



# Supplier Quality Assurance Requirements Goleta, California

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## **Q1. QUALITY SYSTEM REQUIREMENTS**

Note: Items a, d, e, f, g, h, and k have been deleted (6-23-04).

- b. Supplier shall maintain an Inspection System in compliance with MIL-I-45208A or ISO/QS 9002.
- c. Supplier shall maintain the calibration of their Inspection, Measuring, and Test Equipment in compliance with MIL-STD-45662 or ANSI/NCSL Z540-1-1994, Part II, or equivalent.
- i. Supplier shall maintain a Quality Management System compliant with ISO/QS 9001 or AS9100, Quality Systems.
- j. Supplier/Processor is required to maintain a Quality Management System or Process Control Program, as applicable, certified by third party accreditation such as NADCAP.. Major Findings documented by 3<sup>rd</sup> Party registrar shall be reported to ATK within 72 hours.

## **Q2. SOURCE SURVEILLANCE BY ATK QUALITY REPRESENTATIVE**

All items covered by this Purchase Order are subject to source surveillance by an ATK Quality Representative. This will include surveillance of the products and Seller's systems, procedures, and facilities. The seller shall furnish, at no cost, necessary facilities and equipment, supply data, and perform tests as required by applicable drawings, specifications, and Inspection Instructions under surveillance of the ATK Quality Representative. Notwithstanding the provisions of this clause, all items shall be subject to inspection and acceptance by ATK and/or Government/Regulatory Agency representative at ATK.

## **Q3. SOURCE INSPECTION BY ATK PRIOR TO SHIPMENT**

All items covered by this Purchase Order are subject to inspection at the Seller's facility by an ATK Quality Representative prior to shipment. The seller shall furnish, at no cost, acceptable facilities, and equipment to the ATK representative for his inspection. The Seller shall provide no less than forty-eight (48) hours advance notice to the ATK Quality Representative to permit scheduling of source inspection. Evidence of source inspection shall accompany each shipment. Notwithstanding the provisions of this clause, all items may be subject to inspection and acceptance by ATK and/or Government/Regulatory Agency representative at ATK. ATK, by giving twenty-four (24) hours notice, shall be granted access to Suppliers' facility in order to accomplish Source Inspection and to inspect Tooling, Material, Certification Documents, and scheduling information.

## **Q4. SOURCE INSPECTION BY GOVERNMENT AGENCY**

All work on this order is subject to inspection and test by the Government at any time and place. The Government quality representative who has been delegated NASA quality assurance functions on this procurement shall be notified immediately upon receipt of this order. The Government representative shall also be notified forty-eight (48) hours in advance of the time articles or materials are ready for inspection or test.



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### **Q5. CERTIFICATION OF MATERIAL CONFORMANCE**

Each shipment must be accompanied by a legible and reproducible copy of certification stating that the items were produced:

- a. From materials on which the Seller has available for examination specific data or other objective evidence of conformance to applicable specifications. The certificate must contain the signature and title of an authorized representative of the Seller. A sample of raw material, heat treated to the condition of the part delivered to ATK, of a suitable size for hardness and composition testing, is required with each shipment.

Include documentation as stated below in (1-6):

- (1) Certification of raw materials and/or processes. All certifications must include traceability to ATK's part number, purchase order number, and purchase order line item. (e.g. Job number, lot number, heat treat number etc)
  - (2) Supplier's shipper/receiver for raw materials and/or processes referencing the ATK purchase order above.
  - (3) Origin of raw materials, traceable to the ATK purchase order and part number/lot number.
  - (4) Lot/date code, heat, and batch numbers traceable to the ATK purchase order and part number/lot number.
  - (5) Process certifications/test report traceable to the ATK purchase order and part number/lot number.
  - (6) Sample of raw material. Sample shall be labeled with the following:
    - › ATK Purchase order, Purchase order line item and ATK part number.
    - › Material part number (ex.: Al Alloy 7075-T73, Al Alloy 6061-T6, TI-6AL- 4V)
    - › If ATK purchase order requires part to be heat treated two samples are required, one of raw material the other sample shall be from the heat treated material
- b. From materials furnished by ATK and utilized for manufacture and test.
  - c. Deleted

### **Q6. CHEMICAL TEST REPORTS**

Each shipment must be accompanied by a legible and reproducible copy of all chemical test reports identifiable with materials submitted. These reports must contain the signature and title of the authorized representative of the agency performing the test and must assure conformance for specification requirements.

### **Q7. MECHANICAL REPORTS**

Each shipment must be accompanied by a legible and reproducible copy of all physical test reports identifiable with the materials submitted. These reports must contain the signature and title of the authorized representative of the agency performing the test and must assure conformance to specification requirements.

### **Q8. CHEMICAL AND MECHANICAL TEST REPORTS**

Each shipment must be accompanied by a legible and reproducible copy of all chemical and physical test reports pertaining to the material submitted. The reports must contain the signature and title of the authorized representative of the agency performing the test and must assure conformance to the specification requirements.



