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## IEEE Guide for In-Service Maintenance and Electrical Testing of Live-Line Tools

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##### 4.2 Periodic Inspection and Checking

Insulating tools should be visually inspected before use for indications that they may have been mechanically or electrically overstressed (see 5.1.1). Tools that show evidence of overstress (such as damaged, bent, worn, or cracked components) should be removed from service and evaluated for repair. Elongated or deformed rivet ends, for instance, indicate that excessive mechanical loading has occurred and has weakened or sheared the bond between the ferrules and the insulating pole.

The surface of each tool must be inspected before and after each use for contamination such as dirt, creosote, grease, or any other foreign material. If any of the above contaminants exist, the tool surface should be cleaned.

When the insulating member of a tool shows signs of accumulated contamination, surface blisters, excessive abrasion, nicks, or deep scratches the tool should be removed from service and cleaned or refinished as recommended by the manufacturer, and re-tested. Any moisture penetration will reduce the insulating properties of these tools.

When the tools have been exposed to excess moisture, their moisture content can be measured with a moisture meter, which is commercially available (see 4.5), or their general condition determined on the basis of ac dielectric-loss measurements (see 5.9)

##### 4.3 Cleaning and waxing

**Before each use, insulating tools should be wiped with a clean, absorbent paper towel or a clean, absorbent cloth and followed by wiping with a silicone-treated cloth.**

**Caution: Do not use cloths that have been washed in harsh solvents, since some residues on the cloth can be deposited on the pole surface**

**If simple wiping does not remove the contaminant then apply denatured alcohol with a paper towel or clean, absorbent cloth and follow by wiping with a silicone-treated cloth.** Other solvents or cleaners may be used as recommended by the manufacturers of the insulating tools.

**Caution: Do not use soap detergents, liquid or powdered form, such as 409, Fantastic, Comet, ND-150, Bon Ami, Ajax, etc, to clean fiberglass tools under field conditions because of the following problems:**

- (1) The above described cleaning agents will leave a conductive residue unless rinsed with generous amounts of water (usually not available in the field).
- (2) Abrasive cleaners will destroy the surface gloss on the stick.

Note: All fiberglass tools that are subjected to such cleaning agents should be electrically tested under wetting conditions to ensure complete removal of residue from soap-type cleaners (see 5.3).

**Waxing is not necessary after every use of the tools but rather as needed to maintain a glossy surface that will cause any moisture or water to bead on the surface (see 5.5). Before the tool is rewaxed, to avoid a wax buildup, the pole should always be cleaned with a solvent or cleanser recommended by the manufacturer of the tools.**

Waxing imparts not only a glossy finish to the surface of the fiberglass but also adds to the electrical integrity of the tool by providing a protective barrier against dirt, creosote, and other contaminants, and moisture.

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