

- SC-1 Quality System: The Supplier shall have a quality management system that conforms to:
- a) SAE AS9100 Quality Management Systems – Aerospace – Requirements
  - b) SAE AS9110 Quality Management Systems – Aerospace – Requirements for Maintenance Organizations
  - c) SAE AS9120 Quality Management Systems – Aerospace – Requirements for Stockist/Distributors
  - d) ISO 9001 Quality Management System Requirements
  - e) SAE AS9003 Inspection and Test Quality System
- SC-2 Quality System Certification: For SC-1 a – d, independent certification / registration is required. During the course of this Order, the Supplier shall notify F O Engineering, Inc. within three days of a change in registration bodies, loss of their registration status, or notification of pending loss of their registration status.
- SC-3 Calibration System: The Supplier shall have a documented calibration system that meets the requirements of ANSI/NCSL Z540-1 or ISO 10012.
- SC-4 Record Retention: The Supplier and the Supplier's subcontractors shall maintain verifiable objective evidence of all inspections and test performed, results obtained and dispositions of non-conforming articles. These records shall be identified to associated articles, including heat and lot number of materials, unit or lot serialization. These records shall be made available to customer and/or government representatives upon request and shall be retained in a safe, accessible location for the period specified below after date of delivery:
- a) Two (2) years
  - b) Five (5) years
  - c) Ten (10) years
  - d) Fifteen (15) years
  - e) Twenty (20) years
- The Supplier's records associated with the manufacture of serialized or lot controlled articles will provide for continued traceability of serial numbers or lot number identification through all phases of manufacture, commencing with the raw material and continuing through final acceptance of the end item.
- Records held for the required retention period shall not be destroyed without F O Engineering, Inc.'s written concurrence.
- SC-5 Customer Source Inspection (CSI): Products to be delivered on this Purchase Order require customer source inspection, tests, or both prior to delivery. The Supplier shall notify F O Engineering, Inc. or its customer at least two working days in advance of the time the products will be ready for inspection or test. Upon request, the Supplier shall make available to the F O Engineering, Inc. representative or its customer any measuring and test equipment, facilities, records, and personnel to facilitate the source inspection.
- a) In-process source inspection required.
  - b) Final source inspection required.

c) First Article source inspection required.

SC-6 Government Source Inspection (GSI): Products to be delivered on this Purchase Order require U.S. Government Source Inspection prior to delivery. Upon receipt of this Purchase Order, the Supplier shall promptly notify the U.S. Government representative who normally services the Supplier's plant, so that appropriate Government inspection planning can be accomplished. If the Supplier cannot locate the U.S. Government representative to arrange for the required source inspection, the Supplier shall notify F O Engineering, Inc. immediately. Upon request, the Supplier shall make available to the U.S. Government representative, without additional charge, any measuring and test equipment, facilities, records, documents, and personnel to facilitate the Government source inspection.

SC-7 Electrostatic Discharge (ESD) Control Program: The Supplier shall document and implement an ESD Control Program in accordance with ANSI/ESD S20.20, ESD Association Standard for the Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices). Parts must be properly packaged and identified as required in ANSI/ESD-S20.20. All goods will be placed in conductive or static-dissipative packages, tubes, carriers, conductive bags, etc., for shipment. The packaging must be clearly labeled to indicate that it contains electrostatic sensitive goods. Electrical parts that may be used or shipped in conjunction with ESD sensitive parts shall be treated as ESD sensitive.

SC-8 Protection of Electrostatic (ESD) Sensitive Devices: All voltage sensitive devices delivered on this Purchase order, including subassemblies and assemblies containing such devices, shall be protected from static electricity and transient voltages in accordance with the drawing or specification under which the devices are procured.

SC-9 Limited Shelf Life Materials: With each delivery of materials on this Purchase Order that have a limited or specified shelf life, the Supplier shall furnish the following data:

- Cure or manufacture date,
- Expiration date or shelf life,
- Lot or batch number, and
- When applicable, any special storage requirements and/or handling procedures.

The above information shall be marked on each container or certification and shall be in addition to normal identification requirements, such as material name, part or code number, drawing, specification number and revision, type, size and quantity and other markings as applicable. Upon shipment, shelf life remaining shall meet the minimum shelf life specified on the order. If no shelf is specified, 75 percent of the shelf life shall be remaining on products on this Order.

