



Designation: D 6675 – 01

## 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 D 6675; 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 G 7 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 *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:

- B 117 Practice for Operating Salt Spray (Fog) Apparatus<sup>2</sup>
- D 609 Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and Related Coating Products<sup>3</sup>
- D 610 Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces<sup>4</sup>
- D 823 Practices for Producing Films of Uniform Thickness of Paint, Varnish, and Related Products on Test Panels<sup>3</sup>

D 1014 Practices for Conducting Exterior Exposure Tests of Paints on Steel<sup>3</sup>

D 1654 Practices for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments<sup>3</sup>

D 1730 Practices for Preparation of Aluminum and Aluminum Alloy Surfaces for Painting.<sup>5</sup>

D 2201 Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products<sup>3</sup>

D 3170 Test Method for Chip Resistance of Coatings<sup>4</sup>

G 7 Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials<sup>6</sup>

G 50 Practice for Conducting Atmospheric Corrosion Tests on Metals<sup>7</sup>

G 117 Guide for Calculating and Reporting Measures of Precision Using Data from Interlaboratory Wear or Erosion Tests<sup>7</sup>

### 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> *Annual Book of ASTM Standards*, Vol 03.02.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 06.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 06.02.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 02.05.

<sup>6</sup> *Annual Book of ASTM Standards*, Vol 14.04.

<sup>7</sup> *Annual Book of ASTM Standards*, Vol 03.02.