

QCR-1000 Quality Assurance Requirements for Suppliers

Applicability

Acceptance of a Purchase Order which references QCR-1000 constitutes acceptance of the applicable requirements within this document. Any deviation from the requirements of this document requires prior approval and shall be reflected on the purchase order.

General Requirements

1. Supplier Relationship Management Responsibilities

The Buyer, as specified by purchase order is the primary point of contact for all purchasing issues. The buyer must be informed proactively by the Supplier of any issue(s) that impacts Safety, Quality, Delivery, and/or Cost.

2. Purchase Order Conflicts

In the event of any inconsistency or conflict between this document and the provisions of the purchase order, please contact the Buyer for resolution.

3. ITAR Requirements

Suppliers are responsible for meeting all requirements of the International Traffic in Arms Regulation (ITAR). Suppliers are responsible for vetting employees and ensuring that only US persons and/or employees with legal residency are permitted to work with the purchaser product and/or drawings if identified as ITAR Controlled.

Quality System Requirements

4. Supplier Quality Management System Requirements

The Seller's quality management system must conform to the applicable requirements of AS9100, ISO 9001, or NADCAP Aerospace Quality System AC7004 requirements for special processes. In the event that the supplier's quality management system does not fully meet these requirements, it is the discretion of the purchaser's Quality Engineering Manager to determine if the supplier's quality management system adequately supports the purchasers' organizational requirements. This provision recognizes that while full compliance with the specified quality management system standards is preferred, there may be instances where certain deviations or non-compliances can be assessed on a case-by-case basis.

5. Specifications

All referenced specifications shall be interpreted to mean compliance with the revision in effect on the date which this order was entered unless otherwise noted. The seller will be responsible to both obtain and maintain the current issues of any specifications, standards and other applicable documents referenced under this contract. Customer specifications may be flowed down via QCR 3000 as applicable. The seller is responsible for supplying all material, products, or services in accordance with QCR-3000.

6. Right to Access

The purchaser, its customers, and any regulatory authorities reserve the right of access to a supplier's facility when it has been deemed necessary including but not limited to inspections, reviews, and audits. This includes applicable areas of the facility as well as access to any applicable records.

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7. Supplier Records

Records shall be established and maintained to provide evidence of conformity to requirements and of the effective operation of the Supplier's quality management system. Records shall remain legible, readily identifiable, and retrievable. A documented procedure shall be established by the Supplier to define the controls needed for identification, storage, protection, retrieval, retention time and disposition of records.

Supplier records of manufacturing, processing, inspection, and testing will be retained for a minimum of ten (10) years after the completion of this contract. All such records will be made available for review by the purchaser, purchaser customers and regulatory authorities upon request. Supplier's records shall contain test results and quality data, in sufficient detail to substantiate conformance to requirements, a copy of which shall be provided to the purchaser upon request. Disposal of records for Fracture Critical, Life Limited or Safety of Flight parts requires notification to purchaser prior to disposal.

8. Traceability

The supplier is responsible to ensure full traceability of all activities and goods to ensure tracking of the supply chain back to the manufacturer or service provider. All technical/quality requirements applicable to the goods and services should be traceable to the time and place of production. Records should provide the degree of traceability required to enable verification, at any point from raw material to final product, of all aspects of material, manufacturing, and documentation.

9. First Article Inspection

First Article Inspection Reports (FAIR) shall be conducted in accordance with the AS/EN/SJAC 9102. Unless authorized in writing by the purchaser, the seller shall document and report all FAIRs using the Net-Inspect web-based reporting system. The use of Net-Inspect is free to the supplier.

10. Sub-Tier Suppliers

The subcontracting of any work requires purchaser approval. The Supplier shall flow down all requirements listed on this purchase order to their sub-tier suppliers and ensure these requirements are fully met.

11. Special Processes

The seller shall only use Special Process suppliers as listed on the QCR 4000 form provided by the purchaser. The supplier is responsible to flow down all applicable requirements to special process sub tier suppliers.

12. Acceptance Authority Media (AAM)

Supplier shall comply with the AS/EN/JISQ 9100 requirements and 14CFR Part 21.2 regarding the application of the Acceptance Authority Media (AAM) requirements.

