

# STANDARD QUALITY REQUIREMENTS FOR SUPPLIERS

---

For questions concerning Standard Quality Requirements for Suppliers (F05-QP008), please contact your APC buyer.

## 1. SCOPE

This document establishes requirements for supplier's quality control systems. These requirements are in addition to those set forth in specific purchase orders or any other contractual documents. Excluded are suppliers of stationary and janitorial supplies. **Any reference to Federal FAR or DFAR clauses do not apply to commercial purchases unless otherwise stated on the Purchase Order.**

## 2. QUALITY SYSTEM REQUIREMENTS

The supplier shall follow APC's Standard Quality Requirements for Suppliers (F05-QP008) during the fabrication of all parts, sub-assemblies, assemblies, and tooling involved in the manufacturing, distribution, and shipping of APC products or when performing and providing a service for APC. The supplier must retain on file evidence of conformance. By shipping the product to APC, suppliers confirm that the product meets or exceeds all applicable APC engineering and / or purchase agreements, purchase orders, functional test requirements, and / or supplier design control documents. The supplier is also responsible for ensuring sub-tier supplier-produced parts, components, or services conform to APC approved design data. Certification with ISO9001, AS9100 or NADCAP standards is preferred for all suppliers. However, as a minimum, suppliers must meet APC's requirements to the extent further imposed by the provisions of applicable drawings, specifications and Purchase Orders.

## 3. DISTRIBUTORS

Distributors as the direct supplier to Amphenol Printed Circuits Inc. and the representative manufacture, Distributors are responsible for compliance with all procurement action requirements. The applicable requirements of all quality clauses and technical requirements listed on the procurement action will apply to both the distributor and the manufacture of the product.

Distributors must immediately notify Amphenol if there is any change in their status as an approved distributor or source of any purchased parts

Note: Distributors, if a manufacture's Certificate of Conformance is not provided with each shipment of product, Amphenol Printed Circuits Inc. reserves the right to request at that time of, or after receipt of product, a manufacturer's Certificate of Conformance to ensure that the product provided is as specified in the Amphenol Printed Circuits Inc. procurement document.

## 4. QUALITY AUDITS

The supplier's Quality System may be subject to initial and/or periodic audits, at a frequency determined by Amphenol Printed Circuits or its customers, to determine compliance to these or any other contractually imposed requirement.

## 5. RIGHT OF ACCESS

Amphenol Printed Circuits, its customers and applicable regulatory agencies shall be granted access to the facilities involved in a specific Purchase Order and all applicable records pertaining to that order.

## 6. FLOWDOWN

The supplier shall flow down all applicable quality requirements to any subcontractors used in the performance of any contract received from Amphenol Printed Circuits. This includes key characteristic(s) where required.

## 7. SUPPLIER RESPONSIBILITY – PRODUCT / PROCESS CHANGES

The supplier shall maintain a system for the control of quality that complies with the standards as listed above. This system shall be subject to Amphenol Printed Circuits Inc. approval and shall include, but not be limited to, the following:

- The Quality Manager and / or the Purchasing Manager at Amphenol Printed Circuits Inc. shall be notified, in writing, when any changes are made to the quality system that may affect product conformance. Notification shall also be sent when changes in product and/or process definition will affect product conformance or its intended use.
- The quality system shall assure that all services and product offered for acceptance has been subject to all examinations and tests required to prove conformance to contract or purchase order requirements.
- The Quality Manager and Purchasing Manager at APC shall be notified immediately in writing if product cannot meet EEE certifications
- The supplier shall notify Amphenol Printed Circuits Inc. of organizational changes affecting quality management, supply chain management, or ownership within 10 business days of the change. A change in location or certification status, as well as significant organizational changes, may constitute an on-site visit from Amphenol Printed Circuits inc.
- For non-COTS items the supplier shall notify Amphenol prior to implementing engineering and process changes including, but not limited to: new location, new equipment, new tooling, change of process flow, change of materials used

## 8. DOCUMENTATION

Supplier is responsible to obtain all referenced documents. Documents not provided with the purchase order are available upon request of Amphenol Printed Circuits Inc. Purchasing. In the event a purchase order does not have a revision listed, it is the responsibility of the supplier to obtain this information from the buyer.

