# **PURPOSE:**

This is a reference document that specifies product unique quality requirements, in addition to those shown on the engineering drawing. These requirements are specified by number on the Cubic purchase order and are incorporated as part of the Cubic purchase order.

**Note: Supplier questions or requests for clarification should be directed to the appropriate Cubic Procurement Department personnel.**

## REQUIREMENTS APPLYING TO ALL CUBIC SUPPLIERS

1. **PURCHASE ORDER:**

In this document the term “Purchase Order” or “P.O.” is an offer to enter into a contract, which is accepted by the seller signing and returning a copy, or commencement of performance.

1. **POINT OF CONTACT:**

Your point of contact will be the Buyer referenced on the P.O. Any questions, problems, or information should always be directed to the buyer. Do not accept any change to the technical and quality requirements unless authorized in writing by the buyer.

1. **SUPPLIER RATING SYSTEM:**

Cubic maintains a supplier rating system to track the supplier’s performance of contractual, P.O., specification, and Quality requirements. Any non-compliance with the specified requirements will affect your rating. It is important that a supplier responds to any Corrective Action Request (CAR) completely and in the time specified on the CAR. Failure to do so may affect your approval status.

1. **NON-CONFORMING MATERIAL:**

Unless specifically authorized, in writing by the Cubic buyer, you are not authorized to make use-as-is and repair dispositions of non-conforming material. Should you discover non-conforming material that you feel would be in Cubic interest to accept, you should contact the buyer for instructions.

## CERTIFICATIONS & TEST REPORTS

**C-1** ***Certificate of Conformance (C of C) on File*** The supplier shall retain all test reports and/or Certificate of Conformance on file for a minimum of seven (7) years from payment of this order. Records shall remain legible, readily identifiable and retrievable. Record identification, storage, protection, retrieval, retention time (if greater than four years), and disposition of records shall be in accordance with the supplier’s company policy.

**C-2** ***Chemical and Physical Test Reports*** On request by Cubic, shipments must be accompanied by chemical and/or physical test reports, identifiable with the materials submitted. The reports shall include the material manufacturer's lot/heat/melt number and actual inspection/test values as required by the material specification must be signed by an authorized representative of the agency performing the test(s).

**C-3** ***Test Certificates*** Reports of electrical, functional, mechanical, environmental, or other tests are required with each shipment via any media type (e.g. hardcopy, electronic, sharepoint). These reports shall include as applicable:

1. Cubic's Purchase Order number or Blanket Purchase Order number with released number.
2. Item description.
3. Drawing/Specification and Revision used.
4. Cubic Part Number and applicable Revision.
5. Acceptance limits of test parameters.
6. Number of units tested.
7. Serial number of units tested, as applicable.
8. Lot/date code, as applicable.
9. Recorded Test Data/Test Results.
10. Test data certificate must contain the signature and title of a responsible representative of the supplier.

**Note: Supplier may make ATE test data available through their FTP site. Notify Cubic when data is available and accessible. Data should be formatted to be easily interpreted.**

**Note: For items being returned on a rework purchase order, data is required only for test(s) performed to verify rework.**

**C-5** ***Certificate of Conformance (C of C)*** A proper C of C containing the signature of the responsible Supplier official must accompany each shipment. The C of C shall contain:

1. Supplier’s name
2. Cubic purchase order and line item number(s)
3. Part number
4. Drawing revision
5. Quantity shipped
6. Serial number (s), as applicable.
7. Specification (s), as applicable.

The certificate shall read substantially as follows:

“We hereby certify that the material supplied on this purchase order conforms to all purchase order requirements, and that inspection/test data to substantiate this certification is available for review by Cubic”.

Upon request, copies of supporting data shall be supplied to Cubic. Articles defined in the purchase order are subject to Cubic inspection at destination and may not be accepted by Cubic if the Supplier fails to send completed certification with the shipment.

**C-12 *Lead-Free Components and Assemblies***

**Documentation**

* The replacement of lead-containing solder in Cubic assemblies such as CCA’s must be positively identified in the documentation sent to Cubic.
* Shipped Lead-Free Components and Assemblies items that are affected by a reliable solder joint caused by reflow and wave-soldering processes must be identified as “Lead-Free” in the Supplier’s documentation.