Supplier shall ensure that the use of AAM is clearly defined within its Quality Management System. Supplier shall, upon request, be able to demonstrate evidence of communication to its employees and to its supply chain. The use of AAM must be considered as a personal warranty of compliance and conformity. Supplier shall maintain compliance to the AAM requirements by assessing its process and supply chain as part of its audit activities

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13. Statistical Process Control

Statistical Process Control Data for each key characteristic to accompany material when shipped. Key Characteristics are identified with (*) or “KPC” on drawings. This data shall demonstrate process control to an initial capability level of 1.33 CPK.

14. Sampling Plan Requirements

When the supplier’s facility is performing lot inspection sampling, instead of 100% lot inspection, the seller shall use a recognized sampling plan that conforms to AS9138. Any sampling plan permits defectives is not allowed (C=0 plan required). The supplier shall provide a copy of the plan upon request.

15. Qualified Personnel

Supplier personnel with responsibility for performing work that affects product conformity must be properly qualified. Supplier shall provide objective evidence of personnel qualification upon request.

16. Workmanship

All items shall be fabricated and finished in a high quality and good workmanship manner. Supplier shall deliver product free of scratches, nicks dings, tool marks, etc. as defined in PS-027 Acceptability Limits for Visual Indications.

17. Handling and Corrosion Prevention

The supplier shall ensure the preservation of components and/or materials, to the extent necessary to ensure conformity to requirements. The supplier shall protect against any potential cause of damage from corrosion, moisture, contamination, deterioration, handling, and storage at the supplier’s facility, sub tier suppliers or in transit to the purchaser.

The supplier shall apply a corrosion preventive oil (CRC 3-36 or equivalent) to parts and or materials when not being processed, at the earliest stage possible, to reduce the risk of structural damage or loss of outputs. It is the supplier’s responsibility to notify the purchaser in the event preservation of components cannot be accomplished. All damage, corrosion, contamination, deterioration, shall be reported to the purchaser prior to shipment.

18. Foreign Object Debris (FOD) Prevention

The Supplier shall maintain a FOD control program, as defined in AS9146, assuring work is accomplished in a manner preventing foreign objects or material from entering and remaining in deliverable items. Maintenance of the work area and control of tools, parts and material shall preclude the risk of FOD incidents. Prior to closing inaccessible or obscured areas and compartments during assembly the Seller shall inspect for foreign objects/materials. The Seller shall document and investigate all FOD incidents assuring elimination of the root cause.

19. Counterfeit Material

Supplier shall maintain necessary controls to ensure no counterfeit materials are delivered to the purchaser. The supplier is required to immediately notify the purchaser in the event the supplier becomes aware of or suspects counterfeit work may have been delivered to the purchaser. The supplier is liable for all costs associated with the containment and corrective action of counterfeit material and shall at its expense immediately replace with genuine conforming work. Refer to Industry Standard SAE AS6174AS-6174 as a guideline concerning Counterfeit Part Prevention and Control Plans.

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20. Product Safety and Ethics

Suppliers shall ensure their workforce is aware of their contribution to product and service conformity, their contribution to product safety and the importance of ethical behavior. The supplier shall, upon request provide evidence employees have been provided appropriate training in Product Safety and Ethical behavior.

21. Buyer Furnished Equipment

Supplier shall use buyer furnished equipment, tools and/or materials for buyer applications only. It is the supplier's responsibility to conduct inspections upon receipt. Supplier shall ensure proper protection, preservation, and accountability of purchaser's equipment. The purchaser reserves the right to conduct periodic inspections of furnished goods.

22. Supplier's Calibration System

Supplier's Calibration System must conform to ISO 17025 and all calibration must be traceable to NIST standards.

Supplier shall document an impact review whenever monitoring and measuring equipment is identified with a Significant-Out-Of-Tolerance condition (an out of tolerance condition exceeding 25% of the product tolerance or when measured error of the monitoring and measuring equipment is greater than two times the calibration tolerance when product tolerance is not known) and notify the purchaser, within 24 hours of discovery if impacted product has been shipped.

