FEICHUN SPECIAL CABLE — COMPANY & CAPABILITY PROFILE

About Feichun Cable: How a Chinese Mining Cable Manufacturer Serves Underground and Surface Mining Projects Across Six Continents

Company History, Manufacturing Capability, Multi-Standard Production (AS/NZS 1802 · GOST 31945 · IEC 60502 · GB/T 12972), Quality Systems, Regional Expertise, and Practical Procurement Guidance for Mining Engineers Evaluating a China-Based Cable Supplier for Projects in Australia, Central Asia, Africa, South America, and Southeast Asia.

公司历史、制造能力、多标准生产体系（AS/NZS 1802·GOST 31945·IEC 60502·GB/T 12972）、质量管理体系、区域专业经验，以及为澳大利亚、中亚、非洲、南美和东南亚矿业项目评估中国矿用电缆供应商的采购实操指南。

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1. Who Feichun Cable Is: The Direct Summary for Procurement Engineers

Anhui Feichun Special Cable Co., Ltd. (飞纯特种电缆) is a China-based manufacturer of special-purpose cables serving underground and surface mining operations worldwide. The company is headquartered in Hefei, Anhui Province, within the Hefei Economic and Technological Development Zone—a national-level industrial district that clusters advanced manufacturing, logistics infrastructure, and materials science research. Feichun's core business is designing, manufacturing, testing, and exporting mining cables that comply with the major international and regional standards governing electrical cable use in hazardous mining environments: AS/NZS 1802 (Australian/New Zealand), GOST 31945-2012 (Russian Federation and CIS nations), IEC 60502 (International Electrotechnical Commission), and GB/T 12972 (Chinese national standard).

> *安徽飞纯特种电缆有限公司是一家总部位于安徽合肥的特种电缆制造商，专注于为全球地下和露天矿山提供矿用电缆。公司核心业务涵盖按照AS/NZS 1802（澳新标准）、GOST 31945-2012（俄罗斯联邦及独联体标准）、IEC 60502（国际电工委员会标准）和GB/T 12972（中国国家标准）制造、测试和出口矿用电缆。*

What distinguishes Feichun from generic Chinese cable manufacturers is specialization. The Chinese cable industry is vast—China produces roughly forty percent of the world's electrical cable by volume—but the overwhelming majority of Chinese cable factories manufacture commodity-grade building wire, power distribution cable, and communication cable. These products do not require the specialized rubber compounds, multi-core architectures, pilot conductor integration, or extreme-environment material formulations that mining cables demand. Feichun operates exclusively in the specialized mining cable segment, where material science, structural engineering, and regulatory compliance create meaningful barriers to entry. This specialization is not a marketing claim; it is visible in the factory's production equipment (purpose-built rubber compounding lines, multi-core cabling machines, high-voltage test stations), in its technical staff (engineers with mining cable formulation experience rather than generic cable production backgrounds), and in its customer base (mining companies and mining equipment OEMs rather than construction contractors or electrical distributors).

For procurement engineers evaluating Feichun as a potential supplier, the practical question is straightforward: can this company manufacture the specific cable type, to the specific standard, at the specific voltage and configuration, that your mining operation requires—and can it deliver that cable with documentation, test certificates, and quality assurance sufficient

to pass your site inspection authority's review? The remainder of this article provides the detailed evidence to answer that question.

2. Company Origin: From Domestic Industrial Cable to Global Mining Specialist

Founding and Early Development: Feichun Cable was established in Hefei, Anhui Province, initially serving China's domestic industrial cable market. Anhui Province is one of China's major cable manufacturing regions, with proximity to copper smelting operations in Tongling (one of China's largest copper production cities, approximately two hundred kilometers from Hefei), established rubber and polymer compounding supply chains, and a deep pool of cable engineering talent trained at institutions including Hefei University of Technology and the University of Science and Technology of China. This geographic advantage—raw materials, technical talent, and manufacturing infrastructure within a compact industrial corridor—provides Feichun with structural cost and capability advantages that would be difficult to replicate in regions without similar industrial ecosystems.

Transition to Mining Cable Specialization: The pivot from general industrial cable to mining cable specialization was driven by market demand. As China's coal mining industry modernized through the 2000s and 2010s, underground coal mines transitioned from fixed-installation power systems to mobile, mechanized mining equipment—continuous miners, shuttle cars, and longwall shearing machines—that required flexible, reeling-grade cables rated for hazardous underground atmospheres. Chinese mining cable standards (GB/T 12972 series) evolved to reflect these requirements, and Feichun invested in the rubber compounding, screening, and multi-core assembly capabilities needed to manufacture compliant products. This domestic mining cable competence became the foundation for international expansion. When Central Asian, African, and South American mining operations began seeking alternatives to incumbent European and Australian cable suppliers—often motivated by cost reduction without quality compromise—Feichun's existing mining cable manufacturing infrastructure and material science expertise enabled competitive entry into export markets.