## 9. RECORDS

Records and other objective evidence of inspection testing, assembly, processing, and fabrication shall be retained by the supplier for a minimum of 7 years after the final contract shipment unless otherwise specified. These records shall be identified and stored to enable the records to be readily located and retrieved.

## 10. CESSATION OF OPERATIONS

If the supplier ceases operations, the supplier is responsible for notifying Amphenol Printed Circuits within ten business days and arranging for transfer of all applicable records to Amphenol Printed Circuits custody. If the supplier is sold or merges with another company it is the responsibility of the supplier to notify Amphenol Printed Circuits within ten business days and to ensure that all records are transferred to the new company and that Amphenol Printed Circuits is notified of the new storage location.

## 11. Record Types

Types of records to be retained include as applicable, but are not limited to: First Article inspection reports; Inspection and test procedures; Laboratory and other test records; Non-Destructive Testing techniques and records; X-Ray techniques and records; Inspection history (route cards or record cards); Traceability information; Supplier drawings and specification change history; Calibration records; Quotation/procurement documents; Receipt inspection records and Supplier approval documents. Other records may be required and will be noted accordingly on the purchase order.

## 12. CORRECTIVE ACTION

Requests for Corrective Action shall be answered and returned by the due date given on the Corrective Action Request (CAR). The supplier is responsible for determining and implementing corrective action and for performing follow-up actions to verify the effectiveness of corrective action.

## 13. MEASURING AND TEST EQUIPMENT

The supplier shall provide and maintain sufficient gauges and other measuring and test devices that are accurate enough to assure product conformance. As appropriate to the scope of the activities performed, the supplier shall maintain a calibration system that complies with or meets the intent of any of the following: ISO 10012-1, ISO/IEC 17025 or ANSI/NCSL Z540-1.

## 14. AMPHENOL PRINTED CIRCUITS INC. SUPPLIED MATERIAL

When Amphenol Printed Circuits furnishes material, the supplier's procedures shall include, as a minimum,

- Examination upon receipt to detect damage in transit,
- Periodic inspection and precautions to assure adequate conditions and to guard against damage from handling and deterioration during storage,
- Functional testing, either prior to or after processing, or both, as required by contract or specification to determine satisfactory operation.
- Identification and protection from improper use or disposition.
- Verification of quality.
- Notification/Reporting of any discrepancies/concerns to the Amphenol Printed Circuits Inc. Quality department.

## 15. RECEIVING INSPECTION

Unless otherwise stated within the purchase order, purchased material, product and processes will be subject to inspection at Amphenol Printed Circuits Inc., as necessary to assure conformance to contract or purchase order requirements. Initial acceptance of the order at Amphenol Printed Circuits does not relieve the supplier of any responsibility to produce acceptable product for which they are contracted.

## 16. NON-CONFORMING MATERIAL

The supplier shall establish and maintain an effective and positive system for controlling non-conforming material, product and processes, including procedures for the identification, segregation, presentation and disposition of reworked product. All non-conforming product shall be positively identified to prevent use, shipment and intermingling with conforming product. Nonconforming product shall not be submitted without prior notification and authorization / approval from Amphenol Printed Circuits inc.

## 17. CERTIFICATE OF CONFORMANCE

Each shipment of material, product and / or processed parts shall be accompanied by a legible and reproducible copy of a Certificate of Conformance with the signature of an authorized company representative stating that the material, process or product being shipped meets the requirements of applicable drawings or specifications cited in the purchase order. The certificate must list each special process that appears on the drawing such as: non-destructive examination, and plating or coating, etc. Perishable products controlled by batch number or cure date and products controlled by heat number will have applicable controlling number on the individual certificate. The supplier shall include the date of manufacture and the Amphenol Printed Circuits Inc. purchase order number and APC part number (as it appears on the PO) on the C of C with a statement of conformity of the product shipped. Blanket statements of conformance are unacceptable, as are statements of belief rather than fact. Evidence / records substantiating the C of C must be on file and available upon request in accordance with Records Clause of this document.

## 18. CHEMICAL AND / OR PHYSICAL TEST REPORTS

When required, legible and reproducible copies of all chemical and / or physical test reports, identifiable with the furnished materials, must accompany each shipment. These reports must contain the signature and title of the authorized representative of the agency performing the test. The reports shall be identified with the specification number, revision and lot identification (heat, run, batch, and/or cure lot number as applicable to the product). Chemical and Physical test reports shall include the actual numerical values for each property testing in accordance with the applicable specification. When more than one specimen is required, a test result of each is required on the report.

