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.

Designation: D3209 – 93 (Reapproved 2023)

Standard Test Method for Freeze/Thaw Resistance of Polymer Floor Polishes[1]

This standard is issued under the fixed designation D3209; 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 test method covers the determination of the stability of polymer emulsion floor polishes when these are exposed to repeated cycles of freezing and thawing. Possible degradation of the emulsion is observed and possible reduction of initial gloss is measured.

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

1.3 *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]

D1455 Test Method for 60° Specular Gloss of Emulsion Floor Polish

3. Significance and Use

3.1 This test method is used to determine the effect of freezing on floor polishes. It may be used to predict the stability of a floor polish when exposed to freezing.

4. Apparatus

4.1 *Freezer,* adjusted to −7.8 °C to −6.7 °C (18 °F to 20 °F).

4.2 *Flint Glass Bottles,* three, 4 oz (125 mL) capacity.[3]

4.3 *Black Glass,* [4] standard, polished as described in Test Method D1455.

4.4 *60° Gloss Meter.*

4.5 *Polishes* to be tested.

5. Procedure

5.1 Determine the turbidity of each polish, visually or by any other suitable method.

5.2 Pour one coat of each polish to be tested on the black glass. Allow to dry in a vertical position at room temperature. Determine the initial gloss in accordance with Test Method D1455.

5.3 Place 100 mL of polish in each of three 125 mL (4 oz) flint glass bottles. Place the filled bottles side by side, horizontally, in the freezer on a rack, providing a minimum of 25 mm (1 in.) between the bottles and the freezer walls with the contact area between the bottles and the rack no greater than that required to support the bottles.

5.4 Allow the samples to remain in the freezer for 16 h, or a minimum of 8 h after becoming solid.

5.5 Remove all the samples of frozen polish and allow to thaw, undisturbed, at 18 °C to 24 °C (65 °F to 76 °F) for a period of 24 h.

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[1] This test method is under the jurisdiction of ASTM Committee D21 on Polishes and is the direct responsibility of Subcommittee D21.03 on Chemical and Physical Testing.

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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] The sole source of supply of the apparatus known to the committee at this time is Fisher Scientific, Catalog No. 02-883 BA. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,[1] which you may attend.

[4] The sole source of supply of the apparatus known to the committee at this time is Peril Stein Glass, 2543 Kensington Ave., Phila. PA 19125. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,[1] which you may attend.

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