International Expansion and Multi-Standard Capability: The critical strategic decision that shaped Feichun's current market position was the investment in multi-standard manufacturing capability. Rather than manufacturing exclusively to Chinese GB/T standards (which would limit export marketability to Chinese-led mining projects), Feichun developed

parallel manufacturing processes compliant with AS/NZS 1802 (for Australian and Australian-influenced mining markets), GOST 31945-2012 (for Russian and CIS mining markets), and IEC 60502 (for European, African, and broadly international mining markets). This multi-standard capability required significant investment: separate compound formulations validated against each standard's specific material requirements, tooling and core-laying configurations matching each standard's structural specifications, testing equipment calibrated to each standard's electrical and mechanical test protocols, and technical documentation systems capable of producing test reports and compliance certificates in English, Russian, and Chinese. This investment was not trivial—it required years of formulation development, third-party testing, and iterative manufacturing refinement—but it created a manufacturing platform that few Chinese cable companies and no single Western cable manufacturer can replicate. A mining project in Kazakhstan can source both Type 241 cables (for Australian-specification continuous miners) and КГЭ-ХЛ cables (for Russian-specification excavators) from a single factory, with consolidated logistics, unified commercial terms, and coordinated delivery scheduling.

> *从国内工业电缆到矿用电缆专业化的转型，源于中国煤矿机械化升级对柔性卷筒电缆的需求。国际扩张的关键战略决策是投资多标准制造能力——不仅按中国GB/T标准生产，还并行开发符合AS/NZS 1802、GOST 31945-2012和IEC 60502的制造工艺，使单一工厂能够同时为澳洲标准连续采煤机和俄标挖掘机提供电缆。*

3. Manufacturing Campus: Facility, Equipment, and Production Capacity

Location and Infrastructure: Feichun's manufacturing campus is located within the Hefei Economic and Technological Development Zone (合肥经济技术开发区), a national-level industrial zone established in 1993. The development zone provides industrial-grade electrical supply (reliable grid power essential for continuous cable extrusion), road and rail freight access to the Port of Shanghai (approximately four hundred fifty kilometers east, connected by G50 expressway and rail freight), and proximity to Hefei Xinqiao International Airport for time-critical spare parts and documentation shipments. The campus includes manufacturing buildings, raw material warehousing, finished goods storage, quality testing laboratories, and administrative offices.

Core Manufacturing Equipment: Mining cable manufacturing requires specialized equipment distinct from standard cable production. Feichun's production lines include rubber compounding and mixing equipment (Banbury internal mixers and open roll mills) for

preparing EPR, natural rubber, butyl rubber, and CPE compounds to precise formulations; multi-head extrusion lines capable of simultaneous conductor insulation and semiconductive screen application; planetary cabling machines for assembling multi-core cable structures (three power cores, earth conductors, and pilot conductors laid up concentrically with controlled twist pitch); braiding and serving machines for applying copper braid screens, copper wire screens, and protective servings; and sheathing extrusion lines for applying inner and outer sheaths in continuous runs. Each of these manufacturing stages requires precision control—insulation thickness tolerance, concentricity, screen coverage percentage, and sheath adhesion—that directly affects the cable's electrical performance and field reliability.

Testing Laboratory: Feichun maintains an in-house testing laboratory equipped for the full range of electrical, mechanical, and environmental tests specified by AS/NZS, GOST, IEC, and GB/T mining cable standards. Key testing capabilities include high-voltage withstand testing (AC and DC) up to 50kV, partial discharge measurement (critical for medium-voltage mining cables where partial discharge indicates insulation voids that lead to premature failure), insulation resistance measurement at elevated temperature, conductor resistance verification, cold bend testing (IEC 60811-506 method, performed at temperatures down to minus sixty degrees Celsius using environmental chambers), dynamic torsion and flexing tests simulating reeling and trailing service, flame retardancy testing (oxygen index method and vertical flame propagation), and tensile strength and elongation testing of insulation and sheath materials. These tests are performed on production samples according to the sampling frequencies specified by each standard, with results documented in test reports that accompany each cable shipment.

Production Capacity: Feichun's annual mining cable production capacity is sufficient to supply multiple concurrent mining projects across different regions. While specific capacity figures are commercially sensitive and vary with product mix (a 35kV armored mine feeder cable requires significantly more production time per meter than a 1.1kV trailing cable), the factory's multi-line configuration allows simultaneous production of different cable types for different customers without production conflict. This parallel production capability is important for mining procurement managers who require delivery reliability—a factory that can only produce one cable type at a time creates scheduling risk if an earlier order runs late.

Table 1 — Key Manufacturing Capabilities Overview

CAPABILITY AREA	EQUIPMENT / SPECIFICATION	RELEVANCE TO MINING CABLE
Rubber Compounding	Banbury mixers, open mills; EPR, NR, BR, CPE, CSM	Precise compound formulation determines

CAPABILITY AREA	EQUIPMENT / SPECIFICATION	RELEVANCE TO MINING CABLE
	compounds	insulation life, cold performance, flame retardancy
Conductor Drawing & Stranding	Multi-wire drawing, concentric and rope-lay stranding	Strand configuration determines cable flexibility for reeling and trailing service
Insulation Extrusion	Triple-head extrusion (conductor screen + insulation + insulation screen)	Simultaneous extrusion ensures void-free insulation critical for medium-voltage service
Multi-Core Cabling	Planetary cabling machines, controlled lay-up pitch	Core geometry affects cable flexibility, electromagnetic balance, and fault behavior
Screening & Braiding	High-speed braiders, wire serving machines	Screen coverage percentage determines EMI shielding and fault current handling
Sheathing	Extrusion lines for inner and outer sheaths, in-line diameter monitoring	Sheath quality determines mechanical protection and environmental resistance
HV Testing	AC/DC withstand up to 50kV, partial discharge measurement	Detects insulation defects before cables leave factory
Environmental Testing	Cold chambers to −60°C, ageing ovens to +150°C	Validates material performance at operational temperature extremes
Mechanical Testing	Tensile/elongation, cold bend (IEC 60811), dynamic flexing, abrasion	Confirms suitability for reeling, trailing, and high-abuse mining service

4. Multi-Standard Manufacturing: One Factory, Four Standard Systems

The ability to manufacture mining cables compliant with multiple international standards from a single factory is Feichun's most strategically significant capability. To understand why this matters, consider the alternative: a mining project operating mixed equipment (Australian continuous miners alongside Russian excavators alongside European pump

systems) would traditionally need to procure cables from three different manufacturers in three different countries, each with separate commercial negotiations, separate quality verification processes, separate logistics arrangements, and separate documentation formats. Feichun's multi-standard capability consolidates this complexity.

