

REVISION HISTORY

<u>REV</u>	<u>DATE</u>	<u>ORIGIN</u>	<u>REASON FOR CHANGE(S)</u>
A	22 Oct 18	Paul Gettins	Initial Release
B	26 Oct 18	Paul Gettins	Labeling for Cross sections & Test coupons
C	30 Oct 18	Joyce Conn	Revised hyper-corrosion requirement
D	01 Nov 18	Joyce Conn	Corrected date code format

**Q-CODE Q22E QUALITY REQUIREMENTS**

The following are the quality requirements for product purchased under Q-code Q22E. This product is controlled by the SAE standard, AS9100. This includes but is not limited to granting the right of access to the supplier's facilities and all applicable records to Plexus, their customer and regulatory authorities with the acceptance of this Purchase Order, flow down all applicable requirements to sub-tier suppliers including key characteristics and retention of all records that support the manufacturing or material used per the requirements of AS9100. Unless a written waiver is received from Plexus, the supplier agrees to abide by AS9100 and the quality requirements listed.

**FIRST PRODUCTION RUN/PRE 1<sup>ST</sup> SHIPMENT/CHANGE TO PRODUCT OR PROCESS**

Before a product can be released for production the supplier will be required to meet the documentation and quality requirements as follows:

A. First Article Inspection Requirement (FAIR)

Supplier will execute the Aerospace First Article Inspection requirements of the SAE standard, AS9102 and GDP (Good Document Practice) which requires the following to be provided with the results to Plexus with each shipment in which the requirement is to be executed:

- Any of the Fields are Non Applicable in the FAIR, and must insert N/A into that respective Field. **Do not leave it Blank.**
- All date formats must be Day/Month/Year (DD/MMM/YY)
- All pages must be identified for each page as Sheet 1 of \_
  - For example if you need 2 sheets, then the first sheet would be numbered 1 of 2.
- All Signatures must have a Printed Name (or Unique Identification) and Signature of the person approving the specific section of the FAIR.
- A bubble diagram indicating all applicable features, characteristics and notes must be provided as part of the AS9102 FAIR submission and exact grid reference location of "Char No" field 5.
- Only one part or assembly will be selected and inspected as part of the First Article Inspection.
- Only one part or assembly should accompany the FAIR unless otherwise requested.
- Raw materials must have direct traceability with the chemical and physical properties submitted to Plexus.
- Special processes utilized by the supplier will require a certificate of compliance at a minimum.

B. Cross-Section (with inspection data) per IPC-6012 - A cross section sample and inspection report must be supplied from every manufacturing panel regardless of layer count per IPC-6012 section 3.6.2.

C. Hyper-corrosion - For ENIG boards, process controls shall be implemented as per Plexus PCB specification G9000-3. Results and applicable cross-sections shall be retained by the supplier and provided to Plexus on request.

D. PCB for Solderability Sample - Complete and physically intact PCB or Array as supplied for the Part Number. This should be segregated and boldly identified. The box containing the solderability sample must also be identified as such.

E. PCB Test Coupon - A coupon must be supplied from every manufacturing panel.

\*Notice: This document is considered "UNCONTROLLED" when it exists in any printed form.  
See the Partner - Supplier section of the Plexus Web page for the current master of this Q-code.

