



Standard Practice for Modified Salt Spray (Fog) Testing¹

This standard is issued under the fixed designation G 85; 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 (€) 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 NOTE—Editorial changes were made in the Appendix for clarity August 2003.

1. Scope

1.1 This practice sets forth conditions for five modifications in salt spray (fog) testing for specification purposes. These are in chronological order of their development:

1.1.1 Annex A1, acetic acid-salt spray test, continuous.

1.1.2 Annex A2, cyclic acidified salt spray test.

1.1.3 Annex A3, seawater acidified test, cyclic (SWAAT).

1.1.4 Annex A4, SO₂ salt spray test, cyclic.

1.1.5 Annex A5, dilute electrolyte cyclic fog dry test.

1.2 This practice does not prescribe the type of modification, test specimen or exposure periods to be used for a specific product, nor the interpretation to be given to the results.

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 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) Apparatus²

D 609 Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and Related Coating Products³

D 1141 Practice for the Preparation of Substitute Ocean Water⁴

D 1193 Specification for Reagent Water⁵

D 1654 Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments³

E 70 Test Method for pH of Aqueous Solutions with the Glass Electrode⁶

3. Significance and Use

3.1 This practice is applicable to ferrous and nonferrous metals; also organic and inorganic coatings. The variations described herein are useful when a different or more corrosive environment than the salt fog described in Practice B 117 is desired.

4. Apparatus

4.1 Cabinet:

4.1.1 The apparatus required for salt spray (fog) testing consists of a fog chamber, a salt solution reservoir, a supply of suitably conditioned compressed air, one or more atomizing nozzles, specimen supports, provision for heating the chamber, and necessary means of control. The size and detailed construction of the cabinet are optional, provided the conditions obtained meet the requirements of this practice. The material of construction shall be such that it will not affect the corrosiveness of the fog. Suitable apparatus that may be used to obtain these conditions is described in Appendix A1 of Practice B 117 with necessary modifications described in each annex.

4.1.2 Design the cabinet so that drops of solution that accumulate on the ceiling or cover of the chamber do not fall on the specimens being tested. Do not return drops of solution that fall from the specimens to the solution reservoir for respraying.

4.1.3 Equip the cabinet with one or more timing devices to provide for intermittent spraying or periodic introduction of a gas, or both.

4.2 Air Supply:

4.2.1 Make sure the compressed air supply to the nozzle or nozzles for atomizing the salt solution is free of oil and dirt and maintain the air supply between 69 and 172 kPa (10 and 25 psi).

NOTE 1—The air supply may be freed of oil and dirt by passing it through a water scrubber or at least 610 mm (2 ft) of suitable cleaning material such as asbestos, sheep's wool, or activated alumina.

4.2.2 Temperature in the saturator tower (bubble tower) varies depending on the test method used.

4.3 Conditions in Salt-Spray Chamber:

¹ This practice is under the jurisdiction of ASTM Committee G01 on Corrosion of Metals and is the direct responsibility of Subcommittee G01.05 on Laboratory Corrosion Tests.

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

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ *Annual Book of ASTM Standards*, Vol 11.02.

⁵ *Annual Book of ASTM Standards*, Vol 11.01.

⁶ *Annual Book of ASTM Standards*, Vol 15.05.