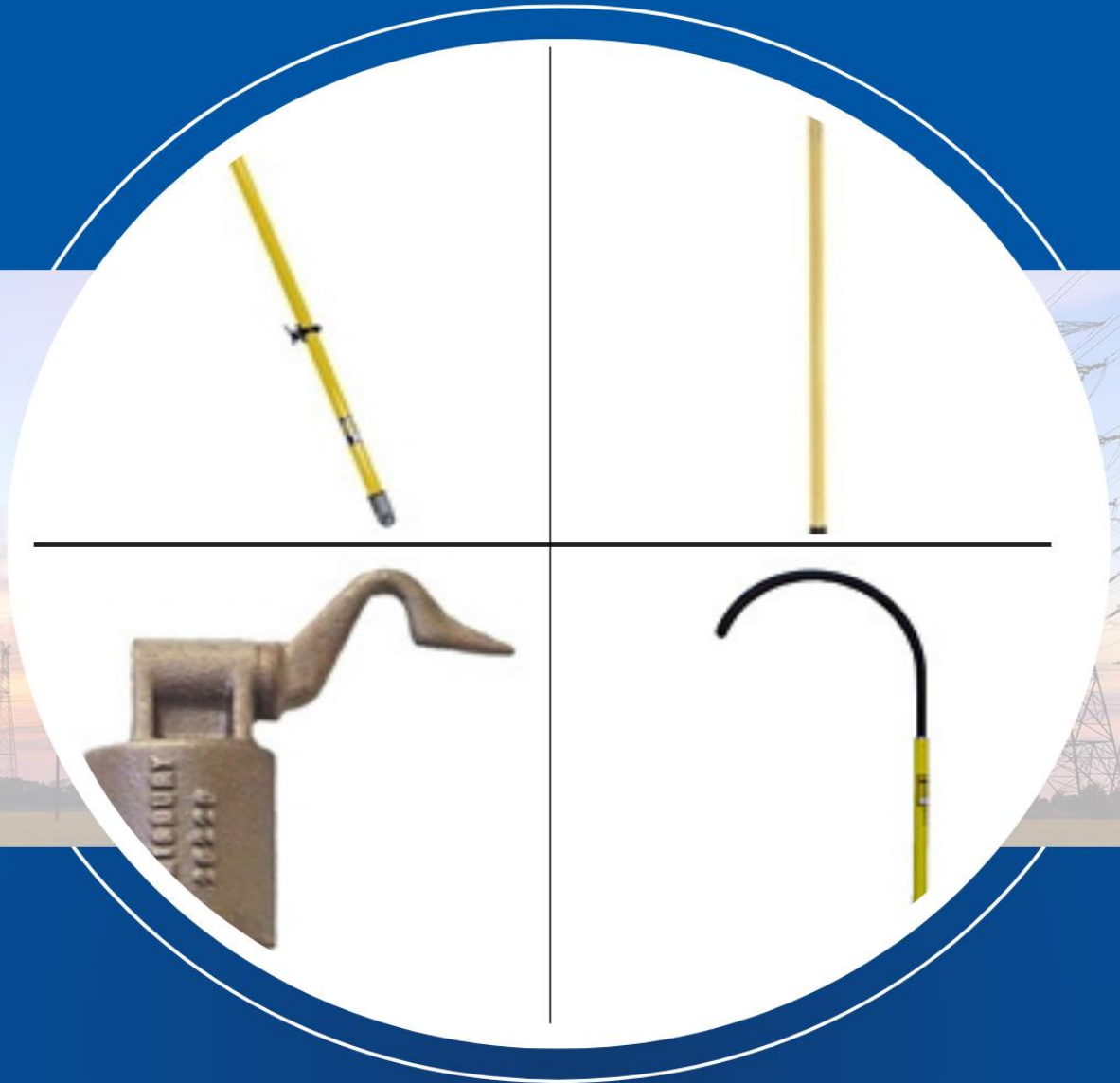


# DIELECTRIC TESTING PROCESS

## Hotsticks



**Burlington Safety Laboratory** has been testing protective equipment since 1971. We are accredited by NAIL for PET, and our test procedures meet or exceed ASTM/ANSI, MIL Specs, NFPA 70E, FED and CAL OSHA standards. Our quality control procedures include thorough and accurate records of each and every article tested, along with dates and test values. Burlington Safety Laboratory's technicians are fully trained before they perform critical tests on your personal protective equipment.



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## Dielectric Testing Process for Electrical Safety Hotsticks

Burlington Safety Laboratory has a short 2 week turnaround upon receiving electrical safety hotsticks for laboratory testing to ASTM standards. Customers can either ship their gloves to us or drop them off at our facility for testing. Upon receiving, our testing process consists of:

### 1. Cleaning

The testing process commences with the thorough cleaning of each hotstick and hot arm using a solvent. This solvent effectively removes all contaminants from the surface of the equipment, enabling technicians to assess its readiness for dielectric testing.



Figure 1 - Hotsticks



## 2. Preliminary Visual Test

During the cleaning process, our technicians conduct a preliminary visual inspection of the hotstick or hot arm. They carefully examine the surface for any signs of fiber "hairs" fraying out of the stick. If such fraying is observed, it indicates that the stick requires a new epoxy coating. This preliminary inspection helps identify any necessary repairs before proceeding with further testing procedures.

