# **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. In the event of a conflict between Quality Clause information and Engineering drawing or specification, Engineering documentation takes precedence.

**Note: Supplier questions or requests for clarification should be directed to the appropriate Cubic Procurement Department personnel. Suppliers should use the “Supplier Request for Deviation” (SRD) form F-018 to request a waiver for exception to drawing or Purchase Order requirements, including Quality Clauses. F-018 requests must be approved by Cubic prior to delivering material or data that does not meet drawing and/or PO requirements.**

 **F-018 can be found in the Current Suppliers Standard Documentation list at** [www.cubic.com/suppliers/current-suppliers](http://www.cubic.com/suppliers/current-suppliers)

## 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:**

The Cubic point of contact is 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. Non-compliance with the specified requirements may affect the Supplier 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 rating and approval status. Suppliers may contact Cubic Buyer or Supplier Quality for Supplier Rating information.

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 Certificates of Conformance on file for a minimum of ten (10) years from payment of the Purchase Order. Records shall remain legible, readily identifiable and retrievable. Record identification, storage, protection, retrieval, retention time, and disposition 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 and 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.**

**Note: Test reports are only required when testing is a specified requirement. If the drawing, specification, or Purchase Order notes do not specify testing, test reports are not required with the shipment.**

**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 (as stated in the PO)
4. Drawing revision
5. Quantity shipped
6. Serial number (s), as applicable.
7. Specification (s), as applicable.
8. Certified parts
	1. Certified parts as identified in Q-4 and Q-26 are to be listed on or a list attached to the C of C for verification.

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. Supplier Certificate of Conformance form F-007 is available for use by suppliers but is not mandatory. It can be found in the Standard Documentation list at [www.cubic.com/suppliers/current-suppliers](http://www.cubic.com/suppliers/current-suppliers)

**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 IPC-A-610 10-6, as well as IPC-TM-650, 2.1 and 2.3 Cleanliness Test - Residual Rosin. Note: Due to the interference of probe contact for testing, this includes the removal of all no clean fluxes also.

**C-26** ***Solderability Conformance*** A Certificate of Conformance containing the signature and title of the responsible Supplier official must accompany each shipment stating that the wires, part leads, and/or circuit boards meet the manufacturer’s 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.

**C-27** ***RoHS / EU Directive Certificate*** Suppliers shall provide a Certificate of Conformance stating compliance to this clause for each material shipment.

This clause includes the EU RoHS Directive 2002/95/EC on the “Restriction of the use of certain Hazardous Substances in electrical and electronic equipment”, the RoHS Recast, Directive 2011/65/EU (RoHS2), and the European Commission’s Delegated Directive EU 2015/863.

RoHS and RoHS2 identify the following six (6) restricted substances, and the Delegated Directive identifies an additional four (4) substances, published on June 4th, 2015, including maximum concentration values based on weight by weigh of homogenous material as follows:

* Cadmium (Cd): 0.01%
* Mercury (Hg): 0.1%
* Lead (Pb): 0.1%
* Hexavalent chromium (Cr6+): 0.1%
* Polybrominated biphenyls (PBB): 0.1 %;
* Polybrominated diphenyl ethers (PBDE): 0.1 %
* Bis(2-Ethylhexyl) phthalate (DEHP): 0.1% (as of the restricted date 7/22/19)
* Benzyl butyl phthalate (BBP): 0.1% (as of the restricted date 7/22/19)
* Dibutyl phthalate (DBP): 0.1% (as of the restricted date 7/22/19)
* Diisobutyl phthalate (DIBP): 0.1% (as of the restricted date 7/22/19)

Supplier-provided products shall not contain any of the above listed substance in quantities specified in the RoHS Directive, RoHS Recast, or Delegated Directive and are, therefore, 100% RoHS compliant.

Supplier shall also agree to notify customers of the presence of any current and future RoHS restricted substances over maximum concentration values and applicable exemptions.

**C-28** ***Waste Electrical and Electronic Equipment (WEEE)*** Suppliers who provide electric and electronic equipment to Cubic are to provide assurance that they declare the supply as B2B WEEE compliant.

## FARE MEDIA REQUIREMENTS

**F-01** **Fare Media** Suppliers of limited use contactless smart cards (LUCSC) must not proceed with fulfillment until they have received a COMPLETED Fare Card Key Manifest (F-110).

