

1.0 Purpose

This document establishes the quality assurance requirements (Q Clauses), which are applicable as specified on the Procurement Document.

2.0 Definitions

- 2.1 Buyer: Mini-Systems, Inc.
- 2.2 Seller: The legal entity that is the contracting party with Buyer, respective of the Procurement Document.
- 2.3 Procurement Document: The purchase order or subcontract.
- 2.4 Item: Products of services contracted for by the Procurement Document.

3.0 Quality Assurance Requirements

The following Q Clauses are requirements when specified by respective number on the Procurement Document.

Q-1 General Quality Assurance Requirements

(Paragraphs A through K, below)

A. Prohibited Practices

- (1) Unauthorized Repairs: Seller may not repair by welding, brazing, plating, splicing, soldering or adhesives, items damaged or found to be faulty during manufacture, without Buyer's written approval. Defects in castings or forgings shall not be repaired by any method without the Buyer's approval.
- (2) Change in Approved Drawings, Processes, Materials, or Procedures: Seller shall not change any drawing, process, material, or procedure without prior Buyer written approval, if such drawing, process, material, or procedure was originally approved by Buyer. Seller shall not change any process, material, or procedure from that used to qualify items that were used by Seller to become a qualified source without written approval by Buyer.
- (3) Resubmittal of Rejected Items: Items rejected by Buyer and subsequently resubmitted to Buyer shall be clearly identified on Seller's shipping document as resubmitted items.
- (4) Unauthorized Submittal of Production: When the Procurement Document requires Buyer acceptance of a "first article", Seller shall not submit items from a production run for Buyer inspection prior to Buyer's acceptance of such "first article".
- (5) Notification of Facility Change: Seller shall not use or relocate and production manufacturing and/or processing facilities during performance of the work specified on the Procurement Document from those production, manufacturing, or process facilities approved by Buyer; without promptly notifying Buyer and affording Buyer an opportunity to examine such facilities for compliance with quality assurance requirements.

B. Responsibility for Conformance

Neither surveillance, inspection, and/or tests made by Buyer, representatives, or representatives of the government, at either Seller's or Buyer's facility, nor Seller's compliance with all applicable Quality Assurance requirements, shall relieve Seller of the responsibility to furnish items that conform to the requirements of the Procurement Document.

C. Buyer Surveys, Surveillance, Audits, and Inspection

- (1) Buyer has the right to conduct surveys, audits, and surveillance of Seller's facilities or those of Seller's subcontractor or suppliers with prior coordination with Seller, to determine the capability to comply, and to verify continuing compliance with the requirements of the Procurement Document.
- (2) Buyer has the right to perform inspection at Seller's facilities or those of Seller's subcontractors or suppliers with prior coordination with Seller, during the period of manufacture, inspection prior to shipment, and final inspection and acceptance at Buyer's facility, unless otherwise specified of the Procurement Document.
- (3) Buyer reserves the right to use MIL-STD 105 or equivalent sampling plans for the acceptance or rejection of items.

D. Documentation

Buyer may refuse to accept items if Seller fails to submit certifications, documentation, test data, or reports specified by the Procurement Document. Documentation includes Buyer source inspection reports when such source inspection is performed.

E. Corrective Action Request

When a quality problem exists with Seller's items, Buyer may forward a Corrective Action Request. Corrective Action Requests require timely responses and must include the following information: analysis of the cause of the problem, statement of the action taken to prevent recurrence, and the effectiveness of the action. When corrective action is required for government source-inspected items, Seller shall coordinate such action with the government quality assurance representative assigned to the Seller's facility. MIL-STD-1520 applies when invoked by the Procurement Document.

F. Government Source Inspection

The government has the right to inspect any or all the work included in the procurement, at Seller's facilities, or at sub-tier supplier facilities.

G. Measuring and Test Equipment

The seller shall be responsible for validating the accuracy and stability of tools, gauges, and test equipment used to demonstrate the items conform to the Procurement Document. This validation shall be traceable to the National Institute of Standards and Technology (NIST). Documented schedules shall be maintained to provide for periodic calibration to NIST. Objective evidence of calibration shall be recorded and made available for review.

H. Discrepant Material

Decisions to accept discrepancies (variances from Buyer drawings and specifications), detected at Seller's facilities, must be made by Buyer unless otherwise specified by the Procurement Document. Seller shall provide control segregation and identification of discrepant material detected at Seller's facilities.

I. Inspection Reports

Seller shall maintain records of all inspections and tests performed on items delivered to Buyer for a period of twelve years. These records shall identify discrepancies and shall be made available for Buyer review.

J. Customer Inspections / Audits

Customers of Mini-Systems, Inc., have the right to inspect Seller's facilities.

