



Designation: D6675 – 01 (Reapproved2011)

# Standard Practice for Salt-Accelerated Outdoor Cosmetic Corrosion Testing of Organic Coatings on Automotive Sheet Steel<sup>1</sup>

This standard is issued under the fixed designation D6675; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## INTRODUCTION

Corrosion of painted sheet steel of auto bodies is classified according to the initial location and direction of the corrosive attack. When the corrosion starts on the visible exterior surface, mostly at nicks and scratches in the paint, it is called “cosmetic” or “outside in” corrosion. Corrosion initiated at an interior surface or within a closed or semi-closed part is called “perforation” or “inside out” corrosion.

## 1. Scope

1.1 This practice is designed to assist procedures to be followed when conducting outdoor exposures to evaluate cosmetic corrosion that might occur in steel panels covered with an organic coating that has been damaged. The outdoor exposures described are based on Practice G7 and include periodic wetting of the test specimens with a salt solution.

1.2 The methods of preparing test specimens and the particular exposure requirements of materials are beyond the scope of this practice.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

- B117 Practice for Operating Salt Spray (Fog) Apparatus
- D609 Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and

## Related Coating Products

- D610 Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
- D823 Practices for Producing Films of Uniform Thickness of Paint, Varnish, and Related Products on Test Panels
- D1014 Practice for Conducting Exterior Exposure Tests of Paints and Coatings on Metal Substrates
- D1654 Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
- D1730 Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting
- D2201 Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products
- D3170 Test Method for Chipping Resistance of Coatings
- G7 Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials
- G50 Practice for Conducting Atmospheric Corrosion Tests on Metals
- G117 Guide for Calculating and Reporting Measures of Precision Using Data from Interlaboratory Wear or Erosion Tests

## 3. Significance and Use

3.1 Tests of the type described in this practice may be used to evaluate the corrosion resistance of organic coatings on metal products exposed to highly salty environments, such as areas subjected to deicing salts or coastal areas. Exposure conditions are complex and changeable. Important factors include climate, time of year, presence of pollution, and so forth. Generally it is difficult, if not impossible, to define or measure precisely all the factors that influence degradation. Repeated exposure testing during different seasons and over a period of at least two years is required to obtain results representative of any given location.

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.27 on Accelerated Testing.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.