## 3. Dielectric Testing

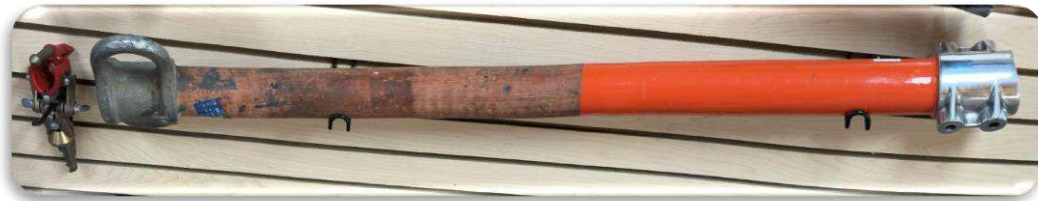
Once the readiness of the hotstick or hot arm is confirmed, it undergoes dielectric testing in our specialized hot stick testing machine, adhering to ASTM F711 standards. This test evaluates the insulation properties by subjecting the stick to high voltage. Pass indicates acceptable insulation, while failure suggests potential dielectric issues. In case of failure, the stick requires remediation, often involving the application of a new epoxy coating to reinforce insulation. Defects are meticulously documented for analysis and remediation, ensuring all sticks meet safety standards before deployment.



*Figure 2 - Hotstick Dielectric Testing*

#### 4. Visual

Our technicians then conduct a thorough visual inspection to ensure all parts are present and examine the fiberglass for any signs of damage or wear resulting from the dielectric test. If the inspection reveals the need for epoxy coating, the options are either replacement or refurbishment of the affected parts.



*Figure 3 - Visual Inspection*

#### 5. Optional Replacement or Refurbishment

In this step, our technicians assess whether replacement or refurbishment is required based on the condition of the hotstick or hot arm components. If metal pieces of the stick are damaged or missing, they can be replaced individually as needed. However, if the fiberglass material is damaged, refurbishment is necessary to restore its integrity. Fiberglass refurbishment involves repairing any cracks, chips, or other damage to the fiberglass material and adding a new epoxy coating to ensure it meets safety standards. Alternatively, if the damage to the fiberglass is extensive or cannot be effectively repaired, replacing the entire stick may be necessary to maintain safety and performance standards. Ultimately, the decision between replacement and refurbishment depends on the extent and nature of the damage observed during the visual inspection.



## 6. Wax Coating Application

Following inspection, technicians apply a protective wax coating to the surface of the hotstick or hot arm. This wax coating helps to enhance durability and resistance to environmental factors, ensuring prolonged lifespan and optimal performance of the equipment during use.

## 7. Sticker Certification

Apply a certification sticker to the hotstick or hot arm, containing essential information such as the identifying serial number, test date, and any pertinent details regarding the testing and certification process. This certification sticker serves as a visible indication of compliance with safety standards and facilitates easy identification and tracking of the equipment's testing history.



*Figure 4 - Sticker Certification*

### **8. Ship or Pickup**

Finally, arrange for the hotstick or hot arm to be shipped to the customer via UPS or made available for customer pickup, based on their preference. This ensures efficient delivery of the tested equipment to the designated recipients, facilitating its prompt integration into their operations.



*Figure 5 - Shipping or Pickup*



## Testing Specifications

| <b>Rubber Insulating Equipment</b>  | <b>ASTM Designation</b> |
|---|-------------------------|
| <b>Rubber Insulating Gloves</b><br>2.5 – 40kV, Class 00 – Class 4         | D120 / F496             |
| <b>Rubber Insulating Sleeves</b><br>5 – 40kV, Class 00 – Class 4          | D1051 / F496            |
| <b>Rubber Insulating Footwear</b><br>5 – 20kV Overshoes & Boots           | F1116/F1117             |
| <b>Rubber Insulating Blankets</b><br>5 – 40kV, Class 0 – Class 4          | D1048/F479              |
| <b>Rubber Insulating Line Equipment</b><br>Line Hose, Hoods, Covers, etc. | D1050/F478              |

| <b>Jumpers/Grounds</b>                                   | <b>ASTM Designation</b> |
|--|-------------------------|
| <b>Hotline Jumpers</b><br>Insulation & Voltage Drop Test | F2321                   |
| <b>Ground Sets and Leads</b><br>Voltage Drop Test        | F855                    |

| <b>Line Guards</b>         | <b>ASTM Designation</b> |
|----------------------------|-------------------------|
| <b>Plastic Line Guards</b> | F712                    |

| <b>Hot Line Tools</b>   | <b>ASTM Designation</b> |
|---|-------------------------|
| <b>All Hot Sticks</b><br>Switch/straight, telescopic, and Grip-All sticks | F711                    |





| Voltage Detectors & Meters   |  |
|--|--|
| Voltage Detectors (Manufacturer's Functional Test)                     |  |
| Meters (Manufacturer's Functional Test) Calibration Services Available |  |

## Testing Intervals

| Equipment        | Testing Interval |
|------------------|------------------|
| Gloves           | Every 6 months   |
| Sleeves          | Every 12 months  |
| Blankets         | Every 12 months  |
| Line Hose        | Every 12 months  |
| Boots            | Every 6 months   |
| Grounds          | Every 12 months  |
| Fiberglass Tools | Every 2 years    |

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