



Designation: D5385/D5385M – 20

Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes¹

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.

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 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, health, and 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.

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 Oct. 1, 2020. Published October 2020. Originally approved in 1993. Last previous edition approved in 2014 as D5385/D5385M – 20 (2014)¹. DOI: 10.1520/D5385_D5385M-20.

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

4. Apparatus

4.1 *Hydrostatic Testing Equipment*, including a chamber (Fig. 1), 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, 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 *Silicone Vacuum Grease*.

4.6 *Precast Concrete Patio Blocks*, 2000 kg/m³ [125 lb/ft³] minimum density, 14.5 MPa [2100 psi] minimum compressive strength, smooth surfaced, 191 \pm 12 by 394 \pm 12 by 57 \pm 6 mm [7½ \pm ½ by 15½ \pm ½ by 2¼ \pm ¼ in.].

5. Test Substrate Preparation

5.1 Cut a kerf approximately 3.2 mm [¼ in.] wide and 44 mm [1¾ in.] deep lengthwise down the center of a precast concrete patio block described in 4.6.

5.2 Cut a kerf in at least three blocks for each membrane to be tested, and condition the blocks at the test temperature of 23 \pm 2 °C [73 \pm 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 (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.