



Designation: F2677 – 08a

Standard Specification for Electrically Insulating Aprons¹

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1. Scope

1.1 This specification covers the acceptance testing of electrically insulating aprons for the protection of workers from incidental contact with live electrical apparatus or circuits.

1.2 The objective of this specification is to prescribe function and performance criteria for insulating aprons that meet a minimum level of electrically insulating and physical performance characteristics.

1.3 Three types of aprons are provided and are designated as Type I, non-resistant to ozone, Type II and Type III, resistant to ozone.

1.4 Six classes of insulating aprons, differing in electrical characteristics, are provided and are designated as Class 00, Class 0, Class 1, Class 2, Class 3, and Class 4.

2. Referenced Documents

2.1 *ASTM Standards*:²

D1048 Specification for Rubber Insulating Blankets

F819 Terminology Relating to Electrical Protective Equipment for Workers

F1742 Specification for PVC Insulating Sheeting

F2320 Specification for Rubber Insulating Sheeting

3. Terminology

3.1 *Definitions*:

3.1.1 *exposed area*—the area of the electrically insulating apron that does not contain any stitching or fasteners.

3.1.2 *exposure zone*—the area on the front of the electrically-insulated apron 1 in. from the fasteners and stitching or borders.

3.1.3 For definitions of other terms, refer to Terminology F819.

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For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

4. Significance and Use

4.1 This specification covers the minimum electrical, chemical and physical properties, and design characteristics for insulating aprons and the procedures by which properties are to be determined. The purchaser may as his/her option, perform or have performed any of these tests in order to verify any manufacturer claim. Claims for failure to meet the specification are subject to verification by the manufacturer.

4.2 The insulating materials used in aprons in this specification are designed for personal protection; therefore, when authorizing its use a margin of safety shall be allowed between the maximum voltage at which it is used and the proof-test voltage at which it is tested. The relationship between proof-test and the maximum voltage at which materials shall be used is shown in Table 1.

4.3 Work practices vary from user to user, depending upon many factors. These factors may include, but are not limited to, operating system voltages, design, work procedures and techniques, weather conditions, etc. Therefore, except for the restrictions set forth in this specification because of design limitations, the use and maintenance of the equipment is beyond the scope of this specification.

4.4 It is common practice and the responsibility of the user of this type of protective equipment to prepare complete instructions and regulations to govern the correct and safe use of such equipment.

5. Classification

5.1 Insulating aprons covered under this specification shall be designated as Type I, Type II or Type III; and as Class 00, Class 0, Class 1, Class 2, Class 3, or Class 4.

5.1.1 *Type I*, non-resistant to ozone, made from a high-grade *cis*-1,4-polyisoprene rubber compound of natural or synthetic origin, properly vulcanized.

5.1.2 *Type II*, ozone-resistant, made of any elastomer or combination of elastomeric compounds.

5.1.3 *Type III*, ozone-resistant, made of any combination of elastomer and thermoplastic polymers, elastic in nature.

5.1.4 The class designation shall be based on the electrical properties as shown in Table 1.