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Standard Test Method for BONDING PERMANENCY OF WATER- OR SOLVENT- SOLUBLE LIQUID ADHESIVES FOR AUTOMATIC MACHINE SEALING TOP FLAPS OF FIBERBOARD SPECIMENS¹

This standard is issued under the fixed designation D 1713; 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 determination of the bonding permanency of dextrin, casein, starch, resin base, and other water- or solvent-soluble liquid adhesives (excluding pressure-sensitive types) used for sealing the top flaps of fiberboard shipping cases.

1.2 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Applicable Document

2.1 ASTM Standard:

D 1714 Test Method for Water Absorptiveness of Fiberboard Specimens for Adhesives²

3. Apparatus

3.1 *Film Applicator*, tube or rod type to give a wet film thickness of 0.025 to 0.0381 mm (0.001 to 0.0015 in.) on a smooth glass plate, and a film coverage 102 by 102 mm (4 by 4 in.) (Film thickness cannot be determined accurately on fiberboard material.)

3.2 *Solid Block or Hydraulic Press* to apply a pressure of 3.4 kN/m² (0.5 psi.)

3.3 *Cabinets or Desiccators*, with means of controlling the temperature and relative humidity at the conditions listed in Table 1.

4. Materials

4.1 *Desiccant*³ for condition of 23 ± 1 % rel-

ative humidity.

4.2 Saturated Salt Solutions:

4.2.1 Ammonium monophosphate for designated conditions of 22 to 38°C, 91 to 93 % relative humidity.

4.2.2 Potassium sulfate for conditions of 30°C, 96 to 97 % relative humidity.

4.2.3 Lithium chloride for conditions of 22 to 38°C, 11 % relative humidity.

5. Sampling Adhesive

5.1 The adhesive sample shall be a 0.9-litre (1-qt) aliquot consisting of a composite taken when possible from three or more separate containers chosen at random. Also take samples from containers that appear to be nonrepresentative and test separately. Before a sample is withdrawn, mix the material to uniform consistency. Place the sample immediately in an airtight glass jar until tested.

6. Test Specimens

6.1 Test specimens shall be 133 by 133-mm (5¼ by 5¼-in.) swatches from shipping case samples, representative of board stock of cases used on the production line of the purchaser. Swatches may consist of corrugated faced board stock, solid fiber stock, or the liner facing material.

NOTE 1—When liner facing material is used, speci-

¹ This test method is under the jurisdiction of ASTM Committee D-14 on Adhesives and is the direct responsibility of Subcommittee D 14.50 on Special Adhesives.

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² *Annual Book of ASTM Standards*, Vol 15.06.

³ Anhydrous (anhydrous magnesium perchlorate) or Drierite (indicating calcium sulfate) is satisfactory for this purpose.