



Designation: D 2201 – 99

Standard Practice for Preparation of Zinc-Coated and Zinc-Alloy-Coated Steel Panels for Testing Paint and Related Coating Products¹

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1. Scope

1.1 This practice covers the preparation of zinc-coated and zinc-alloy-coated sheet steel panels to be used for testing paint, varnish, lacquer, conversion coatings, and related products. It covers sheet steel coated with hot dipped galvanized, one-side galvanized, electrogalvanized, zinc-iron alloy coatings (such as galvaneal), and zinc-5 % aluminum alloy coatings. It does not cover steel panels coated with 55 % aluminum-45 % zinc alloy, because these behave more like aluminum than zinc.

1.2 *This standard does not purport to address all of the safety problems, 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:

A 525 Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process²

A 591/A591M Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Mass Applications²

A 875/A875M Specification for Steel Sheet, Zinc-5 % Aluminum Alloy-Coated by the Hot-Dip Process²

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

D 2092 Guide for Preparation of Zinc-Coated (Galvanized) Steel Surfaces for Painting⁴

2.2 ISO Standards:

ISO 3575 Continuous hot-dip zinc-coated carbon steel sheet of commercial, lock-forming and drawing qualities⁵

ISO 5002 Hot-rolled and cold-reduced electrolytic zinc-coated carbon steel sheet of commercial and drawing qualities⁵

3. Significance and Use

3.1 The procedures described in this practice are designed to provide uniform zinc coated steel panels for testing of paint, varnish, lacquer, conversion coatings and related products.

3.2 The proper description of the zinc coating on the substrate is an important part of this practice. Seemingly slight differences in zinc coating can produce substantial differences in coating performance.

4. Metal Substrate

4.1 The test panels shall be completely free of any visible signs of storage stain or white rust (zinc corrosion). All corners and edges shall be smooth and uniformly rounded.

4.2 The type of zinc coating, zinc thickness, metal thickness, and panel size shall be agreed upon between the purchaser and seller.

4.3 Zinc coated steel may be shipped from the mills uncoiled. However, zinc coated steel that has been oiled with a nonreactive rust preventative oil shall be acceptable under this specification.

4.4 Zinc coated steel may be shipped from the mill with a phosphate pretreatment for improved paint bonding.

NOTE 1—**Caution:** Alkaline cleaning such pre-phosphated metal will often remove the phosphate coating.

4.5 Elimination of Passivating Treatments:

4.5.1 The test panels shall be free of passivating treatments (Note 2), because such treatments interfere with paint bonding.

NOTE 2—Passivating treatments are applied at the mill to prevent oxidation of the zinc (white rust) during storage. Because they bond tightly to the zinc, they also prevent paints and other coatings from bonding to the zinc. Zinc coated material stocked in commercial warehouses almost always has a passivating treatment. To obtain nonpassivated zinc coated steel, it's generally necessary to special order steel directly from a steel mill, or to buy panels from manufacturers of standard test panels. See Appendix X2 of Practices D 2092 for further information on identifying the presence of passivating treatments.

¹ This test method is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.27 on Accelerated Testing.

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² *Annual Book of ASTM Standards*, Vol 01.06.

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

⁴ *Annual Book of ASTM Standards*, Vol 06.02.

⁵ Available from ANSI, 11 W. 42nd St., 13th Floor, New York, NY 10036.