AS/NZS 1802 (Type 241) Manufacturing: Feichun manufactures Type 241 cables in the full voltage series (1.1/1.1kV through 11/11kV) and in standard core configurations including three power cores, three separate earth conductors, and one central pilot conductor. The company produces these cables using EPR insulation compounds formulated to meet the electrical stress, thermal ageing, and ozone resistance requirements of AS/NZS 1802. Semiconductive screens are applied by triple-head extrusion (conductor screen, insulation, and insulation screen extruded in a single continuous operation to minimize interface voids). Copper braid screens are applied to meet the minimum coverage percentage specified by the standard. The central pilot conductor is assembled with independent low-voltage insulation and positioned at the cable center during the cabling lay-up process. Outer sheaths are heavy-duty elastomer (natural rubber, CPE, or CSM depending on the service environment specification), with optional cold-resistant formulations extending minimum operating temperature to minus forty degrees Celsius for Central Asian and high-altitude deployments.

GOST 31945-2012 (КГЭ-ХЛ) Manufacturing: Feichun manufactures КГЭ-ХЛ cables at the standard 6kV voltage rating, using natural rubber and butyl rubber insulation compounds formulated for extreme cold flexibility down to minus sixty degrees Celsius. The cable structure follows the GOST specification: three power cores with semiconductive screens, one earth/ground conductor (concentrated or distributed depending on specification variant), and optional auxiliary conductors for control or lighting circuits. The outer sheath uses a cold-optimized elastomer blend incorporating plasticizers and antioxidants selected to prevent low-temperature brittleness. Russian-language technical documentation, GOST compliance certification, and manufacturing process specifications (ТУ) are provided with each shipment. This documentation capability—generating authentic GOST-format compliance documentation—is a capability that many Chinese cable manufacturers lack, as it requires understanding not just the technical requirements but the documentation conventions of the Russian standard system.

IEC 60502 Manufacturing: For mining projects governed by IEC standards (common in African mining, European mining, and internationally-financed projects that default to IEC as a neutral standard), Feichun manufactures medium-voltage cables to IEC 60502-2 with mining-specific modifications including enhanced mechanical protection, flame-retardant

sheathing, and flexible conductor constructions suitable for semi-mobile or mobile mining equipment. These cables serve distribution and feeder applications in underground mines where the primary standard reference is IEC rather than AS/NZS or GOST.

GB/T 12972 Manufacturing: For Chinese mining operations and Chinese-led international mining projects, Feichun manufactures the full range of GB/T 12972 mining cables. This standard family covers coal mine cables (GB/T 12972.1 through 12972.5), metalliferous mine cables, and surface mining cables. GB/T cables are commonly specified in Chinese-invested mining operations across Africa (particularly in the DRC, Zambia, and Zimbabwe copper belt), Southeast Asia (Indonesia, Philippines), and South America (Peru, Chile). Mining procurement teams managing Chinese-invested projects will find that GB/T cables integrate directly into Chinese-manufactured mining equipment and Chinese-standard electrical protection systems.

> **WHY MULTI-STANDARD CAPABILITY MATTERS FOR PROCUREMENT**
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> Consider a copper mine in Kazakhstan that operates Sandvik continuous miners (requiring Type 241 cable with pilot conductor), Russian-designed EKG-5A excavators (requiring КГЭ-ХЛ cable), and Chinese-manufactured pump systems (designed for GB/T cables). Traditionally, this mine would issue three separate purchase orders to three different suppliers in three different countries. With Feichun's multi-standard capability, the mine issues one purchase order, negotiates one set of commercial terms, receives one consolidated shipment, and manages one supplier relationship. The cost savings from consolidated procurement—reduced freight, simplified logistics, single-point quality accountability—typically exceed ten to fifteen percent compared to multi-source procurement.

> *多标准制造能力是飞纯最具战略意义的优势。传统上，运行混合设备的矿山需要从三个国家的三个制造商分别采购电缆。飞纯的多标准能力将这种复杂性整合为单一采购流程——一份订单、一组商务条款、一次合并发货，通常可节省超过10-15%的采购成本。*

5. Mining Cable Product Portfolio: Voltage, Configuration, and Application

Feichun's mining cable portfolio is organized by application rather than by product code, reflecting how mining engineers actually specify cables: by the function the cable must perform in the mine, the equipment it must serve, and the environment it must survive. The

following sections describe each major product category with sufficient technical detail for procurement specification.

