



Designation: D 1654 – 92 (Reapproved 2000)

Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments¹

This standard is issued under the fixed designation D 1654; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This test method covers the treatment of previously painted or coated specimens for accelerated and atmospheric exposure tests and their subsequent evaluation in respect to corrosion, blistering associated with corrosion, loss of adhesion at a scribe mark, or other film failure.

1.2 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- B 117 Practice for Operating Salt Spray (Fog) Testing Apparatus²
- D 610 Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces³
- D 714 Test Method for Evaluating Degree of Blistering of Paints⁴
- D 870 Practice for Testing Water Resistance of Coatings Using Water Immersion⁴
- D 1014 Practice for Conducting Exterior Exposure Tests of Paints on Steel⁴
- D 1735 Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus⁴
- D 2247 Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity⁴
- D 2803 Guide for Filiform Corrosion Resistance of Organic Coatings on Metal⁴
- D 4141 Practice for Conducting Accelerated Outdoor Expo-

sure Tests of Coatings⁴

D 4585 Practice for Testing Water Resistance of Coatings Using Controlled Condensation⁴

D 4587 Practice for Conducting Tests on Paint and Related Coatings and Materials Using a Fluorescent UV-Condensation Light- and Water-Exposure Apparatus⁴

G 23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials⁵

G 26 Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials⁵

G 85 Practice for Modified Salt Spray (Fog) Testing⁶

G 87 Practice for Conducting Moist SO₂ Tests⁶

2.2 ANSI Standard:

B94.50 Single-Point Cutting Tools, Basic Nomenclature and Definitions for⁷

3. Significance and Use

3.1 This method provides a means of evaluating and comparing basic corrosion performance of the substrate, pretreatment, or coating system, or combination thereof, after exposure to corrosive environments.

4. Apparatus

4.1 *Scribing Tool*—A straight-shank tungsten carbide tip, lathe cutting tool (ANSI B94.50, Style E) or carbide-tipped pencil-type tool is recommended. Any other type of scribing instrument such as a scalpel, razor blade, knife, or other sharp pointed tool is unacceptable unless agreed upon between the producer and the user.

4.2 *Straightedge*—Any straightedge of sufficient length and rigidity to guide the scribing tool in a straight line.

¹ This method is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.25 on Evaluation of Weathering Effects.

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² *Annual Book of ASTM Standards*, Vol 03.02.

³ *Annual Book of ASTM Standards*, Vol 06.02.

⁴ *Annual Book of ASTM Standards*, Vol 06.01.

⁵ Discontinued; G 23 replaced by G 152 and G 153; G 26 replaced by G 155. See 2000 *Annual Book of ASTM Standards*, Vol 14.04.

⁶ *Annual Book of ASTM Standards*, Vol 03.02.

⁷ Available from American National Standards Institute, 13th Floor, 11 W. 42nd St., New York, NY 10036.