## PACKAGING AND HANDLING REQUIREMENTS

**H-5 Drop Ship Packing Slip (PS)**A standard commercial drop ship packing slip must accompany each shipment. For purposes of this clause, the *Supplier* is the supplying/shipping party, and the *Buyer* is Cubic Corporation, and the *Customer* is the party at the Ship To location. The standard Ship To and Sold To and Shipped From information can be found on the Cubic Corporation Purchase Order. The PS shall include as a minimum the following information:

PS Number: *Supplier* PS number shall not be more than 12 characters.

Date, Ship Method, Freight Terms, Way Bill

SHIP FROM:

1. *Supplier’s* name and address

SOLD TO:

1. *Customer’s ID for Cubic* (if any)
2. Cubic Name and Address per Cubic Purchase Order

SHIP TO:

1. *Customer* Name exact detail
2. *Customer* Address exact detail

Body Content of the PS:

1. *Supplier* sales order and Line item number
2. Cubic Corporation sales order number
3. Cubic Purchase Order Number
4. *Supplier* Part Number
5. Part Name
6. *Customer* Part Number
7. *Customer* Purchase Order Number
8. *Customer* Purchase Order CLIN
9. U/M, Quantity shipped, *Supplier* Manufacturing Order (Traveler) Number or Serial Number
10. Number of cartons or transportation handling units

*Supplier* shall affix one PS to the outside of each individual line item carton or THU. For consolidation shipments of more than one carton inside a consolidation box, *Supplier* shall affix all the PS’s to the outside of the consolidation box. *Supplier* shall include a copy of the PS inside each container (carton or THU). (The THU is the outermost packaging unit; i.e. the shipping container.)

**H-11** ***Special Handling/Storage Conditions*** Product must be packaged to protect it from transit damage, product deterioration, and loss. Special consideration must be given to additional packaging protection for ESD sensitive items as well as protection of cosmetic finish on product such as (but not limited to) painted and polished surfaces and viewing lenses. Product technical data sheets must accompany each shipment and must address as a minimum: storage conditions; Shelf Life (applicable when, and only when, the product has known, critical, time-dependent deterioration characteristics) if applicable; instructions for preparation and usage; and safety data, hazards and cautions. For limited Shelf Life material, the date of manufacture and shelf-life shall be specified on the shipping documentation and/or material containers. On receipt at Cubic, limited Shelf Life material must have a minimum of **75% of Shelf Life, or 12 months, whichever is less.** 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 *Safety Data Sheets (SDS)*** Safety data Sheets (formerly known as Material Safety Data Sheets or MSDSs) 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.

**H-26** **Barcode Label Requirements** Suppliers must identify each individual container of materials delivered to Cubic Locations with Bar Code Labels. Each container shall have two labels placed on opposites sides of the container.

The label shall contain the following information:

Purchase Order Number

Purchase Order Line Item (as required)

Cubic Part Number

Part Revision

PO Quantity (Delivered Quantity)

Box Quantity

Box *N* of *T* (As required for more than one container, where *N* is the container number and *T* is the total number of Containers)

Labels size and specifications:

Label size - 4” X 2-5/16” as a minimum

Type - Paper self-adhesive

Barcode type - Code 39

Orientation – Optional (See image and examples below)

 

## INSPECTION & SURVEILLANCE

**Notes regarding First Article Inspection:**

* **First Article Inspection (FAI) is required for the first item(s) of the first lot produced and delta FAI required for all part revisions.**
* **A first article inspection is not required with subsequent orders of the same item if the gap in production does not exceed 12 months (per the requirements of S-019).**
* **A first article inspection is required when changes occur that invalidate the original results (for example, changes to source of supply, manufacturing process, or tooling).**
* **A first article inspection is not required for items which have been returned for repair or refurbishment.**
* **Cubic will not provide First Article inspection service of supplier product unless Cubic Quality agrees to do so prior to PO placement, and it is specifically stated Cubic will do so in the PO. As such, the supplier should not delay shipment waiting for Cubic to perform FAI.**
* **If non-conformance(s) are documented in the First Article Inspection Report, the Supplier shall complete and submit a “Supplier Requested Deviation” (SRD) form F-018 to request a waiver for exception to drawing requirements, including Quality Clauses. F-018 requests must be approved by Cubic prior to delivering material or data that does not meet drawing and/or PO requirements. F-018 can be found in the Supplier Standard Documentation list at** [**www.cubic.com/suppliers/current-suppliers**](http://www.cubic.com/suppliers/current-suppliers)**.**
* **Refer to the Cubic document S-019 FIRST ARTICLE INSPECTION for more detailed information. S-019 can be found in the Current Suppliers Standard Documentation list at** [**www.cubic.com/suppliers/current-suppliers**](http://www.cubic.com/suppliers/current-suppliers)**. Contact Cubic Procurement for clarification if necessary.**

**I-1A** ***First Article with Cubic Approval 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. Unless otherwise stated by Cubic Quality, the first article report and part by the supplier must accompany the shipment.

