# Quality Inspection Report

Product Name: Type High-Temperature Detection Cable

Specifications: AWG 15

Standard: IEC 60584

Order No: **FCHZY2023080106**

Date: **01-08-2023**

| **Test Report for Feichun Cable** | **PPSU (Polyphenylsulfone) Sheathed High-Temperature Detection Cable** |
|---|---|
| **Date** | |
| **Product** | High-Temperature Detection Cable |
| **Insulation Material** | Cross-linked polyethylene (XLPE) |
| **Sheath Material** | Polyphenylsulfone (PPSU) |
| **Cable Type** | High-temperature detection cable |
| **Operating Temperature Range** | -40°C to 200°C |
| **Voltage Rating** | 300V |
| **Testing Voltage** | 2kV |
| **Cable Diameter** | 10 mm |
| **Test Length** | 100 meters |
| **Objective** | |
| Thermal resistance under high temperatures. | |
| Mechanical durability under repeated stress and strain conditions. | |
| Electrical performance (insulation resistance, continuity, and voltage test). | |
| Chemical resistance to industrial fluids and gases. | |
| Fire-retardant properties under direct flame exposure. | |

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| Test | Objective | Procedure | Results |
|---|---|---|---|
| **Thermal Resistance Test** | Assess ability to withstand high temperatures without degradation. | Placed in an oven at 200°C for 168 hours. Inspected for visible changes, and tested for tensile strength. | No visible cracks or swelling. Tensile strength decrease was **<5%**. Full electrical integrity maintained. |
| **Mechanical Durability Test** | Evaluate cable under repeated bending at room and high temperature. | Bending cycles: 5,000 at room temperature, 5,000 at 150°C. Electrical continuity was checked before and after. | PPSU sheath intact. No wear. **No loss of conductivity**. Insulation resistance was within standards. |
| **Electrical Performance Test** | Evaluate insulation and withstand voltage performance. | 2kV voltage test for 5 minutes. Insulation resistance measured with 500V DC megohmmeter. | Insulation resistance: **> 1 GΩ**. No breakdown or shorts observed during voltage withstand. |
| **Chemical Resistance Test** | Evaluate resistance to industrial chemicals. | Cable immersed in mineral oil, diesel, sodium hydroxide for 72 hours at room temperature. | No degradation or softening of the sheath. Tensile strength remained largely unchanged. |
| **Fire Retardant Test** | Assess flame retardant properties. | Direct flame exposure for 60 seconds. Observed flame spread and self-extinguishing properties. | Minimal flame spread. Self-extinguished in 10 seconds. Superficial charring, but sheath maintained structural integrity. |

The High-Temperature Detection Cable demonstratedexcellent thermal resistance, mechanical durability, electrical performance, andfire retardant properties. It is highly suitable for use inextreme environmentssuch asaerospace, automotive, andindustrial applications. The cable passed all tests, confirming itsreliability for high-temperature detection.

Test Engineer: 张道生

Signed:

Date of Test Completion: August 1, 2023