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IPC-TM-650 TEST METHODS MANUAL

1 Scope This test method defines the procedure for determining the bond strength of metal foils that are 18 microns thick or greater clad flexible dielectric material as nominally defined being measured with a 90° peel.

2 Applicable Documents None

3 Test Specimens If a statistically sound evaluation by a given supplier can prove that die cut and etched specimens differ, the preparation giving the lower measurement can be the only preparation tested. In case of conflict, the die cut sample will be used as the referee method. The sample preparation will be the same for as received, after solder and after aging.

3.1 Type A – Etched Specimen

3.1.1 The test specimen **shall** consist of an etched conductor pattern in accordance with Figure 1. **Note:** Conductors are 3.2 mm wide by 228.6 mm long [0.125 in wide by 9 in long].

3.1.2 A minimum of four specimens, two from the machine direction (MD) and two from the transverse direction (TD), **shall** be prepared for each of the procedure Methods A, C, E. If a statistically sound evaluation by a given supplier can prove that MD and TD measurements differ, the direction giving the lower measurement can be the only direction tested. If the two directions are the same, only the MD direction needs to be tested. In the event a test specimen tears during testing, another test specimen will be prepared to replace it.

3.1.3 For double clad laminate, a separate sample unit **shall** be prepared and tested for each side.

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3.2 Type B – Die Cut Specimen

3.2.1 The test specimen **shall** consist of a strip of clad flexible material 12.7 mm wide by 228.6 mm long [1/2 in wide by 9 in long].

3.2.2 A minimum of four specimens, two from the machine direction and two from the transverse direction, **shall** be prepared for each of the procedure Methods B, D, F. If a statistically sound evaluation by a given supplier can prove that MD and TD measurements differ, the direction giving the lower measurement can be the only direction tested. If the two directions are the same, only the MD direction needs to be tested.

3.2.3 For double clad laminate, a separate sample unit **shall** be prepared and tested for each side. The metal foil on the non-test side may remain to provide stability to prevent tenting of the specimen from the German Wheel (free wheel rotary drum). Both samples must be the same with respect to being with or without the non-test side metal foil.

4 Test Equipment

4.1 Testing Machine Power driven testing machine, crosshead autographic type, or an equivalent constant speed drive machine.

4.2 Sample Cutter Thwing Albert sample cutter, Model No. JDC-50, or equivalent.

4.3 Test Fixture Free wheeling rotary drum (Figure 2), sliding plate (Figure 3), or equivalent. The referee fixture will be a 152.4 mm [6.0 in] diameter free wheeling rotary drum.

