



(MSA Internal Reference MSAP 7.4)

Supplier Quality Assurance Requirements

Purpose

The Supplier Quality Assurance Requirements (SQAR) document (defined herein) establishes requirements for suppliers to M.S. Aerospace, Inc.

Scope

SQAR requirements are in addition to those tasks set forth in any other contractual document.

The requirements herein apply to suppliers who are involved with the supply of products or services that fall within a Class I-VI distinction (refer to Section B). The class distinction is denoted in the purchase order header. Only Approved suppliers are permitted to receive PO's with a specified class distinction.

The general requirements and class specific requirements apply as noted below:

Section A: General Requirements

Suppliers are required to:

1. Substantiate production and process conformance to drawings, specifications, contract and purchase order requirements and compliance to QMS system and imposed customer standards.
2. Furnish articles that meet all requirements of the contract, purchase order and/or relevant drawings and specifications and quality management system requirements denoted by Class distinction.
3. Be working to the PO specified revision imposed and or the latest standard published and in effect at time of PO issuance.
4. Establish and maintain a Quality Management System that meets with the approval of MSA's Quality Organization. It is MSA's preference that suppliers pursue and maintain third party qualified system certification that meets the class applicable specification (e.g. Nadcap, AS9100, ISO 17025). In lieu of third party certification suppliers may be approved by MSA Quality following the acceptable completion and review of the Supplier Quality Assurance Questionnaire (FRM-SQQ).
5. Deliver quality, products and services that satisfy MSA requirements and stated needs.
6. Risk Identification: Suppliers are to evaluate MSA requirements and capability to supply product that meets delivery and producibility needs. In the event there are producibility concerns or recommendations for improvement, the supplier is requested to contact MSA Quality Management. For Delivery concerns the supplier is requested to contact MSA Purchasing.
7. Nonconformance Notification: Supplier's must notify MSA in writing in the event they are unable to meet any purchase order, SQAR - general or specific Class imposed requirement. A request for deviation or a supplier agreement must be formalized in order to alleviate any concern of this nature. Suppliers are required to notify MSA (the organization) of suspect or potential quality escapes.



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8. Customer End Use: Class I, III, IV, V suppliers take note within the body of purchase orders issued there may be customer end-use noted; at which time the following additional specifications are imposed.

End Use: Pratt & Whitney Aircraft (PWA), Pratt & Whitney Canada (PWC), Sikorsky Aircraft, Hamilton Sundstrand (HS) and/or purchases for UTC: ASQR-01 forms a part of the applicable purchase order (PO) requirements.

End Use: GE Aircraft (GEAE): S-1000 and Std. Remark C64 applies.

End Use: Rolls Royce: SABRE program requirements apply.

End Use: Honeywell Aerospace: Supplemental Purchase Order Conditions Manual and SPOC 002 apply. When E1010 is PO imposed, suppliers must conform to E1010 requirements. Note: E1010 applies to Flight Safety Parts (FSP) and involves critical characteristics and extended record retention requirements. Frozen process controls and extended record retention time period requirements are imposed as part of this specification.

- 8.1 Customer End Use: Class I, III & VI suppliers take note within the body of purchase orders issued there may be customer end-use noted; at which time the following additional specifications may be imposed.

End Use: Pratt & Whitney Aircraft (PWA), Pratt & Whitney Canada (PWC), and/or purchases for UTC: Refer to applicable PWA Specifications, and applicable MCL Manual F-Section(s) requirements. Available upon request.

9. Customer Approved Sources: This Class involves suppliers who are identified as approved by MSA customers. Customer approved suppliers are required to verify their current customer approval status prior to acceptance of the Purchase Order. Customer approved suppliers shall not be subject to regularly scheduled audits by MSA. Receiving inspection shall be used to establish conformance to contract requirements.
10. Process Controls: Suppliers must perform the applicable process at the facility identified in the MSA purchase order. MSA product may not be transferred outside the organization's facility without advanced written consent from MS Aerospace. Where applicable, suppliers shall flow-down to sub-tier suppliers, the applicable requirements in the MS Aerospace purchasing documents, including key characteristics, where required. The use of non-conventional (e.g. EDM, ECG, LASER) methods for the machining of products is prohibited unless expressly consented to in writing by MS Aerospace, or by approved customer drawings or specific expressed specification(s). Exception: Suppliers contracted to manufacture tooling are permitted to use non-conventional methods as necessary.
11. Part Counts, Accuracy and Accountability: MSA expects that our suppliers have in place a means to identify and account for material at the time of receipt and throughout processing. MSA requires that any dispute in count be brought to our attention at time of delivery receipt, prior to processing and in a written format.
12. Nonconformance Notification: Obtain organization approval for nonconforming product disposition,
13. Organization Changes: Suppliers are required to notify MSA of changes in product and or process, changes of supplier, changes of manufacturing facility location and where required, obtain organization approval.
14. Record Retention: Quality records that are created and/or retained by the supplier must be complete, legible and identifiable to the corresponding product. Quality records shall be retained for minimum period of 50 years or as specified by customer purchase order



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retention requirements and will be made available upon request by MSA or its customers at no charge.

