

# Pikes Peak Test Lab Inc.

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## QUALITY ASSURANCE Q CLAUSES

### Q-1 GENERAL QUALITY ASSURANCE REQUIREMENTS

All of the following paragraphs are applicable to clause Q-1.

#### I. PROCUREMENT CONTROL

1.1 Seller shall levy quality requirements comparable to those contained in this document on lower-tier suppliers and shall assume responsibility for the quality of all purchased materials, articles, and services unless otherwise directed by PPTL in writing. This responsibility includes:

- a. Selection of qualified procurement sources.
- b. Transmission of design, reliability, and quality requirements to suppliers.
- c. Evaluation of procured articles against purchase contract requirements.
- d. Control of nonconforming material and effective provisions for early information feedback and correction of nonconformances.
- e. Providing technical assistance and training to suppliers when necessary to achieve reliability and quality levels.

1.2 Seller shall assure that buyer has the right of entry in subcontractor facilities in order to determine and verify the quality of work and material at any place, including the plant of any supplier, and at all production stages, of materials intended for incorporation into buyer's products. Such investigations at sub-tier facilities will be performed jointly with the seller.

1.3 Seller shall have objective evidence on file, subject to review by the buyer's product assurance representatives, to show that all materials and processing received by seller for subsequent incorporation into buyer's products meet the buyer's purchase contract requirements.

1.4 Seller's product assurance organization shall have the authority to disapprove the use of sources which do not have a quality assurance system adequate to meet the procurement requirements.

1.5 Neither surveillance, inspection, and/or tests made by buyer or his 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 which conform to the requirements of the procurement document.

#### II RESUBMISSION OF REJECTED MATERIAL

Parts or material failing to meet PPTLI contractual requirements and returned to the seller shall not subsequently be resubmitted to PPTLI without replacement, rework, or coordination with PPTLI. Parts resubmitted shall be segregated and tagged "rework" or "replaced" parts, as applicable. In the event seller's does not verify the nonconformance documented by PPTL, the seller shall coordinate with PPTLI before returning the material in question.

### III SELLER CORRECTIVE ACTION

When a quality problem exists with a seller's item, PPTLI may forward a Corrective Action Request (CAR) to the seller. CARS require timely responses and must include the following information as a minimum: analysis of the cause of the problem, statement of the action taken to prevent recurrence, and the effectivity of the action. When corrective action is required for Government Source Inspected (GSI) items, seller shall coordinate such action with the government quality assurance representative assigned to seller's facility. Evidence of coordination with the government quality assurance representative shall be provided to PPTLI upon request.

### IV MATERIAL CONTROL

Material shall be identified and controlled from its receipt at the seller's facility through delivery to PPTLI. A method of stamping the material and/or tags or routing travelers is the preferred means of identification and control to be used by inspection and test personnel.

### V PACKAGING, PRESERVATION AND STORAGE

The seller shall control all preservation, packing, storage, shipping, and handling to assure that all materials are adequately protected during all phases of PO performance and to assure compliance with any special handling and shipping requirements of the PO. Perishable items or those with limited shelf life or moisture sensitivity levels must be handled/preserved in accordance with recommendations of the manufacturer.

### VI GOVERNMENT/CUSTOMER INSPECTION

Seller shall assure that PPTLI's customer, or government representative when applicable, has the right of entry in seller's facilities in order to determine and verify the quality of work and material at any subtier supplier, and at all production stages, of materials intended for incorporation into PPTLI customer's products. Such investigations at subtier facilities will be performed jointly with PPTLI and the seller.

### VII INSPECTION RECORDS

Seller shall maintain records of all inspections and tests performed on items delivered to PPTLI. These records shall show evidence of acceptance and shall identify discrepancies. Inspection records shall be made available to PPTLI, or a representative of the government, for review upon request.

#### VIII MEASURING AND TEST EQUIPMENT

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. Documented schedules shall be maintained to provide for periodic calibration to adequate standards. Objective evidence of calibrations shall be recorded and made available to PPTL for review upon request.

#### IX DATE/LOT CODE

Seller shall assure that parts or products which are assigned a date or lot code must be identified and segregated as to quantity of parts in each date code shipped. Any mixed lot or date codes of parts will be subject to return to the supplier unless the quantity in each lot or date code is specified and segregated.

#### X SAMPLING

PPTLI reserves the right to use MIL-STD-105 or equivalent sampling plans for the acceptance or rejection unless otherwise specified by the PO.