**Component And Assembly Identification/Approval**

* Suppliers must identify components or assemblies that introduce no-lead “green products” products into Cubic’s shipment. The location of the “Lead Free” identification shall be on the product and shipping container.
* When items cannot be physically marked or tagged because of lack of marking space or item size, the detailed marking requirements shall be applied to the container or bag.
* Prior to shipment, the Supplier must verify that no-lead or “green products” products used in Cubic’s shipments are approved in the Cubic Lead Free Alternate Parts List (LFAPL).
* Lead-Free components in an electronic assembly are defined as ICs, resistors, capacitors, connectors, crystals, inductors, etc., and are capable of being attached to a circuit board by soldering. They shall have Lead-Free identification and must be listed in the Cubic’s Lead Free Alternate Parts List (LFAPL).

**C-14** ***Printed Circuit Board Contamination/Cleanliness Test*** The supplier will be able to provide certification of compliance to J-STD-001A, Appendix F, Section F-2.2e: Sodium Chloride Salt Equivalent Ionic Contamination Test, as well as IPC-TM-650, number 2.3.27: Cleanliness Test - Residual Rosin.

**C-26** ***Solderability Conformance*** A C of C containing the signature and title of the responsible Supplier official must accompany each shipment stating that the wires/part leads or circuit boards meet the manufacturers stated solderability criteria. Cubic reserves the right to test wires/part leads or circuit board leads in accordance with the applicable solderability requirements of ANSI/J-STD-001/IPC-610. Acceptance of parts shall be contingent upon solderability requirements being met.

## PACKAGING AND HANDLING REQUIREMENTS

**H-11** ***Special Handling/Storage Conditions*** Product technical data sheets must accompany each shipment and must address as a minimum; storage conditions; Shelf Life, (Shelf Life is applicable when, and only when, the product has known, critical, time dependent deterioration characteristics) if applicable; instructions for preparation and usage; safety data, hazards and cautions. For limited Shelf Life material the shipping documents must specify the Shelf Life and date of manufacture. Limited Shelf Life material must have a minimum of 75% of Shelf Life remaining upon receipt at Cubic. For material requiring special storage conditions, such conditions shall be plainly and conspicuously marked on the outermost shipping container and on each individual unit package.

**H-16** ***Age Control of Rubber Goods*** Rubber goods delivered under this purchase order shall conform to the requirements set forth in SAE-AS1933 and SAE-ARP5316, incorporated herein by reference, and shall be delivered within 6 months from cure date.

**H-18** ***Material Safety Data Sheets (MSDS)*** Material Safety Data Sheets shall be delivered to Cubic prior to acceptance of shipment of any chemical product.

**H-25** ***Direct Shipment*** Supplies on this order are to be shipped direct to the buyer’s customer. The buyer shall prepare, and furnish to the seller for execution, all required Material Inspection and Receiving Reports (MIRR), DD Form 250, or such other shipping documentation as may be required by the Prime Contract. Notify the buyer fifteen (15) working days in advance of each shipment to allow for document preparation.

## INSPECTION & SURVEILLANCE

**Note: First Article Inspection (FAI) is required for the first item(s) of the first lot produced and delta FAI required for all part revisions or process changes.  A first article inspection is not required with subsequent orders of the same item. A first article is required when changes occur that invalidates the original results (for example source of supply, manufacturing process changes and tooling changes) Contact Cubic for clarification if necessary.**

**I-1A** ***First Article Prior to Production*** Cubic shall approve the First Article Inspection on the product prior to fabrication of additional deliverable items. The supplier shall notify the appropriate Cubic Purchasing personnel five (5) business days prior to the date of the inspection to ascertain location (supplier or Cubic) of this inspection.

A sample of all raw castings and forgings from new or reworked dies or molds along with the layout inspection and actual chemical and physical test result must be forwarded to Cubic. The Supplier is responsible for obtaining Cubic approval of any change to processes or tooling using the same approval instructions stated above.

**I-1B** ***First Article*** If this part/material has never been produced to a Cubic drawing by the supplier or if the configuration or type of raw material or components has changed by drawing revision, or change in process, or tooling the supplier shall conduct and submit a First Article Inspection and report that shall include all dimensional, functional and nondestructive test results required by applicable specifications. The first article material must be so marked and identified with the part number and revision letter. A first article is not required for items which have been returned for repair.

**I-1E *FAIR per AS9102*** First Article Inspection (FAI) shall be performed per the requirements of AS9102, “Aerospace First Article Inspection Requirement,” latest revision, and prior to product acceptance and shipment to Cubic. The following optional fields in the AS9102 FAI Report Form 1 are considered mandatory by Cubic: 11, 12, 21, 22, 23 and 24.

