



Standard Guide for Visual Inspection of Electrical Protective Rubber Products¹

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1. Scope

1.1 The purpose of this guide is to present methods and techniques for the visual inspection of electrical protective rubber products. This guide also includes descriptions and photographs of irregularities found in these products.

NOTE 1—It is not the purpose of this guide to establish the acceptance level of any irregularity described herein. That shall be established by the standard for each product.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

F496 Specification for In-Service Care of Insulating Gloves and Sleeves

F819 Terminology Relating to Electrical Protective Equipment for Workers

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *abrasions and scratches*—surface damage that normally occurs when a product makes contact with an abrasive surface (see Fig. 1 and Fig. 2).

3.1.1.1 *Discussion*—Scuff-like damage can also occur from a brush contact with a hot object such as a soldering iron. This can sometimes look like the graining on leather.

3.1.2 *age cracks*—surface cracks that may look like the crazing of glazed ceramics and become progressively worse with time (see Fig. 3).

3.1.2.1 *Discussion*—It is normally a slow oxidation process caused by exposure to sunlight and ozone in the atmosphere and starts in areas of the rubber that are under stress.

3.1.3 *breakdown*—the electrical discharge or arc occurring between the electrodes and through the equipment being tested (see Fig. 4, Fig. 5 and Fig. 6).

3.1.4 *chemical bloom*—a white or yellowish discoloration on the surface of a rubber product caused by the migration to the surface of chemical additives used in the manufacture of the finished product (see Fig. 7).

3.1.5 *color splash*—a spot or blotch on the surface of a rubber product that occurred during the manufacturing process when a contrasting colored particle of unvulcanized rubber became embedded into the finished product (see Fig. 8).

3.1.6 *cuts*—smooth incisions in the surface of the rubber that are usually caused by a sharp-edged object that can increase in size when they are placed under strain (see Fig. 9).

3.1.7 *depressions or indentations*—a shallow recess in the surface of the rubber that exhibits a thinner rubber thickness at the bottom of the depression than in the surrounding areas (see Fig. 10).

3.1.8 *detergent cracks*—cracks that appear on the inside surface of a glove or sleeve that encircle the outline of a spot of detergent residue that was not removed during the cleaning and rinsing of the form prior to the dipping process.

3.1.9 *embedded foreign matter*—a particle of non-rubber material that has been molded into the finished product and may appear as a bump when the rubber is stretched (see Fig. 11).

3.1.10 *form marks*—a raised or indented section on the surface of the rubber that was caused by an irregularity in the form.

3.1.11 *glove discoloration*—a non-harmful surface discoloration on a rubber insulating glove caused by the leaching of the tanning chemicals in leather protectors when protectors are left on the rubber insulating glove for an extended time; this is accelerated when the protectors are wet (see Figs. 12-14).

¹ This guide is under the jurisdiction of ASTM Committee F18 on Electrical Protective Equipment for Workers and is the direct responsibility of Subcommittee F18.60 on Terminology.

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² 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.