## 19. PROCESS CERTIFICATION REQUIREMENTS

A legible and reproducible copy of special process certifications (i.e., testing, assembly, nondestructive testing, plating, etc.) shall accompany each shipment of material or parts for which such processing has been accomplished. Special processes shall be performed by customer (process specification owner)

approved sources. Certifications are to include all specifications listed in the order of sequence and date performed.

## 20. DOMESTIC MATERIALS

Specialty metals, such as Titanium and Stainless Steel, must be of a domestic origin as defined by DFARS Clause 252.225-7009, Preference for Domestic Specialty Metals.

## 21. AGE SENSITIVE MATERIALS

The supplier shall identify all materials that are age controlled or life limited with the date of manufacture and the date at which the useful life is expended (shelf life or cycle life). A signed statement regarding the commodity on company letterhead stating the shelf-life conditions of the particular product is acceptable. When environment is a factor in determining useful life, the identification shall include the storage conditions required to achieve the stated life. Unless otherwise stated in the body of the purchase order, product supplied to Amphenol Printed Circuits Inc. shall have a minimum of 70% of its life expectancy remaining at time of delivery.

## 22. PACKAGING

Unless otherwise specified by the purchase order, the supplier is responsible for assuring that all items are delivered without damage or deterioration. Packaging and verification of the packaging will cover the prevention, detection and removal of foreign objects. Unit and intermediate packaging shall be employed as necessary to prevent damage or deterioration.

## 23. ELECTROSTATIC DISCHARGE PROTECTION

Static sensitive devices classified by the drawing or by the nature of the product must be properly handled, packaged and labeled as per BS EN 100015-1 or MIL-STD-1686.

## 24. SHIPPING DOCUMENTS

Every shipment shall be accompanied with a detailed Certificate of Conformance and packing slip listing purchase order number, APC part number, quantity, and description written as shown on the purchase order. Failure to provide this information will be just cause for withholding payment without loss of discount privileges until such documents are made available.

## 25. Shipping, Packaging, and Labeling Requirements for material that is to be imported into the United States of America

Supplier shall comply with all applicable recommendations or requirements of the Bureau of Customs and Border Protection's Customs-Trade Partnership Against Terrorism ("C-TPAT") initiative. Supplier, upon request shall provide evidence of compliance with the C-TPAT initiative.

## 26. CONFIDENTIALITY ISSUE

All documents provided for the purpose of submitting a quotation or fulfilling purchase order requirements, are Customer property and should be considered of a strictly confidential nature. These documents must be returned to Amphenol Printed Circuits Inc. upon request.

## 27. ON SITE CONTRACTORS - pre-requisite

The following are pre-requisite to allowing any contractor on Amphenol Printed Circuits property to perform any work including, without limitation, custodial, cafeteria, security services, calibration service, routine or special maintenance, landscaping, snowplowing, garbage removal, building modifications, alterations or additions.

- Contractor Safety video - All employees and sub-contractors of the contractor must view a 15 minute "Contractor Safety video" prior to commencement of any work on the property.
- Certificate of Insurance – All contractors shall show that the contractor has "adequate" general liability and workman's compensation insurance coverage; Name Amphenol Printed Circuits Inc. as an "Additional Insured"; Include a 30-day advance notice provision of the cancellation modification of any of the indicated coverage.
- Calibration Services - Contractors performing calibration services for APC shall use equipment which has been calibrated and maintained as appropriate to the scope of the activities performed, the supplier shall maintain a calibration system that complies with or meets the intent of any of the following: ISO 10012-1, ISO/IEC 17025 or ANSI/NCSL Z540-1.

## 28. ELECTRICAL / ELECTRONIC ASSEMBLY & SOLDERING REQUIREMENTS

- All electronic assembly and soldering shall conform to the criteria established in IPC-A-610, current revision unless otherwise stated on the purchase order.
- Technicians performing work on and inspectors engaged in final acceptance of electrical/electronic products for purchase by Amphenol Printed Circuits Inc. shall be Certified Application Specialists per IPC-A-610 or J-STD-001, current revisions.
- All electronic assembly and soldering shall conform to the criteria established in the process standard(s)/specification(s) stated on the Amphenol Printed Circuits Inc. purchase order.

