Number	
2.4.42	
Subject	
Torsional Strength of Chip Adhesives	
Date	Revision
2/88	
Originating Task Group	
N/A	

IPC

IPC-TM-650
TEST METHODS MANUAL

1.0 Scope This procedure establishes the performance and test guidelines for the break-off torque of adhesives used by placement equipment to attach surface mounted devices to printed wiring boards.

2.0 Applicable Documents   None

3.0 Test Specimen

• Apply a 1.25 mm [0.05 in] diameter circle of adhesive 0.1 mm [0.004 in] thick to a FR-4 substrate.

• Place a type 1206 resistor firmly onto the circle of adhesive.

• Cure adhesive according to manufacturers directions.

4.0 Equipment

4.1 Torque Tester A Waters Manufacturing torque watch (or equivalent) with a 0 to 140 or 0 to 280 Nmm scale is to be used. The torque gauge must have a separate indicator needle to register maximum torque.

4.1.1 Torque Fixture Use torque fixture modified per sample being tested.

5.0 Procedure

5.1 Sample Placement Place the samples board in the test fixture.

5.1.1 Zeroing the Gauge Rotate the face knob of the tester per until the maximum torque indicator needle is zeroed.

5.1.2 Testing Sample Using the thumb and forefinger, and middle finger of the right hand slowly rotate the torque gauge in a clockwise direction until the component breaks off.

5.1.3 Torquing Techniques Components to be torqued should be centered inside the probe. The component should not protrude from the probe when testing is begun.

5.1.4 Taking Reading After the component has been torqued off, a reading of break-off torque shall be taken from the face of the torque tester. This reading is shown by the maximum torque indicator needle.

5.1.5 Completion of Torquing Repeat until 5 components of the same type have been torqued off.

6.0 *Notes* Do not raise or lower the gauge while turning. If the gauge is lowered the increased friction against the board will yield inaccurate readings. If the gauge is lifted it will lose contact with the component and yield an inaccurate reading as well.