Designation: D7888 – 13

Standard Practice for Evaluating Adhesive and the Effects of Plasticizer Found Within Polyvinyl Chloride-Backed Floor Coverings[1]

This standard is issued under the fixed designation D7888; 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 standard will provide a qualitative means to determine the potential effects of plasticizers contained within polyvinyl chloride (PVC) floor covering materials on a specific adhesive.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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:*[2]

D123 Terminology Relating to Textiles

D907 Terminology of Adhesives

F141 Terminology Relating to Resilient Floor Coverings

3. Terminology

3.1 *Definitions:*

3.1.1 *plasticizer, n*—additives that increase the plasticity or fluidity of a material; a chemical added especially to rubbers and resins to impart flexibility, workability, or elasticity.

3.1.2 *polyvinyl chloride (PVC), n*—a thermoplastic polymer used in many floor covering materials.

4. Significance and Use

4.1 Plasticizer migration is detrimental to many adhesives, including hot melts, which could be possibly used in conjunction with PVC backed flooring materials, whether resilient or textile, broadloom, tile or plank. This practice can be used as an indicator to determine if plasticizers in the flooring material are compatible with proposed installation adhesive(s).

5. Apparatus

5.1 *Circulating Air Oven,* capable of maintaining 140 ± 3°F (60 ± 2°C).

5.2 *Test Adhesive.*

5.3 *Test Floor Covering.*

5.4 *Floor Covering Seam-roller,* (approximately 2 lb (1 kg).

5.5 *U Notched Trowel, 1/32 in. by 1/16 in. by 1/32 in. (0.079 cm by 0.16 cm by 0.079 cm),* or alternate means of application.

5.6 *Four Pieces of Aluminum Foil,* approximately 26 in. by 10 in. (66 cm by 25 cm).

6. Procedure

6.1 Cut four 6 in. by 6 in. (15 cm by 15 cm) pieces of the PVC backed flooring test material. Material composition can be textile or resilient.

6.2 Using the recommended application method as instructed by the floor covering or adhesive manufacturer (trowel, roller, or spray) apply the adhesive to the backing of two of the 6 in. by 6 in. (15 cm by 15 cm) pieces of floor covering. If no application method is specified use a 1/32 in. by 1/16 in. by 1/32 in. (0.079 cm by 0.16 cm by 0.079 cm) U notched flooring trowel.

6.3 Allow the adhesive on the test specimens to dry at room conditions maintained at 73 ± 3°F (23 ± 2°C) and 50 ± 5 % relative humidity for not less than 3 h before testing.

6.4 Place each of the uncoated 6 in. by 6 in. (15 cm by 15 cm) pieces back-to-back to the adhesive coated specimens forming two test assemblies.

6.5 Press the test assembly together rolling completely using a floor covering seam-roller or similar type method to ensure firm and even contact between the coated and uncoated surfaces.

6.6 Completely wrap the test assemblies in aluminum foil so that each assembly is fully sealed. It is recommended to envelope and tightly seal the test specimens with two layers of aluminum foil.

[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.

6.7 Place one of the test assemblies in the oven at 140° ± 3°F (60 ± 2°C) for 15 days ± 3 h. The second assembly shall be maintained in controlled environment of 73 ± 3°F (23 ± 2°C) and 50 ± 5 % relative humidity for an equal time period.

6.8 After 15 days remove the test assembly from the oven and allow to cool at room temperature for a period of not less than 30 ± 5 min.

6.9 Remove the test assembly form the aluminum foil, and then separate the two assemblies comparing the one taken from the oven, with the one allowed to remain under room conditions for signs of apparent plasticizer migration or differences in adhesion. Examine the adhesive line for any gumminess or oily feel to the adhesive.

6.10 Record and report all observations.

7. Report

7.1 Date, time and duration of test

7.2 Compare and evaluate the two test specimens and report the difference, in appearance or properties, between the aged sample and the benchmark sample.

7.3 Any change in physical appearance in the adhesive will be considered a failure.

8. Keywords

8.1 carpet tile; luxury vinyl; modular carpet; plasticizer; plasticizer migration; polyvinyl chloride; PVC backing; resilient; vinyl plank; vinyl tile