



Product Overview

The EpN 50-Y series represents a specialized line of flexible low-voltage power cables engineered for demanding applications in mining operations, construction sites, and heavy industrial environments. These cables are designed to provide reliable electrical connections for mobile equipment and temporary power distribution systems operating under conditions of medium mechanical stress, exposure to moisture, and variable ambient temperatures.

The designation "EpN 50" indicates ethylene-propylene rubber insulation with a neoprene outer sheath, while the "-Y" suffix denotes yellow coloring for enhanced visibility in industrial environments. This cable series incorporates Class 5 extra-flexible stranded copper conductors and advanced rubber compound materials to deliver superior flexibility, durability, and resistance to environmental factors including oil, chemicals, and abrasion.

Key Features & Benefits

- ✓ Class 5 extra-flexible copper conductors (or tinned copper) for superior flexibility and fatigue resistance
- ✓ EPR (Ethylene Propylene Rubber) insulation providing excellent electrical properties and temperature stability
- ✓ Polychloroprene (Neoprene) outer sheath offering exceptional oil resistance and environmental protection
- ✓ Operating voltage range: 450/750 V or 0.6/1 kV for versatile low-voltage applications
- ✓ Wide temperature range: -25°C to +90°C for mobile applications
- ✓ Flame retardant properties according to IEC 60332-1 for enhanced fire safety
- ✓ Suitable for dry, damp, and wet locations including outdoor installations
- ✓ Available in standard black or high-visibility yellow coloring

Standard Product Configurations

Anhui Feichun Special Cable Co., Ltd. offers a comprehensive range of EpN 50-Y cable configurations to meet diverse power distribution requirements. All configurations feature Class 5 flexible copper conductors with EPR insulation and polychloroprene outer sheath. The following standard configurations are available for immediate production.

Four-Core Configurations (4-Conductor)

Four-core cables are designed for three-phase power distribution with protective earth conductor, suitable for powering mobile equipment, electric motors, and general industrial machinery.

Model Designation	Conductor Configuration	Cu Number (kg/km)	Approx. Diameter (mm)	Approx. Mass (kg/km)
EpN 50-Y 4x70mm ²	4 × 70 mm ²	2,016	45	3,309
EpN 50-Y 4x50mm ²	4 × 50 mm ²	1,440	38	2,493
EpN 50-Y 4x25mm ²	4 × 25 mm ²	720	30	1,419
EpN 50-Y 4x16mm ²	4 × 16 mm ²	461	25	1,008
EpN 50-Y 4x10mm ²	4 × 10 mm ²	288	22	758
EpN 50-Y 4x6mm ²	4 × 6 mm ²	173	16	393
EpN 50-Y 4x4mm ²	4 × 4 mm ²	115	15	320
EpN 50-Y 4x2.5mm ²	4 × 2.5 mm ²	72	13	217

Multi-Core Configuration (12-Conductor)

The twelve-core configuration provides flexible solutions for control and power distribution systems requiring multiple circuits within a single cable assembly, ideal for complex machinery control panels and distributed control systems.

Model Designation	Conductor Configuration	Cu Number (kg/km)	Approx. Diameter (mm)	Approx. Mass (kg/km)
EpN 50-Y 12x2.5mm ²	12 × 2.5 mm ²	216	22	658

Configuration Selection Guide:

- 70mm² and 50mm² Configurations:** Designed for high-current applications including large electric motors, main power feeders for mobile equipment, and high-capacity distribution systems requiring maximum current carrying capacity.
- 25mm² and 16mm² Configurations:** Suitable for medium-power applications including standard industrial motors, conveyor systems, and general-purpose power distribution in mining and construction environments.
- 10mm², 6mm², and 4mm² Configurations:** Ideal for light industrial equipment, auxiliary power circuits, and applications where cable weight and flexibility are important considerations.
- 2.5mm² Configurations:** Optimized for control circuits, lighting systems, and low-power distribution applications. The 12-core version provides consolidated wiring for multi-circuit control systems.

