



NOTE: BAR TO THE LEFT INDICATES CHANGE FROM THE PREVIOUS REVISION

GENERAL REQUIREMENTS (Applies to all orders issued from GMW referencing this document)

QR-01 Quality Management Systems

The supplier shall flow down the substance of this clause to all subtiers.

AS9100 Suppliers: The supplier will as a minimum maintain and implement a documented quality management system, available in the English language that is certified to AS9100 and/or ISO9001 (AS9120 is acceptable for distributors, ISO 17025 is acceptable for material test and calibration laboratories). This system is subject to review by GMW Quality Assurance.

Suppliers must provide GMW with written notification within 3 working days if certification/recertification is cancelled, has been rescheduled past the required certification date, or if there are any major or recurring findings as a result of certification/recertification.

Less than AS9100 Suppliers – Suppliers who do not maintain a quality system certified to AS9100 and/or ISO9001 must implement, at minimum, a quality management system which includes the following, unless otherwise approved by GMW Quality:

- Contract / Purchase Order Review
- Identification and Traceability
- Purchasing
- Control of Nonconforming Product
- Control of Manufacturing Processes
- Measurement and Monitoring of Product
- Training
- Preservation of Product
- Control of Quality Records
- Internal Audit

QR-02 Notification of Change

The supplier shall flow down the substance of this clause to all subtiers.

Suppliers shall notify GMW in advance of the following changes:

- Product and/or process
- Sub-tier suppliers
- Manufacturing facility location
- Management Representative

Written approval from GMW prior to implementation may be required on a case by case basis.

QR-03 Right of Entry

The supplier shall flow down the substance of this clause to all subtiers.

GMW and/or GMW's customer or government representatives shall have the right to survey facilities and review all processes, subcontractors, contracted parts, procedures and records.

QR-04 Supplier Responsibility

The supplier shall flow down the substance of this clause to all subtiers.



Verification of product and processes by GMW, its customer or regulatory agency does not absolve the supplier of the responsibility to provide acceptable product, nor does it preclude subsequent rejection by GMW or its customer.

QR-05 Quality Records

The supplier shall flow down the substance of this clause to all subtiers.

Supplier shall maintain quality records, including traceability, throughout all stages of manufacturing. No quality records shall be destroyed without the written consent of GMW Quality.

QR-06 Product Packaging

In addition to specific product engineering and specification requirements, product must be boxed, banded, or shipped in a manner that will ensure that no damage will occur.

QR-06A Product Packaging – Repackaged Touch Up Kits

Repackaging of materials for the purpose of providing touch up kits to GMW must be done in accordance with the controlling specification using containers and labeling practices defined by the specification. At a minimum, each container must be identified with:

- The controlling specification, type, class, grade and revision
- BAC color (as applicable)
- Original expiration date
- Repackaged expiration date
- GMW PO#

Additional information required by the controlling specification must be included in the certifications provided by the supplier to GMW.

QR-07 Engineering Media

Supplier shall meet the requirements of the drawings, parts lists and specifications referenced on the Purchase Order or applicable engineering media. Supplier shall manufacture and process to the latest revision of specifications unless otherwise stated on the GMW Purchase Order. Specification revisions are listed on GMW's website. Specifications may be requested from a GMW Buyer.

All drawings/PCMs or other engineering media provided to the supplier for outside processing or outside machining must be returned with the order upon completion.

Supplier may not make any changes to materials, processes or design which would affect the product or any component thereof with regard to part number identification, physical or functional interchangeability, repair and overhaul procedures and processes, and/or material changes which affect these procedures without written approval from GMW's customer.

QR-08 Certifications

The supplier shall flow down the substance of this clause to all subtiers.

A certificate of conformance shall accompany each shipment and include a statement that the product/process provided has been inspected by the seller's quality assurance department and meets the controlling engineering and purchase order requirements. The certificate of conformity shall include traceability (e.g. manufacturer's production order/lot number, heat lot number, batch number) to the product/process provided. Certified physical metallurgical test



reports are to be provided when required by the controlling specification. Copies of all raw materials, processes and product certifications must be provided to GMW upon delivery.

Distributors of hardware or raw material are required to include the legal name of the product manufacturer on the certificate of conformance.

QR-09 First Article

The supplier shall flow down the substance of this clause to all subtiers.

