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## **SOLDERING REQUIREMENTS (IPC J-STD-001 Revision F with Amendment 1)**

### **REVISION HISTORY**

- Revision 7 replaces revision 6 dated 04/05/18.
  - o New template to include Buyer Technologies branding
  - o Change “Supplier” to “Seller” throughout document
  - o Added Requirement 1 to reflect Buyer Policy
  - o Modified requirement in Section 2 for subsequent revisions
  - o Changed “should” in Requirement 2.2 to “shall”
  - o Added Data Submission – concurrence to use subsequent revisions
  - o Administrative updates
- The applicable revision of this document is determined by:
  - o The revision specified on the Buyer Purchase Order, or
  - o The revision in effect at the time of the Buyer Purchase Order if no revision is listed on the Buyer Purchase Order.

### **REQUIREMENTS**

1. This Quality Note is not applicable unless the contract or drawing identifies IPC J-STD-001 for solder assembly and workmanship acceptance.
2. Soldered devices shall comply with the requirements of IPC J-STD-001F w/AM1 Class 3, unless otherwise specified on the Buyer Purchase Order.
  - 2.1. COTS (Commercial-Off-The-Shelf) items are exempt except for as noted in J-STD-001F w/AM1 Section 1.9 (Requirements Flowdown).
  - 2.2. When the Space & Military Addendum to J-STD-001 is required by Buyer approved drawing, Purchase Order or equivalent, the Space Addendum document shall be used in conjunction with the base document (J-STD-001F w/AM1). When these documents are used in conjunction, the revisions of each shall correspond.
  - 2.3. Seller, when requesting use of subsequent revisions to IPC J-STD-001, shall obtain written concurrence from the Buyer Procurement Professional/Buyer prior to use.
3. Solder alloys Sn60Pb40, Sn62Pb36Ag2, and Sn63Pb37, shall be in accordance with J-STD-006.
  - 3.1. Solder alloys other than Sn60Pb40, Sn62Pb36Ag2, and Sn63Pb37 shall not be used for electrical and electronic assembly soldering unless otherwise specified on the Buyer approved drawing or Purchase Order. (Reference IPC J-STD-001F w/AM1, Paragraph 3.2 Solder).
4. 100% X-Ray inspection shall be performed on Ball Grid Arrays (BGAs), Bottom Terminated Components (BTCs), Solder Charged Terminations and Components with Bottom Thermal Plane Terminations (D-Paks) unless these device package styles are part of a documented Process Control Plan (PCP) approved by Buyer and noted on the Purchase Order. (Reference J-STD-001F w/AM1 Paragraphs 7.5.14, 7.5.15, 7.5.10.2 and 7.5.16).

- 4.1 Additionally, for other components with partially visible or hidden solder connections (reference J-STD-001F w/ AM1 Paragraph 4.18.3), a documented PCP verifying conformance/compliance for these "other components" shall be communicated to and approved by Buyer. Buyer's concurrence of the control plan or equivalent shall be noted on the Purchase Order.
- 4.2. Prior to beginning manufacturing, Seller shall perform a complete review of the soldered devices and identify each component requiring X-Ray in compliance with Requirements 4 and 4.1. Components requiring X-Ray, identified by the Seller, shall be communicated with Buyer for concurrence.
- 4.3. Seller shall maintain auditable records of required X-Ray results of accepted product, traceable to the applicable Purchase Order, process router, work instruction, or equivalent for each deliverable item. These records shall be maintained and available for Buyer review prior to acceptance and/or receipt of shipment, or as otherwise specified on the Purchase Order.

#### **DATA SUBMISSION**

- Seller to deliver the following data to Buyer for Buyer Approval:
  - o When the exception to 100% X-Ray as described in requirement 4 is requested, the process control plan/documentation is required in order for a Buyer Subject Matter Expert (SME), or equivalent, to review and approve.
  - o Additionally, when components with partially visible or hidden solder connections as described in Requirement 4.1 are present, the process control plan/documentation is also required in order for a Buyer SME or equivalent, to review and approve.
- Seller to deliver the following data to Buyer as required by this document:
  - o X-Ray results/traceability documentation per Requirement 4.3, upon request.
  - o Data to support written concurrence from Buyer Procurement Professional/Buyer when use of subsequent revisions to IPC J-STD-001F, prior to use, upon request.