

## PROCUREMENT QUALITY REQUIREMENTS

S-TEC Corporation  
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The supplier including manufacturers and distributors shall follow S-TEC Procurement Quality Requirements (PQRs) during the fabrication of all parts, subassemblies, assemblies, and tooling involved in the manufacturing, distribution, and shipping of S-TEC products. The supplier must retain on file evidence of conformance either by hardcopy or electronic for a duration of 10 years. This requirement is due to contractual obligations with S-TEC Customers- If traceability cannot be kept at supplier facility then copies must be sent in with each shipment received by S-TEC.

By shipping the product to S-TEC, suppliers confirm that the product meets or exceeds all applicable S-TEC engineering and/or purchase agreements, purchase orders, functional test requirements, and/or supplier design control documents. The supplier is also responsible for ensuring sub-tier supplier-produced parts, components, or services conform to S-TEC approved design data. Certification with ISO9001 or AS9100 standards is preferred for all suppliers, but as a minimum, suppliers must meet S-TEC's requirements listed on the Supplier Evaluation form. For questions concerning PQR's, please contact an S-TEC Quality representative at Extension 7744.

**NOTE:** Some PQRs listed on a Purchase Order may not necessarily be applicable for a given shipment.

**Example:** PQRs noted on a PO and bracketed with parenthesis, is a point of emphasis for the supplier to pay attention to the criteria details. Given some circumstances, the PQRs may or may not apply to that specific lot of parts (i.e., an FAI report would not be needed if none of the noted criteria of PQR #3 apply).

### 1. General Requirements

**Certificate of Conformance:** The Supplier is to provide a certification of conformance document which shall include the following information:

- a) Supplier Name;
- b) Supplier Address;
- c) S-TEC Name;
- d) S-TEC Purchase Order Number;
- e) Part Number Listed On the Purchase Order;
- f) Revision Number / Letter Listed On the Purchase Order; \*\*
- g) Serial Number(s) / Lot Number As Applicable;
- h) Quantity of Parts Certified On This Shipment; and
- i) Fasteners included under the Fastener Quality Amendments Act Of 1999 (PL-106-34) shall provide appropriate certification.

\*\* Providers of commodity parts / components (typically distributors) are exempt from the Revision Number / Letter requirement. Commodity refers to a class of parts / components that are standard-issue and are widely available for purchase, but present difficulties in differentiation of similar products from competitors. (i.e. fasteners, resistors, etc.)

## **1. General Requirements (Continued)**

### **Protection of Material-Preservation, Packaging, and Shipping:**

The Supplier shall ensure adequate control of packaging, preservation, shipping and handling of products to prevent damage, deterioration, and/or loss. Shipments consisting of multiple containers shall have each container identified 1 of 4, 2 of 4, etc. All documentation will be placed in container #1 and marked "Documentation Enclosed". For guidance reference ASTM D3951.

### **Container / Package Identification of Procured Item(s):**

The container(s) the parts / material are delivered to S-TEC in shall have a label affixed that identifies the contents by the manufacturer's part number. In turn, that part number can then be verified as the correct part / material by comparing it against that noted on the Purchase Order and the accompanying Certificate of Conformance (C of C).

**S-TEC Corporation is committed to preserving the environment and is requesting that all materials used in the shipment of product to S-TEC, or any of its subcontractors, is kept at a minimum to ensure adequate protection during transit and be composed of ecological friendly materials.**

All items subject to Electrostatic Discharge damage shall be packaged in a manner consistent with industry standards for ESD.

### **Nonconforming Product:**

Supplier must notify S-TEC of any material that does not conform to specifications/drawings approved by S-TEC. Material Review Board (MRB) authority is not delegated to the supplier. If S-TEC agrees to let supplier ship nonconforming material, it will be annotated on the Purchase Order but does not necessarily constitute acceptance of the material by S-TEC.

### **Inspection by Buyer:**

All work performed shall be subject to inspection, surveillance, and test by S-TEC, the FAA and/or a customer/government representative at any time, including all points of manufacture, parts, materials, inspection records and inspection/testing equipment normally used in production and inspection of the S-TEC parts/materials. This report does not relieve the Supplier of the obligation to furnish items meeting the applicable drawings, specifications, work instructions, and contract requirements.

Inspection by the S-TEC quality representative or other parties does not constitute final acceptance of parts and/or material.

At S-TEC's option, S-TEC Source Inspection may be waived at any time during the life of the order.

### **Notification of Changes to Supplier Organization, Location, or Certification Status:**

The supplier shall notify S-TEC of organizational changes affecting quality management, supply chain management, or ownership within 10 business days of the change. A change in location or certification status, as well as significant organizational changes, may constitute an on-site visit from S-TEC.

### **Mercury Contamination (As applicable):**

The supplier shall certify that all parts, pieces, items, etc., supplied to S-TEC on this Purchase Order do not contain functional mercury or its compounds in any form, and no mercury-bearing instruments and/or Equipment that might have caused mercury contamination have been used in the manufacture, fabrication, assembly, or testing of the delivered products.

