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Chapter 6

composite insulator testing

6.3 Tests on core material

By Orient Power

Tests on core material



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Core:

The core of the insulator shall consist of a fiberglass-reinforced resin matrix. The core shall be sound and free of defects that might adversely affect the mechanical or electrical properties of the insulators.

Core material tests:

- ✧ Dye penetration test
- ✧ Water diffusion test

Dye penetration test:

- ✧ Ten samples shall be cut from an insulator. The housing material may be removed from the core but removal is not mandatory. The length of the samples shall be $10\text{mm} \pm 0.5\text{mm}$. They shall be cut 90 degrees to the axis of the core with a diamond –coated circular saw blade under cool running water. The cut surfaces shall be smoothed with a 180-grit abrasive cloth. The cut ends shall be clean and parallel.
- ✧ The samples shall be placed on a layer of steel or glass balls in a glass vessel with the fibers vertical.
- ✧ The time for the dye to rise through the samples by capillarity shall be more than 15 minutes.

Water diffusion test:

- ✧ Test specimen: six samples shall be cut from an insulator.
- ✧ Prestressing
- ✧ Test
- ✧ Evaluation: No puncture or surface flashover is allowed. The current during the whole test shall not exceed 1 mA r.m.s.

More information, welcome to visit Orient power website.