## 29. FIRST ARTICLE REQUIREMENT

Compliance to requirements shall be verified by performance of a first article inspection. First article inspection reports shall include S/N when applicable, all drawing dimensions, general notes, and tolerance range along with actual measurement results, and where physical testing is required, the results of the tests. First Article parts shall be identified as "First Article" by tagging, separately packaging them or other suitable means.

Seller will supply a First Article Inspection Report in accordance with AS9102. Requirement is waived if the product supplied is deemed to be a Commercial Off-The-Shelf (COTS) product, Mil-Spec component or a First Article Inspection Report has been performed within past 2 years from the date of Amphenol Printed Circuits Purchase Order. A "Delta" First Article Report is required in accordance with AS9102 requirements, where in such cases the revision or configuration status has changed. Contact Amphenol Printed Circuits

Purchasing Representative with any questions or interpretation. This requirement may be superseded by customer contract quality flow down.

Note: In addition to FAI flow down, other direct customer requirements may be required as part of the contract or purchase order. When a customer requirement is flowed as part of the contract/purchase order by APC, the supplier shall comply with the terms of the requirement and notify the buyer in accordance the contract flow down. Ex: Process or equipment changes requiring customer approval.

### 30. SOURCE SURVEILLANCE

When this SQR is imposed, the Amphenol Printed Circuits Inc. Quality Representative, Amphenol Printed Circuits Inc.'s Customer, and applicable regulatory authority shall perform evaluation / acceptance of product at the supplier's facility. This will include surveillance of the products and supplier's systems, procedures, and facilities. The supplier shall furnish, at no cost, the necessary facilities and equipment, supply data, and perform tests / inspections as required by applicable drawings, specifications, or Amphenol Printed Circuits Inc. directed Inspection Instructions under surveillance of Amphenol Printed Circuits Inc. Supplier Quality Representative, Amphenol Printed Circuits Inc.'s Customer, and / or applicable regulatory authority. The supplier is to notify Amphenol Printed Circuits Inc. Buyer, requesting source surveillance at a minimum of 48 hours in advance of desired inspection date.

### 31. FOREIGN OBJECT PREVENTION, DETECTION AND REMOVAL

The supplier shall maintain a FOD (Foreign Object Damage / Debris) control program assuring work is accomplished in a manner preventing foreign objects or material from entering and remaining in deliverable items. Maintenance of the work area and control of tools, parts, and material shall preclude the risk of FOD incidents. The supplier shall document and investigate all FOD incidents assuring elimination of the root cause. The Company shall have the right to perform inspection and / or audits as a method of verification that the supplier's FOD control program is functional, documented, and effective. The supplier shall identify a FOD control person responsible for implementing FOD prevention awareness and training.

Prior to closing inaccessible or obscured areas or compartments during assembly the supplier shall inspect for foreign objects/materials. Tooling, jigs, fixtures, test equipment, and handling devices shall be maintained in a state of cleanliness and repair to prevent FOD. Supplier shall provide a statement of certification that deliverable products are free of any foreign materials that could cause damage to the product or to the components/systems of which the product is a part or to which the product is attached.

### 32. SPECIAL PROCESS CONTROL

Special processes are those yielding products which cannot be evaluated for conformance to requirements through inspection or non-destructive testing, waste processing, etc. These include, but are not limited to welding, plating, heat treating, anodizing, printed circuit board fabrication (Rigid and / or Flexible), solder mask application, via fill application, assembly, electrical test, chemical machining, chemical coating, mechanical machining, etc. The Supplier shall, as a minimum, demonstrate a degree of control over these

processes to provide assurance that Amphenol Printed Circuits Inc. purchase order specifications are upheld. Supplier is responsible to obtain all referenced documents. Documents not provided with the purchase order are available upon request of Amphenol Printed Circuits Inc. Purchasing. As applicable, the Supplier shall provide adequate training for personnel, certifications where required and destructive testing of samples and detailed procedures. Upon request, copies of special process procedures and certifications shall be supplied to Amphenol Printed Circuits Inc. If the Supplier uses facilities other than their own, those facilities are subject to the same conditions stated herein. All certifications supplied as objective evidence must indicate the name and location of the facility performing each special process.

