

Sargent Controls & Aerospace Procurement Quality Requirements

* **GENERAL REQUIREMENTS:**

The requirements stated below shall apply to all subcontractors of the material(s) and processing services furnished to Sargent Controls & Aerospace (SC&A) Purchase Orders. The Procurement Quality Requirement Clauses (PQRC's) and Procurement Engineering Requirement Clauses (PERC's) identify requirements which apply only when noted on the individual purchase order. All material supplied or processed shall conform to the latest revision level of the applicable specification. The Supplier Quality Assurance Manual (SQAM) is applicable for all purchase orders.

The supplier is responsible for flow down to sub-tier suppliers all applicable requirements in the purchasing documents, including key characteristics where required. Purchase Order requirements shall take precedence over the requirements stated herein, should a conflict occur. Refer any questions regarding requirements or other issues to your SC&A buyer. SC&A must be notified immediately when a change occurs in Quality Manager or in manufacturing location.

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 material 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.

SC&A reserves the right of access, which extends to their customer, and regulatory authorities, to all facilities, at any level of the supply chain, involved in the order and to all applicable records.

* **DRAWING CONTROL:**

When design is the responsibility of the Sargent Controls & Aerospace (SC&A) supplier, the supplier shall implement no changes in design, materials, processes or control without prior written approval, via SC&A buyer, from the cognizant SC&A Quality and Design Engineering representatives. The SC&A supplier is further responsible for compliance by their sub-tier subcontractors to the above stipulations.

* **SPECIAL PROCESS REQUIREMENTS:**

Unless approved as a "1A" or "XX" subcontractor, the following applies: Processes such as, but not limited to, welding, heat treatment, electroplating, and nondestructive testing shall be performed solely by SC&A approved processors. For names of approved sources contact your buyer. Certifications for special processes must accompany each shipment.

* **CERTIFICATIONS AND REPORTS:**

All certifications and reports must bear the following: date, name, title and signature of authorized company representative. References shall be made to purchase order number, line number, part number, revision and quantity.

* **CERTIFICATIONS:**

All certifications need to box with parts, preferably in envelope marked "CERTIFICATIONS".

* **SUBCONTRACTOR DISCREPANT MATERIAL REPORT (SDMR):**

An SDMR shall be submitted for authorization to use or ship materials which do not completely conform to all Purchase Order requirements. This includes materials found to be discrepant through receiving and in-process inspection. Submittal of an SDMR does not guarantee approval. SDMR's (Form 2.385) are available from your buyer.

* **WORKMANSHIP:**

The provisions of SC&A Document No. 04-000018 shall apply, as applicable to all fabrication, assembly, or processing performed to a Marine or Aerospace purchase order. The provisions of document KS-073 shall apply, as applicable, to all Kahr Bearing purchase orders.

* **RECORDS:**

Certifications for purchase orders shall be maintained for 7 years by the subcontractors.

* **SUBCONTRACTOR'S INFORMATION:**

Subcontractors requiring information may contact their buyer for assistance or submit an SC&A VIR (Form 2.385) for written response.

1 **SUBCONTRACTOR QUALITY CONTROL PROGRAM**

The subcontractor shall maintain:

XV. NADCAP or A2LA approved processors.

XX. ISO 9000, AS9100 or approved by major OEM customers.

1S. Sole source approved suppliers.

1A. Quality systems that provide a level of control proportionate with item complexity and contractual requirements and control their suppliers.

1B. Calibration systems that meet or exceed the requirements of ISO 10012-1 or ANSI/NCSL Z540-1-1994 and calibration services that are traceable to N.I.S.T. or national standards.

1C. Quality systems that provide a level of control proportionate with item complexity and contractual requirements, but do not control their suppliers.

1D. Specialized quality systems for distributors and other suppliers that are not required to perform in-process inspection.

2 **FIRST PIECE INSPECTION**

The first piece produced shall be submitted to SC&A for Quality approval prior to the production run.

3 **GOVERNMENT SOURCE INSPECTION (GSI)**

All items covered by this purchase order are required to have inspection at the subcontractor's facility, by a Government Representative. The subcontractor shall furnish, at no cost, a copy of the Purchase Order, and all necessary facilities, equipment, and assistance to accomplish this inspection. Evidence of GSI shall accompany each shipment.

