ANHUI FEICHUN SPECIAL CABLE CO., LTD.

安徽飞纯特种电缆有限公司

TECHNICAL DATASHEET

POWER CABLE SPECIFICATION

4C × 2.5MM²

Multi-Core Copper Conductor Power Cable | PVC/XLPE Insulated & Sheathed

LOW VOLTAGE POWER CABLE

1 PRODUCT IDENTIFICATION & CORE SPECIFICATIONS

NUMBER OF CORES	CROSS-SECTION	RATED VOLTAGE	CONDUCTOR TYPE
4C	2.5mm²	0.6/1kV	Cu

Parameter	Specification	Standard
Cable Designation	**4C × 2.5mm² Power Cable**	-
Number of Cores	**4 Cores (3 Phase + Neutral or 3 Phase + PE)**	-
Conductor Cross-Sectional Area	**2.5 mm² per core**	IEC 60228
Rated Voltage U_0/U	**0.6/1.0 kV AC**	IEC 60502
Frequency	50/60 Hz	-
Conductor Material	Copper (Cu) - Annealed, Stranded	IEC 60228 Class 1 or 2
Insulation Material	PVC (Polyvinyl Chloride) or XLPE (Cross-Linked Polyethylene)	IEC 60502-1
Outer Sheath Material	PVC (Black or as specified)	IEC 60502-1

Core Identification	Brown, Black, Grey, Blue (or as per standard)	IEC 60446

2 CABLE CONSTRUCTION & DESIGN

⚡ CABLE STRUCTURE - CROSS SECTION VIEW ⚡

1. **Conductor:** Stranded annealed copper wire, circular conductor, Class 1 or Class 2
2. **Insulation:** PVC (TI1/TI2) or XLPE compound, color-coded per core
3. **Filler (Optional):** Non-hygroscopic material for round cable formation
4. **Inner Sheath (Optional):** PVC separator tape or inner covering
5. **Outer Sheath:** Black PVC (TM1/TM2) compound, extruded over cores

Component	Material & Description	Nominal Dimension
Conductor Diameter	Stranded copper wire	1.78 mm (nominal)
Number of Wires per Conductor	Class 1: 7 wires | Class 2: 7-19 wires	Per IEC 60228
Insulation Thickness	PVC or XLPE compound	0.8 mm (nominal)
Insulated Core Diameter	Conductor + Insulation	≈ 3.4 mm per core
Outer Sheath Thickness	PVC Type TM1 or TM2	1.8 mm (nominal)
Overall Diameter	Complete cable	12.5 mm ± 0.5 mm (approx.)
Cable Weight	Approximate weight	130 kg/km

3 ELECTRICAL PROPERTIES & PERFORMANCE

Parameter	Value	Test Condition / Notes
Rated Voltage (U_0/U)	**0.6/1.0 kV**	AC, 50/60 Hz
Maximum Operating Voltage	1.2 kV	Continuous operation
Current Carrying Capacity	24 A (PVC) / 27 A (XLPE)	Single circuit, 30°C ambient, buried
Conductor DC Resistance (Max)	7.98 Ω/km	At 20°C, for copper 2.5mm²
AC Voltage Test	3.5 kV for 5 minutes	Between conductor and water/earth
Insulation Resistance	≥ 0.01 GΩ·km (PVC) / ≥ 1 GΩ·km (XLPE)	At 20°C
Maximum Conductor Temperature	70°C (PVC) / 90°C (XLPE)	Continuous operation
Emergency Overload Temperature	100°C (PVC) / 130°C (XLPE)	Maximum 100 hours/year
Short Circuit Temperature (Max 5s)	160°C (PVC) / 250°C (XLPE)	Short circuit condition
Voltage Drop	≈ 16 mV/A/m	At unity power factor

Current Rating Note: Current carrying capacity values are approximate and depend on installation method, ambient temperature, grouping factors, and thermal resistivity of soil. Consult detailed rating tables or calculate per IEC 60364-5-52 for specific installations.

