



Designation: D7868 – 21

Standard Practice for Determining the Dry Fall (Fog) Properties of Protective Coatings¹

This standard is issued under the fixed designation D7868; 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 a procedure for qualitatively evaluating the dry fall properties of coatings. The establishment of the test environment and the evaluation procedures are described.

1.2 This practice uses panels containing an automotive finish since these types of surfaces are often the primary concern relating to overspray damage. Panels coated with other systems may be used as collection surfaces when they are deemed to be more representative.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D610 Practice for Evaluating Degree of Rusting on Painted Steel Surfaces

D5402 Practice for Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs

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 D01.46 on Industrial Protective Coatings.

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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. Terminology

3.1 *Definitions:*

3.1.1 *dry fall/fog coating, n*—an interior or exterior coating specially formulated so that the fine particles of overspray dry to a dust or powder during a free fall of a certain distance at specific temperature and humidity ranges, and will not adhere to surfaces on which the overspray is subsequently deposited.

4. Summary of Practice

4.1 A structural frame is erected and enclosed unless a dry fall/fog test chamber or laboratory space is pre-designated. Spray targets are placed at the top, inside the enclosure. Four steel panels coated with an automotive basecoat/clear coat system are placed on the enclosure floor to collect the dry fall. (Panels coated with other systems or uncoated panels, or both, can be used when they are deemed to be more representative.) A duplicate panel set is maintained at the prevailing air temperature, while the other duplicate panel set is heated in oven and placed inside the enclosure immediately prior to atomizing the coating. The coating is atomized against the targets at each of two distances and the panels are removed for evaluation. Two of the coated steel panels remain at laboratory ambient conditions, while the “pre-heated” panels are returned to a laboratory oven. The heated and ambient coated panels are cleaned and evaluated after 24-h for dry fall attachment.

5. Significance and Use

5.1 Attachment of overspray particles to vehicles and other surfaces not intended to be coated can result in property damage and insurance claims. Dry fall coatings are formulated such that overspray particles dry as they move through the air, and before they land on horizontal surfaces. These particles can then be brushed off, vacuumed or washed from the surfaces with no damage. This practice can be used to evaluate the dry fall properties of coatings prior to large scale use. The practice can also be used to evaluate whether the coating(s) possess the same dry fall properties when the fallout collects on surfaces with an elevated temperature.

6. Reagents

6.1 *Commercially available Car Washing Concentrate.*

6.2 *Mineral Spirits.*