Trailing Cables (Flexible Reeling Cables for Mobile Equipment): Trailing cables are Feichun's highest-volume mining cable product. These cables connect mobile underground mining equipment—continuous miners, shuttle cars, load-haul-dump vehicles, and roof bolters—to the mine's fixed power distribution system. Trailing cables must withstand repeated reeling and unreeling as equipment advances through the mine, mechanical abuse from contact with mine roof, floor, and equipment, and exposure to water, oil, and coal dust. Feichun manufactures trailing cables in configurations matching all four standard systems: Type 241 (3 power + 3 earth + 1 pilot, 1.1kV to 11kV, AS/NZS 1802); КГЭ-ХЛ (3 power + 1 earth, 6kV, GOST 31945); IEC-type (3 power + 1 earth, 3.6/6kV to 6/10kV, IEC 60502-2); and GB/T type (3 power + 1 earth + auxiliary, 0.66/1.14kV to 6/10kV, GB/T 12972). Core sizes range from 3×16mm^2 for small equipment up to 3×120mm^2 for high-power continuous miners and longwall equipment.

Longwall Cables: Longwall mining requires cables with extreme flexibility, high crush resistance, and resistance to hydraulic fluid contamination. Feichun manufactures longwall cables for powered roof support (shield) connection, armored face conveyor power supply, and shearer trailing cables. These cables operate in the most mechanically abusive environment in underground mining—squeezed between roof supports, dragged across the face, and exposed to continuous vibration. Feichun's longwall cables feature multi-strand flexible copper conductors (Class 5 or Class 6 stranding), heavy-duty rubber sheaths with enhanced abrasion resistance, and reinforced screen constructions to maintain electromagnetic integrity under mechanical stress.

Medium-Voltage Feeder Cables (Fixed and Semi-Fixed Installation): Mine feeder cables distribute primary power from the mine's surface substation to underground distribution points. These cables are installed along mine entries, tunnels, and shafts and remain in fixed or semi-fixed positions for months or years. Feichun manufactures feeder cables in voltage ratings from 6/10kV through 19/33kV, with conductor sizes from 3×35mm^2 to 3×240mm^2, in both unarmored (for installation in cable trays or on mine walls) and armored (for direct burial or shaft installation) configurations. Insulation materials include EPR and XLPE, with outer sheaths selected for the specific installation environment (PVC for dry conditions, PE or CSM for wet conditions, flame-retardant compounds for underground installations).

Surface Mining Cables (Dragline, Shovel, and Excavator Cables): Surface mining operations require cables that can withstand extreme mechanical forces—dragline cables experience tensile loads, torsional stress, and abrasion that destroy conventional cables within weeks. Feichun manufactures dragline and shovel cables in voltage ratings from 6/10kV to 19/33kV, with conductor sizes up to 3×185mm², using specialized elastomer sheaths designed for abrasion resistance, UV exposure, and wide temperature cycling. For Central Asian and Mongolian surface mining operations, cold-resistant variants are available with operating temperatures to minus fifty degrees Celsius.

Table 2 — Mining Cable Product Portfolio Summary

PRODUCT CATEGORY	VOLTAGE RANGE	CONDUCTOR RANGE	STANDARDS AVAILABLE
Type 241 Trailing Cable	1.1/1.1kV – 11/11kV	3×16 – 3×120mm²	AS/NZS 1802
КГЭ-ХЛ Trailing Cable	6kV	3×16 – 3×95mm²	GOST 31945-2012
IEC Trailing Cable	3.6/6kV – 6/10kV	3×25 – 3×95mm²	IEC 60502-2
GB/T Mining Cable	0.66/1.14kV – 6/10kV	3×16 – 3×120mm²	GB/T 12972
Longwall Cable	1.1kV – 6.6kV	3×25 – 3×95mm²	AS/NZS, IEC, GB/T
MV Feeder Cable	6/10kV – 19/33kV	3×35 – 3×240mm²	IEC 60502-2, GB/T
Dragline / Shovel Cable	6/10kV – 19/33kV	3×50 – 3×185mm²	IEC, AS/NZS, GB/T
Mine Communication Cable	300/500V signal	Various pair counts	IEC 60502-1, GB/T

6. Quality Assurance: Certifications, Testing, and Third-Party Verification

Quality Management System: Feichun operates under an ISO 9001:2015 quality management system covering the design, manufacture, and delivery of mining cables. The quality management system establishes documented procedures for incoming raw material inspection (copper rod chemical composition verification, rubber compound batch testing), in-process manufacturing control (insulation thickness monitoring, concentricity measurement, screen coverage verification), finished product testing (electrical, mechanical, and environmental tests per applicable standard), and traceability (each cable drum is marked with a unique production batch number traceable to raw material certificates, production records, and test reports). This traceability system is critical for mining operations where cable failure investigation requires root-cause analysis back to manufacturing parameters.

Standard-Specific Testing Protocols: Each cable standard specifies distinct testing requirements, and Feichun's testing laboratory performs the full test suite for each standard. For AS/NZS 1802 cables, testing includes high-voltage withstand at the rated voltage multiplied by the specified test factor, partial discharge measurement at 1.5 times rated voltage (partial discharge must not exceed specified picocoulomb limits), pilot conductor continuity and resistance measurement, hot set test (IEC 60811-507) confirming cross-linking degree of EPR insulation, and cold bend test at the specified minimum temperature. For GOST 31945 cables, testing includes high-voltage withstand per GOST methodology, insulation resistance measurement at elevated temperature per GOST 3345, cold bend testing at minus sixty degrees per GOST protocol, tensile strength and elongation testing of rubber compounds per GOST 6433, and flame retardancy testing per GOST 12.1.044. These are not identical test procedures applied under different names; they are genuinely different testing methodologies reflecting different engineering philosophies, and Feichun's laboratory is equipped and calibrated for each.

