



Standard Practice for Preparation of Test Panels for Accelerated and Outdoor Weathering of Bituminous Coatings¹

This standard is issued under the fixed designation D 1669; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This practice covers a procedure for the preparation of accelerated and outdoor weathering test panels of bituminous coatings. It is considered suitable for the preparation of film thicknesses in the range from 0.25 to 2.54 mm (0.010 to 0.100 in.).

1.2 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

1.3 The values stated in SI units are to be regarded as standard.

2. Referenced Documents

2.1 ASTM Standards:

- B 209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate²
- D 5 Test Method for Penetration of Bituminous Materials³
- E 1 Specification for ASTM Thermometers³

3. Summary of Practice

3.1 Heated bituminous material is poured onto a clean, heated, and masked aluminum panel. Care is taken to remove air bubbles. The bitumen is leveled in a press before solidifying, and the coated panel is then cooled, cleaned, and measured for uniform thickness.

4. Significance and Use

4.1 This practice for preparation of test panels greatly increases the likelihood of achieving reproducible results in subsequent testing.

5. Apparatus

5.1 *Panel*—A supporting metal panel on which the bituminous coating is applied. It shall meet the following requirements:

¹ This practice is under the jurisdiction of ASTM Committee D08 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.02 on Prepared Roofings, Shingles, and Siding Materials.

Current edition approved Aug. 10, 2001. Published November 2001. Originally published as D 1669 – 59 T. Last previous edition D 1669 – 89 (Reapproved 1994) ^{ϵ 1}.

² *Annual Book of ASTM Standards*, Vol 02.02.

³ *Annual Book of ASTM Standards*, Vol 04.03.

5.1.1 *Metal, Aluminum or Aluminum Alloy*, as described in Table 2 of Specification B 209 under Alloy 3003-H14.⁴

5.1.2 *Finish*—Mill finish and process cleaned.

5.1.3 *Dimensions*:

5.1.3.1 *Thickness*—0.64 to 1.90 mm (0.025 to 0.075 in.).

5.1.3.2 *Width and Length*—70 by 150 mm (2¾ by 5⅞ in.) or of a size that will allow a minimum bitumen film area of 51 by 127 mm (2 by 5 in.).

5.1.4 *Flatness*—The maximum deviation from a true flat surface for either length or width shall not exceed 0.0005 times the dimension. Flatness shall be measured on a true flat surface employing a curling gage equipped with a dial which reads in 0.025 mm (0.001 in.) and having a foot loading of approximately 100 g.⁵

5.1.5 *Edges*—The edges of the panels shall be free of burrs.

5.1.6 *Storage*—Panels shall be stored in a dry, well-ventilated place to prevent condensation and possible staining or corrosion.

5.2 *Press*—The press shall be capable of delivering a 4500-kg (10 000-lb) thrust and be equipped for using platens 152 by 152 mm (6 by 6 in.) or larger platens.⁶

5.3 *Platens*—The platens shall be 152 by 152 mm (6 by 6 in.) or larger in size and suitable for use with the press. (Platens can be purchased with the press.) It is preferable that both platens have thermostatically controlled units capable of heating them to temperatures up to 260°C (500°F).

5.4 *Metal Spacers*—The metal spacers shall be 13 mm (½ in.) wide and at least 152 mm (6 in.) long and of suitable thickness so that the proper thicknesses of bitumen films can be applied.⁷ To cover the range from 0.254 to 2.54 mm (0.010 to 0.100 in.), the following supply of metal spacers is adequate:

4–0.038 mm (0.0015 in.)

4–0.051 mm (0.002 in.)

⁴ Panels available from the following suppliers meet these requirements: The Q-Panel Company, 26200 First St., Cleveland OH 44145; Atlas Electric Devices Co., 4114 N. Ravenswood Ave., Chicago, IL 60613; Advanced Coating Technologies Inc., 273 Industrial Dr. (PO Box 401), Hillsdale MI 49242.

⁵ Model B-81, manufactured by Federal Products Corp., 1112 Eddy St., Providence, RI 02901, has been found satisfactory for this purpose.

⁶ A Laboratory Model Carver Press, manufactured by Fred S. Carver, Inc., 1 Chatham Rd., Summit, NJ 07901, having a working range from 0 to 9000 kg (0 to 20 000 lb) has been found satisfactory for this purpose.

⁷ Suitable spacers known as “shim” or “feeler” stock are available from U.S. Gasket & Shim Co., 2743 Second St. (P.O. Box 360 A), Cuyahoga Falls, OH 44222, and many machine shops.