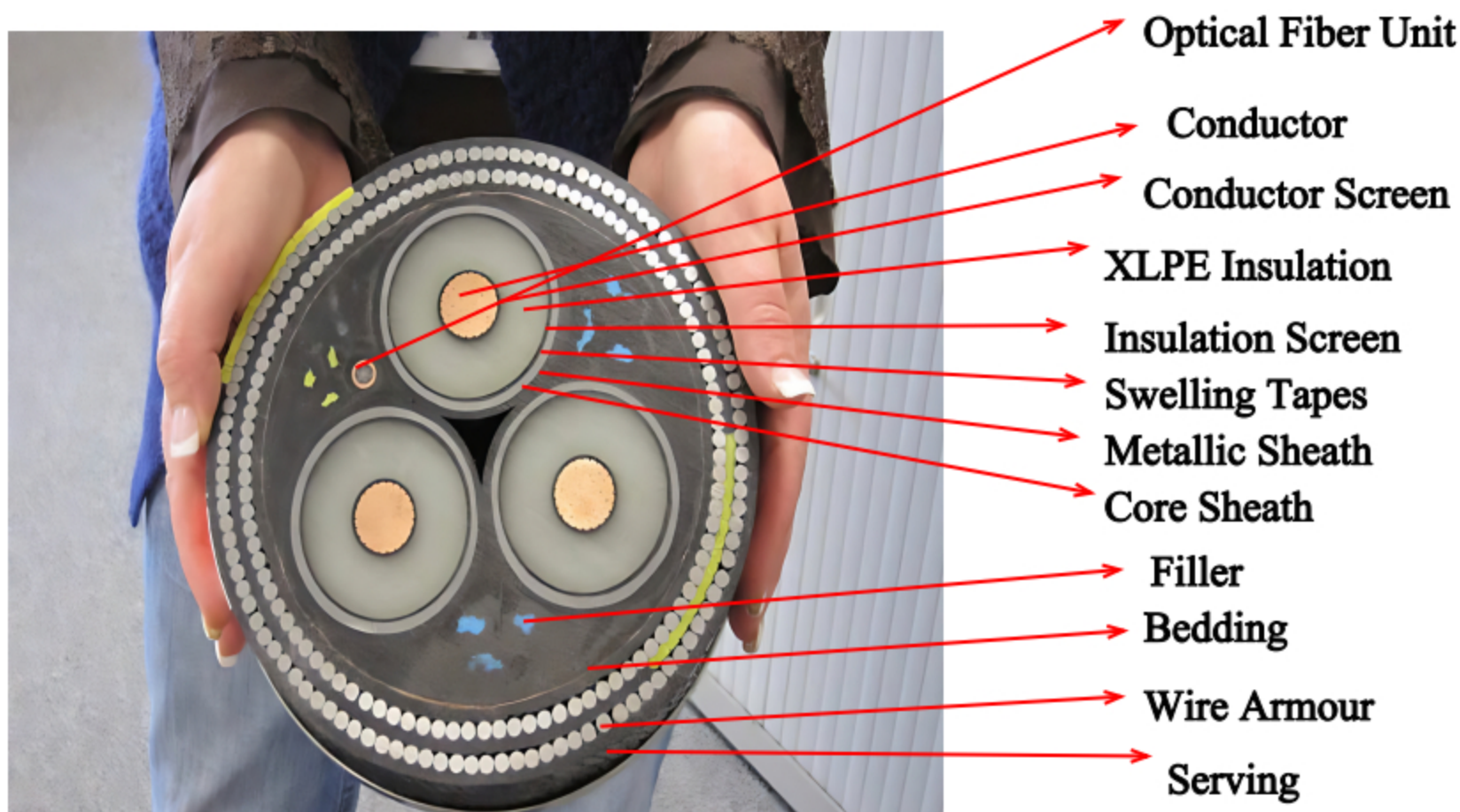


FEICHUN Submarine Power Cable Technical Specification



Detailed Structure of the Optical Fiber Cell:

4-Core Taped Fiber

Slotted Spacer

Strength Member

Jelly Compound

Binder

Lead Alloy Sheath

Jacket

This hybrid design ensures robust electrical and data transmission over long submarine distances, making it ideal for offshore platforms, island interconnections, and underwater renewable energy systems.

