



IPC-TM-650 TEST METHODS MANUAL

1.0 Scope This test method defines the procedure for determining the adhesion of solder masks used over non-melting metals such as copper, gold, nickel, and tin printed wiring boards, both prior to and after soldering.

2.0 Applicable Documents

Commercial Item Description AA-113 Tape, Pressure-Sensitive Film, Office Use

3.0 Test Specimen The test specimen used for preproduction qualification consists of the IPC-B-25 Test Board, Coupons Q and P, clad on both sides with 1 ounce copper, which has the plated metal surfaces that are applicable, and coated with solder mask. For production board testing, use printed wiring boards currently being processed.

4.0 Apparatus

4.1 Cross Hatch Cutter A cutting tool consisting of six parallel blades which will cut through the solder mask film. Spacings between blades are 2 mm.

4.2 Alternative Cutting Device An X-Acto knife with blade No. 6, or equivalent.

4.3 Tape A roll of pressure sensitive tape 3M Brand 600 1/2 inch wide or a tape as described in (CID AA-113), Type 1, Class B, except that the tape may be clear.

5.0 Procedure

5.1 Preparation

5.1.1 Test specimens are to be prepared by processing 1 ounce double clad epoxy glass laminate through the standard plating processes for the metal coatings which are applicable.

5.1.2 For preproduction qualification, test specimens are to be cleaned using cleaning methods as recommended by the solder mask manufacturer and standard production methods for comparison purposes prior to solder mask coating.

Number 2.4.28	
Subject Adhesion, Solder Mask (Non-Melting Metals)	
Date 8/97	Revision B
Originating Task Group N/A	

5.1.3 Test specimens are to be coated and cured by the standard production method.

5.1.4 Testing should be conducted on specimens both before and after wave soldering.

5.2 Testing

5.2.1 Using the prescribed cutting tool, cross hatch (at 90° angles) an area on the solder mask coated base laminate surface and on the metal conductor surface. Make all cuts 1 inch long. Use sufficient pressure to cut through the film.

Note: Cutting tools must be sharp without defects. When using the alternative cutting tool, the cross hatch pattern created shall simulate that created by the cross hatch cutter.

5.2.2 Lightly brush the cross hatched area with a soft brush to remove any particles of film.

5.2.3 Press a strip of pressure sensitive tape 1/2 inch wide by 2 inches long firmly across the surface of the cross hatched area using a hand roller or eraser.

5.2.4 Rapidly remove the tape by manual force applied approximately perpendicular to the pattern. An unused strip of tape must be used each time.

5.3 Evaluation Visually examine tape for evidence of film particles. Examine board for separation, fracturing, or delamination of the coating from the surfaces of the bare material and conductors.

6.0 Notes

6.1 Erichsen cross hatch cutter, model number GE 2952, available from Pacific Scientific, Gardner Neotech Division, 2431 Linden Lane, Silver Springs, MD 20910, or equivalent.