



Designation: D3023 – 98 (Reapproved 2024)

Standard Practice for Determination of Resistance of Factory-Applied Coatings on Wood Products to Stains and Reagents¹

This standard is issued under the fixed designation D3023; 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 evaluation of clear factory-applied coating systems on wood substrates.

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

1.3 *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.*

1.4 *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

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

D333 Guide for Clear and Pigmented Lacquers

D2571 Guide for Testing Wood Furniture Lacquers (Withdrawn 2003)³

3. Significance and Use

3.1 When used in conjunction with Guide D333, this practice will provide a comprehensive evaluation of resistance to stains caused by chemical reagents and household chemicals.

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 D01.52 on Factory Coated Wood Products.

Current edition approved Feb. 1, 2024. Published February 2024. Originally approved in 1972. Last previous edition approved in 2017 as D3023 – 98 (2017). DOI: 10.1520/D3023-98R24.

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.

3.2 This practice applies only to coatings applied in sufficient quantity to form a continuous film. It is recommended that the dry film thickness of the coating under test be reported.

3.3 Results from stain tests conducted in accordance with this practice distinguish differences between coatings.

4. Reagents

4.1 *Code for Applicability of Reagents*—V = Vertical, any surface that may be vertical as on a dresser front. H = Horizontal, any surface that may be horizontal as on a table top. L = Laboratory, any surface that may be used for laboratory furniture (Section 9).

4.2 *Water:*

4.2.1 *Tap Water:* V, H, L

4.2.2 *Boiling Water* (test in accordance with the Boiling Water Resistance section of Guide D2571): H, L

4.3 *Alcohol:*

4.3.1 *Ethyl Alcohol* (test in accordance with the Alcohol Resistance section of Guide D2571): V, H, L

4.4 *Aliphatic:*

4.4.1 *Mineral Spirits:* L (Specification, Type III)

4.4.2 *Perchloroethylene:* V, H, L

4.5 *Ketone:*

4.5.1 *Methyl Ethyl Ketone:* L

4.6 *Acetate:*

4.6.1 *Amyl Acetate:* H, L

4.7 *Inorganic Acid:*

4.7.1 *Hydrochloric Acid (3 N)*—Dilute 258 mL of 12 N (36 %) HCl to 1 L: L

4.8 *Organic Acid:*

4.8.1 *Acetic Acid (3 N)*—Dilute 172 mL of 99 % acetic acid to 1 L: V, H, L

4.8.2 *Grape Juice* (unsweetened): V, H

4.8.3 *Lactic Acid (5 % solution):* V, H

4.9 *Bases:*

4.9.1 *Unscented Mild Soap* (saturated solution): V, H, L

4.9.2 *Potassium Tripolyphosphate* (saturated solution containing 0.5 % sodium *N*-methyl-*N*-oleyl laurate (Igepon T-73)): V, H, L