23. Environmental, Health, Safety (EHS)

Supplier shall develop and enforce appropriate safety and health systems with the goal of ISO 45001 compliance. Supplier shall comply all applicable local, state (or provincial or the equivalent) and national safety and health laws and regulations. These requirements include the availability of appropriate personal protective equipment (PPE) such as safety glasses, earplugs, etc. for the supplier's organization. PPE shall also be made available to the purchaser when visiting as well as the purchasers customers and regulatory authorities.

24. DPD (Digital Product Definition) Requirements

When applicable per purchase order, the supplier shall establish full compliance to D6-51991 requirements.

Purchaser Inspections

25. Periodic Assessments, Audits, and Inspections

The purchaser reserves the right, with reasonable prior notice, to visit a supplier's premises to conduct periodic assessments, audits and/or inspections to conduct an evaluation of its processes, parts, tooling, or documentation impacting or used to manufacture the purchasers' products.

26. Source Inspection

When specified by purchase order, purchaser Source Inspection is required. The purchaser will determine and specify inspection points on the applicable purchase order. Seller shall notify the purchaser at least five days prior to processing or manufacturing in products in conjunction with this purchase order to make the necessary arrangements for source inspection to be conducted.

Objective evidence of such inspection shall be indicated on the sellers shipping documentation and/or sellers Certificate of Conformance (C of C) accompanying each shipment.

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27. Source Delegation Program

Source Delegation Representative (SDR) authority is granted to designated quality personnel at delegated suppliers. SDR's will be responsible for the sourcing of products to support the purchasers ship-to-stock program, in accordance with Process Specification PS 015 and are subject to periodic audit in accordance with this program. The purchaser reserves the right to rescind Source Delegation Program privileges at any time.

Changes

28. Changes in Quality Management System

Supplier shall notify the buyer within five business days of any change in management representation, company name, ownership, loss of certification (AS9100, ISO 9001, AS9012, NADCAP, ISO 17025 etc.) or loss of approval from an OEM (Boeing, GE, Airbus, UTC, etc.).

29. Work Transfers

Supplier shall obtain approval prior to implementing any work transfer; this includes all changes to manufacturing location or changes in sub tier processors.

30. Material Substitution

Supplier shall obtain prior approval from the purchaser for all material substitution.

31. Frozen Planning

When applicable, supplier shall have a documented process for controlling changes to frozen processes. Suppliers shall provide a current version of the frozen process (Router, Technical Sheet etc.) to purchaser for approval prior to starting work. No changes are allowed to frozen processes without written approval.

Nonconformances

32. Nonconforming Material and Concessions

Seller is responsible to notify the purchaser of all product nonconformities using the Vendor Variation Request PQM 174 and obtain approved product dispositions prior to shipment to the purchaser. No Material Review Board (MRB) authority is extended to the supplier by the purchaser. Non-conforming product received with out a Vendor Variation Request may result in the purchaser issuing a SCAR.

33. Notification of Escape

Supplier shall notify the purchaser within 24 hours of suspected nonconforming product shipped. This communication shall include as minimum: affected purchase orders, quantities, dates of delivery and clear nonconformance statement. Supplier will provide Root Cause and Correction Actions being implemented to prevent reoccurrence of this nonconformance on any potential future orders within 5 business days. Closure of RCCA actions shall be completed with in 30 days unless otherwise agree to by purchaser.

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34. Corrective Action

When purchaser determines that a Corrective Action is necessary, the supplier will respond to the request using an 8D Supplier Corrective Action Request (SCAR) Form (PQM 151) provided by the purchaser. The supplier shall acknowledge receipt within 5 business days after receipt of the SCAR and shall provide a detailed corrective action plan to requestor. This includes at a minimum an initial root cause and a short-term action per the 8d problem solving process. Completing and submitting the corrective action shall take place no longer than thirty (30) days after issuance of the SCAR unless agreed to in writing by the purchaser.

