



Standard Test Method for Detection of Holes in Polyethylene Food Service Gloves¹

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1. Scope

1.1 This test method covers the detection of holes in polyethylene food service gloves. This test method shall not be used on any medical glove.

1.2 This test method is limited to the detection of holes that allow water leakage under the conditions of the test.

1.3 The smallest hole size that will allow water leakage has not been determined and is beyond the scope of this method.

1.4 The safe use of polyethylene food service gloves is beyond the scope of this standard.

1.5 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.6 *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

D5151 Test Method for Detection of Holes in Medical Gloves

2.2 *Other Standards*:³

ISO 2859-1 Sampling Procedures and Tables for Inspection by Attributes

3. Terminology

3.1 *Definitions*:

3.1.1 *food service gloves, n*—gloves used in the preparation and distribution of foods for human consumption.

¹ This test method is under the jurisdiction of ASTM Committee D11 on Rubber and is the direct responsibility of Subcommittee D11.40 on Consumer Rubber Products.

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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.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

4. Significance and Use

4.1 This test method is designed to detect holes in food service gloves made of polyethylene that may compromise the barrier quality of the glove.

4.2 This method is suitable and designed as a reference method to evaluate samples of polyethylene food service gloves for holes. The presence of holes is defined as a compromise in barrier quality.

4.3 This test method is designed for use as a quality referee for holes in polyethylene food service gloves and for manufacturers to evaluate the ongoing control of holes in food service gloves made of polyethylene.

4.4 Test Method **D5151** is the test method that shall be used for the detection of holes in a food service glove made of the same material type as that of a medical glove, as specified or described, or both, in each applicable ASTM medical glove standard.

4.5 For food service gloves made of a material type not described or specified in an existing ASTM glove standard, and if the material is non-elastic, this test method shall be used for the detection of holes.

5. Apparatus

5.1 *Filling Apparatus*—A test glove filling apparatus with a suitably smooth finished fixture whose design permits the glove under test to hang unsupported should be used. Care should be taken to not allow the glove samples under test to come into contact with the surface below, but rather they should hang unsupported for the entire test period. If the food service glove is not removed from the filling apparatus for inspection, the mandrel should also seal the cuff of the glove against water overflow without the introduction of an air headspace as the glove is positioned horizontally for examination. The filling apparatus is to have fill set points of 600 cm³, 700 cm³, and 800 cm³ depending on the size of the glove to be tested. See **Table 1**.

5.2 *Graduated Cylinder or Beaker*—At a minimum, the graduated cylinder or beaker used to measure the volume of water for this test shall be marked in increments of 50 cm³ to a capacity of 1000 cm³. The markings shall be accurate to within ± 10 cm³ at volumes greater than 500 cm³.

5.3 *Stopwatch or suitable timing device*.