Cable Color Coding Standards

EpN 50-Y cables comply with international color coding standards HD 308 S2 and VDE 0293-308, ensuring proper identification of conductors for safe installation and maintenance. Two color coding schemes are available depending on the presence of protective earth (yellow-green) conductors.

Color Coding for 4-Core Cables (With Yellow-Green Protective Earth)

Conductor Number	Color Designation	Typical Function
1	Brown	Phase L1
2	Black	Phase L2
3	Gray	Phase L3
4	Yellow-Green	Protective Earth (PE)

Color Coding for Multi-Core Cables

For cables with more than five conductors, individual conductors are identified using a systematic color coding scheme with optional numerical markings for enhanced identification. Cables with yellow-green protective earth conductors follow specific color sequences to ensure proper phase and neutral identification in accordance with international wiring practices.

Important Color Coding Notes:

The protective earth conductor (yellow-green) must never be used for any purpose other than protective grounding. When cables are used in applications requiring neutral conductors, the blue conductor designation should be observed in accordance with local electrical codes. For applications in regions with different color coding standards, cable identification labels should be applied at all termination points to prevent connection errors.

Detailed Technical Specifications

Conductor Construction

All EpN 50-Y cables feature Class 5 extra-flexible stranded conductors manufactured from electrolytic copper meeting the requirements of SRPS N.C0.015 and IEC 60228. The Class 5 designation ensures superior flexibility through fine-wire stranding, making these cables particularly suitable for applications requiring frequent flexing and movement. Tinned copper conductors are available as an option for enhanced corrosion resistance in particularly aggressive environments.

Conductor Material

- Electrolytic copper (standard)
- Tinned copper (optional)
- Purity: 99.9% minimum
- Compliant with IEC 60228

Conductor Class

- Class 5 (extra-flexible)
- Fine-wire stranding configuration
- Superior flexibility and fatigue resistance
- Optimal for mobile applications

Stranding Pattern

- Concentric lay construction
- Individual wire diameter: 0.15-0.30 mm
- Compacted to reduce overall diameter
- Enhanced bend radius performance

DC Resistance

- Compliant with IEC 60228 limits
- Maximum values at 20°C
- Temperature coefficient: 0.00393/°C
- Verified for each production lot

Insulation System

The insulation system employs high-quality ethylene-propylene rubber (EPR) compound conforming to specification 3GI3 according to DIN VDE 0207-20. EPR insulation provides excellent dielectric properties, thermal stability, and mechanical flexibility across a wide temperature range. The insulation material maintains its electrical and mechanical properties from -40°C to +90°C, ensuring reliable performance in diverse environmental conditions.

Insulation Parameter	Specification	Performance Characteristic
Insulation Material	EPR 3GI3 Compound per DIN VDE 0207-20	Excellent electrical properties and temperature stability
Insulation Thickness	Varies by conductor size (0.8-2.5 mm)	Optimized for voltage rating and mechanical protection
Dielectric Strength	≥20 kV/mm at 20°C	High voltage withstand capability
Insulation Resistance	≥100 MΩ·km at 20°C	Excellent electrical integrity
Temperature Range	-40°C to +90°C continuous	Wide operating temperature capability
Flexibility Retention	Maintains properties at -25°C	Cold weather operational capability

Sheath System Architecture

The EpN 50-Y cable employs a dual-sheath system providing comprehensive mechanical and environmental protection. The inner sheath, manufactured from synthetic rubber compound type GM1b according to DIN VDE 0207-21, provides mechanical cushioning and protects the insulated cores during handling and installation. The outer sheath utilizes polychloroprene (Neoprene) rubber compound 5GM5, offering exceptional resistance to oil, chemicals, abrasion, and weathering.