## 2. Traceability

The supplier shall maintain at their facility complete traceability of origin to delivery of items for a minimum duration of ten (10) years. The traceability shall be documented and available upon request either by hardcopy or electronic. If traceability cannot be kept at supplier facility then copies must be sent in with each shipment received by S-TEC. Supplier shall serialize items as required by drawings, specifications, and/or the purchase order. Serial numbers shall not be duplicated. Supplier's quality system shall ensure traceability of all serialized and or date coded items and materials to the original materials.

In addition to the C of C, the following will be required:

**PCB Board Assemblies:** supplier shall tag the board assembly with the following information:

- a) Purchase order number;
- b) Part number and revision level;
- c) PL number and revision level;
- d) Unique serial number; and
- e) Date of manufacture.

**Distributors:** The Supplier shall implement an appropriate strategy to ensure that articles delivered to S-TEC are not counterfeit. The Supplier's strategy shall include, but is not limited to, the direct procurement of articles from the Original Equipment Manufacturer (OEM) or other authorized Suppliers, conducting approved testing or inspection to ensure their authenticity.

Document requirements for Distributors are as follows:

- The OEM's original certificate of conformance for the article;
- Sufficient records providing unbroken supply chain traceability to the OEM; or
- Tests and inspection records demonstrating the article's authenticity.

Counterfeit articles delivered or furnished are deemed nonconforming. If the Supplier becomes aware or suspects that it has furnished counterfeit articles to S-TEC Corporation, the Supplier shall promptly notify S-TEC Corporation and replace, at Supplier's expense, such counterfeit articles with OEM or buyer-approved conforming articles. The Supplier shall be liable for costs related to the replacement of counterfeit articles and any testing or validation necessitated by the installation of authentic articles after counterfeit articles have been replaced. The remedies contained in this section are in addition to any remedies S-TEC Corporation may have at law, equity, or under other provisions. The Supplier bears responsibility for procuring authentic articles or items from its subcontractors and shall ensure that such subcontractors comply with these requirements.

**Raw Material Traceability:** The Supplier shall maintain a material traceability process that ensures full traceability to the raw material lot/heat lot and any applicable requirements imposed by the drawing or specification. The Supplier shall ensure that the certifications provided include the actual material, special process, or testing standards noted on the applicable drawings along with the applicable revision letter or identifier. Mill certifications are required for metallic raw materials used in the manufacturing of hardware specifically designed, fabricated, or altered for the program. Mill certifications must contain the actual chemical and physical properties demonstrating compliance to the governing specification. For aluminum "typicals" is acceptable for the reporting of chemical properties.

**Chemical Test Actuals:** Reported results must be identifiable with test parameters, test methods, specifications, and material(s) to product(s) delivered. Reports must bear the date and signature of a responsible representative of the agency performing the test(s) along with traceability to the S-TEC Purchase Order Number. The specifications must be listed, including the revision letter(s) or revision number(s) and amendments. Test specimens used for material verification tests shall be selected from, and traceable to, each delivered heat/lot of material.

**Physical Test:** Reported results must be identifiable with test parameters, test methods, specifications, and material(s) to product(s) delivered. Reports must bear the date and signature of a responsible representative of the agency performing the test(s) along with traceability to the S-TEC Purchase Order Number. The specifications must be listed, including the revision letter(s) or revision number(s) and amendments. When parts are serialized, serial numbers must appear on the report(s).

### **3. First Article Inspection (FAI):**

Supplier is to complete an FAI report on any manufactured parts meeting the following guidelines:

- a) Initial submission of a part by a newly approved supplier;
- b) A new part number release to an approved supplier;
- c) A two-year interval between purchase order issuances to an approved Supplier will necessitate an FAI, even if the Supplier has built the part to the same revision level, previously;
- d) A revision level change to the drawing will necessitate an FAI. (Delta First Article acceptable);
- e) New S-TEC-owned tooling, manufactured by a supplier, will require an FAI performed on the parts manufactured through the use of said tooling;
- f) S-TEC-owned tooling that has been modified or upgraded will require an FAI submission;
- g) A specific request for an FAI by S-TEC (denoted in purchase order special instructions).

The report will be performed on a minimum of one part, with the part(s) being tagged in such a manner to indicate the FAI was completed against that specific part(s).

**The supplier shall prepare and submit for review by S-TEC, a first article using the AS9102 format.**

### **4. FAA Documentation**

FAA Form 8130-3 (or JAA Form One) is required for all articles in this order.

### **5. Shelf Life**

Submit with each shipment a certification or statement, specifying maximum shelf life and expiration/cure date. A minimum of 75% of the applicable material shelf life shall remain upon receipt by S-TEC. Rubber cure dated items shall be marked with a cure date, e.g., "1Q92", per SAE-AS1933 and referenced Military Specification therein as applicable.

### **6. Inspection/Acceptance/Test Data**

The supplier shall provide documented measurement data and/or test data with each shipment submitted to S-TEC. The actual measurements obtained shall be outlined in the detail specification/drawing and reflect the proper revision level. S-TEC reserves the right to specify the applicable data collection to be used. Test data shall include actual readings taken including actual characteristics/parameters tested. Test data sheets will be validated by an authorized contractor representative by signature or stamp.