Supplier shall perform First Article Inspection in accordance with AS9102 (latest revision) on all supplied product. AS9102 forms are available from GMW upon request. First Article Inspection reports and supporting documentation (e.g. certifications, inspection reports) are to be supplied with the production shipment for all first article parts. This clause does not apply to suppliers who supply raw material, processes, or standard catalog items.

QR-10 Shelf Life

Perishable materials provided to GMW shall be identified with applicable manufacturing and expiration dates on each individual container and certification. Product must be shipped to GMW with a minimum of 60% of its certified shelf life remaining, unless otherwise specified by the PO requirements.

QR-11 Inspection Options

The supplier shall flow down the substance of this clause to all subtiers.

Supplier shall perform 100% for in-process and final inspection or Supplier shall conform to the requirements of document AS9138 "Aerospace Series – Quality Management Systems Statistical Product Acceptance Requirements". With the exception noted herein Seller's statistical sampling procedure/plan conformance to AS9138 with minimum protection levels meeting SAE AS9138 Table A1 and C=0 will constitute Boeing Quality approval subject to restrictions noted in AS9138, Section 4.3 Safety/Critical Characteristics, and part/product Design Data sampling requirements and/or prohibitions.

QR-12 Parts Identification

In addition to drawing requirements, all parts 'make complete' must be, at a minimum, identified with the part number, manufacture date, and manufacturers' production order/ lot number.

All foreign manufactured items furnished under the Purchase Order, unless excepted by law, must be legibly marked with the English name of the country of origin per U.S. Customs Regulation 19 CFR Part 134 Country of Origin Marking. Markings must be legible, indelible, and as permanent as the nature of the article or container will allow.

QR-13 NADCAP

Suppliers must be NADCAP approved as applicable for the processes being performed. NADCAP approval is required for the following processes:

- Heat Treating (AC 7102)
- Welding (AC 7110)
- Chemical Processing (AC 7108)
- Non-Destructive Testing (AC 7114)
- Surface Enhancement (AC 7117)
- Composites (AC 7118)



- Material Testing (AC 7101)

Suppliers must provide GMW with written notification within 3 working days if certification/recertification is cancelled, has been rescheduled past the required certification date, or if there are any major or recurring findings as a result of certification/recertification.

| QR-14 Not used

QR-15 Nonconforming Product

The supplier shall flow down the substance of this clause to all subtiers.

Suppliers shall not use dispositions of use-as-is or repair on nonconforming product.

A) Notice of Escapements:

Supplier shall provide written notification to GMW within one (1) business day when a nonconformance is determined to exist, or is suspected to exist, on product already delivered to GMW under any order. When the following is known, written notification shall include:

- Affected process(es) or product number(s) and name(s)
- Description of the nonconforming condition and the affected engineering requirement (i.e., what it is and what it should be)
- GMW purchase order/line item/release, manufacturer lot number, quantities, and dates shipped to GMW.

B) Rejections and Corrective Action:

When the Supplier is notified by GMW of a detected nonconformance, the Supplier shall immediately take action to eliminate the nonconformance on all products within the Supplier's control and maintain on file verification that root cause corrective action has occurred and has resolved the subject condition. When the Supplier is requested to submit a formal corrective action report, the Supplier shall submit the response by the due date requested. Extensions may be granted at the discretion of GMW Quality Assurance.

QR-16 Excess Inventory

The Supplier shall strictly control all inventory of customer proprietary product that is in excess of contract quantity in order to prevent product from being sold or provided to any third party without prior written authorization from GMW.

QR-17 Counterfeit Parts

The supplier shall flow down the substance of this clause to all subtiers.

Supplier shall put into place a documented program to avoid, detect, mitigate and disposition counterfeit parts and materials.

Suppliers should utilize and reference AS6174 for guidance. Suppliers shall also flow down counterfeit parts programs requirements to their sub-tiers, especially but not limited to:

- Electronic parts suppliers
- Raw material suppliers
- Distributors



QR-18 FOD Prevention Control Program

The supplier shall flow down the substance of this clause to all subtiers.

The supplier shall establish, document and maintain a program in accordance with AS9146 “Foreign Object Debris/Foreign Object Damage (FOD) Prevention Program – Requirements for Aviation, Space, and Defense Organizations.”

QR-19 Clean Air Act

The supplier shall flow down the substance of this clause to all subtiers.

The supplier 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.”

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

QR-20 Application of Acceptance Authority Media (AAM)

The supplier shall flow down the substance of this clause to all subtiers.