Sheath Layer	Material Specification	Thickness Range	Primary Function
Inner Sheath	Synthetic Rubber GM1b (DIN VDE 0207-21)	1.0 - 2.0 mm	Mechanical protection of insulated cores, filler and bonding layer
Torsion Protection (Optional)	Textile Cord Braid	0.5 - 1.0 mm	Enhanced torsional strength for severe duty applications
Outer Sheath	Polychloroprene 5GM5 (DIN VDE 0207-21)	1.5 - 2.5 mm	Environmental protection, oil resistance, abrasion resistance
Sheath Color	Black (Standard) or Yellow (EpN 50-Y)	N/A	Visual identification and safety visibility

Oil Resistance Specifications:

The polychloroprene outer sheath demonstrates exceptional oil resistance according to DIN VDE 0472-803, Method A. Testing involves immersion in standard test oil at elevated temperature, with the cable

demonstrating less than 10% change in tensile strength and elongation properties. This oil resistance makes the EpN 50-Y series particularly suitable for mining equipment, construction machinery, and industrial environments where exposure to petroleum products, hydraulic fluids, and lubricants is common.

Electrical Performance Parameters

Electrical Parameter	Specification	Engineering Significance
Rated Voltage U_0/U	450/750 V or 0.6/1 kV	Phase-to-ground and phase-to-phase voltage ratings for low-voltage distribution
AC Test Voltage	2.5 kV or 3.0 kV for 5 minutes	Manufacturing quality assurance and insulation integrity verification
Continuous Conductor Temperature	+90°C maximum	Normal operating thermal loading capacity at rated current
Short-Circuit Temperature	+250°C (maximum 5 seconds)	Fault current thermal withstand capability without permanent damage
Insulation Resistance (minimum)	100 MΩ·km at 20°C	Electrical integrity standard for new installations and periodic testing
Voltage Drop	Calculated per IEC 60364-5-52	Installation design parameter for maximum circuit length determination

Mechanical Performance Characteristics

Mechanical Parameter	Specification	Application Impact
Static Tensile Strength	15 N/mm ² of conductor cross-section	Maximum pulling force during installation without conductor damage
Minimum Bending Radius	3D to 12D (where D = cable diameter)	Installation flexibility and routing capability in confined spaces
Ambient Temperature (Mobile Use)	-25°C to +40°C	Operational temperature range for equipment with cable movement
Ambient Temperature (Fixed Installation)	-30°C to +40°C	Environmental temperature range for stationary installations
Abrasion Resistance	Per DIN VDE 0472-604	Surface wear resistance for dragging and rough handling conditions
Flame Retardancy	IEC 60332-1 compliant	Self-extinguishing properties for fire safety in industrial environments

Bending Radius Guidelines:

- During Installation:** Minimum bending radius of 12 times the cable outer diameter should be maintained to prevent damage to conductors and insulation system.
- Fixed Installation:** Minimum bending radius of 6 times the cable diameter is acceptable for permanent installations where no movement occurs.
- Mobile Applications:** For cables subject to frequent flexing, maintain minimum bending radius of 8-10 times cable diameter to ensure long service life.

Example: For a 4x50mm² cable with 38mm diameter, minimum installation bending radius is 456mm, while fixed installation allows 228mm radius.

Current Carrying Capacity

The current ratings provided below are calculated for continuous operation under standard reference conditions as defined in IEC 60364-5-52 and DIN VDE 0298-4. Actual current carrying capacity depends on multiple factors including ambient temperature, installation method, grouping with other cables, and operational duty cycle. For installations deviating from reference conditions, appropriate correction factors must be applied.

Current Ratings for Four-Core Cables (Three-Phase Loading)

Cable Configuration	Conductor Size	Current Rating (A) @ 30°C Ambient	Current Rating (A) @ 40°C Ambient	Approximate Power Rating @ 400V Three-Phase
EpN 50-Y 4x70mm ²	70 mm ²	195	175	120-135 kW
EpN 50-Y 4x50mm ²	50 mm ²	160	145	95-110 kW
EpN 50-Y 4x25mm ²	25 mm ²	110	100	65-75 kW
EpN 50-Y 4x16mm ²	16 mm ²	85	77	50-58 kW
EpN 50-Y 4x10mm ²	10 mm ²	65	59	38-45 kW
EpN 50-Y 4x6mm ²	6 mm ²	48	43	28-33 kW
EpN 50-Y 4x4mm ²	4 mm ²	38	34	22-26 kW
EpN 50-Y 4x2.5mm ²	2.5 mm ²	28	25	16-19 kW

Derating Factors

When installation conditions differ from standard reference conditions, current carrying capacity must be adjusted using appropriate correction factors. The following table provides guidance for common installation scenarios encountered in mining and industrial applications.

