



Designation: D6294/D6294M – 13 (Reapproved 2024)

Standard Test Method for Corrosion Resistance of Ferrous Metal Fastener Assemblies Used in Roofing and Waterproofing¹

This standard is issued under the fixed designation D6294/D6294M; 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 covers components of ferrous metal fastener assemblies, excluding those of stainless steel, such as fasteners, stress plates, and batten bars used in low-slope roofing and waterproofing, to a sulfurous acid environment. This test method evaluates relative corrosion resistance of the components by determination of percentage of rust or white rust.

1.2 The components may or may not have a surface treatment applied.

1.3 A limiting factor is the subjectiveness when determining actual percentage of rust or white rust corrosion.

1.4 Other performance characteristics of ferrous metal components such as abrasion resistance of barrier coatings are not evaluated in this method.

1.5 This test method was developed based on Practice G87.

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.*

¹ This test method 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. Referenced Documents

2.1 *ASTM Standards:*²

D16 Terminology for Paint, Related Coatings, Materials, and Applications

D1079 Terminology Relating to Roofing and Waterproofing

G15 Terminology Relating to Corrosion and Corrosion Testing (Withdrawn 2010)³

G87 Practice for Conducting Moist SO₂ Tests

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions of terms used in this test method, see Terminologies D1079, G15, and D16.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *barrier*—any material limiting passage through itself of solids, liquids, semi-solids, gases, vapors, or forms of energy such as ultraviolet light.

3.2.2 *surface treatment*—a process by which the surface of the ferrous metal component is treated with a barrier coating to inhibit corrosion. Examples of barrier coatings for ferrous metal components include galvanization, zinc plating with or without yellow or clear chromate sealer, cadmium, mechanical zinc plating, and organic or inorganic polymers.

4. Summary of Test Method

4.1 This test method exposes ferrous metal specimens to 15 or 30 (24) h cycles consisting of the following:

4.1.1 Eight (8) h exposure to the sulfur dioxide atmosphere in a closed chamber.

4.1.2 An intermediate step of rinsing with distilled water, and

4.1.3 Sixteen (16) h of drying under vented conditions at controlled temperature and humidity.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.