



12716 EAST PINE STREET
TULSA, OK 74116

Supplier Quality Assurance Requirements Manual

Approved:



Bobby Gravison
Quality Assurance Manager
Accurus Tulsa Machining & Manufacturing

Record of Revisions

Revision	Date	Description of Change
Rev. IR	01-01-07	-----
Rev. A	05-29-07	Management Changes-General & Quality Mgrs.
Rev. B	01-20-09	Management Changes-Quality Manager. Added DPD/MBD Requirements and checklist
Rev. C	05-10-13	Changed record retention requirement to 10 years. Added quality clauses section 11. Updated DPD requirements in section 10. Added requirement to the tooling section to have the supplier visually inspect tooling upon receipt and to return prime owned tooling upon completion of the purchase order. Removed first article requirement and added requirements relative to a first piece inspection.
Rev. D	03-22-16	Updated company logo. Added QC9 FAI requirement.
Rev. E	05-12-17	Updated company name and logo
Rev. F	04-13-18	Added sections: 3.6 Counterfeit Parts, 5.5 Conflict Minerals, 5.6 Acceptance Authority Media (AAM), 11.0 Purchase Order Quality Clauses QC10 Material Samples and QC 11 Work Transfer.
Rev. G	05-1-18	Updated Record Retention time period to Calendar year plus 10. Added section 4.5 for Ozone Depleting Substances

Document Overview

Accurus Aerospace Tulsa is committed to continually improve the quality level of products and services received at our facility. This document will define general and specific quality requirements to meet the needs and expectations of Accurus Aerospace Tulsa.

The document is uncontrolled if downloaded or printed from our web site. The Supplier is responsible for maintaining the current revision of this document when providing products and services to Accurus Tulsa.

For questions regarding this document contact the Quality Manager (918)438-3121.

Purpose

The purpose of this document is a Suppliers' guide to understanding our quality requirements and expectations. This document will form a part of Accurus Aerospace Tulsa purchase orders.

Scope

The scope of this document applies to Suppliers who provide products and services used by Accurus Tulsa for aerospace purposes, such as raw material, hardware, special process service, etc.

This document does not apply to products and services considered by Accurus Tulsa as non-aerospace products and services. Non-aerospace products are used for facility and grounds maintenance, such as office supplies and janitorial services.

Requirements listed in the engineering specifications and purchase order shall take precedence over the requirements in the Supplier Quality Assurance Manual.

Table of Contents

Section	Title	Page
1.0	Supplier Quality Management System Requirements	6
1.1	General Quality Management System Requirements	6
1.2	Changes in Quality Management System	6
1.3	Sub-Tier Control	6
1.4	Right of Access	6
2.0	Document Control Requirements	6
2.1	Document Management Requirements	6
2.2	Revision Control	7
2.3	Document Control Audit	7
3.0	Control of Nonconforming Material	7
3.1	Documented Nonconforming Material Procedure	7
3.2	Dispositions	7
3.3	Internal Material Review	7
3.4	Disclosure/Notification of Nonconforming Delivered Products	7
3.5	Foreign Object Damage (FOD) Prevention Program	7
3.6	Counterfeit Parts	7
4.0	Material Identification and Part Marking Requirements	7
4.1	Product Identification – General Requirements	8
4.2	Hardware	8
4.3	Raw Material	8
4.4	Shelf Life Materials	8
4.5	Ozone Depleting Substances	8
5.0	Inspection Requirements	8
5.1	First Piece Inspection and Approval Requirement	8
5.2	Release of Products and Services	8
5.3	Source Inspection	9

5.4	Tooling Inspection Requirements	9
5.5	Conflict Minerals	9
5.6	Acceptance Authority Media	9
6.0	Shipping Documentation Requirements	9
6.1	Shipping Document	9
6.2	Packaging Method	9
7.0	Quality Records Requirements	9
7.1	Quality Record Maintenance Process	9
7.2	Types of Records	10
7.3	Record Retention	10
8.0	Corrective and Preventive Action	10
8.1	Corrective and Preventive Action Process	10
9.0	Special Process Requirements	10
9.1	Special Process Accreditation	10
9.2	Approval of Special Process Suppliers	10
9.3	Special Process Certificate	10
9.4	Calibration Service Providers	11
10.0	DPD/MBD Requirements	11
10.1	DPD/MBD-General Requirements	11
10.2	Change Notification	11
11.0	Purchase Order Quality Clauses	11-12