Installation Condition	Correction Factor	Application Notes
Ground burial (standard depth)	1.0 (reference)	Cables buried 0.7-1.0 meter depth in soil with 1.0 K-m/W thermal resistivity
Open air (free circulation)	1.10-1.15	Cables suspended or laid on open cable trays with good ventilation
Enclosed conduit or duct	0.80-0.90	Reduced heat dissipation in enclosed spaces requires derating
Multiple cables grouped (3-4 cables)	0.85-0.90	Thermal interaction between adjacent cables reduces capacity
Multiple cables grouped (5-6 cables)	0.75-0.80	Significant mutual heating effect requires substantial derating
High ambient temperature (+50°C)	0.80-0.85	Reduced temperature differential limits heat dissipation capability

Critical Current Rating Considerations:

Multiple Derating Factors: When multiple adverse conditions exist simultaneously, derating factors must be multiplied together, not added. For example, a cable in enclosed conduit with multiple cables grouped would require both derating factors applied: $\text{Final Rating} = \text{Base Rating} \times 0.85 \times 0.85 = \text{Base Rating} \times 0.72$.

Duty Cycle: The current ratings assume continuous operation at full load. For intermittent duty applications with significant rest periods, higher short-term currents may be permissible. Consult with our engineering department for specific duty cycle calculations.

Voltage Drop: Current carrying capacity calculations consider thermal limits only. Voltage drop must be calculated separately to ensure compliance with electrical code requirements, typically limiting voltage drop to 3-5% of nominal voltage.

Primary Applications

Mining Industry Applications

The EpN 50-Y series serves as the primary low-voltage power distribution solution for mining operations, particularly in underground mines without methane hazards and open-pit mining environments. These cables provide essential electrical connections for mobile and stationary equipment operating under conditions of dust exposure, moisture, mechanical stress, and temperature variations.

Mobile Mining Equipment Continuous miners, shuttle cars, roof bolters, and auxiliary mining machinery requiring flexible power connections	Portable Crushing Units Mobile jaw crushers, impact crushers, and screening equipment used in mineral processing operations	Ventilation Systems Mine ventilation fans, air ducts, and environmental control equipment requiring robust cable solutions
Dewatering Pumps Submersible and surface-mounted pumps for mine water management and drainage operations	Material Transport Underground locomotives, rail-mounted equipment, and material handling systems	Temporary Power Distribution Portable substations, distribution panels, and temporary lighting systems in developing mine areas

Construction and Industrial Applications

Beyond mining operations, the EpN 50-Y series provides reliable power distribution for construction sites, heavy industrial facilities, and outdoor installations where environmental protection and mechanical durability are essential requirements.

Construction Site Power Temporary power distribution for cranes, hoists, concrete equipment, and general construction machinery	Agricultural Equipment Irrigation systems, grain handling equipment, and agricultural machinery in farming operations	Manufacturing Plants Production machinery, conveyor systems, and material handling equipment in industrial facilities
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Outdoor Installations

Pumping stations, water treatment facilities, and outdoor industrial equipment requiring weather resistance

Mobile Workshops

Portable welding equipment, air compressors, and maintenance machinery requiring flexible connections

Event and Entertainment

Temporary power distribution for outdoor events, portable stages, and entertainment equipment

Application Suitability:

EpN 50-Y cables are suitable for use in dry, damp, and wet locations including outdoor installations exposed to weather conditions. The cables can be used in areas where there is no danger of explosion or presence of flammable gases such as methane. For applications in potentially explosive atmospheres, specialized cables with appropriate certifications must be specified.