#### Q-2 SELLERS QUALITY PROGRAM REQUIREMENTS:

The seller shall, in the performance of this order, provide and maintain a quality program which is in conformance with PPTLI Quality Program Requirements

#### Q-3 INSPECTION SYSTEM REQUIREMENTS:

The seller shall, in the performance of this order, provide and maintain an inspection system which is in conformance with PPTLI requirements.

#### Q-4 FIRST ARTICLE INSPECTION

A number of parts as specified on the PO or in the specifications and positively identified as "First Article" shall be submitted to PPTLI's receiving inspection department for inspection and approval. PPTLI may, at its option, perform this inspection at the seller's plant.

Seller shall furnish at time of first article submittal:

- a. Complete test data sheets for samples submitted, when applicable.
- b. Inspection check sheets, if used.
- c. Drawings/test specifications used.
- d. Any other pertinent data which will aid in the accomplishment of a first article inspection.

#### Q-5 TECHNICAL INFORMATION

Technical information describing items on the PO must accompany first shipment. This information will be acceptable in the form of supplier's catalog or data sheets or other published documents containing identification, marking, physical dimensions and tolerances, functional characteristics, typical test data, or other pertinent information upon which receiving inspection can be based. The information must reference the applicable PO number and be attached to the packing slip or be enclosed in a separate envelope addressed to PPTLI Receiving Inspection. Acceptance of your product will be delayed at PPTLI until this information is available at receiving inspection

#### Q-6 DATA

Data or test reports as specified in the order or the specification are required under this order. Unless otherwise specified, the seller will furnish with the shipments) one copy of test reports/data indicating the performance of the items on the PO as required by the PO, applicable drawings, and/or specifications. Data or reports will be identified in accordance with the specification, but the identification must show as a minimum:

- a. PPTLI PO number
- b. Part number
- c. Type of test performed
- d. Total quantity tested and quantity rejected
- e. Lot numbers, serial numbers, or date codes of items tested

Shipments requiring data shall not be shipped without accompanying data unless authorized by PPTLI.

#### Q-7 CERTIFICATION REPORT, PHYSICAL AND/OR CHEMICAL

Physical and/or chemical certification reports related to the material used on this order shall accompany each shipment to PPTLI. The report must specifically identify the material, finish, and/or process utilized and reference the applicable specification, part number revision, and PPTLI PO number. Shipments received without specified certifications are subject to rejection by PPTLI.

- a. Material
- b. Finish (plating, painting, etc)
- c. Processes
- d. Chemical analysis

#### Q-8 INSPECTION TOOLING

Seller is held responsible for the protection, calibration, and care (other than normal wear) of all inspection tooling and equipment that may be loaned to and/or purchased from the seller to PPTLI to facilitate performance of work on this PO. Seller shall not

perform modifications on any tooling unless provided by contract change. All modifications must be inspected and accepted by PPTLI. Said tooling, or replacement tooling of equal quality, shall be returned in an acceptable condition, upon demand or notice to the seller from PPTLI. Seller will also provide adequate packaging of returned inspection tooling and equipment.

#### Q-9 IDENTIFICATION AND SHELF-LIFE

Each container, package, or material shall be identified as to storage environment, if required, and manufacturers batch, lot, or process control number. PPTLI may refuse to accept material with more than 50 percent of the shelf-life expired at the time of receipt.

The manufacturer shall:

- a. Identify date of manufacture.
- b. Include Material Safety Data Sheet (MSDS), required with each shipment.
- c. Identify each container.
- d. Specify storage environment.
- e. Supplier shall provide limited shelf life information (when applicable).

#### Q-10 MATERIAL TRACEABILITY

The seller shall, in the performance of this PO, provide and maintain a system of traceability on all material, components, and parts. Identification of electrical and electronic parts of articles stated shall be traceable to manufacturer, date of manufacture, and manufacturer's lot control number.

#### Q-11 DRAWING CONTROL

When design is seller's responsibility, seller shall not make any change in materials or design details which would affect the part or any component part number thereof with regard to

- (1) part number identification,
- (2) physical or functional interchangeability, or
- (3) repair and overhaul procedures and processes and material changes which affect these procedures, without prior written approval of PPTLI, and without revising the part numbers and the originals of all drawings or data affected by the change.

#### Q-12 AUTHORITY FOR REWORK OR 100 PERCENT INSPECTION OF VENDOR PURCHASED MATERIAL

Supplier reimbursement to PPTLI for the cost of PPTLI rework or 100 percent inspection required to bring discrepant material to the specified quality level will be negotiated between PPTLI purchasing and the supplier.