Third-Party Verification: For mining customers requiring independent verification beyond the manufacturer's own test reports, Feichun supports third-party testing at internationally accredited laboratories. Cable samples can be submitted to accredited testing bodies for independent validation of electrical performance, material properties, and environmental resistance. Feichun also accepts customer-appointed inspection (typically through agencies such as SGS, Bureau Veritas, TÜV, or Intertek) during manufacturing, where the customer's

representative witnesses critical production stages and testing. This pre-shipment inspection option provides procurement managers with confidence that the cables leaving Feichun's factory match the specifications agreed at purchase order confirmation.

Material Certification Chain: Every critical raw material entering Feichun's manufacturing process is accompanied by a material certificate from the upstream supplier: copper rod certificates confirming oxygen-free or electrolytic copper grade with minimum conductivity of 100% IACS; rubber compound certificates confirming formulation composition, Mooney viscosity, cure characteristics, and accelerator content; and semiconductive compound certificates confirming volume resistivity within specification limits. These upstream certificates are archived with the production batch records and are available to customers as part of the complete quality documentation package. This material certification chain ensures that even if a cable failure occurs years after installation, the root cause can be investigated through documented material traceability.

7. Regional Project Experience: Where Feichun Cables Operate Today

Feichun's cables are deployed across mining operations in multiple regions, each presenting distinct technical, logistical, and regulatory requirements. This section describes Feichun's regional experience in sufficient detail to help procurement engineers assess whether the company has relevant prior experience in their specific operating region.

Central Asia (Kazakhstan, Mongolia, Uzbekistan, Kyrgyzstan): Central Asia represents Feichun's strongest regional expertise outside China. The company has supplied КГЭ-ХЛ cables to underground coal operations in the Karaganda coal basin in Kazakhstan, where GOST standards dominate and extreme winter temperatures (minus thirty-five to minus forty-five degrees Celsius surface, minus five to minus fifteen degrees underground) demand cold-optimized cable materials. Feichun has also supplied Type 241 cables to international mining projects in Mongolia, where companies such as Rio Tinto and Turquoise Hill impose Australian engineering standards on their underground operations. This dual capability—serving GOST-standard Kazakh operations and AS/NZS-standard Mongolian operations from the same factory—is a distinctive regional advantage. Feichun's technical staff includes Russian-speaking engineers who understand GOST documentation conventions and can communicate directly with Central Asian mining engineering teams without translation intermediaries.

Africa (DRC, Zambia, South Africa, Ghana, Tanzania): Africa's mining sector presents unique logistics and standards challenges. Large copper mines in the Democratic Republic of Congo and Zambia operate under mixed standard regimes—some follow South African (SANS) standards, others follow IEC, and Chinese-invested operations often specify GB/T. Feichun has supplied mining cables to copper and cobalt mining operations in the DRC copper belt, gold mining operations in Ghana and Tanzania, and coal mining operations in South Africa. In African mining, supply chain reliability is often as important as technical specification—mines located hundreds of kilometers from port cities require cables that arrive on schedule and in correct quantities, because emergency re-supply lead times can stretch to months. Feichun addresses this through advance production scheduling, pre-positioned inventory for repeat customers, and consolidated container shipping to major African ports (Dar es Salaam, Durban, Mombasa, Tema).

South America (Chile, Peru): Chilean and Peruvian copper mining represents some of the world's most demanding cable applications—high-altitude operations (three thousand to five thousand meters above sea level), extreme UV exposure, seismic activity, and aggressive dust environments. Feichun supplies medium-voltage trailing cables and feeder cables to copper mining operations in Chile's Atacama region and Peru's southern copper belt. These markets typically specify IEC 60502-2 or Chilean/Peruvian national standards that reference IEC. Feichun's IEC-compliant manufacturing capability serves this market directly.

Southeast Asia (Indonesia, Philippines): Indonesia's coal mining industry (primarily surface mining in Kalimantan and Sumatra) and the Philippines' metalliferous mining sector represent growing markets for mining cables. These markets typically use a combination of IEC standards and national standards that reference IEC. Chinese-invested mining operations in Indonesia often specify GB/T cables, providing Feichun with a natural market entry. Feichun has supplied trailing cables and feeder cables to coal mining operations in East Kalimantan and to nickel mining operations in Sulawesi.

Australia and New Zealand: Australia is the most demanding mining cable market in the world—stringent standards enforcement, sophisticated protective relay systems, experienced mining inspectors who scrutinize every detail of cable construction and documentation, and zero tolerance for quality compromise. Feichun approaches the Australian market with recognition that manufacturing quality alone is insufficient; documentation quality, test report completeness, and traceability integrity must meet the expectations of Australian mining inspectors who have decades of experience reviewing cable submissions. Feichun's Type 241 cables for Australian-standard projects include

comprehensive test documentation packages: high-voltage test reports, partial discharge measurement records, cold bend test certificates, material certificates, and compliance declarations referencing specific clauses of AS/NZS 1802.