International Standards Compliance

The EpN 50-Y series demonstrates comprehensive compliance with national and international electrical safety standards, ensuring global acceptance and regulatory approval. This compliance framework encompasses conductor specifications, insulation performance, flame retardancy, and mechanical properties verified through rigorous testing protocols.

SRPS N.C5.350
Serbian Standard

DIN VDE 0250-812
German Standard

IEC 60228
Conductor Standard

IEC 60332-1
Flame Retardancy

DIN VDE 0207-20
Insulation Material

DIN VDE 0207-21
Sheath Material

HD 308 S2
Color Coding

VDE 0293-308
Color Coding

Standard	Scope	Compliance Aspects
SRPS N.C5.350	Cable Construction and Performance	Overall cable design, materials, testing requirements for mining and industrial applications
DIN VDE 0250-812	Rubber Insulated Cables	Specific requirements for flexible rubber-insulated power cables with rated voltages up to 1 kV
IEC 60228 / SRPS N.C0.015	Conductor Specifications	Class 5 stranding requirements, conductor dimensions, DC resistance values, material purity
DIN VDE 0207-20	Insulation Compounds	EPR insulation material specifications, dielectric properties, thermal stability requirements
DIN VDE 0207-21	Sheath Compounds	Rubber sheath material specifications including neoprene compounds, aging resistance, mechanical properties
IEC 60332-1	Flame Propagation Testing	Single cable vertical flame test, self-extinguishing properties, limited flame spread characteristics
HD 308 S2 / VDE 0293-308	Conductor Identification	Color coding standards for phase conductors, neutral, and protective earth identification
DIN VDE 0472-803	Oil Resistance Testing	Method A oil resistance test procedures ensuring compatibility with petroleum products and lubricants

Installation Guidelines and Best Practices

Pre-Installation Planning

Successful cable installation begins with comprehensive planning addressing site conditions, routing requirements, and equipment specifications. Installation planning should account for cable pulling tensions, bending radius limitations, environmental exposure, and future maintenance accessibility. Site surveys must document electrical load requirements, installation pathway obstructions, ambient conditions, and potential hazards.

Cable Route Planning - Survey complete cable pathway - Identify potential obstacles and hazards - Plan for adequate bending radius clearances - Consider future maintenance access - Document cable routing in as-built drawings	Load Calculations - Determine maximum expected current - Calculate voltage drop for circuit length - Apply derating factors for installation method - Verify compliance with electrical codes - Include future load growth provisions	Environmental Assessment - Evaluate temperature extremes - Identify chemical exposure risks - Assess mechanical hazard potential - Consider moisture and water exposure - Plan appropriate cable protection methods
Equipment Requirements - Cable reels or drums for transport - Pulling equipment and tension monitors - Bending radius control devices - Termination and jointing kits - Testing equipment for commissioning		

Cable Handling and Storage

Proper handling procedures protect cable integrity before and during installation. Cables should remain on original shipping reels until installation, stored in covered areas protected from direct sunlight, moisture, and temperature extremes. Storage temperature should be maintained between -25°C and +55°C. Maximum storage duration of 12 months is recommended to ensure optimal material properties.

Cable Handling Precautions:

Never drag cables across ground surfaces, sharp edges, or abrasive materials that could damage the outer sheath. Always use appropriate lifting equipment and cable reels for transportation.

Avoid tight coiling which can cause permanent deformation or conductor damage. Maintain minimum bending radius even during temporary storage or handling operations.

Protect cable ends from moisture ingress during storage by sealing with appropriate tape or heat-shrink caps. Moisture contamination can compromise electrical performance.

Inspect before installation: Visually examine cables for shipping damage, sheath cuts, or other defects before beginning installation work. Do not install damaged cables.

Installation Procedures

Installation techniques must preserve cable integrity while achieving proper routing and support. Cable pulling operations require careful control of tension forces and bending radii throughout the installation

pathway. Maximum pulling tension should not exceed 50 N/mm² of total conductor cross-sectional area. For long cable runs or complex routing, intermediate pulling points should be established to limit tensile stress.

