



UPDATE ON MILITARY QUALIFICATION AND CONFORMANCE of PRINTED CIRCUIT BOARD AND CONFORMAL COATING PRODUCTS

Rev. October 2006

Important DSCC News

MIL-PRF-55110G, Am. 1

MILPRF-55110 Revision G with Amendment 1 is complete and is officially dated July 2, 2006. Copies of the specification are available electronically on the DSCC web site at:

<http://www.dscclia.mil/Downloads/MilSpec/Docs/MIL-PRF-55110/prf55110.pdf>

The implementation date of Amendment 1 is October 1, 2006. Although DSCC-VQ is not requiring QPL-55110 manufacturers to forward procedure updates for this latest specification action, manufacturers are required to have updated and implemented the product assurance procedures referenced in MIL-PRF-55110G paragraph A.4.5.5.2 by October 1, 2006. All new applications for qualification testing should reference Amendment 1.

Peel Strength Coupons: The P-coupon has been added to the specification for peel strength testing. A description of this coupon can be found in Figure A-17; please ensure that a minimum 0.5 inch etched laminate border remains around the P-coupon design after rout. Also, plated tin-lead, solder coating, or other plated metallic resist shall be chemically removed prior to test or shall be prevented

from being deposited during manufacturing. The coupon shall not be coated with any organic coating. Manufacturers qualifying using foil lamination must incorporate a P-coupon in the panel borders (on each foil outer layer) which will be used by the qualification lab to perform peel strength testing (see CTR column of Table A-II). QPL manufacturers may choose to submit either P-coupons or N-coupons for group B peel strength testing (see Table A-V).

Foil Lamination: DSCC is planning to add a designation to QPL listings for companies that have been approved to use foil lamination. This will appear on future revisions of QPL-55110; manufacturers that have previous group B data showing passing peel strength results under their current qualifications should contact DSCC-VQE to ensure these qualifications are designated as well.

Solderability Coupons: Although inadvertently missing from Table A-IV of MILPRF-55110G with Amendment 1, QPL manufacturers may opt to use M-coupons as an alternative to C-coupons or PWBs for group A surface solderability testing. The sampling and acceptance requirements remain the same regardless of the type of test specimen selected.



Military Spotlight

Non - QPL / QML 55110/50884/31032 Testing

To eliminate the possibility of purchasing printed circuit boards produced by a non-QPL/QML listed company, DSCC is mandating that all qualification and retention reports include the manufacturer's qualification number. This qualification number will be required with each Group B submission. If the board manufacturer is not a military-approved company, the test report shall state "Not Qualified" on the front cover.

MIL-P-50884D, Amendment 2 Frequently Asked Questions

Question:

What is the coverlayer thickness requirement for my qualification boards, since it is not stated in the master drawing? (paragraph A.3.5.3.4)

Answer:

If the coverlayer thickness is not specified, the overall thickness of the qualification board shall meet the following requirements:

For type 1: Overall thickness shall be 0.0040"-0.0800"

For type 2: Overall thickness shall be 0.0030" - 0.0600"

For type 3 and 4 : Overall thickness shall be 0.080"- 0.110"

For type 5: Overall thickness shall be 0.060" – 0.080"

Question:

The Qualification Inspection table located on page 28 of the specification does not specify what tests I should perform on Type 5 board. Do I need to perform As-

Received microsections and Thermal Shock testing?

Answer:

Yes. When evaluating the as received microsection, only evaluate the attributes applicable (Examples include conductor thickness, laminate/adhesive voids, annular ring, and dielectric layer thickness. Since there is no plating in the hole, you do not need to evaluate hole copper thickness, hole wall deficiencies, wicking and etchback, etc.

When testing Thermal Shock, no resistance readings of the daisy chain coupon are performed since there is no plating in the hole (no continuity). The test sample shall be evaluated externally for external plating cracks, blistering or delamination. There is no need to microsection the test coupon.

Trace Tips

PCB Qualification Packet Available.

Please contact us if you are interested in a military qualification packet or if you require information regarding upgrading to MIL-PRF-31032 qualification. DSCC is strongly urging everyone to pursue this qualification.

For more information concerning these topics or any other testing needs, please contact

**Renee Michalkiewicz at
(410) 584-9099 or
rmichalkiewicz@tracelabs.com.**

Visit us on the web at www.tracelabs.com.



TRACE LABORATORIES, INC.

Military Spotlight

Meet Your Military Testing Team



Renee Michalkiewicz
Laboratory Director

Renee has been with Trace for eleven years. Renee oversees printed circuit board and printed circuit board material (paste, flux, solder mask, conformal coating) qualification and testing, environmental testing, process validation (Cleanliness, SIR, MIR, ECM and CAF), and training and consultation. She chairs the IPC J-STD-004 Flux committee and the Test Method Committee, is the Vice-Chair of the Assembly and Joining Committee, and is a contributing member to many others.



Mary Opperhauser
Director of Marketing

Mary has been with Trace for eight years. She will be contacting you to see if you have any quote related questions and to confirm that you were satisfied with the outcome of your project.



Mia Heefner
Senior Engineer

Mia has been with Trace for twenty years. Her technical responsibilities include military and commercial printed circuit board qualification and retention testing and leading various training seminars. Her military expertise includes the MIL-PRF-55110, MIL-P-50884 and MIL-PRF-31032 documents.



Debora Obitz
Senior Engineer

Debby has been with Trace for twenty-two years. Her technical responsibilities include commercial and military conformal coating and printed circuit board qualification and retention testing, leading various training seminars including our formal IPC-A-600 course, and testing of solder masks. Her military expertise includes the MIL-I-46058 and MIL-A-28870 documents. Debby co-chairs the IPC Cleaning and Coating and the IPC-CC-830 Conformal Coating Committees and is a contributing member to many others.