



Standard Guide for Limiting Water-Induced Damage to Buildings¹

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^{ε1} NOTE—Units statement was inserted in Section 1.5, units information was corrected, and editorial changes were made throughout in May 2014.

1. Scope

1.1 This guide covers building design, construction, commissioning, operation, and maintenance.

1.2 This guide addresses the need for systematic evaluation of factors that can result in moisture-induced damage to a building or its components. Although of great potential importance, serviceability issues which are often, but not necessarily, related to physical damage of the building or its components (for example, indoor air quality or electrical safety) are not directly addressed in this guide.

1.3 The emphasis of this guide is on low-rise buildings. Portions of this guide; in particular Sections 5, 6, and 7; may also be applicable to high-rise buildings.

1.4 This guide is not intended for direct use in codes and specifications. It does not attempt to prescribe acceptable limits of damage. Buildings intended for different uses may have different service life expectancies, and expected service lives of different components within a given building often differ. Furthermore, some building owners may be satisfied with substantially shorter service life expectancies of building components or of the entire building than other building owners. Lastly, the level of damage that renders a component unserviceable may vary with the type of component, the degree to which failure of the component is critical (for example, whether failure constitutes a life-safety hazard), and the judgment (that is, tolerance for damage) of the building owner. For the reasons stated in this paragraph, prescribing limits of damage would require listing many pages of exceptions and qualifiers and is beyond the scope of this guide.

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *This standard does not purport to address the safety concerns 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

- C168 Terminology Relating to Thermal Insulation
- C717 Terminology of Building Seals and Sealants
- C755 Practice for Selection of Water Vapor Retarders for Thermal Insulation
- C1193 Guide for Use of Joint Sealants
- D1079 Terminology Relating to Roofing and Waterproofing
- E331 Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
- E547 Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference
- E631 Terminology of Building Constructions
- E632 Practice for Developing Accelerated Tests to Aid Prediction of the Service Life of Building Components and Materials
- E1105 Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference
- E1643 Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs
- E1677 Specification for Air Barrier (AB) Material or System for Low-Rise Framed Building Walls
- E1745 Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
- E2112 Practice for Installation of Exterior Windows, Doors and Skylights

¹ This guide is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.41 on Air Leakage and Ventilation Performance

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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.