15. Right of Access: MSA and MSA customer and regulatory authorities are afforded the right of access to supplier location. The supplier agrees to grant access to the applicable areas of all facilities, at any level of the supply chain, involved in the order and to all applicable records, and to inspect any or all of the work that is order applicable at the supplier facility.
16. Verification Activities: MSA and its customers reserve the right to inspect and audit at the supplier facility, products and processing related to an MSA purchase order.
17. Certifications: Certificates of Compliance (C of C's) are required. C of C's shall clearly attest that the product complies with drawings and/or specifications imposed by the purchase order/ contract, and shall reference any/all applicable requirements of the specifications. The C of C shall be attached to the packing slip, and must accompany each shipment.
18. Chemical and/or Physical Test Reports/First Article/Dimensional Data Sheet. When required by the applicable specification, each shipment shall be accompanied by legible and reproducible copies of all chemical and/or physical test reports. When required by the purchase order or applicable specification, a First Article Inspection Report or Dimensional Data Sheet identifiable with the supplies furnished shall accompany each shipment.
19. Preparation for Shipment: The Supplier shall ensure all product shipped is protected, preserved and packaged in accordance with best commercial practice to preclude any damage such as (but not limited to) nicks, dings, scratches, dents, etc.
20. Age Control & Life Limited Products: Age control & life limited products shall be identified with the date of manufacture, test time or cycle at which useful life will be expended. Products supplied to MS Aerospace shall have a minimum of 75% of its life expectancy remaining.
21. Foreign Object Debris (FOD): Suppliers shall have programs for the prevention of foreign objects in the processing performed and products supplied to MSA (Reference: NAS 412).
22. Counterfeit Parts Prevention: Suppliers and sub-tiers in the supply chain delivering products and services shall have programs to eliminate the risk of receipt/or transfer of counterfeit products, or knowingly misrepresent or supply a suspect counterfeit part to MSA. A system to ensure early disclosure notification should be incorporated. (Reference: AS 5553, AS6174 & SPOC 419)
23. Conflict Minerals "The Dodd-Frank Wall Street and Consumer Act": Supplier's shall not knowingly supply MS Aerospace with any product containing Tantalum (and all its derivatives), Tin, Tungsten or Gold from the Democratic Republic of Congo, Angola, Burundi, Central African Republic, Rwanda, Tanzania, South Sudan, Uganda and Zambia. MSA requires suppliers to perform a due diligence effort to make these determinations. Evidence of compliance shall be provided if requested.
24. REACH Regulation EC 1907/2006 compliance. Supplier's are required to ensure the goods supplied contain less than 0.1% by weight of any Candidate List Substances (CLS), or shall notify MSA of which CLS's are present, if deemed greater than 0.1% by weight. The Candidate List pursuant to Article 59 of REACH has been published by ECHA at: <http://www.echa.europa.eu/web/guest/candidate-list-table>
25. MSA requires that suppliers (external providers) maintain a list of approved "sub-tier"



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suppliers and apply the appropriate controls to their direct and sub-tier external providers to ensure that requirements are met.

26. MSA requires that external providers ensure that their employees / personnel are aware of their contributions to product conformity, product safety and ethical behavior.

SECTION B: CLASS I-VI

Testing Aerospace Fasteners | Aerospace Fasteners Non-Destructive Testing: (Class I Supplier) - This class involves suppliers who provide destructive testing services, such as: tensile test, stress rupture test, micro-evaluation, and non-destructive services such as: ultrasonic inspection, fluorescent penetrant inspection, and magnetic particle inspection. Class I suppliers are required to have a quality system accredited to the requirements of the applicable Nadcap commodity.

Calibration Services: (Class II Supplier) - This class involves suppliers who perform calibration of measuring, monitoring and testing equipment for MSA. Calibration labs that calibrate equipment which supports the Materials Testing Laboratory's monitoring and/or measuring functions must meet the requirements of ISO/IEC 17025 and demonstrate competence for the work in question. Calibration service providers calibrating equipment for non-materials laboratory usage shall be in compliance with ANSI/NCSL Z540.3, or equivalent, or otherwise be qualified and competent to a recognized calibration standard. All calibration laboratories shall maintain a system traceable to national or international recognized standards. A Certificate of Calibration must be included with each instrument calibrated.

Surface Treatment, Plating, and Coating: (Class III Supplier) - This class involves suppliers who provide painting, coating, anodizing, plating, etc. Class III suppliers shall be required to have a quality system certified to the applicable Nadcap, (special process) commodity.

Heat Treated Fasteners | Thermal Treatment: (Class IV Supplier) - This Class involves suppliers performing thermal treatment, such as: solution treatment, aging, normalizing, and hardening, to obtain specified mechanical properties of the product. Class IV suppliers are required to have a quality system accredited to the requirements of the applicable Nadcap commodity.

Manufacturing: (Class V Supplier) - This Class involves suppliers who provide manufacturing services, such as: grinding, drilling, milling, thread rolling, etc. Class V suppliers are selected and evaluated based on their ability to supply product in accordance with MSA requirements and complete an FRM-SQQ on request.

Raw Material Suppliers: (Class VI Supplier) - This Class primarily involves suppliers who provide raw material to MSA for the fabrication of product. Class VI Raw Material suppliers are required to have a Quality Management System which complies with the requirements of either ISO 9001, AS9100, AS9120. Suppliers of raw material must provide an original mill certification and a supplier issued certification that directly links to the MS Aerospace purchase order, applicable mill source and heat. Suppliers of fabricated metal products are required to meet MSA general requirements detailed in section A- # 4.

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