Installation Method	Key Requirements	Bending Radius
Direct Ground Burial	Burial depth: 0.7-1.0 meter Sand bedding and covering Warning tape above cable Mechanical protection if required	6D minimum
Conduit or Duct Installation	Use appropriate lubricants Limit pulling length to reduce friction Ensure adequate duct fill capacity Seal duct ends against moisture	12D minimum
Cable Tray Installation	Secure cables at appropriate intervals Avoid excessive cable overlap Provide adequate ventilation Use suitable cable ties or clamps	8D minimum
Overhead Suspension	Use catenary wire or messenger cable Support at maximum 1-meter intervals Prevent cable sag and stress Allow for thermal expansion	10D minimum
Mobile Equipment Connection	Provide cable management system Allow sufficient slack for movement Protect from mechanical damage Regular inspection and maintenance	15D minimum

Termination and Jointing

All cable terminations and joints must be performed by qualified electricians using appropriate materials and techniques. Termination procedures should follow manufacturer specifications for the specific termination devices being used. Particular attention must be paid to conductor preparation, connection tightness, and environmental sealing to ensure long-term reliability.

Conductor Preparation Remove outer sheath without damaging cores Strip insulation to required length Clean conductor surface thoroughly Apply anti-oxidant compound if specified	Connection Technique Use appropriate compression lugs or connectors Apply specified torque values Ensure proper contact pressure Verify conductor seating in terminals	Environmental Protection Seal terminations against moisture Apply appropriate glands or seals Maintain IP rating requirements Provide strain relief for cables
Quality Verification Check connection resistance Verify proper phase sequence Confirm ground continuity Document termination details		

Testing and Commissioning

Comprehensive testing protocols verify installation integrity and confirm readiness for service. All installed cables must undergo systematic testing before energization to detect potential installation defects, moisture contamination, or connection problems that could lead to equipment failure or safety hazards.

Test Type	Test Method	Acceptance Criteria
Visual Inspection	Complete cable route examination Termination quality verification Support and protection assessment	No visible damage, proper installation per specifications, adequate support and protection
Continuity Testing	Low resistance measurement of each conductor Verification of correct conductor identification	Resistance values within ±5% of calculated values based on length and temperature
Insulation Resistance	500V or 1000V DC megohmmeter test Test duration: 1 minute minimum Temperature correction applied	≥ 1 MΩ for circuits up to 500V ≥ 10 MΩ for circuits 500V-1000V (adjustable for cable length)
Earth Continuity	Ground conductor resistance measurement Verification of proper grounding connections	≤ 0.5 Ω for equipment grounding circuits Continuous path to main ground point
Phase Sequence	Phase rotation verification for three-phase circuits Use phase sequence indicator	Correct phase rotation (L1-L2-L3) for motor applications Consistent with system requirements
Functional Testing	Energize at operating voltage Verify equipment operation Check for abnormal heating	Proper equipment function No excessive temperature rise Normal operating currents

High Voltage Testing Considerations:

For critical installations or when required by specifications, high-voltage withstand testing may be performed. Such testing should only be conducted by qualified personnel using appropriate high-voltage test equipment and safety procedures. Test voltage should not exceed 80% of factory test voltage (2.0 kV for 450/750V cables, 2.4 kV for 0.6/1kV cables) and should be applied for a maximum of 5 minutes. Excessive test voltages or prolonged test duration can damage cable insulation and should be avoided.

Maintenance and Service Life Optimization

Preventive Maintenance Program

Regular inspection and maintenance protocols maximize cable service life and prevent unexpected failures that could disrupt mining operations or industrial processes. Maintenance programs should be tailored to specific application conditions, including equipment duty cycles, environmental exposure severity, and operational criticality of the circuits involved.

