

**PCC STRUCTURALS  
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**STANDARD QUALITY  
ASSURANCE REQUIREMENTS  
(SQAR-001)**

**Scope:** SQAR-001, when referenced on the face of the Purchase Order, is an integral part of the Order. **The Purchase Order will include a link to the current and applicable revision of SQAR-001.** Failure by the Supplier to conform to the applicable requirement(s) of SQAR-001 listed on the Purchase Order, **or applicable to the procured material or service type per Table 1**, shall be cause for rejection and return of articles at the Supplier's risk and expense. Any additional technical or quality requirements such as tolerances, accuracies, ranges, calibration points, and industry standards shall be listed on the purchase order as requirements.

Certifications submitted by the Supplier must be in duplicate and bear the signature of an authorized agent, and be legible and reproducible.

#### **QUALITY SYSTEM**

1. The supplier shall maintain an Inspection System capable of meeting the requirements of the applicable SQAR-001 codes.
2. The material supplier shall maintain an Identification and Verification program to provide traceability of material while under his control.
3. Lot integrity must be maintained.
4. **When flowed down on a PO supplier must be capable and demonstrate ability to conform to AS13100.**
5. **Supplier shall have a FOD (Foreign Object Debris/Damage) Program to prevent FOD in the products supplied to PCC in compliance with AS9146 and AS9100D, Section 8.1.**
6. **Supplier shall have a Counterfeit Parts Prevention Program to prevent counterfeit parts from entering the Supply Chain in accordance with AS6174 and AS9100D, Section 8.1.4.**
7. **Supplier shall ensure that personnel are aware of their contribution to product conformity, product safety, and the importance of ethical behavior per AS9100D, Section 8.4.3 and PCC's Code of Conduct.**

#### **APPROVED SOURCES**

8. All material furnished, processing or calibration performed under this order must be by a source approved by PCC Structurals Carson City. Supplier is responsible for requesting a copy of any applicable specifications not available to them. Some Suppliers of special processes must be Customer approved and comply with Customer specifications as applicable to the purchase order as follows:
  - a) GE Specification S1000 or specific GT193 Code.
  - b) Boeing Specification D1-4426, X31764 (QPDR) and any applicable Boeing Quality "Q" notes.
  - c) Honeywell Specification SPOC 002
  - d) **UTC ASQR-01 & SQOP 01-01**
  - e) **Pratt & Whitney MCL**
9. Supplier shall pass on to any sub-tier supplier(s) the applicable requirements of this Purchase Order. The use of sub-tiers to fulfill PCC's purchase order requirements is prohibited unless agreed upon by PCC.
  - a) **The use of subcontractors for calibration or testing is prohibited per NEI-14-05-A-R1.**
10. All material supplied under this purchase order shall be in accordance with the latest Process Control Procedure revision as specified on the face of the purchase order.

#### **MATERIAL CERTIFICATION/RECORDS OF INSPECTION**

11. Supplier shall submit a Certified Material Test Report providing mill identity, mill tests, and analysis of material.
12. Supplier shall provide a Certified Chemical and/or Physical Test Report per applicable specifications. The report shall reflect the mill source of material in accordance with DFARS 252.225-7014 Alt 1 and DFARS 252.872-1 or DFAR 252.225-7008.
  - a) Chemical
  - b) Physical
13. Supplier shall certify as to the ferrite content of the material.
14. Supplier shall submit a certification which includes cure or manufacturing date for material whose acceptability is limited by age. Both the cure date and shelf life shall be listed on the container and on the document certifying the material.
15. Supplier shall provide certification as to the country of origin of the material provided.

16. Supplier shall certify that all articles furnished against this order do not contain, nor have any mercury-containing devices employing only a single boundary of containment.
17. Supplier shall certify that only material furnished by PCC Structurals Carson City, was used in the processing of the product.
18. Supplier's certification shall list the specification and the amendment or revision level to which material is supplied.
  - a) Supplier shall record all specified measurements determined in the course of inspecting the item(s). Such records shall be maintained on file for a period of not less than ten (10) years, **or (40) years for parts marked safety critical**, and are subject to review by the Customer upon reasonable notice. PCC Carson City shall be notified and prior to destroying any records for disposition.
  - b) 100% inspection is required on all items. Sampling inspection may be employed on parts produced to this order, provided the supplier submits a proposed sampling plan and has received written approval from PCC Structurals Carson City Quality Assurance Department prior to incorporating same. Once in place, records shall be kept on the sampling results; such records shall be retained on file for a period of not less than ten (10) years, **or (40) years for parts marked safety critical**, and are subject to review by the Customer upon reasonable notification at any time during that period.

