



Designation: F 968 – 93 (Reapproved 1998)

Standard Specification for Electrically Insulating Plastic Guard Equipment for Protection of Workers¹

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1. Scope

1.1 This specification covers plastic guard equipment and guard systems used by workers for temporary insulation on electric power circuits.

1.2 Plastic guard equipment covered by this specification is rated for momentary, or brush contact only. Maximum-use voltages are covered in Annex A1.

1.3 Typical guards covered include, but are not limited to, the following:

1.3.1 Conductor guards and connecting covers as follows:

- 1.3.1.1 Line guards,
- 1.3.1.2 Line guard connectors,
- 1.3.1.3 Insulator covers,
- 1.3.1.4 Dead end covers,
- 1.3.1.5 Bus guards, and
- 1.3.1.6 Bus “T” guards.

1.3.2 Structure and apparatus covers as follows:

- 1.3.2.1 Pole guards,
- 1.3.2.2 Ridge pin covers,
- 1.3.2.3 Switch-blade covers,
- 1.3.2.4 Arm guards,
- 1.3.2.5 Cutout covers, and
- 1.3.2.6 Cross arm guard.

1.4 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 *ASTM Standards*:

D 149 Test Methods for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies²

D 150 Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials²

D 256 Test Methods for Determining the Pendulum Impact Resistance of Notched Specimens of Plastics³

D 570 Test Method for Water Absorption of Plastics³

¹ This specification is under the jurisdiction of ASTM Committee F-18 on Electrical Protective Equipment for Workers and is the direct responsibility of Subcommittee F18.25 on Insulating Cover-up Equipment.

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² *Annual Book of ASTM Standards*, Vol 10.01.

³ *Annual Book of ASTM Standards*, Vol 08.01.

F 712 Test Methods for Electrically Insulating Plastic Guard Equipment for Protection of Workers⁴

2.2 *IEEE Standard*:

978 Guide for In-Service Maintenance and Electrical Testing for Live-Line Tools⁵

2.3 *UL Standard*:

94 Tests for Flammability of Plastic Materials for Parts in Devices and Appliances⁶

3. Terminology

3.1 *Definitions of Terms Specific to This Standard*:

3.1.1 *insulating plastic guards*—devices for temporary installation on structures or energized electric power circuits for electrical protection of personnel or equipment, or both.

3.1.2 *self extinguishing*—relates to a property of a plastic material compounded so as to cease combustion on removal of the source that caused ignition.

4. Significance and Use

4.1 This specification covers the minimum electrical, chemical, and physical properties designated by the manufacturer and the detailed procedures by which such properties are to be determined. The purchaser has the option to perform or have performed any of these tests and may reject equipment that fails to meet the standard criteria. Claims concerning failure to meet the specification are subject to verification by the manufacturer.

4.2 Plastic guard equipment is used for protection against accidental brush contact by the worker. A margin of safety shall be provided between the maximum voltage at which they are used and the proof-test voltage at which they are tested. This relationship is shown in Table A1.1. The equipment is designed only for phase-to-ground or covered-phase-to-covered-phase exposure.

NOTE 1—Rubber insulating equipment is realistically limited to Class 4 material in the design specification standards. Plastic guard equipment has been designed to go beyond these voltages and provide a satisfactory degree of worker protection. Major differences exist in use criteria between the rubber and the plastic guard equipment. Each glove, sleeve,

⁴ *Annual Book of ASTM Standards*, Vol 10.03.

⁵ Available from the Institute of Electrical and Electronics Engineers, 345 E. 47th St., New York, NY 10017.

⁶ Available from Underwriters Laboratories, 333 Pfingsten Rd., Northbrook, IL 60062.