#### Q-13 DISTRIBUTOR SUPPLIED PARTS

The seller shall only provide parts or materials from manufacturers specified by the PO and the seller shall identify the manufacturer of each separate item furnished under the PO (commercial grade product / No certification is required).

When a requirement is for military specification hardware, seller's certification shall state that parts supplied against the PO meet all requirements as set forth in the applicable military specification and were manufactured by a qualified military specification manufacturer. When a requirement is for an electrical device, certification must comply with the governing specification. (note MIL-S-19500, paragraph 3.3.1, for discrete semiconductor devices.) When parts are to be identified by a PPTLI specified part number, the seller shall also provide complete information as to original manufacturer and original manufacturer's part number. Such identification shall accompany each shipment. (military grade product / Certificate of Compliance is required).

#### Q-14 MARKING PERMANENCE

Legibility and permanence of marking on items shipped against this order shall be in accordance with MIL-STD-883 Method 2015.1 for microelectronics, MIL-STD-750 Method 1022 for discrete active devices, and MIL-STD-202 Method 215 for all other parts. PPTLI receiving inspection may test marking on a sample of the product delivered and may return for rework or replacement by the supplier any or all parts received which represent the failed sample.

#### Q-15 CALIBRATION SERVICES REQUIREMENTS

The seller shall, in the performance of this order, provide and maintain a calibration system which is in conformance with ANSI/NSCL Z540-1 1994 Calibration System Requirements using standards traceable to NIST. PPTLI has the right to conduct surveys and surveillance of seller's facility to evaluate the degree of capability, and the continuing application of such capability, to comply with the requirements of this order. This function may also apply, with the seller's cognizance to subtier suppliers. Seller shall assure that PPTLI's customer has the right of entry in supplier's facilities or subtier supplier's facilities to verify conformance to requirements.

The certificate generated upon completion of the calibration shall state the following:

- a) That the calibration is compliant to ANSI/NSCL Z540-1-1994.
- b) That all measurements are traceable to N.I.S.T. (National Institute of Standards and Technology).
- c) Environmental conditions (when relevant to the accuracy of the instrument).
- d) As found / as left data, plus any fundamental or intrinsic values used.

#### Q-16 ELECTROSTATIC DISCHARGE PROTECTION

All Electrostatic Discharge Sensitive (ESDS) components or assemblies containing ESDS components will be packaged and shipped in Electrostatic Discharge (ESDS) protective material as described in E-1.1 or E-1.2 and marked as " Static Sensitive."

Any ESDS components or assemblies received in house that are not in ESD protective material will be subject to return to the seller.

Suppliers shall provide and maintain a program for electrostatic discharge control for all electrostatic discharge sensitive items to be furnished on this procurement. The supplier's electrostatic discharge control program is subject to review and approval by PPTLI as specified by military specifications.

#### E-1.1 CLASS 0, 1, OR 2 ELECTROSTATIC SENSITIVE DEVICES

Shall be packaged in a container consisting of three (3) layers with an antistatic inner surface and one of the following options:

Option 1: Electrostatic field shielding exterior layer and an insulative intermediate layer.

Option 2: Insulative exterior layer and a conductive electrostatic field shielding intermediate layer.

OR

Conductive noncorrosive material, rail, or conductive foam packaged in material described in option 1 or 2.

#### E-1.2 CLASS 3 ELECTROSTATIC SENSITIVE DEVICES

Shall be packaged in antistatic noncorrosive material, rail, or antistatic foam. Static sensitive devices shall be packaged to prevent movement. Antistatic materials shall be packaged in conductive, electrostatic field shielding material.

#### **NOTE**

**Other packaging methods shall require the approval of PPTL ESD Quality prior to shipment.**

#### E-1.3 DEFINITIONS

E-1.3.1 Electrostatic Discharge Sensitive (ESDS) Devices. Electrical and electronic parts, assemblies, and equipment that are sensitive to Electrostatic Discharge (ESD) voltages of 4000 V or less as determined by the test methods in MIL-STD-883 Method 3015 or DOD-STD-1686 appendix B.

E-1.3.2 Components are also classified as ESD sensitive if they meet any or all of the following requirements:

- a. Marked with the an ESD symbol (a small triangle)
- b. Designated as ESD sensitive by the manufacturer
- c. Designated as ESD sensitive by PPTLI

#### E-1.3.3 DEVICE CLASSIFICATION

Class 1: Sensitivity range 0 to 1000 V.  
Class 2: Sensitivity range 1000 to 4000 V.  
Class 3: Sensitivity range 4000 to 15,000 V.

As specified in MIL-STD-1686 and DOD-HDBK-263.