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Standard Test Method for Degree of Set for Wood Sash Glazing Compound¹

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1. Scope

1.1 This test method describes the determination of the degree of set of wood sash glazing compounds.

1.2 The values stated in inch-pound 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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

C 717 Terminology of Building Seals and Sealants²

D 217 Test Method for Cone Penetration of Lubricating Grease³

D 2451 Test Method for Degree of Set for Glazing Compounds on Metal Sash²

2.2 NWWDA Industry Standards:

NWWDA I.S. 4-94 Water Repellant Preservative Non-Pressure Treatment for Millwork⁴

NWWDA T.M. 2-94 Swellometer Test Method⁴

3. Terminology

3.1 **Definitions**—Refer to Terminology C 717 for definitions of the following terms: compound, glazing.

4. Summary of Test Method

4.1 A brass ring is placed on a wooden block and filled with the compound to be tested. The assembly is aged for 2 weeks at 158°F (70°C), then conditioned for 3 h at room temperature, after which the compound is tested with a penetrometer.

5. Significance and Use

5.1 This test method evaluates the durability of a glazing compound by measuring its resistance to hardening on aging.

¹ This test method is under the jurisdiction of ASTM Committee C-24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.12 on Oil and Resin Base Glazing and Caulking Sealants.

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² *Annual Book of ASTM Standards*, Vol 04.07.

³ *Annual Book of ASTM Standards*, Vol 05.01.

⁴ Available from National Wood Window and Door Association, 1400 East Touhy Avenue, G54, Des Plaines, IL 60018.

6. Apparatus

6.1 *Forced-Air Oven.*

6.2 *Penetrometer and Grease Cone*, as described in Test Method D 217, having a total moving load of 150.0 ± 1 g.

6.3 *Rings*, two, brass, 2.5 in. (63.5 mm) in diameter, 0.5 in. (12.5 mm) deep, and approximately $\frac{1}{16}$ in. (1.5 mm) in wall thickness.

6.4 *Blocks*, two, white pine, $3\frac{1}{2}$ by 4 by $\frac{3}{4}$ in. (88 by 100 by 19 mm).

6.5 *Wood Preservative*, 1 gal, commercial type (water-repellant) conforming to NWWDA I.S. 4-94.

6.6 *Laboratory Spatula*, with 5-in. (125-mm) blade.

7. Sampling

7.1 The compound should be used directly from the container as supplied by the manufacturer. If there are any signs of separation, mix the compound thoroughly, prior to testing.

8. Procedure

8.1 Condition the two white pine blocks for 1 week (168 h) at $73.4 \pm 3.6^\circ\text{F}$ ($23 \pm 2^\circ\text{C}$) and 50 ± 5 % relative humidity.

8.2 Immerse the wood muntin bars in the wood preservative for 30 s when using a solvent-borne preservative and 3 min for water-borne preservative in accordance with NWWDA T.M. 2-94. Weight them if necessary to ensure complete submersion. Then remove them from the preservative and dry for 24 h at $73.4 \pm 3.6^\circ\text{F}$ ($23 \pm 2^\circ\text{C}$) and 50 ± 5 % relative humidity.

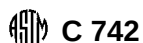
8.3 Prepare two assemblies as follows: Center a brass ring on the flat face of a wood block and using the spatula, pack it, flush with the top edge, with freshly worked glazing compound.

8.4 Place the two assemblies in a forced-air convection oven for 336 h (2 weeks) at $158 \pm 3.6^\circ\text{F}$ ($70 \pm 2^\circ\text{C}$), positioning them at the same level as the bulb of the thermometer.

8.5 Remove the assemblies from the oven and condition them for 3 h at $73.4 \pm 3.6^\circ\text{F}$ ($23 \pm 2^\circ\text{C}$).

8.6 Carefully remove the ring and the contained compound from each wood block by placing the spatula under the ring, and while slightly tilting same, gently scrape it against the wood to assure complete removal of the compound.

8.7 Invert each ring and its contained compound and place each specimen in turn on the penetrometer stand. Take five 5-s readings on each, approximately $\frac{1}{2}$ in. (12.7 mm) from the outer edge and at approximately equal ($\pm 72^\circ$) circumferential intervals. Make sure that the top of the penetrometer cone



barely touches the surface and that the dial is adjusted to zero before each reading. Clean the tip of the cone with acetone or methyl ethyl ketone (MEK) prior to each reading.

9. Report

9.1 Average the ten readings on the two specimens. If none of the readings vary more than 15 % from the average, report the average as well as the individual readings. If one or two readings vary more than 15 % from the average, discard those readings and report the remaining readings and their average. If

three or more readings are outside the 15 % limit, repeat the test.

10. Precision and Bias

10.1 There is no precision or bias statement for this test method. The precision statement for Test Method D 2451 can be used as a guide.

11. Keywords

11.1 glazing compound; set; wood sash

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