#### **MATERIAL IDENTIFICATION**

19. All materials supplied under this purchase order must be identified with:
  - a) Heat/Lot Number
20. Each individual length of weld rod must be "Flag Tagged" on one end with material type. The tag must indicate the lot number of the material, as well as the applicable material specification number.
21. Parts must be identified on package or container.
22. PCC Structurals Carson City Quality Assurance reserves the right to inspect any or all of the materials included in this order at the supplier's plant. Right of entry privileges is also extended to representatives of PCC Structurals Carson City customers.
23. The Government reserves the right to inspect any or all of the materials included in this order at the supplier's plant.
24. 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 appropriate Government Inspection office in your area. If you cannot locate the Government office, our purchasing agent should be notified immediately.

#### **TOOLING/FIRST ARTICLE INSPECTION/MACHINING**

25. Acceptance of production tooling on this purchase order shall be contingent upon inspection and acceptance by PCC Structurals Carson City. The tooling and dimensional samples produced by this tooling must conform to the tolerance limits of Engineering drawings and specification stated on this purchase order.
26. First Article(s) must be reviewed and accepted by PCC Structurals Carson City prior to a production shipment unless specifically authorized by the buyer. First Article(s) should be tagged or otherwise identified to show the tool used.
  - a) Machining Suppliers must submit a first piece production run part along with dimensional results for all machined features to PCC for inspection and approval prior to running production.
27. First Article Inspection, per AS9102 must be performed by an inspection source that is independent of the producer of the tool, fixture or production source.

#### **DEVIATIONS/NONCONFORMANCE**

28. For consideration by PCC Structurals Carson City any departure from drawings, specifications, or other Customer order requirements, must be reported to PCC Structurals Carson City. Disposition of these departures must be approved in writing by PCC Structurals Carson City Quality Assurance prior to shipment.
  - a) When a supplier suspects or knows that nonconforming material/product has been delivered to PCC, the supplier must notify PCC's buyer, within 24 hours of the discovery. Notification may be in the form of e-mail or fax and must contain sufficient information to identify and contain the nonconforming material/product at PCC. PCC retains the right to request a corrective action from the supplier.

**SPECIAL PROCESSES OR PROCESSING**

29. Special processes or processing, which may be, but not limited to; welding, brazing, heat treating, metal forming, surface preparation, film or plating applications, non-destructive testing, approval of processing equipment, procedures or personnel, must be approved prior to the initiation of any task required in the completion of this purchase order.
30. Supplier shall submit N.D.T. items as specified below:
  - a) Radiographic Certification
  - b) Magnetic Particle Certification
  - c) Penetrant Inspection Certification
  - d) Ultrasonic Inspection Certification
  - e) Pressure Test Certification
  - f) Leak Test Certification
  - g) N.D.T. Personnel qualifications
  - h) X-Ray Film
  - i) X-Ray Technique Sheets
31. Welding on material to facilitate a forming process is expressly prohibited without prior approval by PCC Structurals Carson City Quality Assurance.
32. Supplier shall submit a Certification of Plating per applicable specification.
33. Supplier shall submit a certification of the Special Process(es) as indicated below, per applicable specification(s):
  - 1) Surface finish (roughness)
  - 2) Coatings
  - 3) Treatments
  - 4) Adhesive Bonding

**SUPPLEMENTAL TESTING**

34. Supplier shall submit, along with shipment and certifications, two (2) test samples, representative of the processed part(s), for the following:
  - a) Plating
35. The Supplier shall obtain a Product Analysis from an Independent Testing Lab; certified results of that analysis shall be submitted, along with shipment and other certifications.
  - a) Chemical
  - b) Physical
  - c) The Independent Lab must be and approved lab

