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Tear Resistance of Plastic Film Tapes

1. DEFINITION

1.1 Tear resistance as determined by this method is a measure of the force necessary to initiate tearing in plastic film tapes ranging in thickness from 25 microns to 2000 microns (1 to 80 mils). This is contrasted with other methods which measure the force necessary to propagate a tear after it has been initiated.

2. SIGNIFICANCE

2.1 Tear resistance in plastic film tapes indicates how well-integrated the material will remain when it is used to conform to irregular shapes under tensions which vary across the width of the applied strip.

3. TEST SPECIMEN

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

3.2 Prepare specimens using the die in Figure 1. When determining the cross direction tear, the 102 mm (4") dimension shall be in the machine direction. For measuring machine direction tear, the 102 mm (4") dimension shall be in the cross direction.

4. EQUIPMENT

4.1 Die. See Figure 1. Same as Die "C" of ASTM D 624.

4.2 Tensile tester. See Figure 2 and Appendix B.

5. TEST METHOD

5.1 Set the jaw spacing at 50 mm (2").

5.2 Clamp the specimen in the jaws, (see Figure 2) taking care that the jaws grip the specimen with the longitudinal axis of the specimen in line with the applied load. Operate the crosshead at a rate of 300 mm/min (12"/min.) and assure that a chart record is made.

5.3 Read the maximum load recorded on the chart. This is the tearing resistance of the specimen.

6. REPORT

6.1 Report the tearing resistance as found in 5.3 to the nearest 0.1 Newtons.

6.2 Report if the conditioning of sample and test conditions are different from Appendices A and D.

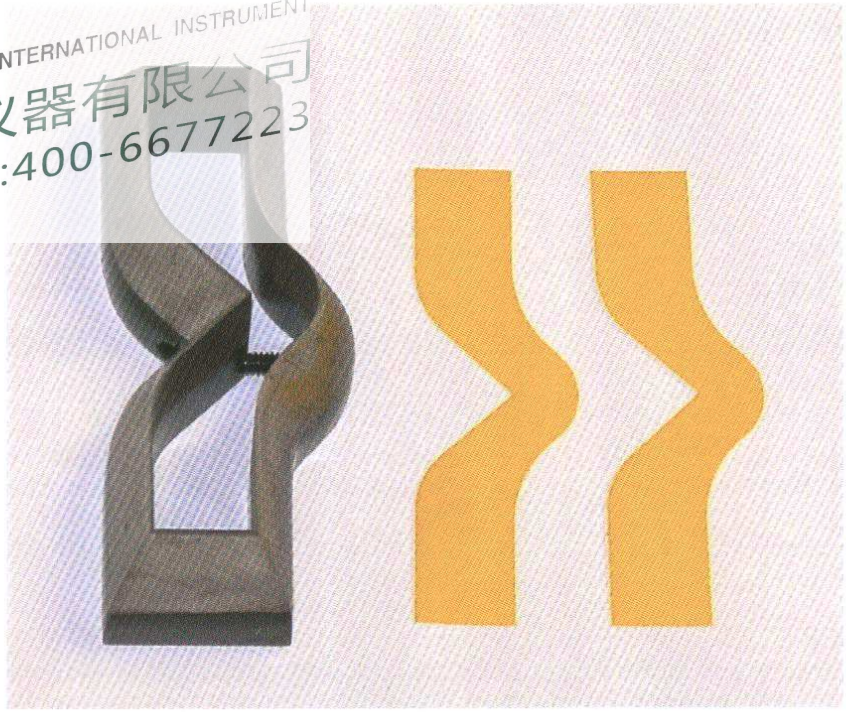

Figure 1. Die for sample preparation.

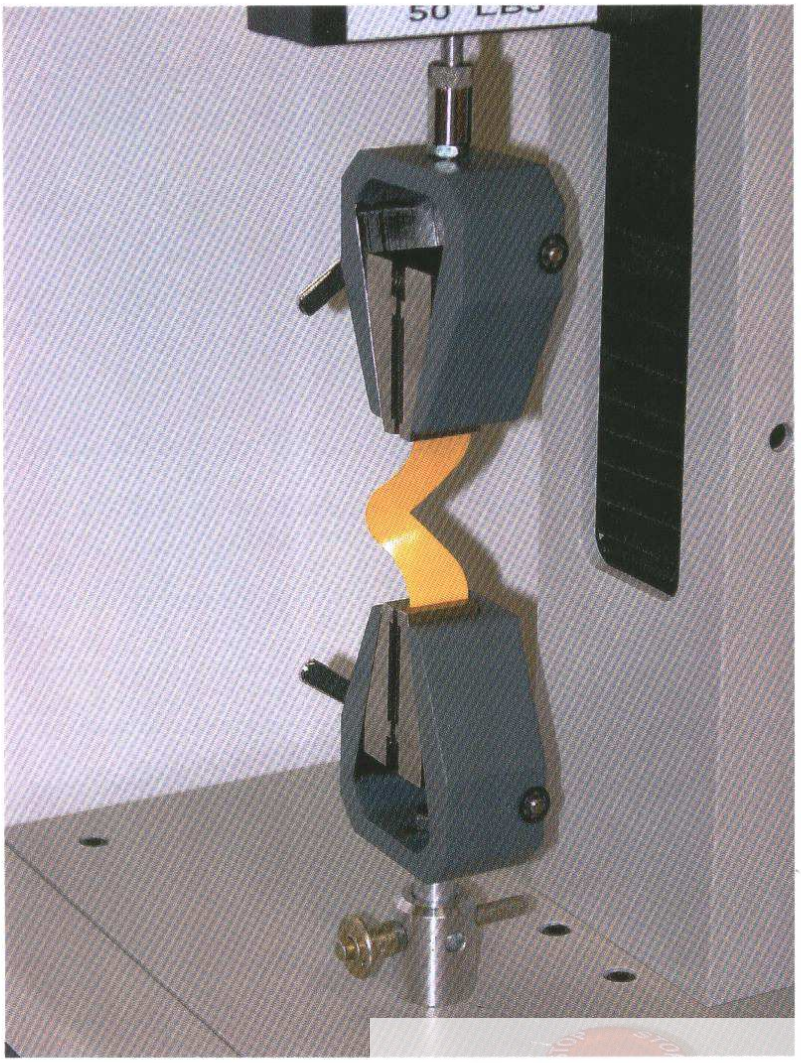

Figure 2. Tensile tester.