



ASSOCIATION CONNECTING
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IPC-TM-650 TEST METHODS MANUAL

1 Scope This test method defines the procedure for determining the adhesion of solder resists (masks) used over melting metals, (such as solder plated and reflowed solder printed boards both prior to and after soldering), nonmelting metals, and printed board substrates.

2 Applicable Documents

J-STD-003 Solderability Test Methods for Printed Boards.

IPC-2221 Design Standard for Rigid Printed Boards.

3 Test Specimens The test specimen used shall be the test coupon shown in Figure 1, which has the plated metal surface that is applicable, and coated with solder resist.

4 Apparatus or Material

4.1 Tape A roll of pressure sensitive self-adhesive film tape 1.3 cm [0.5 in] wide exhibiting an adhesive strength of at least

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Originating Task Group Solder Mask Performance Task Group (5-33B)	

44 N/100 mm [40 oz-force/in] but no more than 66 N/100 mm [60 oz-force/in] as tested per ASTM D3330, as amended. If the tape has an advertised expiration date or shelf life it shall not be used after the expiration date. If no such date exists, the product may be used up to one year from date of purchase. A noncomprehensive list of tapes meeting this requirement can be found at "Pull Test Tapes" under "Technical Resources" at the IPC web site: www.ipc.org.

5 Procedure

5.1 Preparation

5.1.1 For qualification testing, test specimens are to be prepared by processing 34.0 μm [1,339 μin], double clad epoxy glass laminate through the standard plating process for the metal coatings that are applicable. For production testing, the coupons shall be representative of the board.

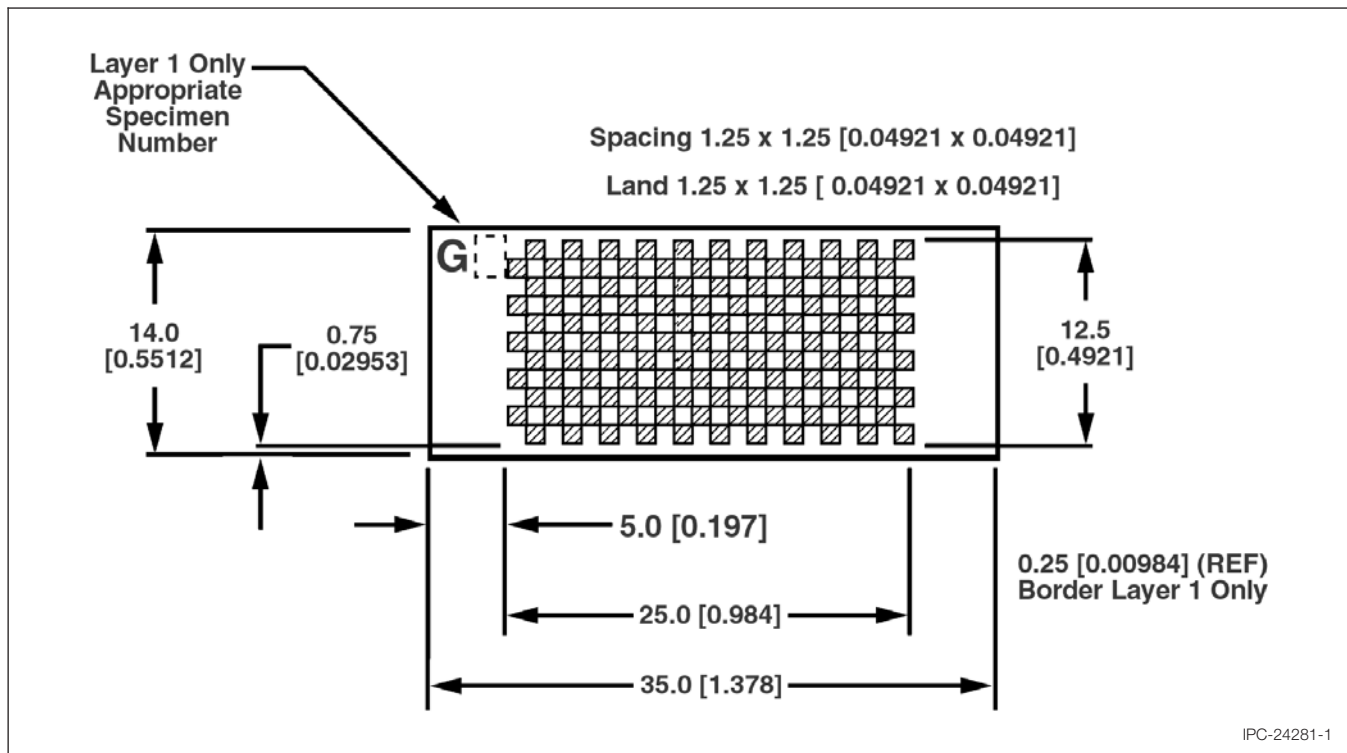


Figure 1 Test Coupon G of IPC-2221, mm [in]

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

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

5.1.4 Testing is to be conducted on specimens before and after soldering in accordance with J-STD-003, Methods A, B, C, or D with no accelerated aging.

5.2 Test

5.2.1 Press a strip of pressure sensitive tape, 50 mm [1.97 in] minimum in length, firmly across the surface of the test area removing all air entrapment. The time between application and removal of tape shall be less than one minute. Remove the tape by a rapid pull force applied approximately perpendicular (right angle) to the test area. An unused strip of tape must be used for each test.

5.3 Evaluation

5.3.1 Visually examine the tape and test area for evidence of any portion of the material tested having been removed from the specimen.

5.3.2 The report should note any evidence of material removed by this test.

6 Notes

6.1 Figure 1 illustrates the coupon that is used for testing. The black squares indicate metal. The white squares indicate the base material. Solder mask is applied over the entire conductor pattern.

6.2 If foreign material (oil, grease, etc.) is present on the test surface the results may be affected.

6.3 Certification of 3M Brand 600 1/2 inch tape to CID-A-A-113 is not required. The 3M Brand 600 1/2 inch tape is available through most office supply stores.