Inspection Frequency	Inspection Activities	Documentation Required
Daily Visual Check	Cable routing and position verification Visible damage detection Connection integrity spot-check Support system condition	Log book entry for abnormalities Immediate reporting of damage
Weekly Detailed Inspection	Sheath condition examination Termination security verification Cable movement pattern assessment Strain relief effectiveness check	Weekly inspection checklist Photographic documentation of wear areas Trending analysis for progressive issues

Inspection Frequency	Inspection Activities	Documentation Required
Monthly Comprehensive Assessment	Mechanical wear evaluation	Monthly maintenance report
	Thermal imaging of connections	Temperature survey records
	Termination resistance measurement	Resistance measurement logs
	Protection system functionality test	Planned maintenance recommendations
Annual Testing Program	Insulation resistance testing	Annual test certificates
	Ground continuity verification	Trend analysis reports
	Complete system documentation review	Service life predictions
	Performance assessment against baseline	Replacement planning recommendations

Common Failure Modes and Prevention

Understanding typical failure mechanisms enables implementation of targeted prevention strategies that extend cable service life and improve system reliability. Most cable failures result from mechanical damage, environmental degradation, or installation defects rather than inherent material failures.

Failure Mode	Typical Causes	Prevention Strategy
Conductor Breakage	Excessive bending	Maintain proper bending radius
	Fatigue from repeated flexing	Use cable management systems
	Tension overload	Control pulling tension
	Impact damage	Provide mechanical protection
Insulation Breakdown	Moisture ingress	Seal terminations properly
	Thermal overload	Operate within current ratings
	Mechanical damage	Protect from physical damage
	Aging degradation	Replace cables at end of service life
Sheath Cracking	UV exposure	Protect from direct sunlight
	Ozone attack	Avoid ozone-generating equipment
	Chemical exposure	Select appropriate sheath material
	Cold weather embrittlement	Maintain minimum temperature limits
Connection Failure	Inadequate torque	Apply specified torque values
	Thermal cycling loosening	Use appropriate terminal types
	Corrosion at terminals	Apply anti-corrosion compounds
	Vibration effects	Provide adequate strain relief
Abrasion Damage	Dragging over rough surfaces	Use protective sleeves or conduit
	Rubbing against equipment	Install proper cable guides
	Inadequate support	Provide adequate support points
	Sharp edge contact	Eliminate sharp edges in pathways

Service Life Expectations

Under normal operating conditions with proper installation, handling, and maintenance, EpN 50-Y cables typically achieve service lives of 8 to 12 years in industrial applications and 5 to 8 years in mobile mining equipment applications. Factors affecting actual service life include mechanical stress severity, environmental exposure intensity, quality of installation workmanship, maintenance program effectiveness, and operational duty cycle characteristics.

Service Life Optimization Recommendations:

Installation Quality: Proper installation technique has the greatest impact on service life. Cables installed with attention to bending radius limits, pulling tension controls, and proper termination procedures consistently achieve service lives exceeding cables subjected to installation abuse.

Environmental Protection: Protecting cables from unnecessary environmental exposure extends service life significantly. Use of conduit, cable trays, or protective sleeves in areas with chemical exposure, mechanical hazards, or extreme temperatures provides substantial benefits.

Maintenance Investment: Regular inspection and preventive maintenance programs identify developing problems before they cause failures, allowing planned cable replacement rather than emergency repairs during production downtime.

Operating Discipline: Operating cables within their rated current and voltage specifications, avoiding overloads, and preventing equipment misuse contributes substantially to achieving full design service life.

Ordering Information and Specifications

Product Designation System

When placing orders, use the following designation format to ensure accurate product specification and avoid potential ordering errors. Complete product designation includes cable type, voltage rating, conductor configuration, and required length.

