



Designation: F 2252 – 03

## Standard Practice for Evaluating Ink or Coating Adhesion to Flexible Packaging Materials Using Tape<sup>1</sup>

This standard is issued under the fixed designation F 2252; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This practice describes a means of evaluating ink or coating adhesion to flexible packaging materials. This practice is intended for use on flexible packaging materials whose surfaces are not damaged by the application and removal of tape.

### 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

D 1898 Practice for Sampling of Plastics<sup>3</sup>

D 3330/D 3330M Test Method for Peel Adhesion of Pressure-Sensitive Tape

D 4332 Practice for Conditioning Containers, Packages, or Packaging Components for Testing

### 3. Significance and Use

3.1 Poor adhesion of ink or coating to the base substrate can impact the readability of printed materials, affect the functionality of coated materials, or create a source of contamination. This practice provides a means for evaluating the adhesion of ink or coating to a flexible packaging material.

3.2 For purposes of resolving inter-laboratory disagreements, test methods developed from this practice may be improved by defining and controlling the pressure and method of tape application, (for example, using weighted roller), and the speed and angle of tape removal.

3.3 This practice does not address acceptability criteria. These need to be jointly determined by the user and producer of the product.

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee F02 on Flexible Barrier Materials and is the direct responsibility of Subcommittee F02.20 on Physical Properties.

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<sup>2</sup> 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.

<sup>3</sup> Withdrawn.

### 4. Apparatus

4.1 3M #610 or Sellotape office adhesive tape is commonly used for this procedure, typically 19 to 25 mm ( $\frac{3}{4}$  to 1 in.) wide. Whichever tape is chosen should be agreed upon by customer and supplier.

4.1.1 Manufacturers storage and shelf-life recommendations should be followed or acceptability determined through real-time aging and laboratory tests. Test Method D 3330/D 3330M gives guidance on testing. Again, as stated in 3.3, acceptability criteria is a matter of agreement between customer and supplier.

### 5. Sampling

5.1 The number of samples tested should be adequate to be predictive of performance. Caution should be taken when eliminating samples with defects as this can bias results.

5.2 See Practice D 1898 for guidance on standard sampling practices.

### 6. Conditioning

6.1 Conditioning of the samples will depend on the material under evaluation. If conditioning before testing is appropriate, normal, and desirable, then condition the test specimens at  $23 \pm 2^\circ\text{C}$  ( $73.4 \pm 3.6^\circ\text{F}$ ) and  $50 \pm 5\%$  RH for not less than 24 h prior to test.

6.2 Before testing catalyzed or cured inks or coatings, or both, ensure that the samples have been exposed to the appropriate conditions for sufficient time to allow complete cure.

6.3 See Practice D 4332 for guidance on conditioning practices.

### 7. Procedure

7.1 Lay sample to be tested on a flat surface. Sample should lay flat and smooth without wrinkles, creases, or folds.

7.2 Cut a piece of tape long enough to cover the printed or coated area of interest on the sample. For large areas it may be easier to work with several shorter pieces of tape. Handling