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**Designation: D 4078 – 02**

## Standard Specification for Water Emulsion Floor Polish<sup>1</sup>

This standard is issued under the fixed designation D 4078; 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 specification covers floor polish intended for use on all nonwood floors and on sealed-wood floors.

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.*

### 2. Referenced Documents

2.1 *ASTM Standards:*

D 1290 Test Method for Sediment in Water-Emulsion Polishes by Centrifuge<sup>2</sup>

D 1455 Test Method for 60° Specular Gloss of Emulsion Floor Polish<sup>2</sup>

D 1791 Test Method for Accelerated Aging of Liquid Water-Emulsion Floor Polishes<sup>2</sup>

D 1792 Test Method for Long-Term Removability Properties of Emulsion Floor Polishes<sup>2</sup>

D 1793 Test Method for Water Spotting of Emulsion Floor Polishes<sup>2</sup>

D 2047 Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine<sup>2</sup>

D 2048 Test Method for Powdering of Floor Polish Films<sup>2</sup>

D 2834 Test Method for Nonvolatile Matter (Total Solids) in Water-Emulsion Floor Polishes, Solvent-Based Floor Polishes, and Polymer-Emulsion Floor Polishes<sup>2</sup>

D 3052 Practice for Rating Water-Emulsion Floor Polishes<sup>2</sup>

D 3153 Test Method for Recoatability of Water-Emulsion Floor Polishes<sup>2</sup>

D 3206 Test Method for Soil Resistance of Floor Polishes<sup>2</sup>

D 3207 Test Method for Detergent Resistance of Floor Polish Films<sup>2</sup>

D 3209 Test Method for Freeze/Thaw Resistance of Polymer Emulsion Floor Polishes<sup>2</sup>

D 3210 Method of Comparing Colors of Films from Water-Emulsion Floor Polishes<sup>2</sup>

E 70 Test Method for pH of Aqueous Solutions with the Glass Electrode<sup>3</sup>

### 3. Requirements

3.1 *Nonvolatile Content (Total Solids)*—The nonvolatile content shall be agreed upon between the purchaser and seller, and shall be determined by Test Method D 2834.

3.2 *Sediment*—Any sediment present in the product shall be soft and free of grit. The amount of sediment shall not exceed 0.2 % when tested as specified in Test Method D 1290.

3.3 *pH*—The pH of the product shall not be greater than 10.0 when tested as specified in Test Method E 70.

3.4 *Stability:*

3.4.1 *Heat (Accelerated Aging)*—When tested as specified in Test Method D 1791, the product shall develop no offensive odor, exhibit minimum creaming, gelling, or separation, and display less than 10 % loss of 60° specular gloss when tested as specified in Test Method D 1455.

3.4.2 *Freeze/Thaw Resistance*—When tested as specified in Test Method D 3209, the product shall exhibit minimum creaming, gelling, or separation, and display less than 10 % loss of 60° specular gloss when tested as specified in Test Method D 1455.

3.5 *Color*—Color, as expressed by the whiteness index, shall be measured as specified in Method D 3210. The product shall be equivalent or have less discoloring effect when compared to the control floor polish specified in 3.15.

3.6 *Odor*—The product shall have no offensive odor.

3.7 *Visual Gloss*—The visual gloss shall be equivalent to the control floor polish specified in 3.15. Utilize the visual gloss method in Practice D 3052 rather than the 60° specular gloss determination by gloss meter.

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 15.04.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 15.05.

3.8 *Recoatibility*—The dry film shall have at least a FAIR rating, preferably GOOD, when tested as specified in Test Method D 3153 (Bench Panel Test).

3.9 *Water-Spotting*—The dry film shall show minimum whitening, color change, change in appearance, or removal of film when tested as specified in Test Method D 1793.

3.10 *Detergent Resistance*:

3.10.1 This requirement is optional and should be used only for those products presented as being detergent resistant.

3.10.2 The dry film shall have at least a GOOD rating, when tested as specified in Test Method D 3207.

3.11 *Resistance to Soiling*:

3.11.1 The dry film shall have equivalent or superior resistance to soiling as compared to the control floor polish specified in 3.15, when tested as specified in Practice D 3052.

3.11.2 If a bench test method is preferred, the dry film shall have an equivalent or superior resistance to soiling as compared to the control floor polish specified in 3.15 when tested as specified in Test Method D 3206.

3.12 *Powdering*—The dry film shall have an equivalent or less severe degree of powdering when tested as specified in Test Method D 2048 and compared to the control floor polish specified in 3.15.

3.13 *Slip Resistance*Coefficient of Friction—The dry film shall have a coefficient of static friction of at least 0.5 when tested as specified in Test Method D 2047.

3.14 *Removability*—The dry film shall have at least a GOOD rating when tested as specified in Test Method D 1792. If the product is described as being detergent resistant and meets the requirements of 3.10 of this specification, add an additional 5 mL of ammonium hydroxide (NH<sub>4</sub>OH, 28 %) per 100 mL of the specified stripper solution.

3.15 *Performance*—The dry film shall have an acceptable performance rating when tested as specified in Practice D 3052. A suitable reference material to be utilized as a control floor polish in the performance evaluation shall be agreed upon between the purchaser and seller.

#### 4. Keywords

4.1 finish floor; floor; specification; water emulsion

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