4 **SC&A SOURCE INSPECTION**

All items covered by this purchase order are required to have inspection at the subcontractor's facility, by an SC&A Quality Representative, prior to shipment. Call your buyer to arrange for inspection.

5 **FIRST ARTICLE INSPECTION/REPORTS**

The subcontractor shall perform a first article inspection. One part shall be inspected when the part is made the first time, when the manufacturing method is changed, or when the print revision is changed. The first article part shall be clearly identified with the words "first article".

The first article report shall list all characteristics, including notes tolerance limits dimensions and material requirements, and shall remain on file for audit or submittal when called for.

6 **CERTIFICATION OF CONFORMANCE (C OF C)**

Subcontractor shall submit with each shipment a legible, typed or printed, reproducible certified statement (C of C) that the items listed thereon comply fully with all purchase order requirements. The "C of C" shall bear: authorized company signature with title, date, purchase order number, line item number, supplier's lot number, part number, revision and quantity. Also, if parts involve a DMA, subcontractor must specify whether parts were re-worked or replaced.

7 **FUNCTIONAL TEST REPORTS**

The subcontractor shall submit, with each shipment, a report listing actual test results, identifiable to the respective products.

8 **MATERIAL CERTIFICATION (NON-METALS, COMMERCIAL, PROPRIETARY)**

Material certifications shall be submitted with each shipment. The certification shall bear description of material, trade name, manufacturer's name, specification number (type, grade, etc.) manufacturers part number, batch and heat or lot number, if applicable.

9 **CHEMICAL AND PHYSICAL TEST REPORT**

Chemical and physical test reports shall be submitted for each shipment and include the following:

(1) Batch, heat or lot number

(2) The specification & revision the material was produced to. (Ferrous metals require specific values of composition).

(3) Mill certificates must accompany all certifications.

11 **SPECIAL PROCESSES**

Aerospace grade special process requirements apply to this part.

Certification reports from the processor(s) identifiable to the materials delivered are required for each process or nondestructive test performed. Reports shall include the following:

(1) Processes performed/ Method/ Type

(2) Specification/drawing and revision level

(3) Purchase order number

(4) Part number

(5) Compliance to required acceptance criteria

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(6) Ultrasonic scan plans if applicable

(7) Radiographic x-rays if applicable

Materials processed must be certified in accordance with the applicable specification. Suppliers shall flow down sufficient information to ensure sub tier vendors/processors are able to correctly process all parts. All plating must show baking times or durations, temperatures, and if materials were processed within the proper time period. Heat Treat certification must show final hardness obtained. NDT must certify acceptance criteria. Note: NDT personnel shall be certified level II or above per MIL-STD-410 or MIL-STD-271

12 MATERIAL/PROCESS SAMPLES

A representative material test sample for all special processes is required with completed parts.

13 UNIQUE HEAT-LOT CONTROL

Only one heat lot of material is to be used in the production of any individual detail. Materials to be segregated by heat-lot, packaged separately, and not commingled.

14 MERCURY-FREE CERTIFICATION

Goods furnished shall be free from contamination by the presence of mercury. Compliance with this requirement shall be certified by the subcontractor. Subtier subcontractors are also required to certify on Level 1 products.

16 STATISTICAL PROCESS CONTROL

An SC&A approved SPC program is required. Control charts are required with each shipment.

17 TRACEABILITY OF SC&A FURNISHED MATERIALS

Only the material furnished may be used to satisfy this order. Material substitution is prohibited. SC&A assigned lot number and serial number when applicable shall be maintained and referenced on all documentation as applicable. Materials drop shipped to suppliers will be verified by certification prior to use.

18 AGE CONTROLLED MATERIALS

Age sensitive materials shall conform to applicable specifications and the following shall be identified on each container:

- Manufacturer's name
- Batch number
- Storage temperature
- Compound/spec. number
- Date of manufacture
- Shelf life requirement

19 MANNED SPACE FLIGHT

Materials, manufacturing and workmanship are to be of the highest standards to insure astronaut safety. If you are able to supply items of a quality higher than the items specified, please notify your buyer.