**CERTIFICATION OF CONFORMANCE**

36. Supplier shall submit, with each shipment of items covered by this order, a Certificate of Conformance ("C of C"). This Certificate must reflect the revision level of all drawings and/or specifications referenced by the order. The "C of C" must be signed by a responsible representative, and shall attest to the following:
  - a) Materials supplied are those which have been specified by the Purchase Order, Supplier has on file Test Reports and/or other required evidence of conformance to applicable specifications.
  - b) Processes used in the fabrication of items delivered were in compliance with the applicable specifications forming a part of this order.
  - c) Items delivered comply with all drawing requirements which form a part of this order.
37. By making shipment under this Purchase Order, the Supplier automatically certifies that materials used in the items shipped (except material furnished by PCC Structurals Carson City) and the processes applied to such articles comply with the applicable drawings and specifications. Supplier agrees to retain objective evidence and/or records to substantiate significant activities in the manufacturing, inspection, testing, treating, preservation, packaging and packing of delivered items (as applicable). Such records shall be made available on request.

**MANUFACTURING, INSPECTION, AND TEST CONTROL**

38. The Supplier shall submit to PCC Structurals Carson City a product flowchart which defines the operational sequence, initial acceptance and testing points, and process control points, with sufficient description to identify the system. The factory inspection and test plan must be submitted prior to fabrication of this order, and is subject to approval by PCC Structurals Carson City.
39. The Supplier shall develop and maintain a Quality Inspection Plan which provides a complete list of the drawing features and characteristics, as well as description of how those items are to be verified; e.g., Coordinate Measuring Machine, etc. If an Inspection Plan is not supplied by PCC then the Suppliers Inspection Plan must be submitted to PCC for approval.
40. Supplier shall inform PCC Structurals Carson City of all manufacturing process and procedures used to produce parts. Once these practices are established and approved, they shall not be changed without informing the PCC Structurals Carson City.
41. Process and procedure sheets required for source substantiation per General Electric specification P1TF17 and S-1000. Supplier shall submit process and procedure sheets for each individual item under this order. In the event that the processes are complex and/or questions arise as to adequate description of those activities, the supplier is encouraged to contact PCC Structurals Carson City Quality Assurance for assistance.
42. The current revision of the following specification applies to this order:
  - a) GE Specification S-1000
  - b) **ISO9001**
  - c) **AS9100**

**SPECIAL CATEGORY REQUIREMENTS**

43. Supplier shall retain all final records applicable to this Purchase Order for a period of Ten (10) years, **(40) years for parts marked safety critical**, or as otherwise agreed upon, and shall notify PCC Structurals Carson City at the end of that period for disposition instructions.
44. Other requirements: As noted in narrative form on the face of the Purchase Order. When the Purchase Order specifies the following legend the supplier is obligated to comply with all relevant sections of ITAR and/or EAR, including the flow down of said requirements to their sub-contact sources:

*Legend: This technical data is controlled by International Traffic in Arms Regulations (ITAR) and/or Export Administration Regulations (EAR) pursuant to 22 CFR Part 120–130 and 15 CFR Parts 730–774 respectively. Transfer of this data by any means to a Non–U.S. Person, whether in the United States or abroad, without the proper U.S. Government authorization is strictly prohibited.”*

**MEASURING AND TEST EQUIPMENT (M&TE)**

45. Supplier must maintain a calibration system for measuring and test equipment which complies with the requirements of the latest revision ISO 10012 or ISO/IEC 17025.
46. Accredited Supplier of calibration services shall perform calibration of M&TE in accordance with the current revision of ISO/IEC 17025. **The customer must be notified of any condition that adversely impacts the laboratory’s ability to maintain the scope of accreditation.**
47. **Certificates of Calibration must clearly state all of the following, unless approved by the customer in writing:**
  - a) **The calibration source name and address.**
  - b) **The applicable customer PO number.**
  - c) **That the service was performed with equipment traceable to the N.I.S.T.**
  - d) **The specification and revision level the calibration service was performed to.**
  - e) **Equipment description, operating range, and precision.**
  - f) **As found Condition.**
  - g) **As left condition if any adjustment or repair was made.**
  - h) **A unique Certificate number, calibration date & expiration date.**
  - i) **The calibration personnel who performed the calibration.**
  - j) **Accreditation Body and/or certificate number.**

**PACKAGING/PROTECTION**

48. Castings shall be protected by appropriate material interleaved between individual sheets and on top and bottom surfaces of material.
49. Supplier shall individually wrap or box items to prevent damage in transit.
50. Supplier shall package items for shipment so as to prevent metal-to metal contact on machined surfaces.
51. Protective devices accompanying materials or items when shipped to supplier: supplier shall maintain protection during processing and return all such items with return shipment.

