

**BOARD ASSEMBLY, IPC-A-610**

**1.0 Definition of terms:**

**1.0.1** The term “shall”, “will” and “may” are used with specific intent thought-out these documents and will observe the following rules:

- 1.1** Requirements defined using “**shall**” in the text are mandatory requirements and are considered to be binding and require formal verification. Departure from such a requirement is not permissible without formal agreement between Subcontractor and CSPI.
- 1.2** Requirements defined using “**will**” in the text expresses a provision or service by CSPI or an intention by CSPI in connection with a requirement of this document. The subcontractor is implicitly authorized to rely on such service or intention.
- 1.3** The word “**may**” in the text expresses a permissible practice or action. It does not express a requirement of this document.

**2.0 Board Assembly, IPC-A-610**

**2.1** Boards shall be assembled per the latest revision of IPC-A-610, class-3 standard and J-STD-001D Class-3, Requirements for Soldered Electrical and Electronic Assemblies.

**2.2** Boards shall be assembled with **Eutectic SnPb process only**.

**2.3** The use of Pure Tin Plated finishes is strictly PROHIBITED. Any tin Plating Solder process shall contain NO LESS than 3 percent LEAD composition, unless specifically authorized in writing by CSPI. These restrictions apply for all types and levels of procurement, with the supplier responsible for communicating these restrictions to subcontractor or sub-tier supplier as required.

**2.4** Lead-free solder process may be used if a seller/contractor has written Lead-Free control plan in accordance with GEIA-STD-000-1 that has been approved in writing by CSPI.

**2.5** Components and “components in completed sub-assemblies” shall meet the following requirements:

**2.5.1** The termination finish shall meet the solderability requirement of ANS/J-STD-002 or EIA JESD22-B102 as a minimum and must accept solder at 200 degrees Celsius or less. ANSI/J-STD-002 is preferred test method. A double tinning or dynamic solder wave process shall be used for any gold plating removal.

**2.5.2** Non-Approved Termination Finishes:

**2.5.2.a** Any solder containing tin (Sn) that does not contain at least 3% lead (Pb). This includes, but not limited to: Pure tin (Sn), Tin-Bismuth (SnBi), Tin-Copper (SnAgCu or SAC), tin-Silver (SnAg).

This document is an integral part of the purchase order. The revision in effect at the time the purchase order was placed applies.

**2.6** Connectors must be free of all flux residues. Flux residue may be removed with alcohol only.

**2.7** All DIP switches shall be assembled by hand following wash operations associated with the reflow process. Protective tape covering the DIP switches shall remain firmly attached at all times. Exercise caution to prevent flux solvent or compressed air lifting the tape. Lead temperature shall not exceed 300 degrees C nor shall reflow temperature be allowed for more than 3 seconds on any given lead. Do not remove the tape during the test process.

**2.8** Board assembly contractor shall provide process data with each lot built: Failure data: what failed and how many per assembly.

**3.0 Board Assembly (CSPI ONLY), IPC-A-610**

3.0.1 These Instructions are specific to CSPI assemblies.

**3.1** Heat sink assembly torque values and tread locking mechanisms for CSPI assemblies shall be per CSPI product specific drawing.

**3.2** On a CSPI assembly a component in the same location shall not be replaced more than twice.

**3.3** CSPI assembly product can only ship in CSPI approved container.

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