20 LEVEL I/SUBSAFE MATERIAL TEST REPORT

A detailed chemical (composition) and physical (mechanical property) test report is required for each heat number of material. This report shall include a full description of the material (name or symbol, specification number and revision, alloy and condition, type, grade, class, form, finish, production method, etc., as applicable), producer's (mill) name, heat number, and actual quantitative results of chemical analysis and physical (mechanical) test to substantiate composition and condition. Certifications to limiting ranges of composition/condition are NOT acceptable. Certification data supplied shall be the original mill material certification or reproducible copies and from DOMESTIC SOURCES ONLY.

NOTE:

(1) **When mechanical properties of the material have been altered by heat treatment or metal working processes, the mill test report shall be accompanied by a certification from the heat treatment or metal working facility, containing quantitative results of the mechanical tests performed to prove that the material supplied complies with specification requirements.**

When mechanical properties of the material have been altered, the material and certifications shall be uniquely re-identified with a "new" heat/lot control number. The sole alternative permitted to the mill providing heat treatment or metalworking certifications is a testing laboratory's quantitative test report, identifiable and traceable to material it represents.

(2) **Transcription of data from the original mill test report, heat treatment or metal working facility certification, and/or testing laboratory test report to a subcontractor's form is prohibited. Test reports/certifications provided will be the originals or true copies thereof, and shall include actual signatures and traceability references.**

21 SUBCONTRACTOR CATALOG/SPECIFICATION

Subcontractor shall submit a copy of the actual catalog pages and/or manufacturer's specification that furnishes all required information applicable to the purchased items.

22 GENERAL ELECTRIC VSE PART

This part falls within the requirements as outlined in G.E.'s P1TF17 "Substantiation Administration Requirements". A copy of the G.E. approved VSE package is required with each shipment.

23 NONDESTRUCTIVE TESTING (NDT) REQUIREMENTS (CRITICAL ITEMS)

All nondestructive testing shall be performed in accordance with an SC&A approved procedure. The subcontractor's facility, test personnel, and NDT procedure(s) shall be approved by SC&A prior to performing required tests. A copy of the approved procedures is to be kept on file at SC&A at all times. The subcontractors are responsible to insure that any revisions to these procedures be forwarded to SC&A for acceptance prior to performing any testing to the new revision. Each shipment of materials must be accompanied by a certified test report for each NDT performed. The reports shall specify the test(s) performed, the specification, specification revision, test method(s) used, approved test procedure number and revision, and the acceptance criteria utilized (document reference shall suffice). Operators performing NDT shall be properly qualified and certified. Their certifications shall include:

(1) **Part number, heat, and purchase order number identification of the material to which the certificate belongs.**

(2) **The name (typed or printed), organizational title and signature of the authorized representative of the company.**

26 BRAZING/WELDING APPROVALS

The procedure used and a representative sample (actual joint configuration) shall be submitted for approval prior to production.

27 PROCESS DOCUMENTATION APPROVAL

Work routing, procedures and process sheets for subcontractor and sub-tier subcontractors shall be submitted for review and approval prior to production. This document shall be considered frozen. Modifications must be re-submitted for approval.

28 TOOL/ FIXTURE DOCUMENTATION

Subcontractor shall submit a drawing, sketch or photograph for all tooling used in the manufacture of this product.

29 TOOL PROOFING AND DOCUMENTATION

Subcontractor shall document the first piece inspection generated using the furnished tooling. Documentation shall accompany shipment.

30 SC&A's CUSTOMER APPROVED SOURCES

SC&A's customer requires all processes be performed by their approved sources. The purchase order will state the customer whose approved sources must be used and provide information on how to find the listing of approved sources. Contact your buyer if you do not have a listing of approved sources. Certifications will list SC&A customer's specifications.

31 DIMENSIONAL INSPECTION REPORTS

A Dimensional inspection report is required to ANSI/ASQC Z 1.4; AQL 1.0 for all characteristics of .005 or less drawing tolerance.

