Designation: ~~D5385/D5385M – 93 (Reapproved 2014)$^{\varepsilon 1}$~~ D5385/D5385M – 20

Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes[1]

This standard is issued under the fixed designation D5385/D5385M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

~~ε^1 NOTE—Units information was editorially corrected in May 2014.~~

1. Scope

1.1 This test method measures the hydrostatic resistance of a waterproofing membrane under controlled laboratory conditions. This test method is not suitable for systems that rely on confinement of the seams by the backfill since backfill is not part of this test method.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in ~~non-conformance~~nonconformance with the 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~~ safety, health, and ~~health~~environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Terminology

2.1 *Definitions:*

2.1.1 *post-formed crack*—for the purposes of this test method, one that forms and widens behind the waterproofing membrane after it has been applied and cured.

3. Significance and Use

3.1 This test method tests the hydrostatic resistance of a waterproofing membrane and can be used to compare the hydrostatic resistance of waterproofing membranes.

3.2 No correlation has been established between the performance in this test method and that in the field.

[1] This test method is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.22 on Waterproofing and Dampproofing Systems.

Current edition approved ~~May 1, 2014~~Oct. 1, 2020. Published ~~May 2014~~October 2020. Originally approved in 1993. Last previous edition approved in ~~2006~~2014 as ~~D5385 – 93 (2006).~~D5385/D5385M – 93 (2014)$^{\varepsilon 1}$. DOI: ~~10.1520/D5385_D5385M-93R14E01.~~10.1520/D5385_D5385M-20.

4. Apparatus

4.1 *Hydrostatic Testing Equipment,* including a chamber (Fig. 1), ~~and~~ a clamping bracket (Fig. 2), and the gasket and fasteners to form the completed assembly (Fig. 3).

4.2 *Conditioning Room,* with ~~forced air circulation to maintain a temperature of 2 to 7°C [35 to 45°F] for testing sheet systems, 18 to 24°C [65 to 75°F] for liquid-applied systems, and large enough to condition, prepare, and test samples.~~forced-air circulation, large enough to condition, prepare, and test samples while maintaining temperature within a maximum variation of ±2 °C [±4 °F] from the test temperature.

4.3 *Source of Compressed Air,* with pressure up to 690 kPa [100 psi] and with an air pressure controller to regulate the air in 103-kPa [15-psi] increments.

4.4 *Cut Off Saw,* equipped with a diamond or masonry blade, to prepare precast concrete blocks for testing substrates.

~~4.5 *Clock*—Either a common time piece or a 1-h interval timer.~~

4.5 *Silicone Vacuum Grease.*

4.6 ~~*Precast Concrete*~~ *Precast Concrete Patio Blocks,* ~~125 lb/ft~~2000 kg/m^3 [125 lb/ft^3] minimum density, ~~2100 psi~~ 14.5 MPa [2100 psi] minimum compressive strength, smooth surfaced, 191 ± 12 by 394 ~~by 51 mm~~ ± 12 by 57 ± 6 mm [7½ ± ½ by 15½ ± ½ by 2¼ ± ¼ in.].

5. Test Substrate Preparation

5.1 Cut ~~an approximately 3.2-mm~~ a kerf approximately 3.2 mm [⅛ ~~in.~~] ~~wide kerf 44 mm~~ in.] wide and 44 mm [1¾ in.] deep lengthwise down the center of a ~~191 by 394 by 51-mm [7~~precast concrete patio block described in ~~½~~ 4.6 ~~by 15. ½ by 2-in.] concrete block.~~

5.2 Cut a kerf in at least three blocks for each ~~system~~membrane to be tested, and condition the blocks at the test temperature of 23 ± 2 °C [73 ± 4 °F] for at least 24 h. Testing at alternate temperatures is permitted. Any deviation in test temperature must be indicated in the report.

5.3 Condition all other materials necessary for the system to be tested at the test temperature for at least 4 h.

6. Sample Preparation

6.1 Prime, surface condition, or otherwise prepare the surface of the block ~~to~~ (opposite to the kerf) to receive the membrane, as recommended by the manufacturer of the system. Permit the primer to dry or cure for the minimum time recommended by the manufacturer.