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- F. Contamination Test Report - ROSE or Modified (ROSE) extraction method. (Ref. G9000-3 per IPC-TM-650 2.3.25.0/1 )
- G. 100% Electrical Testing Certificate or Stamp - Including an Impedance Report on impedance designs.
- H. Material Certificate - at a minimum the material certification must include a statement declaring that the items are manufactured from the material specified. This may be included with the certificate of compliance.
- I. Certificate of Compliance - detail the following:
- A statement of overall compliance to all the applicable specifications and a statement is required to list, all the applicable specifications such as detailed below but is not exclusive:
    - Drawing
    - Plexus Purchase Order
    - Customer specifications (e.g. QAM10 relevant Issue No.)
    - Plexus G9000-3
    - IPC specifications
  - Any associated non-conformance reports shall be appended to the FAIR
  - Approved copies of any Product Acceptance Testing/Acceptance Test Report or additional test data shall be maintained and appended to the FAIR
  - Material & test certificates/reports (including chemical and mechanical analysis) and manufacturing layout (job cards) shall be collected and appended to the FAIR
  - Associated C of C's shall be annotated to state that the parts are subject to a FAIR
  - Refer to the drawing number / specification to which it conforms
  - be signed by a person with documented approval to do so
  - List any FAIR, Process Control Plan or Non-Conformance Report references applicable
  - Reference to applicable QMS accreditation registration number
  - A unique reference number from the Supplier, unless otherwise stated
  - The statement of work which shall include the words: 'Manufactured, Inspected and Tested'
  - Any prior agreed exception, deviations and concessions
  - Product subject to shelf life control shall have the date of manufacture and expiry clearly stated on the C of C
    - A minimum of 90% shelf life shall remain at point of delivery unless otherwise agreed with Plexus
  - In accordance with the REACH Regulation, the Supplier shall provide Plexus with a REACH Article 33 Declaration including, safe use information if the product contains a REACH Candidate List substance where applicable, of the product on first delivery (FAIR) or upon request.
- J. Traceability - It also must include the following information:
- Name of Supplier (if different than the actual Manufacturer/OEM/OCM)
  - Name of Manufacturer/OEM/OCM
  - Manufacturer's/OEM's/OCM's Part Number
  - The Manufacturer/OEM/OCM Lot # or Date Code, (Each shipment, COC and packing slip must contain only one lot or date code)
  - Location or place of manufacture
  - If the product has a shelf life, the manufacturer or cure date, batch number, the shelf life and expiration date must be included (note: the remaining shelf life must be greater than 90% of the stated shelf life). Any special handling and/or storage requirements must also be included.
  - Plexus part number ordered on the PO
  - EC level or Revision level as specified on the PO for the Plexus part number ordered
  - PO number

Cross sections and PCB coupons will be identified so that they can be traced back to the receipt of the shipment.

The label must detail the following:

- Part Number of the PCB
- Date Code
- Receipt date and supplier or Receipt number
- Date of inspection

Cross Sections and Coupons must be stored in an accessible location for indefinite period of time or per the specific customer requirement.

- K. Packaging - All cartons, required documentation, labels, packaging and packing slips must have part number, EC level or revision, quantity and P.O. number listed on them.

## SUBSEQUENT SHIPMENTS

The Quality requisites below and must meet the same requisites as stipulated for the corresponding 1<sup>st</sup> shipments/change above:

- A. First Article Inspection Requirement - Supplier will execute **First Production Run requirements** and provide the results to Plexus with each shipment following any subsequent change that invalidates the previous first article inspection result per AS9102. In addition, parts held in inventory by the supplier for 2 or more years or not received by Plexus in 2 or more years must have the **First Production Run requirements** performed to assure no revision change or part deterioration during storage.
- B. PCB for Solderability Sample - if point A is applicable
- C. Cross-Section (with inspection data) per IPC-6012 section 3.6.2.
- D. Hyper-corrosion – For ENIG boards, process controls shall be implemented as per Plexus PCB specification G9000-3. Results and applicable cross-sections shall be retained by the supplier and provided to Plexus on request.
- E. Test Coupon
- F. Contamination Test Report
- G. 100% Electrical Testing Certificate or Stamp
- H. Material Certificate
- I. Certificate of Compliance
- J. Traceability
- K. Packaging

*When the revision of the part changes, First Production Run requirements must be completed as a new part before the shipment of product to Plexus.*

The above listed documentation must be submitted with each shipment. Material received without the completion and proper execution of the Quality Requirement allows Plexus the right to return the material.

### Product change notification

Upon acceptance of conforming product, documentation, and the requirements of this Q-code, the supplier's manufacturing process shall be considered "qualified". All changes require written approval from Plexus prior to implementation. Product or Process change notification requests (PCNs) shall be submitted to [pcns@plexus.com](mailto:pcns@plexus.com).