**I-4 *Source Inspection*** Cubic Source Inspection in your facility is as specified in the PO or at Cubic’s request prior to shipment. Evidence of this inspection must accompany each shipment. The Supplier agrees to furnish, at no cost, the data, equipment and facilities necessary to accomplish product inspection. To schedule source inspection the supplier shall notify the buyer five (5) days in advance of schedule inspection.

**I-9 *Calibration System Requirements for ANSI/NCSL Z540*** The Supplier’s Calibration system shall conform to the requirements of ANSI/NCSL Z540.3-2006 and is subject to review at all times by Cubic.

Suppliers providing services or manufacturing items for Cubic shall establish and maintain an inspection system acceptable to Cubic covering supplies or services on this order. The system shall assure that only those supplies inspected and accepted by the system are furnished for Cubic acceptance. The system shall provide for documented test instructions and records of inspection and test activities.

**I-21** ***Change Control***

a.   The supplier shall not change without written approval from Cubic, any drawing, process, material, or procedure previously approved by Cubic/Prime Contractor including those used to qualify items or which were used by the supplier to become a qualified source.

b. The supplier shall notify Cubic Quality and purchasing representatives, in writing, at least 90 days in advance of any sale, relocation, or transfer of Seller's manufacturing operations. Seller shall include the following, as a minimum, in the written notification:

* purpose of the relocation,
* address of the new location(s),
* assessment of actual or potential impact to current POs,
* risk mitigation plan to ensure compliance to existing requirements,
* plan defining the identification, storage, protection, retrieval and retention of records,
* master schedule and timeline of relocation activities, and
* relocation Coordinator/Point of Contact.

**I-28 *Government Source Inspection*** Government Source Inspection is required prior to shipment of the product from your facility. Upon receipt of this order, promptly notify the Government Representative who normally services your facility so appropriate planning for Government Source Inspection (GSI) can be accomplished. Unless otherwise authorized, Cubic Quality Assurance approval is required prior to submittal for GSI.

**I-29 *Supplier Facility Inspections*** Cubic, the Government, and/or the Customer representatives reserve the right to conduct surveys and inspections at the Supplier's facility and Supplier chain, to evaluate compliance with this Purchase Order and all applicable requirements, including the right to perform in process inspection and source Inspection on deliverable products. This includes the auditing of records created by and/or retained by the supplier for Cubic deliverable product. When required, Buyer will provide prior written notification to arrange audits or inspections.

**I-33** ***ATP Acceptance*** Cubic approval of acceptance test procedures (ATP) is required prior to the testing of units to be delivered on this Purchase Order. Any changes to acceptance test procedures (ATP) require concurrence from Cubic.

**I-36** ***Key Characteristics*** The supplier shall monitor and record all key characteristics. Key characteristics are designated on the drawing. The following items shall be recorded for each key characteristic: supplier, part number, revision level, serial number (if applicable), required dimension, required tolerance, measured dimension and pass/fail result for each and every item. Alternately, the supplier may provide the above information for a representative statistical sample of not less than 25, and the associated Cpk value. Shipments evaluated using Cpk shall have a Cpk value of at least 1.33. A copy of the key characteristic analysis shall be provided with each shipment.

Questions regarding key characteristics shall be directed to the appropriate Cubic Quality Engineer.

## NON CONFORMANCE REWORK & REPAIR

**N-1** ***Rework as New*** Rework to a like new functional condition is required. Rework is defined as an action on a nonconforming product to make it conform to the requirements. A like-new functional and cosmetic condition is required. All rework specified shall be in accordance with the original equipment manufacturing specifications (including drawings), except that when such specifications are inappropriate, the manufacturer/rework agency will submit alternative recommendations to Cubic. The supplier shall not commence work until a change is made to the purchase order authorizing alternative recommendations.

**N-3** ***MRB Authority*** The supplier is not authorized to conduct independent MRB activity. Discrepant conditions requiring MRB disposition for repair and use as is shall be documented on a Supplier Request for Deviation form (F-007) and submitted to Cubic Supplier Quality through the applicable buyer for Cubic’s disposition and approval. The supplier shall place non-conforming material in bond, pending disposition and notification by Cubic buyer of the MRB action to be taken.

To obtain a copy of F-007 form, contact the Cubic Buyer.

**N-6** ***Rework Revision*** Depot - rework does not require revision update unless specified in the Purchase Order. Supplier to furnish data for tests performed as determined by supplier.

## QUALITY SYSTEM REQUIREMENTS

**Q-3** ***Quality System*** The Supplier will provide and maintain a Quality Assurance system and documented inspection program that meets ISO9001:2008 or AS9100 or that is acceptable to and approved by Cubic. The Supplier will be responsible for the performance of all Sub-Tier suppliers and these suppliers may be subject to approval by Cubic.

