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Tack Rolling Ball

1. DEFINITION

1.1 The rolling ball tack test is one measure of the capacity of the adhesive to form a bond with the surface of another material upon brief contact under virtually no pressure.

2. SIGNIFICANCE

2.1 The rolling ball tack test is one method of attempting to quantify the ability of an adhesive to adhere quickly to another surface.

3. TEST SPECIMEN

3.1 For test specimen conditioning, selection, and test conditions, see Appendices A & D.

3.2 The test specimen shall be 24 mm (1") wide by approximately 375 mm (15") long.

4. EQUIPMENT - See Appendix B

4.1 Rolling ball test apparatus. See Figures 1 and 2.

4.2 A stainless steel ball, 11 mm (7/16") in diameter, such as a standard type ball bearing.

4.3 A working surface that is level, hard, and smooth, such as a table top, plate glass, etc.

5. TEST METHOD

5.1 Prior to testing each lot of tape, thoroughly clean the raceway surface with n-heptane, methyl ethyl ketone, isopropyl alcohol, or methyl alcohol. Prior to each roll of the ball, thoroughly clean the ball with the same solvent. Wipe with a lint-free, bleached, absorbent material to remove any remaining residue. After cleaning, do not touch the raceway or ball with fingers.

5.2 Ensure that the working surface is perfectly horizontal. Arrange the specimen to be tested, adhesive side up, on the working surface. Align the raceway of the incline with the tape under test so that at least 300 mm (12") of tape is exposed. The end of the specimen opposite the incline is to be held to the working surface with tape. Using clean dry tongs, place the ball on the upper side of the release pin. Release the ball and allow it to roll to a stop on the adhesive. Measure the distance from the point where the ball initially contacts the adhesive to where the ball stops (Figure 2).

6. REPORT

6.1 The average of the stopping distance measurements shall be reported in millimeters or in inches to the nearest 1/8". Five tests shall determine the average. A fresh strip of tape shall be used to begin each test, and the ball should be cleaned after each roll in accord with the cleansing procedure outlined in section 5.1.

Another method for measuring tack rolling ball is ASTM D 3121.

SUMMARY OF CHANGES

No changes from the 14th edition.



Figure 1. Rolling ball apparatus components.

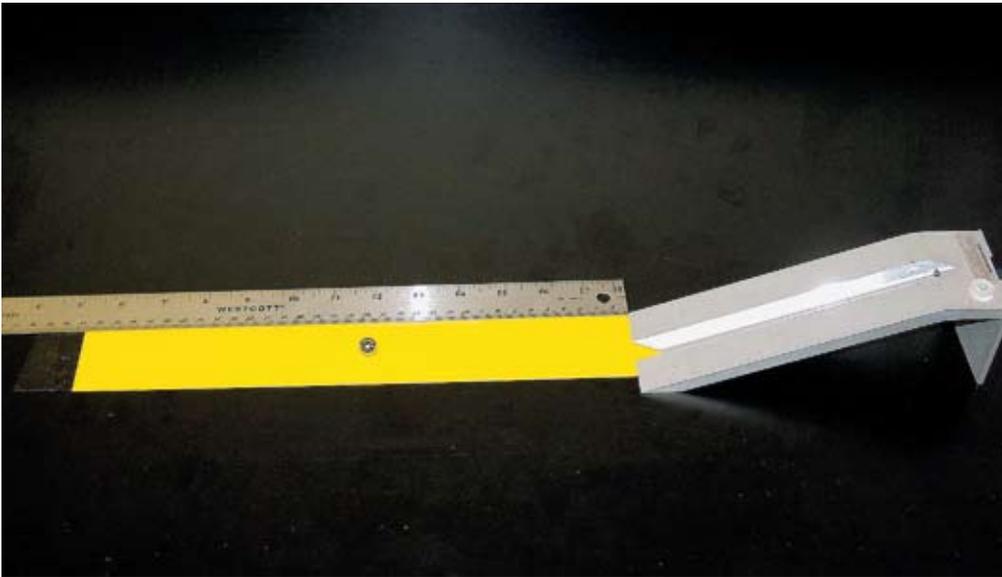


Figure 2. Rolling ball test apparatus and specimen showing distance of roll that is measured.