Section 1.0 Supplier Quality Management System Requirements

1.1 General Quality Management System Requirements

Supplier shall maintain a quality management system which complies with industry standards and specifications which is appropriate to the type of product or service.

Accurus Tulsa strongly recommends our suppliers to be certified or compliant with ISO 9001 or AS/EN9100. Suppliers shall provide a current copy of their certifications to Accurus Tulsa.

Recommendations for Suppliers' quality management system by type of supplier:

Calibration: A2LA, ANSI-Z540-1, ISO 17025, ISO 10012

Special Process: Nadcap AC7004, AS/EN9100

Manufacturer: ISO 9001, AS/EN9100

Pass-Thru Distributor: ISO 9001, AS9120, ASA 100

1.2 Changes in Quality Management System

Supplier shall promptly notify Accurus Tulsa within five business days of any change in management representation, company name change, ownership, quality system, or manufacturing location. Supplier shall submit written notification to Accurus Tulsa Quality Manager.

1.3 Sub-tier Control

Supplier shall flow down requirements in Accurus Tulsa purchase orders and the contents in this document to sub-tier suppliers who provide products and services which are subsequently delivered to Accurus Tulsa.

1.4 Right of Access

Accurus Tulsa reserves the right to perform initial and periodic review of the Supplier's quality system to obtain objective evidence of compliance to an acceptable quality system. Accurus Tulsa may honor qualified second and third party audits to provide evidence of compliance of the Supplier's quality system.

Supplier shall provide Accurus Tulsa, Accurus Tulsa's customers, third party of Accurus Tulsa or Accurus Tulsa's customer, or regulatory agencies access to the Suppliers' facility and records related to the verification of product conformity.

2.0 Document Control Requirements

2.1 Document Management Requirements

Supplier shall maintain a document control process which ensures the latest technical data is easily identifiable and available at the point of use. The document control system must include provisions for approval, review, update and re-approval. The distribution of documents must be controlled to prevent unintended use of obsolete technical data.

2.2 Revision Control

Supplier shall be responsible for obtaining the correct revision level of technical data as specified in Accurus Tulsa purchase orders.

2.3 Document Control Audit

Supplier shall conduct an annual internal audit to ensure adequate control of engineering documentation, including drawings, specifications, datasets or other engineering media.

3.0 Control of Nonconforming Material

3.1 Documented Nonconforming Material Procedure

Supplier shall have a documented procedure to systematically identify and segregate and disposition nonconforming material to prevent unintended use or release to Accurus Tulsa.

3.2 Dispositions

Supplier disposition authority is limited to:

Rework to specification

Return to supplier

Scrap

3.3 Internal Material Review

Supplier shall provide written notification to Accurus Tulsa Quality Manager for dispositions which are not listed in this section. Dispositions of product or services which affect form, fit function, safety, weight, interchangeability, or unique key characteristics require written notification to be submitted on a Material Review document for Accurus Tulsa approval.

3.4 Disclosure/Notification of Nonconforming Delivered Products

Supplier shall provide immediate verbal and written notification to Accurus Tulsa Quality Manager and Buyer of nonconforming product released from the Suppliers facility or delivered to Accurus Tulsa. Supplier shall notify Accurus Tulsa within one business day when a nonconformance is determined to exist, or is suspected to exist. Notification must include product name and number, quantity, clear description of discrepancy, release date, purchase order number, and provide root cause and prevention method to correct the process for subsequent shipments.

3.5 Foreign Object Damage (FOD) Prevention Program

Supplier shall promote the awareness of foreign object damage which includes prevention, detection, removal and reporting foreign objects. Accurus Tulsa reserves the right to obtain information regarding the FOD knowledge of affected personnel.

