



Designation: F 1117 – 93 (Reapproved 1998)

Standard Specification for Dielectric Overshoe Footwear¹

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1. Scope

1.1 This specification covers acceptance testing of overshoe footwear designed to provide additional isolation or insulation of workers if in accidental contact with energized electrical conductors, apparatus, or circuits.

1.2 Three styles of overshoe footwear are provided and are designated as Style A, rubbers; Style B, boots; and Style C, galoshes.

2. Referenced Documents

2.1 ASTM Standards:

F 819 Definitions of Terms Relating to Electrical Protective Equipment for Workers²

F 1116 Test Method for Determining Dielectric Strength of Overshoe Footwear²

3. Terminology

3.1 *Definitions*—Definitions pertaining to electrical protective equipment may be found in Definitions F 819.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *sole*—the underside of the rubber, boot, or galosh that would normally be in contact with the ground. The sole is normally one piece and constructed of a molded elastomer.

3.2.2 *foot portion*—the portion of the footwear below the wearer's ankle bone.

3.2.3 *user*—as used in 4.3.1, the entity employing the actual worker(s) utilizing the equipment; if no separate employer, then the individual.

4. Significance and Use

4.1 This specification covers the minimum electrical properties of overshoe footwear guaranteed by the manufacturer and the detailed procedures by which such properties are to be determined. The purchaser may, at his option, perform or have performed these tests in order to verify the guarantee. Claims for failure to meet the specification are subject to verification by the manufacturer.

4.2 Electrical contact injuries to workers may involve a

current path through the feet of the worker. The footwear covered by this specification is dielectrically rated to provide additional isolation or insulation to the worker.

4.3 Work practices vary from user to user depending upon many factors. These may include, but are not limited to, operating system voltages, construction 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 this equipment is beyond the scope of this specification.

4.3.1 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 Overshoe footwear covered under this specification shall be designated as Style A, B, or C.

5.1.1 *Style A*—Rubbers, designed to be worn over existing footwear and to cover only the foot of the worker.

5.1.2 *Style B*—Boots, designed to be worn over existing footwear and to cover the foot and lower leg of the worker to below the knee.

5.1.3 *Style C*—Galoshes, designed to be worn over existing footwear and to cover the foot and lower leg of the worker to below the knee and having fasteners to close the folded front flaps.

6. Ordering Information

6.1 Orders for footwear under this specification should include the following information:

- 6.1.1 Style,
- 6.1.2 Size, and
- 6.1.3 Color

7. Manufacture and Marking

7.1 The construction shall be such that the footwear has a specified minimum dielectric strength when tested as specified in Test Method F 1116.

7.2 Each article of footwear shall be marked clearly and permanently with the name of the manufacturer or supplier, ASTM F1117, and size.

7.3 The required information shall be on a label which shall be applied to either the inside or outside of the footwear in such

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² *Annual Book of ASTM Standards*, Vol 10.03.

a manner as to not affect the dielectric property of the footwear.

8. Electrical Requirements

8.1 Each article of overshoe footwear shall be given a proof test and shall withstand the 60-Hz a-c proof-test voltage (rms value) or the d-c proof-test voltage (average value) specified in Table 1. The proof test shall be performed in accordance with Test Method F 1116. The voltage shall be applied continuously for a minimum of 1 min and a maximum of 3 min.

8.1.1 When the a-c proof test is used, the 60-Hz proof-test current shall not exceed the values specified in Table 1 at any time during the test period.

9. Sampling

9.1 Each article of footwear in a lot or shipment shall be subject to inspection and test to meet the requirements of Sections 7, 8.1, and 12.

10. Guarantee

10.1 The manufacturer or supplier shall replace, without charge to the purchaser, unused footwear which, at any time within a period of nine months from date of initial delivery of shipment to the purchaser or his designee, fail to pass the tests in this specification. This guarantee will be binding on the

manufacturer or supplier only if the footwear have been properly stored and have not been subjected to more than an original acceptance test and one retest.

10.2 Any acceptance test made by the purchaser, or the purchaser's designee, shall be performed within the first two months of the guarantee period unless otherwise specified.

11. Rejection

11.1 Individual articles of footwear shall be rejected if they fail to meet the requirements of Sections 7, 8.1, and 12.

11.2 The entire lot or shipment of footwear shall be rejected if 5 % or more, but not less than two articles of footwear, in a lot or shipment fail to meet the requirements of 8.1.

11.3 The testing shall be terminated and the manufacturer or supplier notified if, during the course of testing, the footwear in a lot or shipment fail to meet the requirements of 8.1 as determined by the rejection criteria of 11.2. The manufacturer or supplier may in such a case require the purchaser to submit proof that the test procedure and equipment conform to this specification. When such proof has been furnished, the manufacturer or supplier may request that his representative witness the testing of additional footwear from the shipment.

11.4 All rejected material shall be returned as directed by the manufacturer, at his or the supplier's request, without being defaced by rubber stamp or other permanent marking. However, those articles of footwear punctured when tested in accordance with 8.1 shall be stamped, punched, or cut prior to being returned to the supplier to indicate that they lack the required dielectric property.

12. Packaging and Package Marking

12.1 Each pair of footwear shall be packed in an individual container of sufficient strength to properly protect the footwear from damage in transit. The end of the container shall be marked with the name of the manufacturer or supplier, style, size, and color.

TABLE 1 Electrical Requirements

	A-C Proof Test Voltage, rms, V	D-C Proof Test Voltage, avg, V	A-C Voltage Requirements Proof- Test Current, max, mA		
			Test Method		
			A	B	C
Style A, Rubber	15 000	45 000	1	10	...
Style B, Boot	15 000	45 000	1	10	18
Style C, Galosh	15 000	45 000	1	10	18

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