



Designation: D6382/D6382M – 99 (Reapproved 2022)

Standard Practice for Dynamic Mechanical Analysis and Thermogravimetry of Roofing and Waterproofing Membrane Material¹

This standard is issued under the fixed designation D6382/D6382M; 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 practice covers test procedures and conditions that are applicable when Test Methods [D5023](#), [D5024](#), [D5026](#), [D5279](#), and [D5418](#) are used for conducting dynamic mechanical analysis of roofing and waterproofing membrane material in three-point bending, compression, tension, torsion, and dual cantilever modes, respectively. The specific method is selected by the analyst and depends on the membrane material and the operating principles of the individual instrument used for the analysis.

1.2 This practice covers test procedures and conditions that are applicable when Test Method [E1131](#) is used for conducting thermogravimetry of roofing and waterproofing membrane material.

1.3 Membrane materials include bituminous built-up roofing, polymer-modified bitumen sheets, vulcanized rubbers, non-vulcanized polymeric sheets, and thermoplastics. The membrane materials can be either nonreinforced or reinforced.

1.4 This practice is applicable to new membrane materials received from the supplier, those exposed artificially in the laboratory or outdoors on an exposure rack, and those sampled from field installations.

1.5 This practice contains notes which are explanatory and are not part of the mandatory requirements of this practice.

1.6 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.

1.7 *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.

1.8 *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. Referenced Documents

2.1 *ASTM Standards:*²

[D1079](#) Terminology Relating to Roofing and Waterproofing
[D4092](#) Terminology for Plastics: Dynamic Mechanical Properties

[D5023](#) Test Method for Plastics: Dynamic Mechanical Properties: In Flexure (Three-Point Bending)

[D5024](#) Test Method for Plastics: Dynamic Mechanical Properties: In Compression

[D5026](#) Test Method for Plastics: Dynamic Mechanical Properties: In Tension

[D5279](#) Test Method for Plastics: Dynamic Mechanical Properties: In Torsion

[D5418](#) Test Method for Plastics: Dynamic Mechanical Properties: In Flexure (Dual Cantilever Beam)

[E473](#) Terminology Relating to Thermal Analysis and Rheology

[E1131](#) Test Method for Compositional Analysis by Thermogravimetry

[E1142](#) Terminology Relating to Thermophysical Properties

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminologies [E473](#), [D1079](#), [D4092](#), and [E1142](#).

4. Summary of Practice

4.1 In conducting a dynamic mechanical analysis, the roofing or waterproofing membrane specimen is placed in a test

¹ This practice is under the jurisdiction of ASTM Committee [D08](#) on Roofing and Waterproofing and is the direct responsibility of Subcommittee [D08.20](#) on Roofing Membrane Systems.

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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.