3.6 Counterfeit Parts

The supplier shall perform due diligence in counterfeit detection process that meets the intent of, SAE standard AS6174, Counterfeit Material; Assuring Acquisition of Authentic and Conforming Material.

4.0 Material Identification and Part Marking Requirements

4.1 Product Identification – General Requirements

Supplier shall mark or ensure all products to be delivered to Accurus Tulsa are identified in accordance with purchase order requirements and identifiably traceable to the Supplier.

4.2 Hardware

Hardware shall be identified by manufacturer, date of manufacture or date control number, such as the batch number, lot number, heat lot number, or serial number for traceability purposes. When size of hardware prevents individual identification, identification information shall be placed on bags, tags, or labels as applicable.

4.3 Raw Material

Supplier shall provide certifications of metallic materials which include the mill certificate or material test report. Test results must include the chemical and physical analysis for product shipped to Accurus Tulsa.

4.4 Shelf Life Materials

Supplier shall provide certification which indicates the manufacture date, lot number, expiration date or length of shelf life, and storage requirements.

4.5 Ozone Depleting Substances

Definition. "Ozone-depleting substance," as used in this clause, means any substance the Environmental Protection Agency designates in 40 CFR Part 82 as--

(1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or

(2) Class II, including, but not limited to hydrochlorofluorocarbons.

Seller shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part 82, Subpart E, as applicable:

Warning

Contains * _____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

Warning

Manufactured with * _____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

* Seller shall insert the name of the substance(s).

5.0 Inspection Requirements

5.1 First Piece Inspection and Approval Requirement

Supplier shall provide evidence of inspection results when a first piece is brought to Accurus Tulsa for inspection. The supplier shall obtain verbal or written notification that the part is conforming prior to machining the production lot of parts. Final product acceptance shall be performed at Accurus Tulsa; however, the supplier is required to perform 100% inspection on the finished lot prior to delivering them to Accurus Tulsa. The supplier may perform sampling inspection using a statistically valid sampling plan provided they have received approval from the Accurus Tulsa quality department.

5.2 Release of Products and Services

Supplier is responsible for the conformity and required documentation of products released to Accurus Tulsa. Supplier shall perform appropriate inspection activities to ensure product conforms to specified

requirements. If the Supplier does not perform 100% inspection, prior to release, the inspection sampling plan must be approved by Accurus Tulsa.

5.3 Source Inspection

Accurus Tulsa reserves the right to perform source inspection activities at the Supplier's facility. The Supplier shall ensure product is not released to Accurus Tulsa if source inspection is required by Accurus Tulsa.

5.4 Tooling Inspection Requirements

Supplier shall visually inspect Accurus Tulsa's furnished tooling upon receipt for damage, missing or loose parts and notify Accurus Tulsa of damaged and/or incomplete tooling. Supplier shall ensure tooling, used for inspection purposes, is included in the Supplier's periodic calibration program. Supplier shall provide evidence of periodic tool inspection activities to Accurus Tulsa. *Any prime owned customer furnished tooling (Boeing owned, Navy gages, etc.) shall be returned to Accurus Tulsa upon the completion of the purchase order.*

5.5 Conflict Minerals

The supplier shall disclose whether products and/or materials furnished hereunder contain any conflict minerals as defined under Section 1502 of the U.S. Dodd-Frank Act and its implementing regulations (collectively the "Conflict Minerals Law") that are necessary to the production or functionality of such products and/or materials ("Conflict Minerals"). Supplier shall have a due diligence process in place to determine if any of its products and/or materials contain Conflict Minerals.

If the products and/or materials furnished hereunder contain any Conflict Minerals, Supplier must: assure that those Conflict Minerals are "DRC conflict-free" (as defined in the Conflict Minerals Law); provide on request such other information as Accurus Tulsa may reasonably require, including responding to reasonable inquiries from Accurus Tulsa or its representatives, to determine the DRC conflict free status of Conflict Minerals used in such products and/or materials; Supplier shall perform due diligences policies and management systems consistent with Accurus Tulsa's Conflict Minerals Policy and require its suppliers to adopt similar due diligence policies and systems.

