Designation: D609 – 00 (Reapproved 2006)

Standard Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and Related Coating Products[1]

This standard is issued under the fixed designation D609; 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 practice covers various types of cold rolled steel panels and the procedures to be followed in their preparation for testing paint, varnish, lacquer, conversion coatings, and related products.

1.2 The procedures are as follows:

Procedure A—Conversion coatings (phosphates, chromates, etc.)
Procedure B—Vapor degreasing
Procedure C—Solvent brushing
Procedure D—Solvent wiping
Procedure E—Alkaline cleaning

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 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:*[2]

A109/A109M Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled

A366/A366M Specification for Commercial Steel (CS) Sheet, Carbon, (0.15 Maximum Percent) Cold-Rolled (Withdrawn 2000)[3]

D235 Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)

3. Summary of Practice

3.1 Several procedures for preparation and cleaning of steel test panels are described as shown in Table 1.

4. Significance and Use

4.1 The procedures described in this practice are designed to provide steel panels with a uniform and reproducible surface for testing of paint, varnish, lacquer, conversion coatings, and related products.

5. Test Panels

5.1 Prepare the test panels from rust and stain-free cold-rolled steel as described in 5.2, 5.3, 5.4, and Table 1. The panels shall be made to a size and thickness as agreed upon between the purchaser and seller. Edges shall be smooth and corners rounded. The steel may have been coated at the mill with a suitable rust preventive compound for protection during shipment and storage. However, long-term steel storage with oil on the surface may cause an oil/steel reaction known as oil stain. Since such stains inhibit chemical bonding, the steel selected for panels shall be free of oil stain and other visible processing variation caused by pickling or annealing.

5.2 *Type 1* steel has a matte finish produced by steel mill rolls that have been grit blasted. This finish is typical of cold-rolled steel used for painted surfaces on automobiles, appliances, etc. Such surfaces can be partially characterized by measuring the average peak-to-valley distance and the number of peaks per unit area. However, conversion coating and paint performance on such surfaces may vary because of different oxidation, annealing procedures, and surface conditions.

[1] 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.

Current edition approved Nov. 1, 2006. Published November 2006. Originally approved in 1941. Last previous edition approved in 2000 as D609 – 00. DOI: 10.1520/D0609-00R06.

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

[3] The last approved version of this historical standard is referenced on www.astm.org.