32 ELONGATION REQUIREMENTS

Fasteners shall have an elongation of 12% minimum in 4 diameters in accordance with FF-S-86. One copy of a certification of elongation values is to accompany each shipment on this order. The certification shall be signed and dated by the seller's authorized representative. Certification shall be attached to the packing list. Where more than one container or package is included in the shipment, the certification shall be attached securely to or placed in one container or package and clearly identified on the outside. When fasteners are too short for elongation testing, specimens may be prepared from parent bar stock or on a longer length screw from the same lot. Fasteners too short for testing are

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defined by FF-S-86E (4), paragraph 4.3.1.2 or, ASTM F606-02, paragraph 3.6.

33 HYDROGEN EMBRITTLEMENT TEST REPORT

Hydrogen embrittlement test report is required. Report must comply with AMS-QQ-P-416. Fasteners shall pass the stress durability test in accordance with MIL-STD-1312-5, using the external load method. Sufficient external load shall be applied to the fastener to develop an induced load of 75-80% of the minimum tensile strength specified for a duration of not less than 72 hours (Mil Std 7838 Bolts require the same load, however the duration period is reduced to 24 hours of test time). Sampling shall be per FF-S-86 REV. E (1) para. 4.2.3. Fasteners selected for test shall not be submitted for acceptance. Test reports shall be identifiable to the materials submitted and shall include Batch /Heat and Lot Number.

34 TENSILE COUPONS

Representative samples of materials used to produce hardware, in the final heat-treated condition, must accompany each shipment. Samples shall be in accordance with ASTM-E-8 unless otherwise specified.

36 (ESD) ELECTRO SENSITIVE DISCHARGE ITEMS

Items to be ESD protected and labeled as ESD sensitive. Certification indicating all items supplied were handled only at certified ESD workstations is required with each shipment.

39 DOMESTIC MATERIALS

Any specialty metals incorporated in articles delivered under this contract shall be melted in the United States, its possessions or Puerto Rico. Specialty metals means:

- (1) Steel with a maximum alloy content exceeding one or more of the following limits: manganese 1.65%, silicon 0.60%, or copper 0.60%.
- (2) Steel containing more than 0.25 percent of any of the following elements: aluminum, chromium, cobalt, columbium, molybdenum, nickel, titanium, tungsten or vanadium.
- (3) Metal alloys consisting of nickel, iron-nickel, and cobalt base alloys containing a total of other alloying metals (except iron) in excess of 10 percent.
- (4) Titanium and titanium alloys.
- (5) Zirconium and zirconium base alloys.

This clause does not apply to specialty metals melted in a qualifying country. Call your buyer for a list of qualifying countries.

40 NADCAP APPROVED SOURCES

NADCAP approved sources are required for all processes listed on the purchase order. Contact your buyer if you do not have a listing of NADCAP approved sources.

41 KEY CHARACTERISTICS

When applicable, Key Characteristics are specified on the purchase order or the drawing. Data on Key Characteristics shall be collected by the Supplier and shipped to SC&A with each shipment. When necessary, this clause must be flowed down to sub-tier vendor/processor.

45 FAA DRUG AND ALCOHOL CERTIFICATION

This requirement must be flowed down to all sub-tier suppliers. Suppliers performing work on this order are required to submit a certification indicating your company has an FAA certified drug and alcohol testing program or, your company has been added to Sargent Controls and Aerospace drug and alcohol testing Program. Note: submittal required with first order or when program certification has changed.

46 FAA 8130-3 TAG

FAA form 8130-3 Return to Service tag required with shipment. 8130-3 tag(s) shall include the following information: SC&A purchase order number, line item, part number (both SC&A and SC&A's customer, when listed on the purchase order). The 8130-3 tag box 13 shall also include reference information for technical data used to achieve the work performed.

47 NN-801

During the performance of this contract, U-NNPI may be developed or used. Appropriate safeguards must be implemented to prevent release of U-NNPI in any form by supplier or any sub-tier suppliers. These

safeguards shall ensure that access to U-NNPI is limited to those governmental and supplier parties (including sub-tier suppliers), that have an established Need-To-Know (NTK), and then only under conditions which assure that the information is properly protected. Access by Foreign Nationals or representatives of foreign interests is not permitted. In addition, any and all issuances of releases of such information beyond such necessary parties, whether or not ordered through an administrative or judicial tribunal, shall be brought to the attention of SC&A.