SC-10 Electronic Products – General Requirements: The materials, methods, and acceptance criteria for producing soldered electrical and electronic assemblies shall meet the requirements of IPC-A-610 – “Acceptability of Electronic Assemblies,” and IPC/EIA J-STD-001 – “Requirements for Soldered Electrical and Electronic Assemblies” for the class specified below:

a) Class 2 Dedicated Service (Industrial) Electronic Products

## b) Class 3 High Performance (Aerospace) Electronic Products

SC-11 First Article Inspection: The Supplier is required to perform first article inspection on the items in this contract / purchase order. The inspection records and data shall identify each characteristic and feature required by the design data, the allowable tolerance limits, and the actual dimension measured as objective evidence that each characteristic and feature has been inspected and accepted by the Supplier's quality and/or inspection function. When testing is required, the parameters and results of the test shall be recorded in the same manner.

The first article inspection report must show evidence of acceptance by the Supplier's quality assurance representative. The first article(s) shall be produced on production equipment and using processes which will be utilized on production runs.

The following sub-clauses shall apply to this Purchase Order when specified:

- a) SAE AS9102: First article inspections shall be in accordance with current revision of SAE Aerospace Standard AS9102.
- b) Delivery of First Article Inspection Records: The Supplier shall provide one (1) reproducible copy of the First Article Inspection/Test records accompanied by variables data with the initial shipment.
- c) Retention of First Article: The Supplier shall retain the first article(s) as objective evidence and make available to F O Engineering, Inc. upon request. Disposal of first article is prohibited until authorized by F O Engineering, Inc. in writing.
- d) Delivery of First Article: The Supplier is required to deliver the first article to F O Engineering, Inc. for verification, as part of this Purchase Order, prior to the shipment of any balance of said Purchase Order, unless otherwise specified.

SC-12 Configuration Management: The Supplier shall be responsible for controlling / tracking changes to parts and components manufactured to ensure that the end product meets specified functional and physical requirements of this Purchase Order. This includes any part or component manufactured to customers' or vendors' drawings, specifications, or special process procedures. At a minimum, with each shipment, the Supplier shall submit "configuration documents," which define the requirements, designs, build / production, and verification for a configuration controlled item. This record shall be signed and dated by an official of the Supplier's quality assurance department, and, in addition to the aforementioned required information, shall include the following minimum requirements:

- Contract / Purchase Order number and line item number, if applicable
- Part number of deliverable item and all traceable / repairable sub-tiered parts
- Serial number, as contractually required
- Lot number, as contractually required
- Drawing number for drawings related to deliverable item(s) and all traceable/repairable sub-tiered parts
- Revision level (baseline configuration of drawing to which hardware was built)
- Engineering order(s) or equivalent drawing changes as applicable
- Customer approved deviations and waivers as applicable

SC-13 Change Authority for Critical Items: This procurement is for a product, part, or process that is critical in nature to the end item or vehicle. The Supplier shall provide in writing advance notification to F O Engineering, Inc. of any change(s) to tooling, facilities, materials or processes of the delivered item including sub-tier supplier changes. This includes, but is not limited to, fabrication, assembly, handling, testing, facility location or introduction of a new sub-tier supplier.

SC-14 Special Processes: This Purchase Order contains special processes, i.e. the application of chemical, metallurgical, nondestructive or any other manufacturing, joining, or inspection processes, controlled by Federal, Military, US Government, Industry, Customer, National, International, or other specifications.  
The Supplier shall furnish to F O Engineering, Inc., with the delivery of products, the certification/test report issued by the source that actually performed the process. Certifications/test reports shall include as a minimum a complete description of the special process performed (process name, applicable specification and revision, type, class, grade, etc.) and a statement that the process was performed by certified operator(s), when applicable.

The following sub-clauses apply to this Order when specified:

- a) The Supplier is required to use special process sources approved by F O Engineering, Inc. or its customer(s). Contact F O Engineering, Inc. for a list of the approved special process sources. Use of process sources that have not been approved may result in the return of all products to the Supplier at the Supplier's expense.
- b) The Supplier is required to use special process sources that have been surveyed and qualified / approved, by NADCAP (National Aerospace & Defense Contractors Accreditation Program). The organization shall provide to F O Engineering, Inc. with its certification/test report, documentation showing evidence of qualification of use of NADCAP approved special processes.