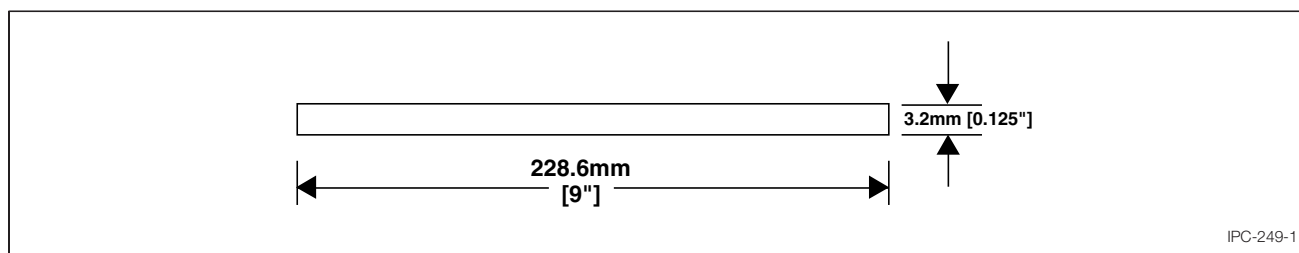


Figure 1 Type A Peel Strength Test Pattern

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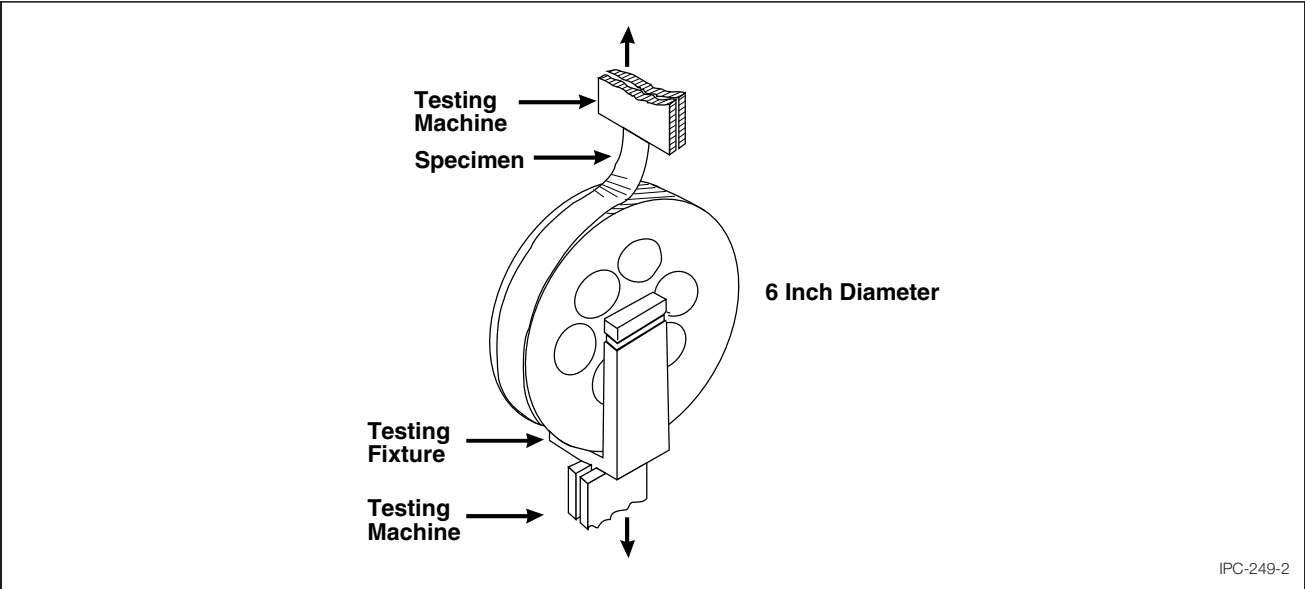


Figure 2 Free Wheeling Rotary Drum Test Fixture

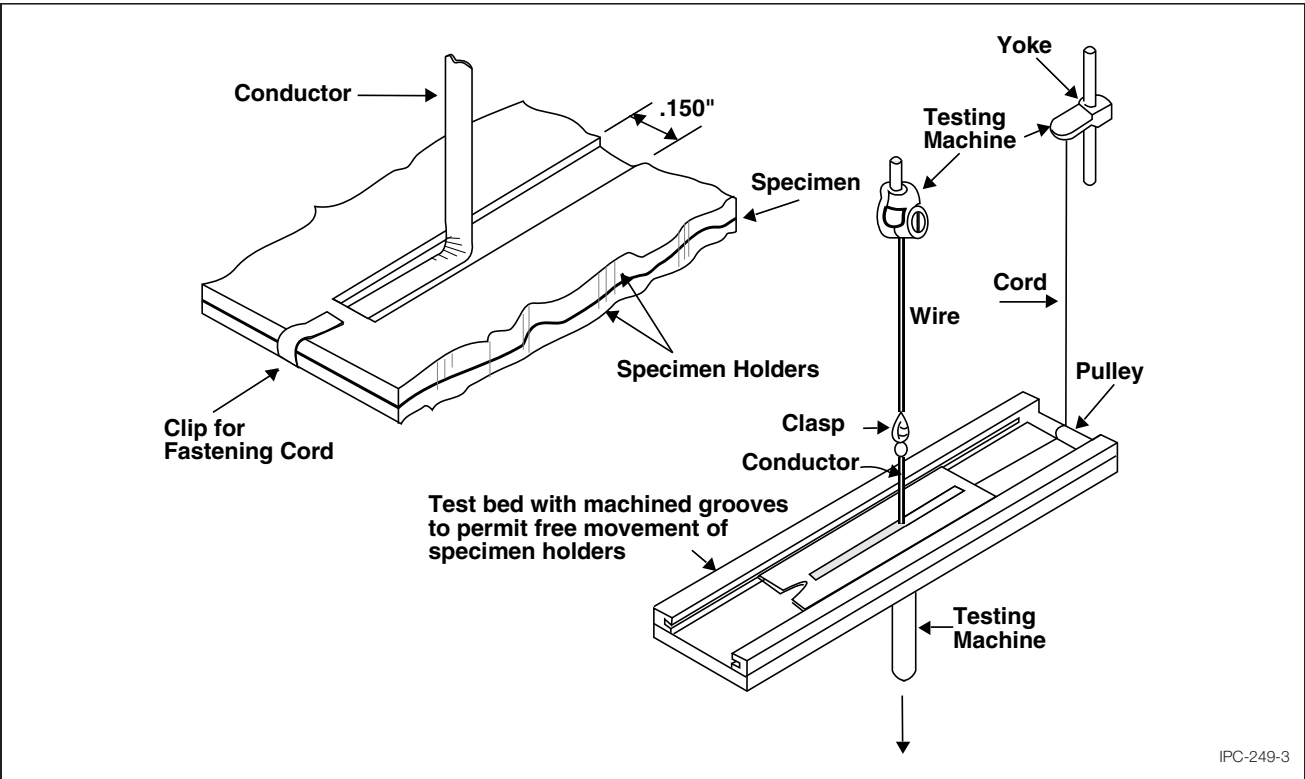


Figure 3 Sliding Plate Test Fixture