Chapter 5
Composite Insulator Design

5.5 Fiber glass rod size selection according to mechanical strength

By Orient Power
Fiber glass rod size selection according to mechanical strength

Fiber glass core rod is the main material of composite insulator, play a skeleton enhancement effect.

Fiber glass is the preferred reinforcement material used to increase the mechanical properties of the compounded polymers.

**Types of mechanical strength in composite insulator:**

- Cantilever strength
- Tensile load
- Torsional load
- Thermal mechanical

The cantilever strength usually have: 1.5KN, 4KN, 6KN, 8KN, 10KN, 12.5KN, 13KN, 13.5KN, 16KN, 20KN.

Mechanical tensile strength have: 40KN, 70KN, 80KN, 90KN, 100KN, 111KN, 120KN, 160KN, 210KN, 15000LB, 25000LB, 30000LB and so on.

Composite insulator fiber glass core rod uses the non-alkali glass fiber.

Specification for composite insulator fiber glass core rod: φ12, φ16, φ18, φ20, φ22, φ24, φ25, φ26, φ28, φ30, φ32, φ34, φ35, φ38, φ40, φ45, φ46, φ50, φ53, φ60, φ63, φ70, φ76, φ80, φ90, φ110

Also the fiber glass size should according to the mechanical strength, the types of insulator, using environment to design it. Different strength should choose different size diameter, and this will be according to the rod strength of each factory, Orient Power reinforced fiber glass core rod can reach 1700Mpa when testing.

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