K. AS9100 flow down requirements.

- a. Maintain any quality record associated with this PO in good practice for a minimum of 12 years.
- b. Allow the right of access by Mini-Systems, our customer, and regulatory, to all facilities involved with this order and applicable records.
- c. Notify Mini-Systems of any changes in product and/or process definition; nonconformances that affect delivery or product quality; changes of suppliers; and manufacturing facility location.
- d. Flow down requirements of this order when sub-tiering.
- e. Suppliers shall ensure persons are aware of good aerospace practices regarding product conformity, product safety throughout its life cycle, and the importance of ethical behavior.
- f. Prevent the use of counterfeit parts.

Q-2 Quality System (ISO 9001)

The Seller shall, in the performance of the Procurement Document, provide and maintain a quality system that complies with ISO-9001, Quality Systems – Model for Quality Assurance in Design, Development, Production, Installation, and Servicing.

Q-3 Inspection System Requirements (MIL-I-45208A)

The seller shall provide and maintain an inspection system, which is in conformance with Military Specification MIL-I-45208A, Inspection Systems Requirements.

Q-4 Material Compliance

Material shall be compliant (unless exempt) with RoHS Directive 2002/95/EC and WEEE Directive 2002/96/EC.

Q-5 Quality Program Requirements (MIL-Q-9858A)

Seller shall provide and maintain a quality program, which is in conformance with Military Specification MIL-Q-9858A, "Quality Program Requirements".

Q-6 Source Inspection

Inspection by Buyer must be performed at Seller's facility prior to shipment. Seller shall provide reasonable inspection facilities for Buyer to verify conformance to requirements. Buyer reserves the right to inspect at Seller's facility and at Seller's source those items not manufactured with Seller's facilities. Seller shall notify Buyer no less than 48 hours prior to the need for Buyer inspection/test.

Q-7 Buyer-In-Process Inspection

Items will be inspected by Buyer during manufacture at one of more of the following, as specified by the Procurement Document.

- a) Prior to encapsulation/conformal coating
- b) Prior to cleaning
- c) Prior to plating
- d) Prior to assembly close-up
- e) Other points specified by the Procurement Document

Seller shall notify Buyer no less than 48 hours in advance that the items are ready for inspection. After Buyer's in-process inspection, and rework or re-test of the item, including non-scheduled entry, such as removal of a panel, cover, or enclosure will void the in-process inspection. In case of any non-scheduled entry rework or re-test, Buyer shall be notified and requested to repeat in-process inspection.

Q-8 Control of Processes

Seller must be approved by Buyer to perform the processes listed below, or must use process suppliers approved by Buyer when such processes are required by the Procurement Document. A list of approved processes is required by the Procurement Document. A list of approved process suppliers will be provided by Buyer upon request. If Seller wishes to use a supplier not approved by Buyer, authorization must be requested and received from Buyer prior to the use of an unapproved supplier. Seller must identify the process supplier and the process performed in writing with the shipment of items to Buyer.

Applicable processes are: welding, brazing, soldering, heat treating of metals, plating, chemical surface treatments, casting, forging, structural adhesives, bonding, magnetic particle inspection, dye penetration inspection, radiographic inspection, contamination control, and measurement, destructive physical analysis (DPA) for electronic components.

Buyer's approval of any process supplier does not in any way relieve Seller of his responsibility to deliver items conforming to the requirements of the Procurement Document.

Q-9 Government Source Inspection (Department of Defense)

Government source inspection is required prior to shipment from Seller's facility. Upon receipt of this Procurement Document, Seller is required immediately to notify the government representative who normally services Seller's facility so that appropriate planning for government inspection can be accomplished. In the event that the government representative cannot be contacted, Buyer shall be notified immediately.

The Seller, without additional charge, shall provide all reasonable facilities and assistance for the safety and convenience of the government representatives in the performance of their duties. A letter of delegation shall be furnished by the Buyer or DOD representative.

Q-10 Traceability System

The Seller shall, in the performance of this Procurement Document, provide and maintain a system of traceability on all material, components, and parts used to complete this order. That is, traceability from the deliverable product to the manufacturer's processing lot/date code (backward traceability).

Q-11 Ozone Depleting Chemicals and Substances

The Seller shall insure that no Class I or Class II Ozone-Depleting Chemicals (ODC) or Ozone-Depleting Substances (ODS) were used in the production and formulation of, or exist in the supplied materials as described in the Clean Air Act (CAA) Amendment. Usage of equipment that causes ODC/ODS contamination in the manufacture, fabrication, assembly, or test of this material is prohibited. This requirement must be disseminated to all subcontractors.