### **7. Special Processes (As applicable)**

Any of the following special processes applicable to your product/service shall be performed by qualified personnel or sources:

#### **Material Certification, Physical and/or Chemical Test Reports:**

Each shipment is to include material certifications, with physical and/or chemical test reports in conformance with the latest specification revision or as defined by the drawing or purchase order. Certifications shall include the mill name and heat number. Certification must be complete, legible, reproducible, and authentic. The name and title of the authorized representative and date shall appear in type on the certification and bear the signature of that person along with the date.

## 7. (Continued)

### Process Certifications:

Each shipment is to include process certifications with required equipment and personnel identification number with the latest revision as required by the purchase order, process sheet and/or drawing. Certification must be complete, legible, reproducible, and authentic. The name and title of the authorized representative and date shall appear in type on the certification and bear the signature of that person along with the date.

### Certification Welding:

Certifications reflecting title and authorized signatures for the items are required with each receipt.

- a) Welding is accomplished in accordance with the applicable engineering specifications.
- b) Certification and identification of welding personnel.
- c) Certify welding procedure specifications and qualification records conform to MIL-STD-1595.
- d) Conformance and traceability of weld filler material.

### PCB Requirements:

PCB suppliers shall build all assemblies in accordance with S-TEC Engineering specification 05193. The criteria listed in the specification shall apply to all PCB assemblies unless otherwise specified on the associated engineering documentation. The supplier shall not deviate from this criteria unless written approval from S-TEC is received. The supplier shall provide documented evidence of conformance with each shipment.

Printed Circuit Board Assemblies (PCBAs) shall be manufactured and certified to the following:

- Solder composition of 63% Sn and 37% Pb (unless otherwise specified on the engineering documentation, or Approved by S-TEC through the purchase order contract;
- PC Board Assembly Engineering Specification criteria shall comply with that of S-TEC drawing number 05193. (Workmanship and Inspection Acceptability compliant to IPC-A-610 and IPC J-STD-001, Class 2).

### Wiring Harness and Interconnect Assemblies

Wiring Harness and Interconnect Assemblies shall be manufactured and certified to the following:

- Wiring Harness and Cable Assembly Specification criteria shall comply with that of S-TEC drawing 05167. (Workmanship and Inspection Acceptability compliant to IPC-A-620).

## 8. Nondestructive Test (NDT)

### Personnel Certification:

Personnel performing nondestructive acceptance testing operations shall be certified to Level II, or III.

All personnel certifications shall be in accordance with (a) or (b) below.

- a) NAS 410
- b) ASNT SNT-TC 1A

### Radiographic Inspection:

A report that reflects the supplier's interpretation of the acceptance of the articles to the standards shall be submitted with each shipment.

## **9. Calibration Services**

Contractors performing calibration services for S-TEC shall use equipment which has been calibrated and maintained using standards which are traceable to the National Institute of Standards and Technology (NIST), in accordance with the latest revisions of ANSI/NCSI, 2540-1, Calibration System Requirements.

## **10. Government Source Inspection**

Government inspection is required prior to shipment from your plant. Upon receipt of this order, promptly notify and furnish a copy to the Government representative normally servicing your plant. So that government inspection can be appropriately planned. If a Government representative does not service your plant, contact the nearest Air Force, or Navy Inspection office. If you locate the Government office, our purchasing agent should be notified immediately. Notice to the Government shall be given 24 hours prior to shipment and S-TEC shall be advised immediately following the supplier's notification to the Government.

## **11. Qualified Product List (QPL)/Government Requirements/JAN Semiconductors**

Items to be furnished on this Purchase Order are applicable to a Government or customer Qualified Product List. Manufacturers listed must be selected as sources of supply. All JAN devices shall meet the requirements of MIL-S-19500. A Certificate of Traceability shall accompany each device shipment. The document shall include the information specified in MIL-S-19500 Paragraph 3.3.1 (a) or 3.3.1 (b), as applicable.

## **12. Dock-to-Stock**

Parts/materials shall be packaged and marked according to Dock-to-Stock agreement.

## **13. No Change Policy**

Previous S-TEC approved processes and materials identified in manufacturing procedures submitted shall remain at the level of configuration in effect at the time of written approval by S-TEC. The supplier shall not change processes, materials, manufacturing procedures, and/or sub-tier suppliers unless written approval from S-TEC is received.

## **14. Software Requirements (As applicable)**

**Airborne Software**-The supplier shall maintain at their facility a software process based on the RTCA DO-178 document or equivalent. Documentation verifying this process shall be available upon request. Any software delivered shall be traceable to a release process which identifies the software as FAA approved software for the purpose it was delivered for.

**Product Acceptance Software** -Any delivered software used in the testing of airborne software shall be traceable and reproducible by the supplier. Documentation verifying the testing the product acceptance software underwent shall be available upon request.

The supplier acknowledges S-TEC Corporation's  
Commitment to the environment and  
acknowledges S-TEC Corporation's  
environmental policy located at  
[www.genesys-aerosystems.com](http://www.genesys-aerosystems.com).