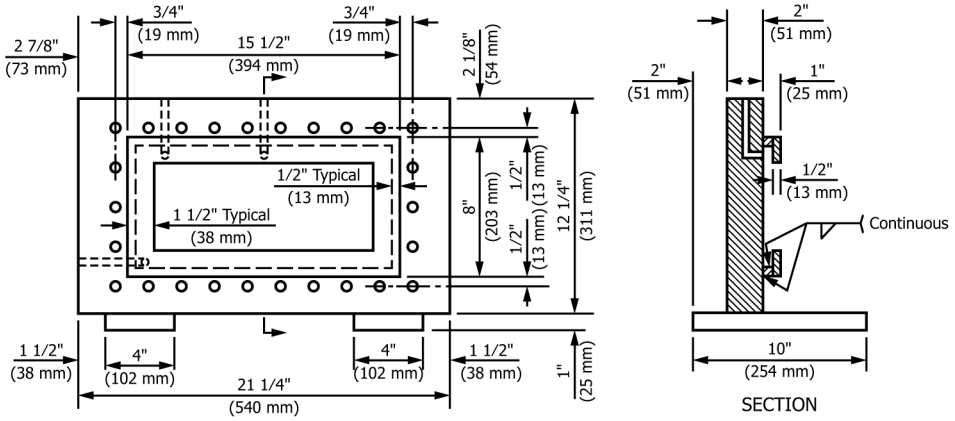

FIG. 1 Chamber

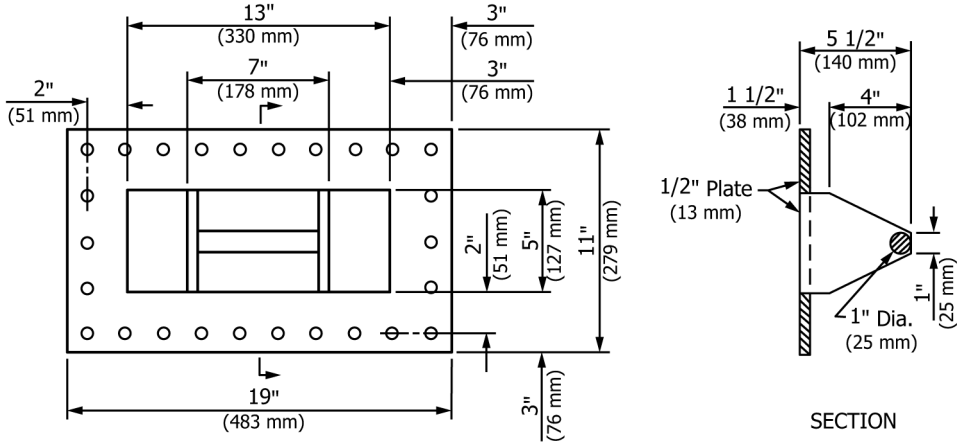

FIG. 2 Clamping Bracket

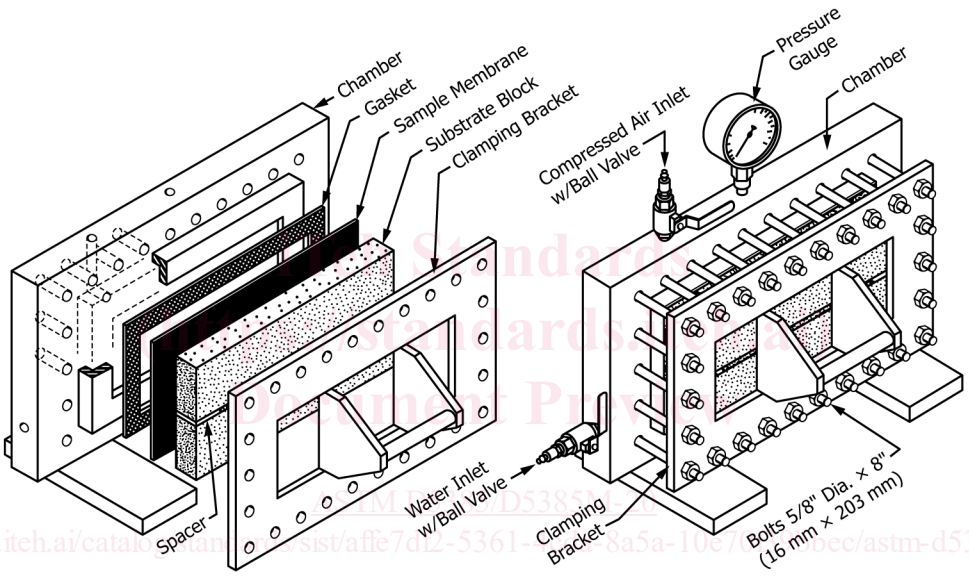

FIG. 3 Completed Assembly

6.2 For ~~single-ply sheet samples,~~ sheet-applied membranes, cut and install the membrane over the prepared block, with a lap of the width recommended by the manufacturer perpendicular to and in the center of the kerf in the other side of the blocks. The edges of the lapped sheets ~~should~~shall extend beyond the block edges ~~approximately~~ for a minimum of 6 mm [¼ in.]. ~~Roll membranes intended for pressure-sensitive application with four passes of a 12.7-kg [28-lb], 152-mm [6-in.] wide steel roller.~~

6.3 Roll membranes intended for pressure-sensitive application with four passes of a roller of a mass of 12.7 ± 1 kg [28 ± 2 lb] and a width of 152 ± 6 mm [6 ± ¼ in.].

NOTE 1—The use of a roller may not be representative of the field installation of pressure-sensitive membranes, but it ensures a consistent specimen preparation procedure.

6.4 ~~Follow the manufacturer's instructions for all membranes. Spacers may be used~~For liquid-applied membranes, spacers shall be permitted to aid in obtaining the thickness required by the manufacturer.

6.5 Allow all samples to cure or condition at the test temperature of 23 ± 2 °C [73 ± 4 °F] for at least 24 h or for the minimum time recommended by the manufacturer, whichever is greater.