

Australian/New Zealand Standard®

Methods of test for pressure-sensitive adhesive tape

Method 7.1: Unwind force

1 SCOPE This Standard sets out the method for determining the force required to unwind pressure-sensitive adhesive tape from a roll.

2 REFERENCED DOCUMENT The following document is referred to in this Standard:

AS

2193 Methods for calibration and grading of force-measuring systems of testing machines

3 APPARATUS The following apparatus is required:

- (a) *Tension testing machine*—complying with the requirements of AS 2193 for Grade B machines over suitable load ranges, and having a rate of travel of 300 ± 10 mm/min of the moving jaw or carriage.
- (b) *Unwind test jig* (see Figure 1).
- (c) *Unwind machine*—which allows the unwind force to be measured by means of an indicator and calibrated scale (see Figure 2).

4 TEST CONDITIONS Testing shall be conducted at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ relative humidity.

5 PREPARATION OF ROLL FOR TESTING The roll shall be conditioned at $23 \pm 2^\circ\text{C}$ and $50 \pm 5\%$ relative humidity for 24 ± 1 h prior to testing.

6 PROCEDURE

6.1 Low speed unwind The procedure shall be as follows:

- (a) Measure and record the width of the roll of tape to the nearest 0.5 mm.
- (b) Place the roll in the unwind test jig and attach the assembly to one moving jaw or carriage of the tension testing machine.
- (c) Unroll approximately 75 mm of the tape by hand and make a tab by folding the last 25 mm of tape on to itself, adhesive to adhesive.
- (d) Insert the tab in the other clamp (jaw or carriage) of the tension testing machine, and unwind approximately 200 mm of the tape at a rate of 300 ± 10 mm/min.
- (e) Record the maximum force required to unwind the roll, in newtons.
- (f) Examine the tape for transfer of adhesive, tearing and other visible defects.
- (g) Repeat Steps (b) to (f) using two other sections taken at random from the same roll.

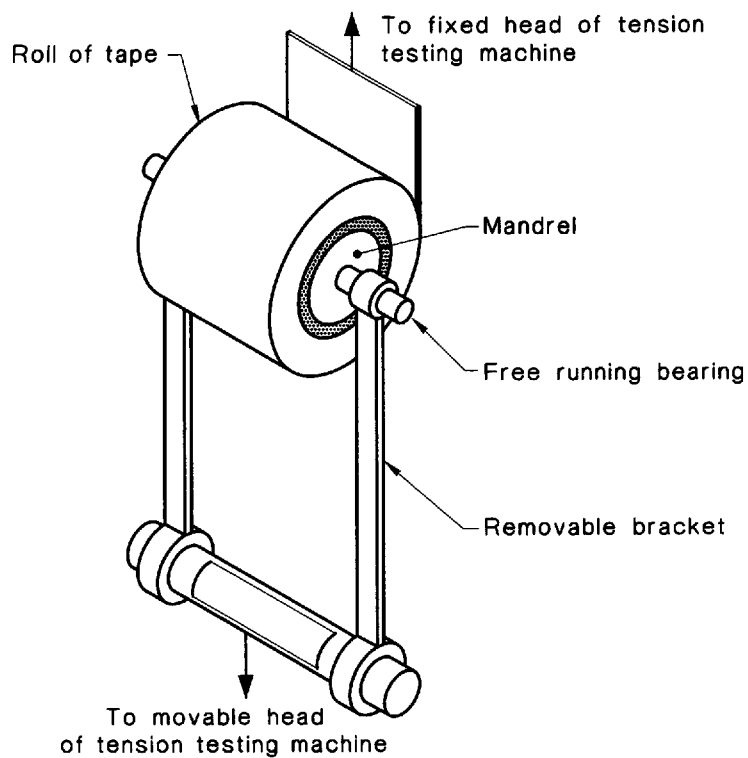


FIGURE 1 SUGGESTED UNWIND TEST JIG

6.2 High speed unwind The procedure shall be as follows:

- (a) Thread one end of the tape on the unwind machine, depicted in Figure 2.
- (b) Unwind the whole roll on the unwind machine at a speed of 45 ± 5 m/min.

NOTE: The speed may be indicated on the machine.

- (c) Take readings of the average force unwind at three different section at regular intervals throughout the unwinding of the roll.

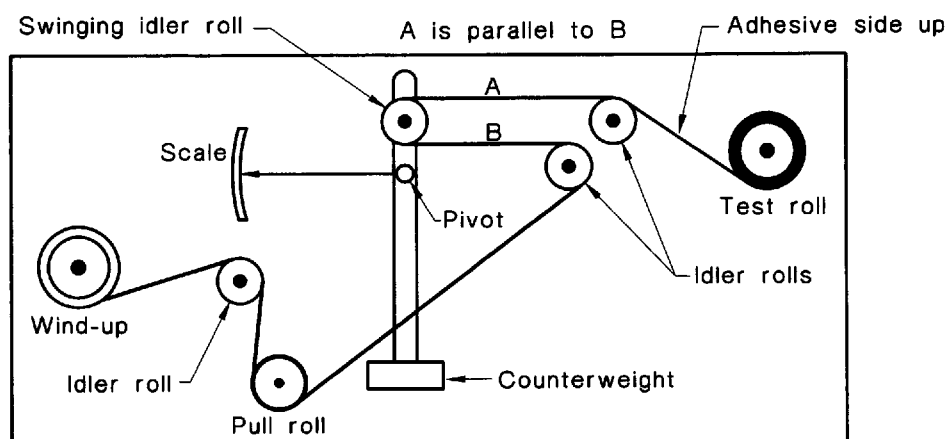


FIGURE 2 DIAGRAMMATIC ARRANGEMENT OF SUGGESTED UNWIND MACHINE