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.

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Standard Practice for Determination of Re-tack Ability of Carpet Adhesives[1]

This standard is issued under the fixed designation D7532; 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 will provide a protocol for determining the effect of extended drying (open time) periods on the shear and peel strength performance of a carpet adhesive when bonding a carpet backing or standard duck cloth material to a substrate.

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]

D907 Terminology of Adhesives

D6004 Test Method for Determining Adhesive Shear Strength of Resilient Flooring and Carpet Adhesives

D6862 Test Method for 90 Degree Peel Resistance of Adhesives

2.2 *Voluntary Product Standards:*[3]

PS1 Construction and Industrial Plywood

3. Terminology

3.1 *Definitions:*

3.1.1 Many of the terms in this test method are defined in Terminology D907.

3.1.2 *re-tack, n*—an industry term used to describe an adhesive performance characteristic when the original application is modified to include an extended adhesive open time period followed by re-application of pressure to bond the carpet to the substrate.

3.1.3 *standard conditions, n*—23 ± 2°C (73 ± 3°F) and 50 % relative humidity.

4. Summary of Practice

4.1 This practice is for a comparison of shear strength and 90 degree peel strength performance between a standard duck cloth material versus a specific carpet backing. Performance testing occurs after an applied test adhesive has been exposed to standard conditions ambient air for various open time periods. It should be noted that the use of duck cloth is necessary since there is no bench mark or standardized carpet backing currently produced in the United States.

5. Significance and Use

5.1 Selection of or development of a carpet adhesive, for direct glue or adhered applications requires knowledge of the adhesive's ability to perform adequately when it is found necessary to correct an installation concern, such as bubbles or wrinkles, by re-rolling or application of dead weight to the affected area without the application or injection of additional adhesive.

5.2 Adhesive bonding of some carpet backings to substrates and the adhesive bonding of carpet backings to a pad foundation, double stick or glue application, require that prior to bonding the adhesive is to be dried sufficiently to allow for no transfer of adhesive as a result of slight finger pressure.

6. Apparatus

6.1 *Applicator Trowel,* with a notch pattern of 3.2 mm (⅛ in.) wide, 2.4 mm (3⁄32 in.) deep, 3.2 mm (⅛ in.) flat.

NOTE 1—Adhesive manufacturer application instructions may recommend different trowel notching design.

6.2 Six 1 kg (2.2 lb) dead weights.

6.3 *Testing Equipment* in accordance with the test method to be implemented.

6.4 *Timer.*

[1] This practice is under the jurisdiction of ASTM Committee D14 on Adhesives and is the direct responsibility of Subcommittee D14.10 on Working Properties.

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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] Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, http://www.access.gpo.gov.

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7. Materials

7.1 *Adhesive*—An adhesive classified as appropriate for the intended application.

7.2 *Duck Cloth*[4]—Natural, untreated, #10, 417.6 g (14.73 oz).

7.3 *Carpet*—The carpet specimen with backing attached as appropriate for the application.

7.4 *Underlayment*—Common wood-based products such as PS1 grade marked stamped plywood underlayment. Simulated concrete board, no specific product has been identified. Other products recommended by the adhesive or carpet manufacturer may be used.

8. Hazards

8.1 There are no known hazards associated with this practice.

9. Sampling, Test Specimens, and Test Units

9.1 Follow the protocols in Test Method D6862 for evaluation of peel and Test Method D6004 for evaluation of shear.

10. Conditioning

10.1 Prior to testing, condition the carpet, duck cloth, underlayment, and adhesive at standard conditions.

10.2 The adhesive temperature is checked and recorded prior to application to ensure compliance with 10.1.

11. Procedure

11.1 The adhesive application, open time, bonding, and testing are to occur at standard conditions.

11.2 With the application trowel at a 45° angle spread sufficient adhesive to cover the substrate bonding areas. Do not over apply and when completed start the timer for measurement of initial drying time.

11.3 During the first 60 min. of initial drying time, periodically check for no transfer of adhesive with slight finger pressure. If necessary, continue the drying time past 60 min. until no transfer has occurred and record the time.

NOTE 2—Bonding shall not occur at less than 60 min.

11.4 The extended drying time periods begin when 60 min. of initial drying has elapsed or after a longer initial drying time in order to achieve evidence of no transfer.

11.5 The test specimen assemblies are prepared at the conclusion of three different extended drying time intervals. The intervals are 4 h, 12 h, and 24 h.

11.6 When an open time interval occurs, prepare a set of three (3) test specimens with carpet and three (3) test specimens with duck cloth for each test method (Test Methods D6862 and D6004). There will be a total of six test specimens for each test method and each time interval.

11.7 On a flat horizontal working surface position the adhesive coated substrate facing upward. Position the carpet backing surface or either side of duck cloth, or both, to fully contact the test adhesive surface. Place a second piece of substrate to cover the top of the non bonded face of carpet and duck cloth swatch.

11.8 Place a 1 kg (2.2 lb) weight onto the top substrate. This dead weight load is positioned on center to provide a uniform load to the bonding area.

11.9 Remove the dead weight load after 30 ± 5 s and begin testing within 10 min. thereafter.

11.10 Test in accordance with Test Methods D6862 and D6004 procedures respectively.

12. Report

12.1 Test date and test location.

12.2 Preparation, drying, and testing environment temperature and relative humidity.

12.3 The type of carpet adhesive, identification nomenclature, and lot/batch number (if available).

12.4 The carpet sample identification nomenclature.

12.5 The underlayment identification nomenclature, including thickness and treatments.

12.6 The approximate application thickness and trowel type used to apply.

12.7 The time to achieve no transfer.

12.8 The shear or peel strength, or both, results for each test specimen for each extended drying time interval.

13. Keywords

13.1 direct glue; double stick; open time; re-bond; re-tack

[4] Available from Top Value Fabrics, Division of TVF, Inc., 401 West Carmel Drive, Carmel, IN 46032–2529, http://www.tvfinc.com.

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