5.6 Acceptance Authority Media (AAM)

Supplier shall comply with the AS/EN/JISQ 9100 requirements 14CFR part 21.2 regarding the application of the Acceptance Authority Media (AAM) requirements. Use of AAM must be considered as a personal warranty of compliance and conformity.

6.0 Shipping Documentation Requirements

6.1 Shipping Document

Supplier shall provide shipping documents including a packing sheet, applicable certification of conformance, and applicable documentation to support product conformity.

6.2 Packaging Method

Supplier shall ensure product is packaged in accordance with industry standards to prevent damage and deterioration throughout delivery process.

7.0 Quality Records Requirements

7.1 Quality Record Maintenance Process

Supplier shall maintain quality records which provide evidence that processes meet requirements or conformity to requirements is evident, Quality records must be in English, legible, identifiable, appropriately stored to protect from damage, deterioration or loss, and easily retrievable for review.

7.2 Types of Records

Records include, but are not limited to:

- Test Results
- Inspection Reports
- Raw Material Certification
- Special Process Certifications
- Certificate of Conformance
- Material Review Reports
- Calibration Records
- Control Charts
- Traceability Records (traveler/manufacturing order, etc.)
- Education, training and skills records

7.3 Record Retention

The supplier shall maintain records for review by Accurus Tulsa, customer(s)/regulatory agency for a minimum of a calendar year plus (10) years upon completion of contract (unless otherwise specified) and readily retrievable upon request. Supplier shall flow down this requirement to sub-tier suppliers.

8.0 Corrective and Preventive Action

8.1 Correction and Preventive Action Process

Supplier shall complete and submit corrective action report by the due date indicated on the request. The due date may be extended upon request to allow the Supplier to effectively respond, but the Supplier must request an extension prior to the initial due date. Accurus Tulsa reserves the right to reject inadequate responses. Accurus Tulsa reserves the right to verify corrective action has been implemented to ensure the root cause has been eliminated. Accurus Tulsa may perform verification at the Supplier's facility or the Supplier shall submit objective evidence as requested.

9.0 Special Process Requirements

9.1 Special Process Accreditation

Supplier shall maintain current NADCAP certifications for special processes performed in house. Supplier shall also maintain NADCAP certifications of sub-tier suppliers when Accurus Tulsa contracts are outsourced to subcontractors. Supplier shall provide special process certifications to Accurus Tulsa upon request.

9.2 Approval of Special Process Suppliers

Suppliers shall use special process sources approved by Accurus Tulsa. Approval is indicated when the special process source is listed on a Accurus Tulsa purchase order.

Special Processes are Brazing and Welding, Calibration, Chemical Film, Coatings, Heat Treat, Non Destructive Testing, Passivation, Shot Peening.

9.3 Special Process Certificate

Supplier shall provide in part of shipping documentation a special process certificate(s) which contains:

- Specification Number
- Revision Level
- Test Results

For processing performed under NADCAP certification, the NADCAP process statement, accreditation number and expiration date must be included in the certification provided to Accurus Tulsa.

9.4 Calibration Service Providers

Calibration Service Providers will immediately notify Accurus Tulsa Quality Management of any out of tolerance conditions found during servicing. Immediate notification will be verbal, followed by written notification.

10.0 DPD/MBD Requirements

10.1 DPD/MBD-General Requirements

Suppliers that manufacture model based parts and/or are supplied with digital data from Accurus Tulsa are required to secure access to digital data provided by Accurus Tulsa. When developing NC programs, the supplier shall maintain traceability from the NC program to the authority dataset and ensure only current authority datasets are available for use in production and inspection. All product acceptance is performed at Accurus Tulsa. Accurus Tulsa has no delegated suppliers.

10.2 Change Notification

Supplier shall notify Accurus Tulsa within thirty business days of any change in their DPD/MBD process.

