



BDS Common Quality Clauses

Q504 Requirements for Process Producibility Analysis (PPA) Testing of Multilayers – Rev 1/31/2003

When Boeing Specification BSPS-23-001 is invoked on purchase orders, PPA testing shall be in accordance with the specification requirements as defined in the specification. Otherwise, when PPA testing is required on purchase orders it shall be in accordance with the following:

Vendors shall perform in-process inspection on all multilayer board lots as defined below. A lot is defined as all boards of the same part number and same date code. The date code shall represent the date the lot was processed through etchback.

PPA Shall Apply to:

All receipt lot sizes as defined on the face of the purchase order. PPA shall apply to supplier lot quantities of 5 or more PWB's.

In-process inspection shall be performed at three points in the fabrication process on one sample board per lot. The in-process inspection shall be incorporated into vendor travelers.

Procedure

The in-process samples shall be removed from the sample board at the approximate center of the panel. These samples shall contain a minimum of three through holes and shall meet the requirements of the applicable acceptance documentation. (Only the thermal exposure sample must be a minimum of 4 sq. in.).

ALL TEST SAMPLES AND REMAINING PORTIONS OF THE SAMPLE BOARD SHALL BE DELIVERED TO BOEING

Etchback

A sample shall be removed from the sample board just after etchback and shall be reviewed in cross section. When the etchback step must be repeated, an additional sample shall be removed from the board until etchback is acceptable per the acceptance documentation.

It is recommended that a copper strike be plated onto the test sample before measuring etchback. The sample board shall not be plated until the etchback measurement is acceptable per the acceptance documentation.

Final Plating

A sample shall be removed from the sample board just after final plating and shall be reviewed in cross section. If additional plating is required, another sample shall be removed from the board until the plating is acceptable per the acceptance documentation.

Completed Board

A minimum of 4 sq. in. (2" x 2") of the sample board shall be thermally exposed per the acceptance specification. When the board is less than 4 sq. in., the remaining portion of the board shall be thermally exposed. This sample shall be reviewed in cross section and shall

meet solderability, marking ink tape test, and cross sectional requirements of the applicable acceptance documentation.

Failures

All anomalies that cannot be corrected by further processing shall be reported to Boeing's Procurement Quality Engineer (PQE).

Referees

The board vendors will be allowed to perform Referee Testing on finished boards when the in-process sample is inadvertently destroyed during fabrication or when defects can be traced to affected panels. The Procurement Quality Engineer will determine if Referee Testing is permitted. A Materials and Processes Engineer shall be present during the retest and shall evaluate all in-process referees.

Deviations

Deviations in the test procedure shall be allowed provided prior written approval has been granted by the responsible Design Engineer, Materials and Processes Engineer and Procurement Quality Engineer. It shall be the responsibility of the vendor to maintain documentation of each of these deviations and provide a copy of these deviations with their shipment.

The deviation must be coordinated through Purchasing and included in the purchase order via formal Change Notice, prior to shipment.

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