Q-12 Age-Sensitive Material

The articles furnished in accordance with this Procurement Document are subject to age control. Seller shall mark articles with batch or lot number, date of manufacture, cure date, storage environment, and/or shelf life, if applicable. Articles subject to age deterioration shall not be supplied when less than 50% of the usable shelf life has been expended, at the date of shipment.

Q-13 Raw Material Documentation Requirements

- A. Shipment of metallic raw material must be accompanied by manufacturer or mill inspection/test report for the raw material containing:
 - a. Name and location of the raw material manufacturer or mill.

- b. Material identification by specification number and material condition.
 - c. Manufacturer or mil lot identification number of the raw material.
 - d. Actual chemical and physical test results as specified in the applicable material specification.
- B. Shipment of metallic raw material must be accompanied by a certification from Seller containing:
- a. Name and location of the raw material manufacturer or mill.
 - b. Material identification by specification number and material condition.
 - c. A statement that the raw material meets applicable specification requirements.
- C. Shipment of finished or semi-finished items manufactured from metallic raw material must be accompanied by a certification from Seller containing:
- a. Name and location of the manufacturer(s) of the raw material(s), and the log number(s) used in the manufacture of the finished or semi-finished item(s).
 - b. A statement that the raw material(s) used in the manufacture of the finished or semi-finished item(s) meet applicable specification requirements.
- D. Shipment of non-metallic raw material must be accompanied by a chemical inspection/test report for the raw material containing:
- a. Name and location of the raw material manufacturer.
 - b. Material identification by specification number.
 - c. Manufacturer lot or batch number of the raw material.
 - d. Actual chemical test results as specified in the application specification.

Q-14 Measuring and Test Equipment

The seller shall be responsible for validating the accuracy and stability of tools, gauges, and test equipment used to demonstrate that items conform to the Procurement Document. The Seller shall maintain a calibration system in accordance with the requirements of ANSI/NCCL Z540-1.

Q-15 Certification of Compliance

A certificate of compliance indicating the part number, part name, date, applicable specifications, and authorized signature shall accompany each shipment against this order. Each certificate shall include the following statement:

Material and/or parts furnished on this order have been manufactured in accordance with all applicable instructions and specification and such records are on file and available for inspection.

Q-16 Test Data

When Buyer specifications require test data to be recorded during the performance of acceptance testing, a copy of the recorded data showing evidence of Seller's inspection and verification of conformance shall accompany shipment of items to Buyer. As a minimum, data shall be identified with:

- a) Buyer Procurement Document number
- b) Part number
- c) Type of test performed.
- d) Lot numbers, serial number, or date codes of items tested.

- e) Total quantity tested.
- f) Any codes, keys, or other information necessary to interpret Seller's data.

Q-17 Preference for Domestic Specialty Metals (Military Orders)

Any specialty metals incorporated in articles delivered under this contract shall be melted in the US or its outlying areas. DFARS 252.225.7014, Alt. I is imposed in regards to specialty metals.

Q-18 Buyer Precap Inspection

Items on this Procurement Document require precap inspection by Buyer. Seller shall notify Buyer no less than 48 hours in advance of the time that items are ready for inspection.

Q-19 Buyer SEM Analysis

Buyer approval of Scanning Electron Microscope (SEM) Analysis is required for wafer lots to be incorporated in parts supplied to Buyer. The SEM Analysis shall be performed by Seller and must be approved by Buyer prior to the incorporation of wafers in parts. Seller shall notify Buyer 48 hours in advance of the time that parts are scheduled for SEM Analysis.

Q-20 Buyer Source Surveillance

Buyer will perform surveillance at Seller's facilities during the course of the manufacture and test of the item to be furnished on this Procurement Document. Surveillance will be scheduled by Buyer and coordinated with Seller.

Q-21 Requirements for Distributors

- A. The distributor (a Seller other than the manufacturer) shall identify the manufacturer and location of manufacture of each item furnished under the Procurement Document.
- B. When items are identified by a Buyer number, the distributor shall provide complete information as to the original manufacturer and original manufacturer's part number. Such identification shall be with each shipment.

Q-22 Mercury Contamination

The Seller shall insure that no mercury or mercury compound shall exist in supplied materials. Usage of equipment which might cause mercury contamination in the manufacture, fabrication, assembly, or test of this material is prohibited. This requirement must be passed on to all subcontractors.

Q-23 Packaging

Packaging in accordance with good commercial practice to the extent necessary to provide protection from hazards of contamination and physical damage encountered in general handling, shipping, and storage.

Q-24 Counterfeit Parts Policy

Any incoming materials suspected of counterfeiting or containing conflict minerals shall be reported and subject to further investigation. The standards DFAR252.246 and AS5553 apply in this circumstance.