Product Description

Feichun Cable's high-voltage submarine cable is meticulously engineered for reliable long-distance underwater power transmission, combining power cores with optical fiber units in a single integrated construction.

This advanced cable supports 150 kV power transmission, while also enabling high-speed data and control signal communication via its built-in optical fiber unit. It is specially designed to withstand the demanding conditions of marine environments, such as high pressure, corrosion, and mechanical stress.

Electrical and Thermal Characteristics

Rated Voltage: 12/20 (24) kV

Impulse Withstand Voltage (1.2/50 μ s): 125 kV

Maximum Permissible Conductor Temperature: 90 °C

Short-Circuit Withstand Current (1 second): $\geq$ 16 kA

Factory Acceptance Tests (FAT)

To ensure product quality and compliance with international standards, the submarine cable undergoes the following factory acceptance tests:



FEICHUN SPECIAL CABLES

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1. Conductor Resistance Test

Performed on the entire cable length

Reference Standard: IEC 60502-2 Clause 16.2

2. Partial Discharge Test

Sampled at 10 meters from each cable end

Reference Standard: IEC 60502-2 Clause 16.3

3. Voltage Withstand Test

Entire cable length

Reference Standard: IEC 60502-2 Clause 16.4

4. Conductor Examination

1-meter sample from each end

Reference Standard: IEC 60502-2 Clause 17.4

5. Dimensional Verification

1-meter sample from each end

Reference Standard: IEC 60502-2 Clauses 17.5 to 17.8

6. Electrical Stress Test (Voltage Test)

Same sample used for partial discharge

Reference Standard: IEC 60502-2 Clause 17.9



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7. Hot Set Test (Thermal Deformation Check)

1-meter sample from each end

Reference Standard: IEC 60502-2 Clause 17.10

8. Time Domain Reflectometry (TDR) Test

On entire cable length to detect faults in optical fiber

Reference Standard: CIGRE 189

9. Mechanical Armour Tensile Strength Test

Samples can be taken from partial discharge samples

Reference Standard: BS EN 10257-2:1998

10. Optical Fiber Cable Test

Reference Standards:

IEC 60793 (Generic Specification for Optical Fibre)

ITU-T G652D (Single Mode Fiber)

ITU-T G650 (Definition & Test Methods for Fiber Parameters)

This cable complies with the latest editions of the following international standards:

IEC 60502-2: Power cables with extruded insulation for rated voltages from 6 kV up to 30 kV

EN 10257-2:1998: Armour wires for submarine cables

EN 50307:2003: Lead and lead alloy sheath specifications

IEC 60228: Conductors of insulated cables

IEC 60793 & IEC 60794: Optical fiber cable specifications

ITU-T G652D / G650: Optical fiber types and measurement methods

CIGRE ELECTRA 189 & 171: Reflectometry and performance analysis of submarine cables

IEEE 400.2: VLF field testing for power cable systems



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Key Features & Advantages

Hybrid Design: Power and fiber optic transmission in one cable

XLPE Insulation: High thermal and electrical reliability

Lead Alloy Sheath: Exceptional water blocking and corrosion resistance

Steel Wire Armouring: Enhanced mechanical strength for underwater installation

Compliance with International Standards: Ensures quality and global usability

Customisable Optical Fiber Cell: For smart grid and communication integration

Undersea power transmission between islands and the mainland

Offshore wind farms and energy platforms

Oil and gas marine facilities

Telecommunication and SCADA integration

Submarine interconnects for renewable energy grids



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