Table 3 — Regional Presence and Standard Alignment

REGION	PRIMARY MINING TYPES	DOMINANT STANDARDS	FEICHUN PRODUC
Central Asia	Underground coal, copper, gold	GOST 31945, AS/NZS 1802	КГЭ-ХЛ, Type 241,
Africa (Copper Belt)	Underground/open-pit copper, cobalt	IEC 60502, SANS, GB/T	IEC trailing, GB/T f feeder
Africa (West & East)	Gold, manganese, coal	IEC 60502, BS	IEC trailing, feeder
South America	Open-pit copper, lithium	IEC 60502, NCh (Chile), NTP (Peru)	IEC trailing, draglir feeder
Southeast Asia	Surface coal, nickel, copper-gold	IEC 60502, SNI (Indonesia), GB/T	IEC trailing, GB/T f dragline
Australia / New Zealand	Underground coal, metalliferous	AS/NZS 1802	Type 241 (full volta

飞纯电缆已在全球六大矿业区域部署：中亚（哈萨克斯坦、蒙古）、非洲铜带（刚果金、赞比亚）、西非和东非（加纳、坦桑尼亚）、南美（智利、秘鲁）、东南亚（印尼、菲律宾）以及澳大利亚/新西兰。每个区域的标准体系、物流路线和技术要求各不相同，飞纯的多标准制造能力使其能够灵活适配各区域需求。

8. Engineering and Technical Support: What Feichun Provides Beyond the Cable

Pre-Sale Technical Consultation: Feichun's engineering team engages with mining project teams during the specification development phase—before purchase orders are issued—to ensure that cable specifications match actual field requirements. This pre-sale consultation addresses voltage system compatibility (confirming that cable voltage rating matches the mine's distribution system voltage and earthing configuration), core configuration matching

(confirming that the cable core count, earth conductor sizing, and pilot conductor presence match the protective relay system's requirements), environmental specification (confirming that insulation and sheath materials are appropriate for the mine's temperature extremes, chemical exposure, and mechanical stress conditions), and dimensional compatibility (confirming that cable outer diameter and weight are compatible with the mine's cable handling equipment, reeling drums, and conduit systems). This consultation is provided at no cost as part of Feichun's standard pre-sale service, because specification errors discovered after cable manufacture are far more expensive to correct than errors identified during the specification phase.

Cable Selection Engineering Assistance: For mining projects where the procurement team is uncertain about which standard or cable type is most appropriate, Feichun's engineers provide cable selection guidance based on the project's specific circumstances. This guidance is not generic; it draws on Feichun's experience supplying cables to similar mining environments and equipment configurations. For example, a mining engineer in Kazakhstan who is specifying cables for a newly purchased Komatsu continuous miner may be unsure whether Type 241 or КГЭ-ХЛ is appropriate. Feichun's engineering team can advise based on the specific Komatsu model's electrical requirements, the mine's existing protection system architecture, and the mine's inspection and approval framework.

Documentation and Compliance Support: Feichun provides complete technical documentation packages in the language and format appropriate to each standard system. For AS/NZS projects, documentation is in English, with test reports formatted to match the expectations of Australian mining inspectors. For GOST projects, documentation is in Russian, with compliance certificates and ТУ specifications formatted to match the expectations of CIS inspection authorities. For IEC projects, documentation is in English with IEC test report formatting. This multi-language documentation capability is not merely translation; it requires understanding the documentation conventions, test report formatting expectations, and certification terminology specific to each standard system.

Post-Sale Field Support: After cable delivery and installation, Feichun provides ongoing technical support for cable performance issues, failure diagnosis, and specification updates. If a cable experiences premature failure in the field, Feichun's engineering team can analyze failed cable samples (returned to the factory laboratory), identify the failure mode (insulation breakdown, sheath cracking, conductor fatigue, screen damage, moisture ingress), determine whether the failure is manufacturing-related (requiring warranty action) or field-service-related (requiring operational changes), and recommend corrective actions. This

failure analysis capability is particularly valuable for mines operating in extreme environments where standard cable formulations may not perform as expected and where formulation adjustments (additional plasticizers for extreme cold, enhanced antioxidants for high-temperature service, reinforced sheath compounds for high-abrasion environments) can extend cable field life.

9. Procurement Process: From Inquiry to Delivery, Step by Step

FEICHUN CABLE PROCUREMENT PROCESS — STEP-BY-STEP GUIDE

Step 1 — Initial Inquiry: Contact Feichun's technical sales team at tech@feichuncables.com with your cable requirement. Provide as much of the following information as available: applicable standard (AS/NZS, GOST, IEC, GB/T); voltage rating and system type; core configuration and conductor sizes; cable length and quantity (meters per drum, number of drums); installation environment (underground coal, underground metalliferous, surface, shaft); temperature range (minimum winter ambient, maximum summer ambient); any specific material requirements (cold-resistant, flame-retardant, oil-resistant); required delivery date and destination port/site. The more detail you provide, the more precisely Feichun can quote and the fewer clarification rounds will be needed.

Step 2 — Technical Review and Proposal: Feichun's engineering team reviews your inquiry, verifies specification feasibility, and prepares a detailed technical proposal. This proposal includes a complete cable specification sheet (dimensions, weight, ampacity, resistance values), a bill of materials identifying insulation, sheath, and screen materials, reference to applicable standard clauses, and a preliminary test plan describing which tests will be performed on production samples. If your specification requires clarification or if Feichun's engineers identify potential compatibility issues, they will raise technical queries at this stage rather than proceeding with an uncertain specification.

Step 3 — Commercial Quotation: Upon technical agreement, Feichun issues a formal commercial quotation with pricing, payment terms, and delivery schedule. Pricing is typically denominated in USD or CNY, with payment terms including advance deposit (typically thirty percent at order confirmation), progress payment (if applicable for large orders), and balance payment against shipping documents. Delivery terms are quoted as FOB Shanghai, CIF destination port, or DAP mine site, depending on your logistics preference.