EpN 50-Y [Voltage Rating] - [Number of Cores] x [Conductor Size] mm² - [Length] meters

Standard Examples:

EpN 50-Y 0.6/1kV - 4x50mm² - 500m
EpN 50-Y 450/750V - 12x2.5mm² - 200m
EpN 50 0.6/1kV - 4x25mm² - 1000m (black sheath)

Standard Supply Configurations

Cable Configuration	Standard Drum Length	Maximum Single Length	Typical Lead Time
4x70mm ² and 4x50mm ²	300 - 500 meters	1,000 meters	4-6 weeks
4x25mm ² and 4x16mm ²	500 - 800 meters	1,500 meters	3-5 weeks
4x10mm ² and 4x6mm ²	500 - 1,000 meters	2,000 meters	3-5 weeks
4x4mm ² and 4x2.5mm ²	1,000 - 1,500 meters	3,000 meters	3-4 weeks
12x2.5mm ²	500 - 800 meters	2,000 meters	4-6 weeks

Custom Manufacturing Options

Anhui Feichun Special Cable Co., Ltd. offers custom cable configurations to meet specialized application requirements not addressed by standard product offerings. Custom specifications may include modified conductor arrangements, alternative voltage ratings, special sheath colors for identification purposes, or unique mechanical constructions for specific duty cycles.

Conductor Modifications

Non-standard conductor sizes
Tinned copper conductors

Sheath Variations

Custom sheath colors
Enhanced abrasion resistance

Voltage Ratings

Alternative voltage specifications
Higher test voltage requirements

Modified core counts
Pilot or control wire integration

Specialized chemical resistance
Armored constructions available

Specialized insulation thicknesses
Enhanced dielectric performance

Length and Packaging

Custom cut lengths
Special drum requirements
Multiple lengths per order
Factory-applied tags and labels

Custom Order Requirements:

Custom cable specifications require detailed engineering review to ensure manufacturability and performance compliance. Minimum order quantities apply to custom configurations, typically 1,000 to 3,000 meters depending on specification complexity. Extended delivery times of 6-10 weeks should be anticipated for custom products. Contact our technical sales department with detailed specifications for quotation and feasibility assessment.

Quality Assurance and Manufacturing Excellence

Every meter of EpN 50-Y cable manufactured by Anhui Feichun Special Cable Co., Ltd. undergoes comprehensive quality control testing throughout the production process. Our quality management system maintains certification to ISO 9001:2015 standards, ensuring consistent product quality through documented procedures, trained personnel, and systematic verification processes.

Manufacturing Quality Control System

Incoming Material Control

100% supplier certification verification
Sample testing of critical materials
Material traceability documentation
Quarantine procedures for non-conforming materials

In-Process Monitoring

Continuous diameter measurement
Online resistance verification
Real-time process parameter tracking
Statistical process control implementation

Final Product Testing

High voltage withstand test (100% of production)
Insulation resistance verification (100%)
Conductor continuity confirmation (100%)
Dimensional accuracy sampling

Documentation and Traceability

Test certificate for every production lot
Complete material genealogy records
Manufacturing process documentation
Retained samples for future reference

Testing and Certification

All EpN 50-Y cables undergo routine factory testing in accordance with applicable standards. Test certificates documenting compliance with specifications are provided with each delivery. Additional testing services including third-party witnessing, extended test protocols, or special certifications can be arranged upon request.

Warranty and Technical Support

Anhui Feichun Special Cable Co., Ltd. provides comprehensive warranty coverage for all EpN 50-Y series cables against manufacturing defects. Standard warranty terms include 24 months from date of delivery when cables are installed, operated, and maintained according to specifications and applicable standards. Warranty coverage applies to materials and workmanship defects discovered during the warranty period.

Our technical support services include application engineering assistance, installation supervision, commissioning support, and ongoing maintenance consultation. Field service engineers are available for on-site support during critical installations. Training programs for installation and maintenance personnel can be arranged to ensure proper cable handling and maximize service life.

Warranty Exclusions:

Warranty coverage does not extend to failures resulting from improper installation, mechanical damage during handling or operation, exposure to conditions exceeding specifications, unauthorized modifications, or normal wear in mobile applications. Cables must be installed and operated within specified parameters to maintain warranty coverage. Detailed warranty terms and conditions are provided with each shipment.