**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*** This clause preserves Cubic’s right to conduct source Inspection in your facility. This right will be invoked by an additional statement on the PO. Cubic may also request source inspection privileges at any time after PO placement and prior to the scheduled shipment date in a PO amendment or email. 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 requested 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-22** ***Change Control Exclusions*** For electronic components used in Circuit Card Assemblies (CCAs), in general Cubic makes no stipulation for the packaging options that components may be transported in, providing the device manufacturer approves and sources the packaging style that the supplier is using or prefers. Unless specifically stated in the drawings, suppliers are free to use their discretion when determining the packaging style for electronic components used in Cubic products.

Examples of this would include: Tape and Reel, Tray, or Tube packaging.

**Note**: this exclusion applies ONLY to device packaging options, not to the device part number itself, which must adhere to the **Change Control** requirements listed above.

**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 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 Key Characteristics (KC) data, using AS9103 as guidance. KCs are generally defined as, a feature, whose historical measured data variation within control limits and possibly outside upper and lower specification limits or whose failure of pass/fail attribute data, will have an adverse or critical effect on product form, fit, performance, service life and manufacturability.

KCs with variable data are added from the report required by this clause as trends immediately decline below 1.33 Cpk. KCs with variable data may be removed from the report required by this clause as trends continue to improve, maintaining CPK above 2.00 for 6 months or per contract period.  If not maintaining 1.33, define measures taken to assure conformance to KCs and prevent escapes to the field.

The following data shall be recorded or calculated as needed for each KC with variable data: supplier, part number, revision level, serial number (if applicable), KC unique definition of target value, target value, upper and lower specification limit, measured value, upper and lower process control limit, mean, standard deviation, Cp, Cpk and pass/fail result for each measured value.

Alternately, for high volume production (for example, greater than lot size of 1000 each per shipment), the supplier may provide the above data for a representative statistical sample of not less than 25, Ref AQL ANSI Z 1.4 for guidance.

A KC analysis report showing the above data shall be provided monthly by the 5th of the month or defined by contract of the second month after the end of the month that the data was collected. The report shall be submitted electronically to Cubic Quality or its designated representative. The goal of this analysis is to provide for continuous improvement/control of processes above 1.33 Cpk.

KC reporting period and format must be approved by Cubic Quality Management or its designated representative.

## 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** ***Material Review Board (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-018) 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**.**

**F-018 can be found in the Current Suppliers Standard Documentation list at** [www.cubic.com/suppliers/current-suppliers](http://www.cubic.com/suppliers/current-suppliers)

**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 the current version of ISO9001 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 from CE, C-tick, TUV, Intertek, UL, or other similar agencies. 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) form and added into the Cubic Business System as an acceptable alternate.

**Q-6** ***Minimum Packaging of All Items*** All material delivered must 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-DTL-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 U.S. 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, but it is the responsibility of the supplier to validate that product finish meets Cubic requirements. Cubic uses a Spectrophotometer to measure color. 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.

For items that are subject to Payment Card Industry (PCI) Point-to-Point Encryption (P2PE), additional requirements are applicable.  PCI P2PE components are to be handled in accordance with C-029 PCI Component and Assembly Handling and Shipping Instructions (for Suppliers) and C-030 Cubic Internal PCI Component and Assembly Handling and Shipping Instructions (for Cubic).  Examples include, but are not limited to:  restricted access to authorized personnel, Chain of Custody documentation is required throughout lifecycle, use of serialized tamper evident bags, stored in secure area(s), and PCI P2PE storage and/or production area is to be recorded under CCTV cameras.  See Checklist C-029 and C-030 for additional requirements.  **C-029 and C-030** **can be found in the Current Suppliers Standard Documentation list at** [**www.cubic.com/suppliers/current-suppliers**](http://www.cubic.com/suppliers/current-suppliers)**.**

**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 and D-QCD-0498-001 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), is required for the product and **must accompany each shipment**. This may include the need for a U.S. certificate of origin, if requested, for USMCA related shipments. See PO Header text for additional information.