4 MECHANICAL & ENVIRONMENTAL PROPERTIES

Property	Specification	Notes
Minimum Bending Radius (Installation)	8 × Overall Diameter (≥ 100 mm)	During laying
Minimum Bending Radius (Fixed)	6 × Overall Diameter (≥ 75 mm)	After installation
Operating Temperature Range	-15°C to +70°C (PVC) / -40°C to +90°C (XLPE)	Continuous operation

Installation Temperature	≥ 0°C (PVC) / ≥ -5°C (XLPE)	Without preheating
Flame Retardant Performance	Passes vertical flame test	IEC 60332-1-2
Service Life	30+ years (XLPE) / 20+ years (PVC)	Under normal conditions
Maximum Pulling Tension	50 N/mm² of conductor area	During installation
UV Resistance	Suitable for outdoor use with black sheath	UV stabilized PVC

5 APPLICATIONS & TYPICAL USES

Building Power Distribution

Fixed wiring in residential, commercial, and industrial buildings for power distribution to lighting and equipment

Industrial Installations

Power supply to machinery, motors, pumps, and industrial equipment in factories and workshops

Underground Installation

Direct burial in ducts, trenches, or conduits for underground power distribution networks

Three-Phase Systems

Ideal for 3-phase power distribution with neutral or earth conductor (TN-S, TN-C-S systems)

Construction Sites

Temporary power distribution for construction equipment and site facilities

Lighting Circuits

Power distribution for lighting systems in commercial and public buildings

Installation Environments: Suitable for indoor and outdoor installations, in cable trays, conduits, ducts, direct burial, on walls or suspended. Can be used in dry, damp, or wet locations. Not suitable for direct sunlight exposure without additional protection (unless UV-resistant sheath specified).

6 TECHNICAL ADVANTAGES & FEATURES

High Conductivity

99.9% pure annealed copper conductor ensures excellent electrical conductivity and minimal power loss

Robust Insulation

PVC or XLPE insulation provides excellent dielectric strength and long-term reliability

Flame Retardant

Passes flame retardant tests, reducing fire hazard and improving safety

Oil & Chemical Resistant

PVC sheath resists oils, acids, and alkalis commonly found in industrial environments

Easy Installation

Flexible construction and manageable bending radius simplify installation procedures

Cost-Effective

Excellent price-to-performance ratio for general power distribution applications

Important Safety Notes: This cable must be installed by qualified electricians in accordance with local electrical codes and regulations. Ensure proper overcurrent protection (circuit breakers/fuses) is installed. Do not exceed the rated current carrying capacity. Protect cables from mechanical damage during and after installation.

7 STANDARDS & COMPLIANCE

Standard Number	Title / Description	Compliance
IEC 60502-1	Power cables with extruded insulation and their accessories for rated voltages from 1 kV up to 30 kV	✓ Full Compliance
IEC 60228	Conductors of insulated cables	✓ Full Compliance
IEC 60332-1-2	Tests on electric and optical fibre cables under fire conditions - Single vertical insulated wire or cable flame test	✓ Full Compliance
IEC 60364-5-52	Electrical installations of buildings - Selection and erection of electrical equipment - Wiring systems	✓ Full Compliance
GB/T 12706	Chinese National Standard for power cables with rated voltage from 1 kV to 35 kV	✓ Full Compliance
RoHS Directive 2011/65/EU	Restriction of Hazardous Substances in electrical and electronic equipment	✓ Compliant
CE Marking	European Conformity marking for product safety	✓ Available
ISO 9001:2015	Quality Management System certification	✓ Certified

8 PACKAGING, MARKING & DELIVERY

Item	Specification

Standard Drum Length	100m, 200m, 500m, 1000m (or as per customer requirement)
Packaging Type	Wooden drum, steel-wood drum, or steel drum (depending on length and weight)
Cable Marking	Manufacturer name, cable type, rated voltage, cross-section, manufacturing date, sequential length marking every 1 meter
Drum Marking	Cable specification, length, gross/net weight, drum number, production date, destination
Test Certificate	Provided with each delivery batch (routine test report)
Production Lead Time	15-30 days after order confirmation (depends on quantity)
Storage Conditions	Store in dry, ventilated area. Avoid direct sunlight and extreme temperatures. Keep drums covered.
Shelf Life	24 months from manufacturing date when stored properly

Quality Assurance: Every cable undergoes rigorous quality control including conductor resistance test, voltage withstand test, insulation resistance test, and dimensional inspection. Type test reports available upon request. Third-party testing can be arranged if required.

Customization Available: This specification represents our standard product. We can customize conductor material, insulation type, sheath color, flame retardant grade, and other parameters to meet specific project requirements. Please contact our technical team for custom specifications, special constructions, or additional technical support.

飞纯电缆

FEICHUN SPECIAL CABLES

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