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### **Q9. PENETRANT AND MAGNETIC OPERATOR INSPECTION CERTIFICATION**

Dye penetrant, florescent penetrant, magnetic particle ultrasonic, x-ray, and eddy current inspection processes as referenced on drawings and/or specifications applicable to this order must be accomplished by Inspection operators properly certified by third party accreditation. QE may request copies of certification.

### **Q10. FUNCTIONAL TEST REPORT**

Each shipment must be accompanied by a legible and reproducible copy of reports of actual test results identifiable with test parameters and products submitted. These reports must contain the signature and title of the authorized representative of the agency performing the test and must assure conformance to specified requirements. **NOTE:** Functional tests are defined as operational inspections, e.g., mechanical, electronic, hydraulic, etc.

### **Q11. SPECIAL PROCESS CERTIFICATION**

- a. Each shipment must be accompanied by a legible and reproducible copy of a certificate containing the signature and title of an authorized representative for all processes used such as heat treating, Nondestructive Evaluation (NDE), soldering, welding, environmental testing such as vibration, acoustic, shock, surface preparation and treatment, etc. The certificate shall include the processing used, the specification to which the special process conforms, and the name of the agency that performed the process other than Seller. When parts are serialized, these serial numbers must appear on the certification.
- b. Traceability to the individual performing the special process.
- c. Only ATK-approved special processors may be used. See attached list of special process suppliers that are currently approved by ATK. Seller is responsible for the quality, workmanship, and performance of ATK-approved special process suppliers. ATK shall not be held responsible for defects in workmanship, loss of parts, or damages resulting from performance of ATK-approved special processors.

### **Q12. HEAT TREAT REPORT**

Each shipment shall be accompanied by a legible and reproducible copy of the certification of heat treat including specification, condition, and batch/oven details.

### **Q13. REPORT OF DISCREPANCY**

Departures from drawings, specifications, or other Purchase Order requirements shall be reported to ATK within two (2) working days. Written report shall be submitted to ATK within five (5) working days. The report shall indicate the suspected or known cause of the problem, and shall provide suggested disposition, corrective action to prevent recurrence, and, if applicable, preventive action to preclude potential problems. Dispositions of "Repair" and "Use As Is" require written approval from ATK.

### **Q14. CERTIFICATIONS, TEST REPORTS, AND RECORDS**

The Seller shall generate and maintain records as required by this specification that are legible, readily identifiable, and retrievable for the periods noted below. All records shall be made available on request to the Buyer, Government Representative, or Regulatory Agency. Records shall provide evidence that the required inspections and tests have been performed, including part, component, or system identification, inspection or tests involved, number of items accepted or rejected. The records shall be suitable in format, accuracy, and



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completeness to permit analysis. Where numerical results are required, the actual values obtained shall be recorded. Where, tape, film, or other media are required, they shall be identified with the characteristics measured. Where defective or nonconforming material is involved, the records shall include the results on analysis and corrective action taken.

- a. 1 year      d. 7 years              g. 20 years
- b. 3 years      e. 10 years              h. 25 years
- c. 5 years      f. 15 years

### **Q15. RANDOM AND SYSTEMATIC ERRORS**

- a. Random and systematic errors in any article or material measurement shall not exceed 10% of the tolerance of the article or material characteristics being measured. ATK Quality Assurance shall be promptly notified regarding any exceptions.
- b. Random and systematic errors in any calibration measurement shall not exceed 25% of the tolerance of the parameter being measured. ATK Quality Assurance shall be promptly notified regarding any exceptions.

### **Q16. PROCESSING AND FABRICATION DOCUMENTS**

Supplier and subtier fabrication and processing travelers, work orders, and job tickets shall be maintained for each part or assembly and shall be available for an ATK and/or Government/Regulatory Agency audit upon request. These fabrication documents shall contain as a minimum the following:

- a. Part nomenclature and identification number.
- b. Drawing number and specification, including revision level.
- d. Inspector's stamp or signature and date for each inspection.
- e. Operator's stamp or signature and date for each fabrication operation.
- f. Packaging/handling/storage direction and inspection verification.

### **Q17. REVIEW OF SUPPLIER DOCUMENTATION**

The following data and documents in Supplier's format shall accompany the hardware when it is shipped to ATK.

- a. Material Certifications and Test Reports (physical and chemical).
- b. deleted
- c. First Article Inspection:

A First Article Inspection (FAI) is required to be performed by the Supplier and witnessed by an ATK Quality Assurance representative at the Supplier's facility. The Supplier is required to supply a First Article Inspection Report (FAIR) whose format has been shall be approved by ATK Quality Assurance prior to use. If the Supplier does not have a FAIR ATK will supply the form (reference DG-9 for the form and instructions for use).

- The Supplier shall notify ATK Quality Assurance 5 days in advance of being ready for FAI.
- Only when all drawing requirements have been met is the First Article requirement satisfied. A "Use-As-Is" or "Repair" disposition does not satisfy a First Article unless ATK MRB approval has been received.
- Critical dimensions which can only be measured during the manufacturing process (i.e., only while fixtured on production tooling) must be analyzed in each case by the ATK Quality Assurance representative to allow appropriate planning.
- Subsequent acceptance of hardware is contingent upon successful completion of

First Article Inspection.