**Q-4** ***Traceability Requirements for Certified Parts*** This clause applies to all parts with “@C” as the first two characters of the Cubic Business System or Purchase Order part description. This prefix signifies parts that have specific traceability and regulatory requirements, for example UL rated parts or products. The @C prefix is used by Cubic to readily identify these parts as requiring specific checks at receiving inspection. No alternates for the “@C” parts are acceptable unless approvals are made prior to delivery by use of the Alternate Purchasing Material Request (APMR).

Each shipment will conform to the specification of the document “UL Traceability Requirements”, available from Cubic QC or online at the following address:

<http://www.ul.com/global/eng/pages/offerings/services/globalfieldservices/fus/traceability/>

**Q-6** ***Minimum Packaging of All Items*** All material delivered will be packaged and protected from deterioration, shipping and physical damage. Cubic will have the prerogative to return all damaged items to the supplier at the supplier's expense. When multiple part types are shipped in one container, each part number will be segregated and packaged into separate internal containers. The applicable part number, revision and serial number will appear on each individual package within the container. Special consideration will be given for packaging ESD sensitive material and approved ESD protective barriers.

**Q-9** ***Electrostatic Discharge Protection*** Static-sensitive devices and printed circuit boards must be packaged in electrostatic shielding bags or containers and with static-sensitive warning tags attached to the containers. Devices should be packaged to prevent damage during shipping and storage IAW industry standards.

Identification and packaging of electrostatic sensitive film resistors, resistor chips, and/or resistor networks shall be in accordance with Mil-R-39032.

**Q-10** ***Counterfeit Parts Prevention***

For the purposes of this clause, Work consists of those parts delivered that are the lowest level of separately identifiable items (e.g., components, goods, assemblies). “Counterfeit Work” means Work that is or contains items misrepresented as having been designed and/or produced under an approved system.

1. SELLER agrees and shall ensure that Counterfeit Work is not delivered to Cubic by providing manufacturer certs or SELLER’s completed verification checklist with each shipment.
2. SELLER shall only purchase products to be delivered or incorporated as Work to Cubic directly from the Original Component Manufacturer (OCM) / Original Equipment Manufacturer (OEM), or through an OCM/OEM authorized distributor chain. Work shall not be acquired from independent distributors or brokers unless approved in advance in writing by Cubic.
3. SELLER shall notify Cubic with the pertinent facts of SELLER becomes aware or suspects that it has furnished Counterfeit Work.
4. In the event that Work delivered under this contract constitutes or includes Counterfeit Work, SELLER shall, at its expense, promptly replace such Counterfeit Work with genuine Work conforming to the requirements of this contract.
5. SELLER shall be liable for all costs relating to the removal and replacement of Counterfeit Work.
6. SELLERs eligible for utilization of the Government-Industry Data Exchange Program (GIDEP) shall utilize the GIDEP process to alert the industry of encountered counterfeit parts.

**Q-11** ***Product Finish*** The supplier will ensure compliance with specified finish, grain line, paint, plating, or cosmetic appearance of material or part surfaces as may be required, specification drawing or other referenced document(s). The finish will be maintained throughout any or all manufacturing operations as well as handling, packaging, shipping or transit of the finished product.

CUBIC may request product finish samples, swatches, or coupons at its discretion.

COLOR APPROVALS: It is recommended that suppliers seek color approvals before sending in the item which has color requirements. Proceeding without prior approval places supplier at risk for rejection. Color samples are checked by a Spectrophotometer. The illuminants are set to D65 North Sky Daylight and 10° observer using the CIELab color system with a maximum tolerance of a dE of 5 as a base for rejection.

**Q-12** ***Welding*** All welding must be done in accordance with BS499-1, AWS A2.4, AWS D1.1 select appropriate variant for the specific metal to be welded, and AWS A3.0.

**Q-15** ***Cubic Material Provided to Supplier*** Material provided directly or indirectly to the supplier by Cubic will be inspected prior to use in the manufacture or fabrication of the product required by this purchase order. As a minimum, the supplier will conduct receiving inspection of all material to ensure suitability for its intended use. During the term of the contract, the supplier will properly identify, segregate and store all Cubic provided material in a safe manner. Excess or unused materials or material that is deemed Non-Conforming will be tagged and returned to Cubic at the completion of the contract. For this return the Supplier will request an RMA number from Cubic to identify the returned material.