11.0 Purchase Order Quality Clauses

- QC 1 Chemical/Physical material test reports-A test report is required with this purchase order. The test report shall contain the chemical and physical properties of the material provided as required by the specification noted on the purchase order along with the batch/ heat lot number. Traceability of the material shall be maintained from the mill to delivery at Accurus Tulsa. Substitutions regarding size, alloy, temper, etc. are only allowed as called out on the Accurus Tulsa purchase order. Any other substitutions are unauthorized without written consent from Accurus Tulsa engineering/quality organization. Note: If the material provided is a casting or a forging then the supplier shall also include a certificate for ultrasonic inspection, mag. particle inspection, radiographic inspection, penetrant inspection, pressure test, and grain flow as required by the procurement specification.
- QC 2 A certificate of conformance is required with this purchase order. The c of c shall contain the lot/batch number and a statement of conformance to the procurement specification. Full test reports shall be available to Accurus Tulsa if required by customer.
- QC 3 A first piece inspection must be performed at Accurus Tulsa, for each manufacturing operation or on a completed part (whichever is applicable), during the initial run of each line item on the purchase order. The supplier's inspection results shall be made available at the time the part is brought to Accurus Tulsa for inspection.
- QC 4 Source inspection is required at your facility prior to shipment. Contact Accurus Tulsa's quality department 48 hours in advance to schedule.
- QC 5 The supplier shall ensure that parts/material are handled and packaged in a way so as to prevent damage in process and during delivery of the finished product. Failure to do this could result in the supplier being charged for rework or scrapped items.
- QC 6 A packlist is required to be sent in with the finished parts. The packlist shall be signed by an approved company representative indicating that the parts were produced, inspected, and conform to the requirements of the purchase order.

- QC 7 Special processing is called out on this purchase order. Special processing includes but is not limited to: NDT, Chemical processing, surface enhancement, heat treating, welding, and coating application. Upon completion of the purchase order, the supplier shall provide Accurus Tulsa a signed certificate of conformance including the process specification number with the revision level, part number, processing date(s), Accurus Tulsa's purchase order number, and any required variable information (i.e. coating thickness, etch rate, etc.) . The supplier shall not subcontract work without written authorization from Accurus Tulsa. The supplier shall be NADCAP approved for the processes that require it (I.E. NDT, Chemical Processing, surface enhancement, etc.).
- QC 8 A certificate of conformance is required for this purchase order. Ensure certificates contain the gage number, calibration dates, a conformity statement listing the required specifications, an approval signature/stamp, and as found and final readings for each gage. All gages shall be calibrated in accordance with the latest revision of ANSI Z540-1, ISO 17025, and ISO 10012 unless otherwise noted on the purchase order. Ensure standards used for calibration are traceable to NIST. Calibrate gages to OEM requirements unless noted otherwise.
- QC9 First Article Inspections: On first part (new part) orders, a detailed first article inspection report is required and shall be compliant to AS9102 requirements. The report must be furnished with first shipment of the product to Accurus Tulsa for verification, unless otherwise specified. The first article report and the part used should be packaged separately, clearly identified, and shipped with production parts on the first delivery of a new product. Accurus Tulsa reserves the right to witness the actual inspection or to require spot checks to verify data.
- QC 10 Material Samples: A material sample must be furnished to Accurus Tulsa with the shipment of material, unless otherwise specified. The size of the sample shall be determined by Accurus Tulsa or the material specification. The sample shall be cut or molded from the same material lot as the product supplied. In addition, the supplier must reference the PO, part number, Lot number (if applicable), Serial Number (if applicable) on their certification. If a sample does not pass its material specification tests, the product supplied with the sample shall be considered unacceptable and may be returned to the supplier.
- QC 11 Work Transfer: (Per AS9100, from one organization facility to another, from the organization to a supplier, from one supplier to another supplier).
Supplier shall not relocate or subcontract any portion of the Purchase Order without written notification and acknowledgement from Accurus Tulsa.