SC-15 Sampling Inspection: Unless otherwise specified on this Purchase Order, when the Supplier elects to use sampling inspection as a means of product acceptance for items delivered, the sampling plan shall be statistically valid, e.g. ANSI/ASQ Z1.9, and preclude the acceptance of lots whose samples have known nonconformities, e.g. zero acceptance plans, C = 0.

The following sub-clauses apply to this Order when specified:

- a) Submit to F O Engineering, Inc. the sampling plan to be used prior to start of the Order.

SC-16 100% Inspection Report: The Supplier shall perform 100% inspection of all characteristics on all parts delivered under this Purchase Order. The Supplier's 100% inspection report shall show the part number, drawing revision, serial numbers or other traceable identification (where applicable), and the actual values obtained during inspection versus the drawing requirements, including block data and notes, or specification. When applicable, copies of material and/or process certifications shall be attached to the inspection report.

SC-17 Shipping Documents: The Supplier shall furnish Commercial Shipping Documents/Packing Lists with each shipment containing the following information:

- F O Engineering, Inc. Purchase Order Number
- Part Number(s)
- Description
- Quantity ordered
- Quantity shipped
- Lot/Date Code/serialization, as applicable
- Any handling constraints or cautions such as, but not limited to:
  - Optics; open only in clean room environments.
  - ESD sensitive items, open only at approved ESD workstation.
  - Moisture sensitive components, open/store only in humidity controlled area.
  - Shock sensitive components (shock monitoring should be specified if required).

SC-18 Certificate of Conformance (CoC): The Supplier shall provide on the packing list/shipper or on a separate document, a written statement titled “Certificate of Conformance” or equivalent, that conforms to GTC-6 and is worded as follows or equivalent:

“This is to certify that all products or services delivered on this Purchase Order (number) and packing list/shipper (number) are in conformance with all requirements of the Purchase Order. Objective evidence to support this certification will be made available for review upon request. Inspections necessary to determine the acceptability of all products under this Order were completed. All products submitted on this Order are subject to final acceptance by the customer.”

SC-19 Certificate of Conformance for Raw Materials: The Supplier shall include with each shipment the raw material manufacturer's test report (e.g., mill test report) that states that the lot of material furnished has been tested, inspected, and found to be in conformance with the applicable material specifications. The test report will list the specifications, including revision numbers or letters, to which the material has been tested and/or inspected and the identification of the material lot to which it applies.

When the material specification requires quantitative limits for chemical, mechanical, or physical properties, the test report will contain the actual test and/or inspection values obtained. For aluminum mill products (except castings), certifications for chemistry may indicate conformance within the allowed range. Certifications for physical properties will show actual values.

When organization supplies converted material produced by a raw material manufacturer, the Supplier shall submit all pre and post conversion chemical / physical tests reports.

SC-20 Calibration Certificate: The Supplier shall submit for each item calibrated, one reproducible record of actual calibration results, including applicable graphic and tabular data. Records shall be traceable to the individual item tested, by part number, serial number and customer’s order number for the item shipped. The Supplier’s calibration certificate shall include a unique calibration tracking number, tolerance range, and, when applicable, environmental conditions for each parameter calibrated. The certificate shall also state the operating error per specification, the degree of correction of out of tolerance condition, and remaining uncorrected out of tolerance condition, if applicable.