Materials

35. Raw Materials

Raw Materials shall be accompanied with certifications Mill chemical and/or physical Test Reports (as required by specification for each lot/batch/heat) must be attached to the C of C and must accompany each delivered shipment. The report must be identifiable to the product being delivered (Purchase order and Part Number) and must indicate that the material/parts delivered are acceptable to Purchase order, drawing and/or specification requirements.

36. Single Lots

The supplier shall maintain Single Lot Control for each PO line. All material used for each PO line shall consist of the same origin of material (heat, batch, resin, etc.). If multiple lots are required to complete the order, the supplier shall contact the purchaser and request adding additional PO lines. Product shall be clearly identified with corresponding line item.

37. Specialty Metals

Specialty metals must be melted in the United States or a qualifying country, or they can be melted anywhere but must be “incorporated in an article manufactured in a qualifying country” per the requirements stated in DFARs 252.225. The clause allows a qualifying country to manufacture parts from metal that was melted anywhere, provided it meets specifications, but a United States company can only use metal that was melted in the United States or a qualifying country.

38. Mercury Free

Material furnished under this order shall be free from contamination by the presence of mercury. Material furnished under this order shall also be free from contamination by the presence of other toxic substance without prior approval from the purchaser.

39. Limited Shelf Life Material Control

A statement shall accompany all material shipments listing manufactured date and shelf life date on material shipped. Statement will also note any special storage procedures such as temperature, etc. All parts having a shelf-life requirement must have a minimum of 75% of the shelf life remaining upon receipt. Articles received with a remaining shelf life of less than 75% will be subject to rejection.

In the event of any accident involving mercury or any other toxic substance contamination of the material being furnished on this Purchase Order or suspicion of such contamination, the purchaser shall be notified within 24 hours.

It is the responsibility of the supplier to ensure sub-tier suppliers are notified of and ensure their compliance with the requirements of this notice.

40. General Electric S400 Specification

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When applicable by purchase order, A five-inch raw material sample shall be submitted for testing to an approved General Electric source per GE S400 specification. Lab test shall be provided for the following: S400 Code A: Room Temperature Tensile Test and S400 Code D Wet Chemical Analysis or S400 Code F: Quantitative Spectroscopy. Certification for such materials must clearly state compliance to GE S400

41. Pratt & Whitney LCS Program

As applicable per purchase order, material must be obtained from a source approved in accordance with Pratt & Whitney Laboratory Control at Source (LCS) program. Certification for such materials must clearly state compliance to it. Material shall be certified to the Pratt & Whitney MCL Manual, Section F-17 LCS requirements. Customer approved source required per Pratt & Whitney MCS Manual, Appendix 36.

Delivery

42. Packaging, Handling and Shipment

The seller shall use the best common practices when shipping parts and materials to ensure products are protected and handled in a manner that will prevent damage (i.e. scratches, nicks, and dings and/or contamination) while at the seller's facility and in transit. Each package shall be identified with purchase order number, work order number (if applicable) and part number. Material, packaging, equipment, and/or gaging furnished by the purchaser shall be returned with each shipment unless otherwise specified in writing.

43. Certification of Conformance

Certification of Conformance is required for each shipment. The C of C shall contain the following information as minimum:

- Purchase order number
- Supplier's name and address
- Specification number or Drawing and Revision
- Material identification
- Date
- Serial numbers (if applicable)
- Specification requirements
- Special process specification for any outside processes (i.e., Heat Treatment, Plating, NDT)
- Actual test results, including individuals and averages
- batch, heat lot number or lot numbers, as applicable
- The C of C shall be signed by an authorized agent of the supplier's organization.
- The suppliers C of C shall include a statement that certifies all material, products or services comply with the Purchase Order and drawing and specifications requirements.

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44. Material Certification

Supplier shall provide material certification with each shipment as required by the specification. The certification must meet the following requirements:

- Be on a company letterhead.
- Contain Signature and title of an authorized quality representative.
- Include specification(s) and revision level(s) used to produce the order. Certify in accordance with applicable purchase order, contract, drawing and specifications requirements, including type, grade, class, heat/lot, results of testing as applicable.

45. Special Process Certifications

Certification for special processes, such as heat-treating, chemical processing, plating, etc., shall be submitted with each shipment. Test reports or certifications applicable to the process must be provided. This requirement may be invoked for special processes on industry standard parts.

