marking

Drum requirement. All cables are supplied wound on **wooden drums**: round cables on drums with flange diameter **Ø 600 mm**, festoon cables on drums with flange diameter **Ø 800 mm**. Wood heat-treated and ISPM 15 marked. Cable ends sealed with heat-shrink caps.

Item	Size	Drum	Proposed drum lengths	Drums	Net cable weight / drum (approx.)
A1	**3 × 1,5**	Ø 600 mm	5 × 300 m	5	≈ 45 kg
A2	**4 × 2,5**	Ø 600 mm	1 × 250 m	1	≈ 55 kg
A3	**4 × 4**	Ø 600 mm	2 × 200 m + 1 × 100 m	3	≈ 59 / 30 kg
A4	**4 × 6**	Ø 600 mm	1 × 100 m	1	≈ 39 kg
A5	**4 × 10**	Ø 600 mm	8 × 125 m	8	≈ 72 kg
A6	**5G1,5**	Ø 600 mm	8 × 250 m	8	≈ 49 kg
A7	**7G1,5**	Ø 600 mm	20 × 200 m	20	≈ 52 kg
A8	**16G1,5**	Ø 600 mm	4 × 125 m	4	≈ 60 kg
B1	**12G1,5**	Ø 800 mm	2 × 500 m	2	≈ 215 kg
B2	**16G1,5**	Ø 800 mm	4 × 250 m	4	≈ 140 kg
B3	**4G2,5**	Ø 800 mm	2 × 500 m	2	≈ 113 kg
B4	**8G2,5**	Ø 800 mm	2 × 500 m	2	≈ 200 kg
B5	**4G4**	Ø 800 mm	2 × 500 m	2	≈ 150 kg
B6	**4G6**	Ø 800 mm	2 × 500 m	2	≈ 205 kg

Item	Size	Drum	Proposed drum lengths	Drums	Net cable weight / drum (approx.)
B7	**4G10**	Ø 800 mm	4 × 250 m	4	≈ 165 kg
			Total	**68**	**≈ 5.7 t net**

Proposed lengths are based on the cable dimensions and typical drums of Ø 600 mm (≈ 450 mm wide) and Ø 800 mm (≈ 560 mm wide). Other lengths per drum can be agreed before production. Length tolerance ±2 % per drum. Final drum sizes and weights are confirmed on the packing list.

Item	Requirement
Sheath marking – round cables	**Printed at intervals ≤ 1 m:** **FEICHUN – FG16OR16 0,6/1 kV – [n° × mm²] – [YEAR] – [LOT] – [METRE MARK]**
Sheath marking – festoon cables	**Printed at intervals ≤ 1 m:** **FEICHUN – H07VVH6-F 450/750 V – [n°G mm²] – [YEAR] – [METRE MARK]**
Drum label	**Manufacturer, cable type, size, voltage, length, net/gross weight, drum number, order number, rolling-direction arrow**

09 Tests

Routine tests (every drum length)

- Conductor DC resistance measurement
- Voltage test: round cables 4000 V AC; festoon cables 2500 V AC
- Visual inspection: core colours / numbering, dimensions and marking
- Length check on every drum

Sample tests

- Conductor examination (class 5)
- Thickness of insulation and sheath; overall diameter / flat dimensions W × H
- Tensile strength and elongation of insulation and sheath
- Flame propagation EN 60332-1-2 (round cables)

Type tests. Per CEI 20-13 / IEC 60502-1 (round cables) and CEI EN 50214 (festoon cables). A factory routine test certificate accompanies every drum.

10 Compliance with Customer Data Sheets

Customer requirement	FeiChun offer	Status
Round: FG16OR16 0,6/1 kV, Cu class 5	FG16OR16 0,6/1 kV, plain Cu class 5	**Complies**
Round: insulation G16, sheath R16 grey	HEPR G16 insulation, PVC R16 sheath, grey	**Complies**
Round: dimensions, resistance, weight per catalogue	See Section 04	**Complies**

Customer requirement	FeiChun offer	Status
Round: 4000 V test, 90 °C, 250 °C short circuit	See Section 05	**Complies**
Round: CPR class Cca-s3,d1,a3 (EN 50575), CE / DoP	[To be confirmed by FeiChun before sending]	**TBC**
Festoon: H07VVH6-F 450/750 V, Cu class 5	H07VVH6-F 450/750 V, plain Cu class 5	**Complies**
Festoon: insulation PVC R2, sheath PVC RZ, blue	PVC R2 insulation, PVC RZ sheath, blue	**Complies**
Festoon: W × H, insulation / sheath thickness, resistance	Per customer data sheet – see Section 06	**Complies**
Festoon: 35 m free suspension, 1.6 m/s, 10 × H bending	See Section 07	**Complies**
Wooden drums: Ø 800 mm festoon / Ø 600 mm round	See Section 08	**Complies**

11 Documents to be Supplied

- Cable data sheets and cross-section drawings (this document)
- Factory routine test certificate (per drum)
- Certificate of Conformity; type test reports on request
- Packing list, Commercial Invoice, Certificate of Origin (China)

Prepared by: design engineer	Checked by: technical dept. / QA	Approved by: technical director

ANHUI FEICHUN SPECIAL CABLE CO., LTD.

安徽飞纯特种电缆有限公司

Hefei, Anhui Province, China

National Economic & Technological Development Zone

www.feichuncables.com

CONTACTS

Technical dept.: Tech@feichuncables.com

Sales: zihao.yang@feichuncables.com

Zihao Yang, Sales Manager

WhatsApp: +86 138 5512 3218

Intellectual property. Document FC-TDS-FG16FST-2026-IT16850 is the property of Anhui FeiChun Special Cable Co., Ltd. and is provided to the addressee solely for evaluation of this enquiry. Copying or disclosure to third parties without written consent of FeiChun is prohibited. Dimensions, weights and electrical ratings are approximate and typical; the manufacturer may modify the design without reducing product performance. All data are subject to confirmation in the approved production drawing.