



Standard Practice for Establishing Conformance to the Minimum Expected Corrosion Characteristics of Metallic, Painted-Metallic, and Nonmetallic-Coated Steel Sheet Intended for Use as Cold Formed Framing Members¹

This standard is issued under the fixed designation A 1004/A 1004M; 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 practice covers procedures for establishing the acceptability of metallic-coated steel sheet, painted metallic-coated steel sheet and painted nonmetallic-coated steel sheet for use as cold formed framing members.

1.2 This practice shall be used to assess the corrosion resistance of different coatings on steel sheet in a laboratory test. It shall not be used as an application performance standard for the cold formed framing members.

1.3 The practice shall be used to evaluate coatings under consideration for addition to Specification A 1003/A 1003M.

1.4 The values stated in either inch-pound or SI units are to be regarded separately as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other.

1.5 The text of this standard references notes and footnotes that provide explanatory material. These notes and footnotes, excluding those in tables and figures, shall not be considered as requirements of the standard.

2. Referenced Documents

2.1 ASTM Standards:

A 902 Terminology Relating to Metallic Coated Steel Products²

A 1003/A 1003M Specification for Steel Sheet, Carbon, Metallic and Non-Metallic Coated for Cold Formed Framing Members²

B 117 Practice for Operating Salt Spray (Fog) Testing Apparatus³

D 714 Test Method for Evaluating Degree of Blistering of Paints⁴

D 1654 Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments⁴

¹ This practice is under the jurisdiction of Committee A-5 on Metallic-Coated Iron and Steel Products and is the direct responsibility of Subcommittee A05.11 on Sheet Specifications.

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² Annual Book of ASTM Standards, Vol 01.06.

³ Annual Book of ASTM Standards, Vol 03.02.

⁴ Annual Book of ASTM Standards, Vol 06.01.

3. Terminology

3.1 For definitions of terms related to metallic-coated steel products, see Terminology A 902.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *red rust, n*—the oxide formed when iron combines chemically with oxygen.

3.2.2 *red rust stains, n*—the discoloration of the surface of a coated steel sheet caused by the bleeding of red rust from adjacent areas.

4. Summary of Practice

4.1 This practice involves exposing flat and formed samples of metallic-coated, painted metallic-coated and painted nonmetallic-coated steel sheet to a controlled saline environment using Practice B 117 and measuring the extent of corrosion after a predetermined time of exposure in the accelerated test.

4.2 The samples exposed to the saline environment are prepared according to Test Method D 1654.

4.3 The maximum acceptable amount of corrosion allowed for each material is described in Specification A 1003/A 1003M.

5. Significance and Use

5.1 This practice is intended solely for the evaluation of metallic-coated, painted metallic-coated, and painted nonmetallic-coated materials used for the manufacture of cold formed framing members.

5.2 Correlation and extrapolation of corrosion performance based on exposure to the test environment provided by Practice B 117 are not always predictable. Correlation and extrapolation should be considered only in cases where appropriate corroborating long-term atmospheric exposures have been conducted.

5.3 This practice assesses whether coated materials not currently in Specification A 1003/A 1003M satisfy the required minimum corrosion characteristics.

6. Procedure

6.1 General Requirements:

6.1.1 Select test panels from routine production material ensuring that the samples are representative of the material.

