



## Q-CODE Q45E QUALITY REQUIREMENTS

### ACCEPTANCE OF PRINTED CIRCUIT BOARDS/PRINTED WIRING BOARDS FOR DRS PROGRAM

The following are the quality requirements for product purchased under Q-Code Q45E. These requirements are specific to our customer Leonardo DRS Naval Power. Unless a written waiver is received from Plexus, the supplier agrees to abide by the quality requirements listed below. 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 Leonardo DRS Naval Power and regulatory authorities with the acceptance of the Purchase Order
- Flow down all applicable requirements to sub-tier suppliers including key characteristics
- Retention of all records for a minimum of 7 years that support the manufacturing or material per the requirements of this Plexus customer.

### ALL SHIPMENTS

#### SHIPMENTS AND HANDLING OF EXPORT CONTROLLED ITEMS, DATA, OR SERVICES

The Supplier agrees to comply with The Arms Export Control Act, 22 U.S.C 2751-2794, the International Traffic in Arms Regulation (ITAR), 22 C. F. R. 120 - 130, the Export Administration Act, 50 U.S.C. app 2401-2420, and the Export Administration Regulations, 15 C.F.R. 730-774 for this product, all specifications, and associated documentation. This includes, but is not limited to:

- Export controlled items, data, services, or any element thereof, shall not be exported from the United States without U.S. Government authority and the express written authorization of a Plexus ITAR Empowered Official.
- Export controlled items, data, or any element thereof, shall not be transferred or disclosed to foreign persons including transfer to foreign persons employed by or associated with, under contract to Sub-tier suppliers including transportation carriers.
- Import licenses will be provided with all shipments where applicable.

#### PROHIBITED MATERIALS

Unless specifically called out by DRS-CCI procurement documents or approved drawings, the material listed in Table 1 below shall not be used in the manufacturing of items delivered to DRS-CCI.

Exceptions can be requested via the Plexus deviation process.



Table 1: Prohibited Materials

Adhesive Tape	Cork	Polychlorinated Biphenyls (PCBs)
Aluminum Electrical Conducting Wire	Corrosion Inhibitors	Polyvinyl Chloride (PVC)
Aluminum Alloy	Flammable Materials	Radioactive Materials
Antimony and Alloys	Fragile or brittle Materials	Selenium
Asbestos	Freon Solvents	Silicone
Barium	Lead and Alloys	Silver
Bismuth and Alloys	Liquid Masking Materials (for electrical connectors and socket mounted components)	Teflon
Boron Trifluoride	Lithium	Thermal Compound (for electrical connectors and socket mounted components)
Brass with Pb >1%	Low Ductility Materials	Thiosulfate
Bronze with Pb>1%	Low Melting Point Metals	Tin and Alloys
Cast Iron and Cast Aluminum	Magnesium	Zinc, Alloys and Chromates
Cadmium and Cadmium Plating	Mercury and Mercury Compounds	Zinc Plating, Galvanizing, Hexavalent Chromium and Plastic Coatings
Chromium % Chromium Compounds (including Hexavalent Chromium)	Ozone Depleting Substances	

## FIRST ARTICLE REQUIREMENT

Supplier will execute the First Shipment requirements below and provide the results to Plexus when any of the following occurs:

- A change invalidates the previous first article inspection result per AS9102
- Finished goods have been held in inventory by the supplier for 2 or more years
- Plexus has not received product in 2 or more years

## First Shipment

The documentation and quality requirements for the initial shipment and/or the first shipment after any changes have been made, are as follows:

- First Article Inspection Report - All dimensions and specifications on the drawing must be verified and within print tolerance. Plexus must approve any dimension that is not within print specification in writing before product/parts can be shipped.
- Cross-Section Report - Shall include inspection data and be per IPC-6012 section 3.6.2.
- 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.
- Contamination Test Report
- Cleanliness - Cleanliness per IPC-5704 "Cleanliness Requirements for Unpopulated Printed Boards"



- F. 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.
- G. 100% Electrical Testing Certificate or Stamp. Including an Impedance Report on impedance designs.
- H. Certificate of Compliance - Must state compliance to all applicable specifications (drawing, PO, customer specifications, Plexus G9000-3, IPC specifications, etc. The statement of compliance must include the name and location of the facility that manufactured the Printed Circuit Board/Printed Wiring Board.
- I. Any test and inspection records provided with the shipment shall have the following statement on the document: "The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute."
- J. Packaging and Labeling - all cartons, required documentation, labels, packaging and packing slips must have the Plexus part number, EC level or revision (if applicable), date code(s), quantity and PO number listed on them.

## SUBSEQUENT SHIPMENTS

The documentation and quality requirements as listed below are required with for all subsequent shipments

- A. Cross-Section Report - Should include inspection data and be per IPC-6012 section 3.6.2.
- B. 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.
- C. Contamination Test Report
- D. Cleanliness - Cleanliness per IPC-5704 "Cleanliness Requirements for Unpopulated Printed Boards"
- E. 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.
- F. 100% Electrical Testing Certificate or Stamp. Including an Impedance Report on impedance designs.
- G. Certificate of Compliance - Must state compliance to all applicable specifications (drawing, PO, customer specifications, Plexus G9000-3, IPC specifications, etc. The statement of compliance must include the name and location of the facility that manufactured the Printed Circuit Board/Printed Wiring Board.
- H. Any test and inspection records provided with the shipment shall have the following statement on the document: "The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a felony under Federal Statute."



- I. Packaging and Labeling - all cartons, required documentation, labels, packaging and packing slips must have the Plexus part number, EC level or revision (if applicable), date code(s), quantity, and PO number listed on them.

The above listed required documentation must be submitted with each shipment. Shipments received without the proper execution and completion of these Quality Requirements is considered non-conforming and Plexus reserves the right to return to the supplier at the supplier's expense.

## PRODUCT CHANGE NOTIFICATION

Product or Process change notification (PCNs) shall be submitted to [pcns@plexus.com](mailto:pcns@plexus.com), please reference the details of our PCN policy and requirements in the Plexus Supplier Quality Manual, [DCS 10503](#).

## REVISION HISTORY

REV	RELEASE DATE	ORIGINATOR	DESCRIPTION OF CHANGE(S)	REASON FOR CHANGE(S)
A	18-Dec-2023	Jorge Irizarry	New - Initial Release	Specific requirements for 20H IPC-5704 and prohibited materials.
B	6-Feb-2024	Jorge Irizarry	Removed link to DRS quality clauses and corrected customer name page 1. Added required statement for test and inspection records	Link not required. Required statement flowed down by customer.
C	18-Apr-2024	Jorge Irizarry	Added to the prohibited materials list. Format change for packaging and labeling requirement (created bullet J and I), slight formatting changes to add space	Customer added to the prohibited materials list. Made document easier to read.