



Designation: D7466 – 08

Standard Test Method for Measuring the Asperity Height of Textured Geomembrane¹

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1. Scope

1.1 This test method covers a procedure to measure the asperity height of textured geomembranes.

1.2 This test method does not provide for measurement of the spacing between the asperities nor of the complete profile of the textured surface.

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

D4439 Terminology for Geosynthetics

D5994 Test Method for Measuring Core Thickness of Textured Geomembrane

3. Terminology

3.1 *Definitions:*

3.1.1 *asperity, n*—the individual projections of polyethylene that extend above the core surface of a textured geomembrane resulting in the textured surface profile.

3.1.2 *core thickness, n*—the average thickness of a textured geomembrane as measured using Test Method D5994.

3.1.3 *geomembrane, n*—an essentially impermeable geosynthetic composed of one or more synthetic sheets. D4439

3.1.4 *thickness gage contact point, n*—the tip of a thickness gage which contacts the base sheet of the geomembrane surface.

3.1.5 *setting block, n*—the component part of a depth gage that rests on top of the asperities.

3.1.6 *thickness, n*—the perpendicular distance between one surface and its opposite.

3.2 For definitions of other terms used in this test method, refer to Terminology D4439.

¹ This test method is under the jurisdiction of ASTM Committee D35 on Geosynthetics and is the direct responsibility of Subcommittee D35.10 on Geomembranes.

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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.

4. Summary of Test Method

4.1 The asperity height of a textured geomembrane is measured with a depth gage, the setting block of which rests on the top of the asperities while the contact point extends to the sheet's core surface.

4.2 The asperity height of a textured geomembrane is calculated as the average value of ten (10) individual measurements taken across the roll width of the sample under investigation.

5. Significance and Use

5.1 The asperity height is an index property used to quantify one of the physical attributes related to the surface roughness of textured geomembranes.

5.2 This test method is applicable to all currently available textured geomembranes that are deployed as manufactured geomembrane sheets.

6. Apparatus

6.1 *Depth Gage*—The depth gage shall consist of three components that conform the requirements of this section; a dial indicator, a setting block and a contact point with extension.

6.1.1 *Dial Indicator*—capable of measuring to depth of at least 2.5 mm (0.10 in.) with an accuracy of ± 0.025 mm (0.001 in.).

6.1.2 *Setting Block*—the setting block shall have a base dimension of 50 mm to 63.5 mm long x 20 mm to 12.7 mm wide (2.0 in. to 2.5 in. long x 0.75 in. to 0.50 in. wide) and a height of 15 mm (0.60 in.).

6.1.3 *Contact Point with Extension*—The contact point is 1.3 mm (0.051 in.) in diameter with the tip tapered to a point. An extension of approximately 17 mm (0.66 in.) is required to achieve the necessary travel beyond the base surface of the setting block. The contact point should protrude at least 10 mm below the setting block when not in use in order to ensure that a competent “zero” setting is achieved. See Fig. 1, Fig. 2, and Fig. 3.

6.1.4 The mass of the depth gage fully assembled with the dial indicator, setting block, contact point with extension should not exceed 300 grams.

NOTE 1—Depth gages of the type described above are manufactured by Chicago Dial Indicator, Inc., B.C. Ames Company and Federal Instruments.