



Designation: D2793 – 99 (Reapproved 2011)

# Standard Test Method for Block Resistance of Organic Coatings on Wood Panel Substrates<sup>1</sup>

This standard is issued under the fixed designation D2793; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method covers the determination of the block resistance of organic coatings on wood and wood-based panel substrates. Block resistance is the ability of a coating to resist sticking to another surface and to resist any change in appearance when it is pressed against that surface for a prolonged period of time.

1.2 General methods for determining block resistance are outlined in Sections 6 and 7. Variations inherent in user materials and procedures, however, may dictate adjustments to the general method to improve accuracy. Paragraphs 7.3 and 7.4 provide guidelines for tailoring the general procedure to a user's specific application. Paragraph 7.5 offers a rating methodology.

1.3 Test Method D2091 should be used for the determination of print resistance or pressure mottling of organic coatings, particularly lacquers, applied to wood-based case goods such as furniture.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 *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.*

## 2. Referenced Documents

- 2.1 *ASTM Standards*:<sup>2</sup>  
D2091 Test Method for Print Resistance of Lacquers

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.52 on Factory Coated Wood Products.

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<sup>2</sup> 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. Summary of Test Method

3.1 The coatings are prepared for testing in a manner duplicating production application and curing conditions as nearly as possible on the specified wood substrate. Then a stack of these painted substrates is formed and subjected to a specified pressure and temperature for a sufficient time to develop any sticking tendencies that exist. The pressure is released and the painted surfaces are examined for any signs of sticking or pressure mottling. If blocking (forming a block by panels sticking together) occurs, the material is unsatisfactory. If no sticking or damage to the film surface occurs, the material is satisfactory.

3.2 When the conditions of production finishing are established and known, the method of application, the substrate, film thickness, and cure of the film should duplicate these conditions as closely as possible. However, some acceleration of the test may be possible with more severe conditions.

## 4. Significance and Use

4.1 Coated wood panel products must be stacked face to face or face to back during warehousing, packaging, and transportation without the coated finish sticking (blocking) and becoming damaged. This test method describes a laboratory means of evaluating conditions of blocking using factors of pressure, heat, time and moisture.

4.2 Degrees of hardness or degrees of cure of organic coatings, or both, can be evaluated using a blocking test.

4.3 The rate of volatile loss (drying speed) of organic coatings can be evaluated using a blocking test.

4.4 The effectiveness of protective packaging materials (slip sheets) for organic coatings on wood substrates can be evaluated using a blocking test.

## 5. Apparatus

5.1 *Hydraulic Press* (preferably constant pressure), capable of maintaining the agreed upon stacking pressure.

5.2 *Rigid Platens*, at least 4 in. (100 mm) square, capable of being maintained at the desired test temperature.