### **ADDITIONAL REQUIREMENTS BY COMMODITY:**

(Unless otherwise stated within the P.O.)

#### **33. RAW MATERIALS – (METALLIC) SHEETS**

Material shall be free from surface defects and flat per specification. Original Mill certifications with actual chemical and physical values are required. Material must be identified with an identifier (heat, lot, run or batch number), temper, thickness, alloy and specification. The preferable means is via stenciling. Tags or labels may also be used so long as the material can be positively tied to all certifications. Each purchase order must be shipped on its own skid. This skid shall be of the same size as the material being shipped. When the shipment encompasses more than one heat (lot, run, batch), each heat must be segregated and positively identified. All banding must be cardboard protected. Sheets shall be paper interleaved. The paper may not be taped to the material.

#### **34. RAW MATERIAL – EPOXY OR PHENOLIC SHEETS**

Material shall be free from surface defects. Original Mill certifications with actual chemical and physical values are required. Material must be identified within its package, positively traceable to all certifications. Each purchase order must be shipped on its own skid. This skid shall be of the same size as the material being shipped. When the shipment encompasses more than one heat (lot, run, batch), each heat must be segregated and positively identified.

#### **35. RAW MATERIAL – METALLIC FOIL**

Material must be of photo image-able, laminating quality, free from oil and other contaminants. Original Mill certifications with actual chemical and physical values are required. Packages must be marked with the purchase order, quantity, weight, heat (lot, run, batch), number and specification. Packaged one part number per skid.

#### **36. RAW MATERIAL – POLYIMIDE FILM**

Each roll must be identified with the Amphenol Printed Circuits Inc. Part Number, quantity and an identifier (Lot/ batch number) traceable to the certifications. Material certifications with actual test values are required.



### 37. RAW MATERIAL – POLYIMIDE LAMINATE

Material must be of photo image-able, laminating quality, free from oil and other contaminants. Original Mill certifications with actual chemical and physical values are required. Packages must be marked with the purchase order, quantity, weight, heat (lot, run, batch), number and specification. Packaged one part number per skid.

### 38. RAW MATERIAL – EXTRUSIONS, MOLDINGS AND CASTINGS

Material shall be free from surface defects. Original Mill certifications with actual chemical and physical values are required. Material must be identified with an identifier (heat, lot, run or batch number), temper, part number, alloy and specification. The preferable means is via stenciling. Each purchase order must be shipped in its own container. The container shall offer sufficient protection from damage during transit. When the shipment encompasses more than one heat (lot, run, batch), each heat must be segregated and positively identified.

### 39. PURCHASED PARTS

Original mill raw material certifications with actual chemical and physical values are required. Test reports for all processes performed are required with the shipment. Approved suppliers, as outline previously, shall be used for all special processes.

### 40. CHEMICALS, GLUES AND ENCAPSULENTS

A Certificate of Analysis (C of A) or Certificate of Conformance (C of C) is required with each shipment. Documentation must include manufactured and expiration dates for each lot shipped. Containers are to be shipped in a single-level bundle and packaged to prevent damage in transit.

### 41. COUNTERFEIT COMPONENT RISK MITIGATION

**Quality Management Systems** - All Suppliers to APC shall maintain a Quality System process documented to mitigate risk of supplying counterfeit components in accordance with SAE AS5553. Quality Systems in place should comply with and / or be certified to appropriate quality standard (e.g., AS9100, AS9120, ISO9001, and AS9003)

**Certificate of Conformance** - Manufacturer C of C / Full Documentation Traceability back to Original Component Manufacturer is required with all shipments to APC. Material received without acceptable documentation is subject for rejection / return.

**Product Traceability** - All suppliers to APC shall maintain a method of item traceability that ensures tracking of the supply chain back to the manufacturer. This traceability shall include the manufacturer's batch identification for the items(s) such as date codes, lot codes, serializations, or other batch identifications.

**Inventory Control** - All suppliers to APC shall maintain inventory control processes to prevent co-mingling of materials from authorized and non –authorized sources

**Penalties Associated with Fraud** - APC is a supplier to Aerospace Defense Contractors and Subcontractors. Our suppliers must insure that only new and authentic materials are used in products delivered to APC. If it has been determined that counterfeit parts are furnished to APC, such items shall be impounded. The

supplier will promptly replace with items acceptable to the Buyer. The seller may be liable for costs relating to impoundment, removal and replacement. The buyer may turn items over to US Governmental authorities for investigation and reserves the right to withhold payment for the items pending results of investigation.