46. Safety Data Sheets (SDS)

Whenever the material supplied in fulfillment of this purchase order is supplied for the first time, a current, detailed Safety Data Sheet (SDS) shall accompany the shipment, given that the material is either toxic or hazardous or both as defined by any applicable law, code statute or regulation.

Whenever an SDS is revised, a post revision copy shall be furnished with the next shipment.

Whenever an SDS needs to accompany a material shipment, an additional copy of the SDS shall be sent, under separate cover, to the buyer.

Supplier Classification and Rating Process

47. Supplier Classification

Suppliers are classified in accordance with QP-STD-6.0 Supplier Selection, Approval and Control, utilizing the criteria specified below:

Class 1 - Suppliers that provide engineered components (i.e.: product machined to purchaser drawings) and/or perform special processes (i.e.: heat treating, chemical processing, non-destructive testing, etc.). One of the conditions for the applicable class must be met:

- Customer required source
- AS9100 certification
- ISO 9001 certification
- NADCAP certification with the relevant processes within their certification scope.
- A supplier audit conducted by Quality Engineer (PQM 160/160-1)

Class 2 - Suppliers that produce or distribute hardware (i.e. screws, nuts, washers, fasteners, etc.), or raw materials. One of the conditions for the applicable class must be met:

- Customer required source
- ISO 9001 certification
- AS9100 or AS9120 certification
- A completed supplier survey (Form PQM 116) with no nonconformities evident
- A supplier audit conducted by Quality Engineer (PQM 160/160-1)

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Class 3 - Calibration, engineering services, test services, certification bodies, source inspection services and other certified services (i.e.: DERs and DARs). One of the conditions for the applicable class must be met:

- Customer required or approved source
- Calibration Services – ISO 17025
- Test Services - NADCAP
- Certification Bodies – ANAB credentials
- Engineering Services – FAA DER or DAR certification as applicable

48. Supplier Performance Rating

Supplier rating is made up of two components, Quality and On-Time Delivery. Supplier performance is a key factor to continued or expanded business relations. Supplier’s Rating process is defined in QP-STD-6.0 Supplier Selection, Approval and Control

Supplier quality performance is generated utilizing pieces received versus pieces rejected to calculate PPM (parts per million) are on a 12-month rolling average.

Supplier Rating	OTD Performance	Quality Performance
Gold	100.00% to 95.00%	0 to 1,000 PPM
Silver	94.99% to 90.00%	1,001 PPM to 10,000 PPM
Yellow	89.99% to 85.00%	10,001 PPM to 20,000 PPM
Red	< 85.00%	≥ 20,001 PPM

On-Time Delivery (OTD) percentage is the percentage of PO’s line delivered on time (Zero date late to promise date). Quality Performance is determined by a Parts per million (PPM) calculation (total verified supplier quantity of defective parts received / total quantity of parts received by our suppliers x 1,000,000) during the identified review period.

Gold (Exceptional)

Supplier performance clearly exceeds expectations; evaluation element was accomplished by the supplier with few minor problems where corrective actions taken were highly effective.

Silver (Good)

Supplier performance meets and may exceed expectations; evaluation element was accomplished by the supplier with some minor problems where corrective actions taken were effective.

Yellow (Needs Improvement)

Supplier performance does not meet expectations; performance for the evaluation element reflects a serious problem where corrective actions have not yet been identified or fully implemented. If implemented the supplier’s actions appear only marginally effective.

Red (Unsatisfactory)

Supplier performance clearly does not meet expectations and recovery is not likely in a timely manner; performance for the evaluation element contains serious for which the corrective actions appear or were ineffective.

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Suppliers showing 12 month rolling PPM or OTD which do not meet the required goal (Yellow or Red rating), at the discretion of the purchaser's Quality Engineering Manager, the supplier may be subjected to various performance enhancement activities, which may include, but not limited to, corrective actions, on-site quality system surveys, periodic audits, Quality Improvement plan (QIP), On-going meetings for resolution and/or disqualification of supplier as an approved source.