- d. Deleted
- e. Charts or other time/temperature data records for required processes.
- f. Non-conformance reports.
- g. Certification of Conformance.
- h. Supplier is required to provide an inspection report (Supplier's format) that documents the acceptability of each drawing requirement.
  - The person performing the inspection, the inspection equipment, and the actual values of the measurements must be recorded. Check marks are not acceptable.
  - The range of measurements on a lot of parts may be recorded showing minimum and maximum values for each characteristic.
  - Any discrepancies must be identified and reported IAW paragraph Q13 of this document, and approval obtained in writing from ATK prior to shipment. If employed, lot sampling shall be per ANSI/ASQC Z1.4, General Inspection Level II, Single, Normal, AQL 1.0.
  - All **critical dimensions** shall be measured and recorded on 100% of the parts. A critical dimension is defined as one with a linear tolerance less than 0.001 or an angular tolerance less than 0.1 degrees, or any dimension or attribute defined by the program QE as critical. The requirement for measuring the critical linear dimension is superseded by the requirements found in drawings that have incorporated the use of the black diamond in the title block to indicate critical dimensions.
  - The instrument(s) used for inspection must be listed on the inspection report and traceable to the data recorded for each drawing requirement, must be calibrated in accordance with Q1.c of this document, and have sufficient accuracy, stability, range, and resolution required for the intended measurements.
  - The inspections must be accomplished with the part(s) unrestrained in a temperature-controlled environment to comply with drawing requirements.

### **Q18. MANNED SPACEFLIGHT REQUIREMENTS**

Articles ordered in this contract are for use in manned spaceflight. Materials, manufacturing, and workmanship of the highest quality standards are essential to astronaut safety. If Supplier is able to supply the desired items with a quality that is higher than that of the items specified or proposed, Supplier is requested to bring this fact to the immediate attention of the purchaser. The clause above, including this sentence shall be inserted in all subcontracts and purchase orders for such items down to the lowest tier.

### **Q19. TIME AND TEMPERATURE SENSITIVE MATERIAL**

Time and temperature storage conditions must be attached to the packing sheet and accompany each shipment to be delivered hereunder. The outer shipping box **MUST** be marked to indicate "Time and Temperature Sensitive Material," and "Temperature Storage Range in Degrees."

**Limited life materials with less than 75% life remaining at the time of receipt at ATK Space are NOT acceptable.**

### **Q20. PART CERTIFICATION - DISTRIBUTORS**

Contractor shall certify that the articles delivered under this Contract conform to the requirements set forth in the Procurement Specification and applicable Detail Specification.

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The Contractor shall submit with each shipment, a certification as to the ORIGIN of manufacture and procurement, applicable traceability information for articles delivered, (e.g., date code/lot number), and part number. The certification shall be dated and bear the signature and title of an authorized representative of the Contractor supplying the article(s). Articles defined in this contract are subject to ATK inspection at destination and will not be accepted without a complete certification.

### **Q21. CERTIFICATE OF CALIBRATION – CALIBRATION LABORATORY**

Laboratory shall submit a Certificate of Calibration with data traceable to NIST(National Institute of Science and Technology) standards, or to other national or international standards, and stating compliance with all requirements of MIL-STD-45662, ANSI Z 540-1, or ISO/IEC 17025.

### **Q22. MATERIAL SAFETY DATA SHEET (MSDS)**

Manufacturer or Distributor shall provide the MSDS associated with the supplied material or product.

### **Q23. DIGITAL DESIGN MODEL AND PARTIALLY DEFINED DRAWING (PDD)**

Requirements for this order are based on the ATK PDD and its associated design model (CAD digital file) as defined in ASME Y14.41-2003; these are provided to the supplier for use in planning and programming digitally controlled machining and inspection equipment, and seller is responsible for meeting all requirements specified therein. ATK will provide the design model with a file name structure that will include part number and revision as a minimum (EXAMPLE: 3039K4802-1\_D\_3D.igs); ATK design model revision and PDD revision are always the same. All changes conveyed to the seller will be via ECO that describes “Was” and “Is” conditions.

- a. Configuration - Seller shall have a documented control system to assure that both the ATK design model/PDD and seller derived files are placed under seller configuration control; seller derived files shall be validated prior to use, and maintained in a manner that prevents misuse or alteration of the file. All revisions shall be controlled. Seller requests for changes to the design model/PDD shall be documented and submitted through the ATK Buyer.
- b. Inspection – Seller is required to provide an Inspection Report for each production lot that documents compliance with all requirements of the ATK design model and PDD. The report shall map to the PDD requirements (Seller may annotate a copy of the PDD). The report shall meet the Inspection Report content requirements of SQAR Code 17.h. A hardcopy of the CMM printout shall accompany the inspection report, and shall also map to the PDD requirements.