**Flowdown** - All component suppliers to APC must communicate and flow down counterfeit risk mitigation requirements to their suppliers.

#### 42. BUSINESS CONTINUITY

While it is apparent that contingency plans cannot be developed for all potential scenarios, Amphenol Printed Circuits expects its Suppliers to have and maintain robust plans to facilitate rapid response and recovery in the event of business disruptions. In addition, Amphenol Printed Circuits expects its Suppliers to have a comprehensive crisis management approach to deal with potential business disruptions. This approach needs to include plan of action, checklist of activities, communication plans, escalation procedures, and organization of teams, roles, and responsibilities. This plan should address the recovery time needed for a variety of business interruptions, contact information for key locations, supply chain assessment of risk for equipment, material, supplied components and labor, etc. and be specific to Amphenol Printed Circuits products and/or services provided.

Upon request, the Supplier shall provide risk management and business continuity plans to Amphenol Printed Circuits. Amphenol Printed Circuits expects its Suppliers to develop, deploy, maintain, and adhere to these business continuity planning requirements at all times.

#### 43. OUTSIDE SERVICE CERTIFICATION OF CALIBRATION

The outside calibration service shall provide a certificate attesting to the calibration of the items serviced. This certification must contain all the test parameters necessary to demonstrate conformance to the manufacturer's specifications and shall be traceable to National Institute of Standards and Technology (NIST). The service provider shall maintain a calibration system in accordance with ISO17025 and AS9100 as applicable.

#### 44. ITAR CONTROLLED TECHNICAL DATA

No Amphenol ITAR controlled technical data is permitted transfer to any party other than return to its original source of supply without first determining possible restrictions related to ITAR obligations/controls.

Transfer of ITAR technical data to a U.S. subcontractor is permitted to be made by the responsible supplier only once the supplier has provided Amphenol with a written assurance that it conducts itself in compliance with U.S. Export laws. Pending any acceptable response from the U.S. subcontractor, including their acknowledgement that they are registered with DDTC and that appropriate controls are in place to restrict access of Amphenol ITAR technical data from any Foreign National, a request for quotation or other communication/transfer of ITAR technical data can be made to the subcontractor.

Letters of certification for a subcontractor will be updated on an annual basis with all U.S. subcontractors. See form F13-QP008: ITAR Compliance Certification

#### 45. SAFEGARDING COVERED DEFENSE INFORMATION AND CYBER INCIDENT REPORTING (DFARS 252.204-7012)

Seller is responsible for full compliance to the DFAR regulations related to safeguarding covered defense information and cyber incident reporting. The seller shall conduct activities under this clause in accordance with applicable laws and regulations on the interception, monitoring, access, use and disclosure of electronic communications and data. The safeguarding and cyber incident reporting required by this clause in no way abrogates the seller's responsibility for other safeguarding and cyber incident reporting pertaining to any unclassified systems required by other applicable clauses of this contract, or as a result of other applicable U.S. Government statutory or regulatory requirements. The Contractor shall include this clause, including this paragraph, in subcontracts, or similar contractual instruments, for operationally critical support, or for which subcontract performance will involve covered defense information, including subcontracts for commercial items, without alteration, except to identify the parties. The Contractor shall determine if the information required for subcontractor performance retains its identity as covered defense information and will require protection under this clause, and, if necessary, consult with the Contracting Officer; and require subcontractors to:

- Notify the prime Contractor (or next higher-tier subcontractor) when submitting a request to vary from a NIST SP 800-171 security requirement to the Contracting Officer, in accordance with paragraph (24)(2)(ii)(B) of this clause; and
- Provide the incident report number, automatically assigned by DoD, to the prime Contractor (or next higher-tier subcontractor) as soon as practicable, when reporting a cyber incident to DoD as required in paragraph (c) of this clause.

#### 46. Suppliers must ensure that all supplier personnel, sub-tiers, and other employees are aware of:

- Their contribution to product or service conformity
- Their contribution to product safety
- The importance of ethical behavior
- While producing any product sold to Amphenol Printed Circuits.