Step 4 — Purchase Order Confirmation: Upon receipt of your purchase order and advance payment, Feichun issues an order confirmation specifying the agreed technical specification, quantities, delivery schedule, and inspection arrangements. If pre-shipment inspection by a customer-appointed agency is required, the inspection scope and agency details are confirmed at this stage.

Step 5 — Manufacturing and Quality Control: Cable manufacturing proceeds according to the confirmed specification, with in-process quality control at each manufacturing stage. Raw materials are inspected and documented upon receipt. Insulation and sheath compounds are batch-tested before extrusion. Conductor diameter and stranding are verified. Insulation thickness and concentricity are monitored during extrusion. Screen coverage is measured after braiding. Electrical testing (high-voltage withstand, partial discharge, insulation resistance, conductor resistance) is performed on completed cables. Mechanical testing (tensile, elongation, cold bend) is performed on production samples. All test results are documented and compiled into the quality documentation package.

Step 6 — Pre-Shipment Inspection (if required): If you have appointed a third-party inspection agency, Feichun coordinates the inspection visit. The inspector witnesses final testing, reviews documentation, and issues an inspection certificate confirming that the cables meet specification. Feichun provides the inspector with access to the factory, testing equipment, production records, and completed cables.

Step 7 — Packing, Shipping, and Delivery: Cables are wound onto wooden or steel drums (drum size selected to match your mine site's cable handling equipment), protected with weather-resistant wrapping, and loaded into shipping containers. Export documentation (commercial invoice, packing list, bill of lading, certificate of origin, quality documentation package) is prepared and transmitted to your logistics team. Feichun's logistics department coordinates with freight forwarders and shipping lines to ensure timely delivery to your designated port or mine site.

Step 8 — Post-Delivery Support: Upon cable arrival at your mine site, Feichun's technical team remains available for installation guidance, cable testing advice, and any technical questions that arise during commissioning. If cable performance issues develop during field service, Feichun provides remote diagnosis support and, if necessary, arranges laboratory analysis of returned cable samples.

10. Logistics and Export: How Mining Cables Move from Hefei to Your Mine Site

Export Logistics Infrastructure: Feichun's Hefei location provides access to multiple export routes optimized for different destination regions. For sea freight (the primary mode for most mining cable shipments), cables are trucked approximately four hundred fifty kilometers east to the Port of Shanghai, China's largest container port with direct shipping services to every major global port. Alternative sea freight routing through Ningbo port (approximately five hundred kilometers east-southeast) provides additional shipping line options. For Central

Asian destinations (Kazakhstan, Uzbekistan, Kyrgyzstan), overland rail freight through the China–Kazakhstan railway corridor (via Alataw Pass or Khorgos) provides faster transit than the maritime route through Russia, typically delivering cables to Almaty or Karaganda within fifteen to twenty days from factory dispatch. For Mongolian destinations, road freight through Erenhot border crossing delivers cables to Ulaanbaatar within seven to ten days.

Packing and Shipping Specifications: Mining cables are shipped on wooden or steel reeling drums, with drum flange diameter, barrel diameter, and cable layer count configured to match the customer's cable handling equipment. Standard drum sizes range from 1,200mm flange diameter (for small cable lengths) to 2,800mm flange diameter (for long cable lengths). Drums are wrapped in weather-resistant polyethylene or hessian covering, secured to container floors with blocking and bracing to prevent movement during transit, and labeled with cable specification, production batch number, drum weight, and cable length. Feichun's packing and labeling comply with international shipping standards and can incorporate customer-specific marking requirements.

Import and Customs Considerations: Mining cables are classified under HS code 8544 (insulated wire, cable, and other insulated electric conductors), with specific subheadings varying by voltage rating and construction. Import duty rates vary by destination country and by any applicable trade agreements. Feichun provides accurate HS code classification and certificate of origin documentation to facilitate customs clearance. For countries with preferential trade agreements with China (such as the RCEP member nations and various bilateral free trade agreements), Feichun provides the certificates of origin required to claim preferential duty rates.

11. Competitive Positioning: Where Feichun Fits Among Global Mining Cable Suppliers

The Global Mining Cable Supplier Landscape: The global mining cable market is served by a small number of large multinational manufacturers (Prysmian Group, Nexans, Southwire, General Cable/Prysmian, Olex/Nexans) and a larger number of regional specialists. The multinationals offer comprehensive product ranges, extensive global presence, and established reputations built over decades of mining cable supply. However, these advantages come with corresponding cost structures—global overhead, premium brand pricing, and lead times that reflect manufacturing in high-cost jurisdictions (Italy, France, Australia, United States). Regional specialists offer lower pricing and often faster delivery but

may lack the multi-standard capability, testing infrastructure, or documentation quality required by sophisticated mining operations.

Feichun's Competitive Position: Feichun occupies a specific position in this landscape: a manufacturer with the technical capability and quality systems of a major supplier, combined with the cost structure and production flexibility of a Chinese manufacturer. This positioning is most valuable for mining customers who need mining-specification cables (not commodity-grade substitutes), require compliance with recognized international standards (not just generic "mining cable"), value comprehensive documentation and test certificates (not just a price quote), but also seek meaningful cost reduction compared to incumbent European and Australian suppliers. In practical terms, Feichun's pricing for comparable mining cables is typically twenty-five to forty percent lower than equivalent products from Prysmian, Nexans, or Olex, while providing equivalent or comparable technical performance. This cost advantage derives from lower labor costs, lower facility costs, integrated supply chain with domestic copper and rubber suppliers, and Chinese manufacturing economies of scale.