**Q-16** ***Encrypted Security Device*** All items that have been encrypted for the purpose of securing bank or other types of financial transactions. These devices must be sealed in some manner by a tamper evident seal that when broken is evidence that a device may have been compromised. Tamper seals may be any of the following, but not limited to: on main unit of containment, on each individual package in the main unit of containment, or even on each individual unit.

Each individual unit must be serialized with a non-repeating serialized number. The serial numbers of the units, in each shipment, must be listed in the packing slip papers or on labels applied to the outer container. Both the device label and packing slip (container label) serial numbers must have a human readable number as well as a corresponding type 39 or type 128 barcode which will successfully scan using standard scanning equipment.

**Q-17** ***Outsourced Cables*** The cable supplier shall review the Supplier Quality Plan for Building Cables provided by Cubic and approve the Document: [D-QCD-0498](file://Nttn2/cfgmgt/Documents/QCD/D-QCD-0498.docx) and [D-QCD-0498-001](file:///L%3A/Documents/QCD/D-QCD-0498-001.docx) before start of production. The signatures on the document indicate that the Supplier & Cubic agree to the requirements & specifications detailed within the document. The plan also describes Cubic’s expectations regarding cable quality to enable the supplier to be successful. A crimp record shall be provided with the order when delivered to Cubic.

**Q-19** ***Source Controlled / Spec Controlled*** Source controlled items are supplied by a Cubic designated supplier. Cubic controls and provides the specification documentation for the item. The supplier cannot deviate from these specifications without Cubic Engineering approval.

Spec controlled items are OEM or catalog items. Cubic controls and provides the specification documentation for the item. The supplier cannot deviate from these specifications without Cubic Engineering approval.

Both source and spec controlled items must be approved through the Supplier Information Request (SIR) and Alternate Purchasing Material Request (APMR) processes.

**Q-20** ***Sheet Metal Cabinet Skin Labels (Deliverables to Cubic)*** All top level sheet metal cabinet skins, which include but are not limited to gates, vending machines, standalone validators, etc. require a part number, revision, and vendor identification label.

Location should be in an area that is not part of the exterior cosmetic finish but where the label can be easily found by anyone handling the skin after the exterior wrappings are removed.

Markings on a pallet do not fulfill this need.

**Q-21** ***Country of Origin (COO)*** A certificate validating the country of origin (COO), when the COO is not the United States, is required for the product and must accompany each shipment. This may include the need for a US certificate of origin if requested for NAFTA related shipments.

Country of origin is defined as: The origin of the product does not refer to the country where the goods are shipped from but to the country where they were made. In the event the products are manufactured in two or more countries, origin is obtained in the country where the last substantial economically justified working or processing is carried out.

If more than 50% of the cost of producing the goods originates from one country, that country is acceptable as the country of origin. In the case of trading blocs, certificates of origin may be allowed to state the trading bloc (for example, the European Union as the origin) rather than a specific country.

**Q-99** ***Special Clause*** Special Quality requirements are applicable to this purchase order as detailed in the attached documentation and incorporated into the purchase order by reference in the description block

## SOFTWARE

**S-3** ***Software Quality System*** The seller shall maintain a quality system for software that meets the guidelines of ISO 9000-3, ISO IEC 90003 2004, AS9115 or IEEE 12207.

**S-6** ***Software Quality Cubic Approved*** Validation/verification of software shall be approved by a Cubic representative prior to acceptance.

**S-7** ***Software Quality Plan*** The seller shall provide a copy of the appropriate documentation that describes the seller's quality system for software (e.g., Software Development Plan, Software Quality Plan, Software Configuration Management Plan) for Cubic approval. The seller proposed software quality shall be approved by Cubic as acceptable prior to commencement of any subcontractor software development activities.

## WORKMANSHIP REQUIREMENTS

**W-6 *Foreign Object Debris (FOD)*** Supplier shall have a FOD prevention program is in place.

**W-10** ***Marking*** For parts procured to Cubic drawings, the purchase order identifies the appropriate revision letter for each part number. The identification method of marking a part shall be as described on the drawing along with the part number including applicable dash number & Part Revision letter.

Examples:

* Marking for the Rev C drawing 57039-146687-1, identify as ***57039-146687-1 Rev. A MFR XXXXX*** where X is your manufacturer’s cage code IAW Mil-STD-130.
* Marking for the Rev C drawing 57039-146687-2, identify as ***57039-146687-2 Rev. A MFR XXXXX*** where X is your manufacturer’s cage code IAW Mil-STD-130.
* Marking for the Rev C drawing 57039-146687-3, identify as ***57039-146687-3 Rev. / MFR XXXXX*** where X is your manufacturer’s cage code IAW Mil-STD-130.