- SC-21 Electrical Wire and Cable Test Report: The Supplier shall provide certification (reference GTC-6) that each shipment of electrical wire or cable furnished under this contract conforms to the applicable specifications.
- For each lot or cable in each shipment, a certified test report or copy thereof shall be included with the packing sheet. The test report shall, at a minimum, include a record of the physical, chemical, or electrical (and in the case of RF cable, electronic) inspections and tests conducted to satisfy the acceptance requirements of applicable specifications, and shall include numerical results when applicable. For cable shipments, these requirements apply to both basic and finished cable.
- SC-22 Traceability of Products to Raw Material: For each lot of products delivered to F O Engineering, Inc., the Supplier shall provide positive traceability of each individual product to the material certification/test report that represents the raw material from which each of the products was manufactured. Traceability may be provided by identifying the raw material heat, lot, batch, or melt number from the certification/test report on tags attached to each product an/or packaging. Heat/lot identification required by applicable specifications, such as for castings and forgings, is acceptable for traceability purposes provided it is clearly marked and not obliterated by subsequent operations.
- SC-23 Raw Material Verification Program: The Supplier shall develop, document and implement a raw material (sheet, plate, bar, rod, etc.) verification program that will ensure that material received from the Supplier's sub-tier sources meets all applicable technical and quality requirements. The Supplier's verification program shall include provisions for monitoring and periodic testing of raw material upon receipt to ensure that such material meets all applicable requirements, and implement appropriate storage and controls to ensure lot traceability. Raw material testing shall be performed in accordance with specification requirements by the Supplier or a recognized testing laboratory. The Supplier's verification program shall document the frequency of such tests and the test results. Records showing the results of the Supplier's material verification program shall be available to F O Engineering, Inc. for review upon request.
- SC-24 Test Samples: With each delivery of products on the Purchase Order, the Supplier shall furnish for verification testing by F O Engineering, Inc., one (1) additional product or suitable test sample produced from the same material lot and processed simultaneously with the lot of products delivered. When more than one lot of material was used, a sample is required for each lot. The sample(s) shall be marked or tagged to identify the process that it represents (e.g. material, heat treat, plating, etc.) and noted on the packing list/shipper.
- SC-25 Product Serialization Requirements: Serial numbers for all products on this Purchase Order have been assigned by F O Engineering, Inc. as defined in the Order or referenced documents. The Supplier shall apply the specified serial numbers on all products and record the serial numbers on all applicable documentation. The assigned serial numbers may not be altered or replaced without written authorization from F O Engineering, Inc..
- SC-26 Product Serialization by the Supplier: Products ordered on this Purchase Order shall be serialized by the Supplier using a serialization scheme selected by the Supplier. The Supplier's

serialization scheme shall ensure that serial numbers are not duplicated on products with the same part number.

SC-27 Acceptance Test Procedure (ATP) Approval: Prior to initial delivery of products on this Purchase Order, the Supplier shall submit to F O Engineering, Inc., for review and approval, a copy of the ATP or other quality conformance procedure that describes the final tests to be performed by the Supplier on products scheduled for delivery to F O Engineering, Inc.. The ATP shall include a list of equipment used and any test diagrams or sketches necessary for technical interpretation of the ATP. Any revisions to a F O Engineering, Inc. approved ATP shall be submitted to F O Engineering, Inc. for review and approval prior to incorporation into production.

SC-28 Functional Test Data Sheets: With each delivery of products on this Purchase Order, the Supplier shall furnish to F O Engineering, Inc. a functional test data sheet, which shows the actual results (values) obtained during the functional tests performed on each unit of product versus the requirements specified in the F O Engineering, Inc. approved Acceptance Test Procedure or specification. The test data sheets shall identify the part number and drawing revision, individual products by serial number, and meet the requirements of GTC-6.

SC-29 Functional Test Certificate (FTC): The Supplier shall include on the packing list/shipper or on a separate attached document a written statement titled "Functional Test Certificate" (FTC) that conforms with the requirements of GTC-6 and is worded substantially as follows:

"This is to certify that all products delivered on this Purchase Order (number) and packing list/shipper (number) have been tested as required by the applicable drawing, specification, or approved acceptance/functional test procedure, and are in conformance with all requirements of the Purchase Order. Objective evidence to support this certification will be made available on request."

Company Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Printed Name of Authorized Individual \_\_\_\_\_ Date: \_\_\_\_\_  
Title: \_\_\_\_\_ Signature/Stamp: \_\_\_\_\_

SC-30 Manufacturer's Catalogs, Drawings, etc.: With the initial delivery of products on this Purchase Order, the Supplier shall furnish to F O Engineering, Inc. one (1) copy of the current manufacturer's catalog, drawing, blueprint, or specification which fully and clearly describes the products delivered, and can be used by F O Engineering, Inc. to verify product conformance to requirements.