*PCC's Code of Conduct* can be found at:

<https://www.precast.com/public-relations/code-of-conduct.pdf>

*PCC's Supplier Integrity Guide* can be found at:

<https://www.precast.com/pcc-common/assets/documents/pcc-supplier-integrity-guide.pdf>

Table 1  
Guidelines for SQAR Selection

Procured Material or Service	Applicable SQAR-001 requirements
Re-melt Material: code “A”	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12a, 13 <sup>(1)</sup> , 15, 16, 18, 18a, 19, 21, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 28, 28a, 36, 36a, 36c, 37, 43, 44, 45
Weld Rod: code “B”	1, 2, 3, 4, 5, 6, 7, 8, 10, 12a, 13 <sup>(1)</sup> , 15, 16, 18, 18a, 19, 20, 21, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 28, 28a, 36, 36a, 36c, 37, 43, 44, 45
Heat Treat: code “C”	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 18, 18a, 18b, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 26, 28, 28a, 29, 33, 36, 36b, 36c, 37, 38 <sup>(1)</sup> , 40, 43, 44, 45, 48, 51
Hip: code “D”	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 18, 18a, 18b, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 26, 28, 28a, 29, 33 <sup>(1)</sup> , 36, 36b, 36c, 37, 38 <sup>(1)</sup> , 40, 43, 44, 48, 51
Surface Treatment: code “E”	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 16, 18, 18a, 18b, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 26, 28, 28a, 29, 32, 33, 34, 36, 36b, 36c, 37, 38 <sup>(1)</sup> , 40, 43, 44, 45, 48, 51
Process Materials: code “F”	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 16, 17, 18 <sup>(1)</sup> , 18a, 18b <sup>(1)</sup> , 21, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 26, 28, 28a, 32, 33 <sup>(1)</sup> , 35 <sup>(1)</sup> , 36, 36a, 36b, 36c, 37, 38 <sup>(1)</sup> , 40, 43, 44, 45, 48, 51
NDT: code “G”	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 18, 18a, 18b, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 28, 28a, 29, 30, 31 <sup>(2)</sup> , 33, 36, 36b, 36c, 37, 43, 44, 45, 48, 51
Machining: code “H”	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 18, 18a, 18b, 21, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 26, 26a, 28, 28a, 29, 36, 36a, 36b, 36c, 37, 38 <sup>(1)</sup> , 39, 40, 43, 44, 45, 48, 50, 51
New Tooling: code “I”	1, 2, 5, 7, 16, 22, 25, 26 <sup>(1)</sup> , 26a <sup>(1)</sup> , 27 <sup>(1)</sup> , 28, 28a, 44, 49
Testing: code “J”	1, 2, 3, 4, 5, 6, 7, 8, 9, 9a, 10, 11 <sup>(1)</sup> , 12 <sup>(1)</sup> , 13 <sup>(1)</sup> , 17, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 28, 28a, 30 <sup>(1)</sup> , 31 <sup>(1)</sup> , 32 <sup>(1)</sup> , 33 <sup>(1)</sup> , 35 <sup>(1)</sup> , 36a-c <sup>(1)</sup> , 37, 38, 39, 40, 42 <sup>(2)</sup> , 43, 44, 45
VSE Process: code “K”	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 22, 28, 28a, 37, 38, 39, 40, 42 <sup>(2)</sup> , 43, 44, 51
GEAE Orders: code “L”	1, 2, 3, 4, 5, 6, 7, 8, 41, 42 <sup>(2)</sup> , 43, 44, 51
Calibrations: code “M”	1, 2, 3, 5, 6, 7, 8, 9, 9a, 22, 26, 26a, 28, 28a, 44, 45, 46, 47, 49, 50, 51
Industrial Gas: code “N”	1, 2, 6, 7, 28, 28.1, 36a, 37
Distributers: code “O”	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13 <sup>(1)</sup> , 15, 18, 18a, 18b, 19, 21, 22, 23 <sup>(2)</sup> , 24 <sup>(2)</sup> , 26, 27, 28, 28a, 36, 37, 39, 43, 44, 49

- (1) When applicable  
(2) Requisitioner must specify details