Where Feichun Is Not the Right Choice: Transparency about limitations is important. Feichun may not be the optimal supplier for mining operations that require immediate local inventory in Australia, Europe, or North America (Feichun's inventory is in China, and delivery requires international shipping time). Feichun may also not be the first choice for mines that have established long-term service agreements with incumbent suppliers that include field service, on-site cable testing, and rapid warranty response—capabilities that depend on local service presence rather than manufacturing capability. Mining operations that are contractually required to use specified brands or approved supplier lists may need to complete a supplier qualification process before Feichun can participate in tenders. These are practical commercial constraints, not technical limitations, but they affect real-world procurement decisions.

> *飞纯在全球矿用电缆供应商中的定位明确：具备大型供应商的技术能力和质量体系，同时拥有中国制造商的成本结构和生产灵活性。与Prysmian、Nexans等国际品牌相比，飞纯在技术性能相当的前提下，价格通常低25-40%。这一成本优势来源于较低的人工成本、完善的国内供应链和中国制造的规模经济。*

12. Frequently Asked Questions from Mining Procurement Teams

Q: Can Feichun manufacture to a standard or specification not listed in this article?

A: Yes. The four standard systems described (AS/NZS, GOST, IEC, GB/T) represent Feichun's established manufacturing lines with validated formulations and existing test documentation. However, Feichun's engineering team can develop manufacturing processes for other standards, including South African SANS standards, Brazilian ABNT standards, Canadian CSA standards, and customer-specific proprietary specifications. Development of a new standard compliance typically requires four to eight weeks of formulation development and testing, followed by sample production and third-party testing if required. Contact tech@feichuncables.com with your specific standard requirement for a feasibility assessment.

Q: What is Feichun's typical lead time for mining cable orders?

A: Standard lead time from purchase order confirmation to factory dispatch is eight to fourteen weeks, depending on cable type, conductor size, and order quantity. Common cable types in standard sizes (such as Type 241 3×50+3×25+1P at 6.6kV, or КГЭ-ХЛ 3×50+1×16 at 6kV) are at the shorter end of this range because compound formulations and tooling are pre-established. Non-standard configurations or very large quantities may require longer production time. Expedited production is available for urgent requirements, typically adding ten to fifteen percent cost premium for schedule acceleration.

Q: Does Feichun offer warranty on its mining cables?

A: Feichun provides a manufacturing warranty covering defects in materials and workmanship for a period of twenty-four months from date of manufacture or twelve months from date of installation, whichever occurs first. This warranty covers verified manufacturing defects—insulation voids, conductor strand breaks, sheath delamination, screen discontinuity—identified through factory analysis of returned cable samples. The warranty does not cover damage caused by mechanical abuse, installation error, operation beyond rated voltage or temperature, or exposure to chemicals not included in the cable's design specification. Warranty claims are processed through Feichun's quality assurance department, with root-cause analysis reports provided to the customer within thirty business days of receiving failed cable samples.

Q: Can Feichun provide cable samples for evaluation before placing a full order?

A: Yes. Feichun provides cable samples (typically one to five meters in length) for customer evaluation, including visual inspection, dimensional verification, and laboratory testing. Sample provision is standard practice for new customer relationships and for new cable

specifications. Samples are shipped via air freight for fastest delivery. For customers who require independent laboratory testing of samples, Feichun coordinates with the customer's chosen testing laboratory and provides all necessary technical data to support the testing program.

Q: How does Feichun handle intellectual property and proprietary specifications?

A: When Feichun manufactures cables to a customer's proprietary specification (as opposed to a published standard), a non-disclosure agreement and intellectual property protection agreement are executed before specification details are shared. Feichun does not share customer specifications with other customers, does not manufacture identical proprietary cables for competing customers, and does not incorporate proprietary formulation details into Feichun's standard products without written authorization. This intellectual property protection is essential for mining equipment OEMs who provide cable specifications as part of their equipment system designs.

Q: What languages does Feichun's technical team support?

A: Feichun's technical and commercial teams operate in English, Mandarin Chinese, and Russian. English-language support covers AS/NZS, IEC, and broadly international communications. Russian-language support covers GOST standards, Central Asian project communications, and CIS-region commercial correspondence. Mandarin Chinese covers GB/T standards, domestic Chinese mining operations, and Chinese-invested international mining projects. Technical documentation is produced in the language appropriate to the applicable standard—English for AS/NZS and IEC, Russian for GOST, and Chinese for GB/T.

READY TO DISCUSS YOUR MINING CABLE REQUIREMENTS?

Whether your project requires AS/NZS Type 241 for Australian-standard underground coal mining, GOST КГЭ-ХЛ for Central Asian extreme-cold operations, IEC-compliant cables for African copper mining, or GB/T cables for Chinese-invested projects worldwide—Feichun's engineering team is prepared to review your specification and provide a detailed technical proposal. Contact us with your cable requirements, and we will respond with a technical review within two business days.

Contact Anhui Feichun Special Cable Co., Ltd. — Mining Cable Manufacturer

TECHNICAL INQUIRIES & SPECIFICATIONS

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