Country of Origin requirements do not apply to:

* Software
* Parts that are reworked, repaired, or reconditioned

Certificate of Origin for USMCA-related shipments may be satisfied with either:

1. USCMA Certificate of Origin form, available at:

 <https://www.cbp.gov/document/guidance/certification-origin-template>

or

1. Cubic Manufacturer USMCA Affidavit, available at Current Suppliers Standard Documentation list at  [www.cubic.com/suppliers/current-suppliers](http://www.cubic.com/suppliers/current-suppliers)

Direct link: <http://cubenet.cubic.cub/ocqms/Published/F-020.xlsx>

Country of origin definition: 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-22 *Government Property*** Contractor Acquired Property (CAP) and Contractor Acquired Material (CAM) is any item purchased against a government cost-reimbursable contract, or a fixed price contract containing one or more cost-reimbursable Contract Line Item Numbers (CLINs). CAP and CAM become Government owned property upon acceptance by Cubic Quality.

**NOTE: When the PO is for procurement of material, which will be Government property upon receipt at Cubic, it will be annotated as follows:**

**“This Purchase Order involves Government Property which must be received, utilized, maintained, and accounted for in accordance with FAR Parts 45 and 52”**

**Q-23 *Calibration Service Requirements***

### Quality System Requirements

All calibration services performed shall meet the requirements of ISO10012, and/or utilize calibration labs that meet the requirements of ISO17025 and/or ANSI-Z-540-1.

### Out of Tolerance Conditions

Upon receipt for calibration, Measurement Test Equipment (MTE) is tested to determine if it is within specification limits before any adjustment, repair, or cleaning which would affect calibration results is performed.  If not within specification limits, out of tolerance data is recorded and reported to Cubic. If MTE cannot be brought within specification limits, all work is halted and contact Cubic for directions from the appropriate Metrology Department.

### Certificate of Calibration/Traceability

1. A Certificate of Calibration / Traceability shall accompany each item calibrated by the subcontractor, indicating that all measurements are traceable to the National Institute of Standards and Technology (NIST).
2. MTE calibrated by a Subcontractor which is not accompanied by a Certificate of Calibration/Traceability or inadequate data, will not be accepted and unit will be returned for recalibration.

**Q-24 *Mechanical Counterfeit Parts Prevention***

1. The SELLER shall ensure that only new and authentic materials are used in materiel delivered to Cubic through the implementation of policies that include prevention, detection and risk mitigation methods to protect against their use.
2. The SELLER shall maintain a method of commodity and item level traceability that ensures tracking of the supply chain back to the manufacturer of all materiel being delivered per this order. This traceability method shall clearly identify the name and location of all of the supply chain intermediaries from the manufacturer to the direct source of the materiel for the SELLER and shall include the manufacturer's commodity or item level identification for the item(s) such as date codes, lot codes, heat codes, serializations, unique item identifiers, or batch identifications.
3. The SELLER shall retain all materiel reports, 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.  When requested by Cubic, the SELLER shall provide documentation that authenticates traceability of the parts to the original Equipment Manufacturer or authorized distribution chain.
4. All requirements of this paragraph shall be flowed to all sub-tier suppliers/subcontractors.  In the event SELLER suspects that it has furnished Counterfeit Parts, it shall immediately notify CUBIC and report in writing whether such parts should or will be replaced with genuine parts.

**Q-25 *Casting, Moulding, or Extrusion Tooling*** Where tooling is provided to the Supplier or new tooling is included in purchase, all tooling is, and shall remain, the property of Cubic, and must be indelibly marked, as is practical, with the Cubic Tool Number specified on the Purchase Order. In the case of multi-cavity tools, a sample from each cavity shall be provided, including cavity marking by dots or symbols per drawing, or as approved by Cubic in the Purchase Order.

**Q-26** ***Mastercard Terminal Quality Management (TQM)*** The supplier/subcontractor shall comply with the TQM requirements when providing Cubic with services, components, or parts deemed by Cubic to be critical to Mastercard TQM product compliance. Where applicable, the latest version of the Mastercard TQM Requirements will be provided.

Identification: TQM parts and components will be identified in the Bill of Material by an X in the column under TQM part. The BOM is to be supplied by Purchasing in the quote process and when revisions are made. The BOM will also be available upon request of the supplier.

NOTE: Category 3 contract manufacturers shall undertake site audits and/or desk reviews on their identified Category 2 component supplier and be able to communicate records of these activities to Cubic upon request. The content of these audits and reviews shall assure Cubic of the authenticity and quality of the components that have been or will be procured as well as cover all applicable TQM requirements. The TQM Manager shall define the scope of these audits with the PAA and any external/internal parties identified as having delegated responsibility for TQM compliance.

**Q-27 *Sheet Metal Fabrication and Tolerances*** This set of definitions and tolerances are to meet current industry standards for sheet metal manufacturing. This set of definitions and tolerances are to support new and legacy drawings that have title blocks with incorrect sheet metal tolerances. The specifications in these tables supersede the drawing unspecified tolerance blocks. They do not supersede specified dimensions and tolerances on the face of the drawing for a feature.

 **Note: This clause is applicable only when Q-27 is invoked on the PO.**

Table 1: Sheet Metal Standards and Allowances

| Q-Clause No. | Q-Clause Title | Description |
| --- | --- | --- |
| **Q27** | **Sheet Metal Fabrication and Tolerances** | 1. Laser protrusions in holes are allowable up to .006 inches (0.15 mm) unless a dimension-specified hole tolerance is noted.
2. Thru hole diameters at countersinks may be exceeded due to countersink size.
3. Bend relief dimensions are reference only.
4. Forming distortion is allowable on features near bends. Distortion from clinch fastener installation near edges is allowable.
5. Spot weld locations are reference only. Alternate TIG (bloop) welding is acceptable if weld locations are not accessible with spot welding equipment. **Reference**: weld location is too confined, or the part is too small for accessibility with spot weld electrodes.
6. Tooling hole sizes and locations are reference only.
7. Additional tooling holes are allowable on interior and non-cosmetic surfaces.
8. If chem film color is unspecified, the color must be yellow.
9. U.S. equivalents of British Standards materials and plating are allowable.
10. Hardware substitutions for equivalent hardware type, thread size / length, and material are allowable. Extrude and tap threads are acceptable in lieu of weld or clinch nuts for stainless steel or mild steel parts.
11. Hardware thread sizes may be inspected with mating fasteners of the same class thread in lieu of “Go” thread gages.
12. Deburring and edge conditioning processes to be at the discretion of the fabricator as long as the process meets safe handling requirements per UL 1439, or the part requires a specific appearance or cosmetic finish.

**Reference**: many old CTS Limited (UK) drawings that include the note “Finish – Rumble De-burr”.**NOTE: If in doubt, contact Cubic Manufacturing Engineering.****RECEIVING INSPECTION EVIDENCE:** MID database queries, approved supplier list (ASL) |

The specifications in the table below supersede the drawing unspecified tolerance block. They do not supersede dimension specified tolerances.



Table 2: Imperial and Metric Tolerances

|  |  |  |
| --- | --- | --- |
| **Feature / Description** |  | **Tolerance** |
| **Dimension** | **Imperial (inches)** | **Metric (millimeters)** |
| Sheared edge to a Hole | A |  + / - 0.008 |  + / - 0.20 |
| 2 Holes on one surface OR Feature to Feature | B |  + / - 0.008 |  + / - 0.20 |
| Formed edge to Hole | C |  + / - 0.010 |  + / - 0.25 |
| Holes / Features across 2 bends | D  |  + / - 0.025 |  + / - 0.64 |
| Holes across 4 bends (In a Constrained Condition) | E\* |  + / - 0.030 |  + / - 0.75 |
| Sheared edge to a bend | F |  + / - 0.010 |  + / - 0.25 |
| Across 2 bends | G |  + / - 0.030 |  + / - 0.75 |
| Formed part (Not recommended - Ref. Only Dimension) | H\* |  + / - 0.030 |  + / - 0.75 |
| Across 2 bends | J |  + / - 0.030 |  + / - 0.75 |
| Self-locating hardware installation - each position | - |  + / - 0.005 |  + / - 0.12 |
| CD Weld Stud hardware installation - each position | - |  + / - 0.020 |  + / - 0.50 |
| Angles - each bend | - |  + / - 1 degree |   |
|  |  |  |  |
| \* Dimensions E & H are not a recommended form of dimensioning a part on a drawing. |

**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 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. When items cannot be physically marked or tagged due to lack of marking space or item size, the detailed marking requirements shall be applied to the container or bag.

NOTE: The part revision is that of the BOM revision and not the drawing. For example, if the drawing is revision C and the BOM revision is A, the part revision is A.

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. A MFR XXXXX*** where X is your manufacturer’s cage code IAW MIL-STD-130.