Seller shall comply with the AS/EN/JISQ 9100 requirements and 14CFR Part 21.2 regarding the application of the Acceptance Authority media (AAM) requirements. Seller shall, within its organization and its supply chain, ensure that the use of AAM is clearly defined within its Quality Management System (QMS). Seller shall, upon customer request, be able to demonstrate evidence of communication to its employees and to its supply chain; use of AAM must be considered as a personal warranty of compliance and conformity. Seller shall maintain compliance to the AAM requirements by assessing its process and supply chain as part of its internal audit activities. The areas of focus of this assessment shall include but not limited to:

- Authority Media Application Errors (i.e. Omission, Typos, Legibility, etc.)
- Authority Media Application Untimely Use (i.e. Documentation is not completed as planned, “Stamp/Sign as you go”, etc.)
- Authority Media Application Misrepresentation (i.e., uncertified personnel, Falsification of documentation, Work not performed as planned, etc.)
- Authority Media Application Training Deficiencies (i.e. Ethics, Culture awareness, Proper Use of authority media, etc.)



GMW CUSTOMER SPECIFIC REQUIREMENTS

Boeing Commercial Product Additional Requirements

The supplier shall flow down the substance of the Boeing Product Additional Requirements clause to all subtiers.

Digital Product Definition - Suppliers utilizing GMW supplied Digital Product Definition (DPD) for the purposes of manufacturing and/or inspection of Boeing product must comply with Boeing D6-51991 requirements. Suppliers are required to complete and submit to GMW a Digital Product Definition Supplier Survey. This survey may be requested from GMW.

After initial approval, suppliers must notify their GMW Buyer within 30 calendar days of implementing any changes to:

- The documented DPD processes
- CATIA synchronization per D6-56199
- CAD/CAM (when used for product acceptance), CAI software additions, updates or changes
- Addition of new coordinate measurement system (CMS) and CNC On-machine probing equipment
- Quality manager or key personnel

Approved Process Sources (D1-4426) - The Supplier is required to maintain compliance with this document as maybe revised from time to time. This document defines the approved sources for special processing, composite raw materials, composite products, aircraft bearings, designated fasteners, and metallic raw materials. All manufacturing and inspection processes which are controlled by D1-4426 shall be performed only by the sources specified in the document.

Approved Standards Sources (D-590) - The Supplier is required to procure standards from approved manufacturers as listed in Boeing Document D-590 as applicable. Distributors may be used as allowed.

Regulatory Approvals - For aircraft regulated by Civil Aviation Authorities, regulatory approval may be required for Seller to make direct sales (does not include "direct ship" sale through Boeing) of modification or replacement parts to owners/operators of type-certificated aircraft. Regulatory approval, such as FAA Parts Manufacturer Approval (PMA), is granted by Civil Aviation Authorities. Seller agrees not to engage in any such direct sales of Products or Services under this Agreement without appropriate regulatory approval. For Seller proprietary parts, Seller agrees to notify Boeing of application for regulatory approval and the subsequent approval or denial of same. Upon receipt of proof of applicable regulatory approval, Boeing may list Seller in the illustrated parts catalog as seller of that part. Unless explicit contractual direction is given to the contrary, no articles (or constituent parts thereof) ordered by Boeing Commercial Airplane Co. purchased under this agreement shall contain any Federal Aviation Administration- Parts Manufacturer Approval (FAA-PMA) markings and the accompanying paperwork (e.g., packages, shippers, etc.) shall not contain any FAA-PMA markings.

Metallic Raw Material Procurement - Metallic raw materials used for product must be procured from Boeing or a Boeing designated service provider (TMX) unless otherwise approved in writing by GMW. Commodities include: Aluminum sheet, plate, extrusion and coil



as well as all wrought and unwrought titanium mill products. This requirement excludes stainless steel materials.

Validation of Raw Material Test Reports - When the supplier utilizes test reports to accept supplier purchased raw material, the following requirements apply:

Test reports shall be checked 100% against supplier's requirements and applicable specifications.

Validation test requirement: Supplier shall periodically validate test reports for raw material accepted on the basis of test reports. That validation shall be accomplished by supplier or other independent party through periodic, scheduled tests of raw material samples. Schedules for frequency of tests will be established by supplier based on historical performance of the raw material supplier.

Supplier shall retain test reports provided by the raw material supplier, as well as supplier's validation test results as quality records traceable to the conformance of product supplied.

Operator Self-Verification Program – If Supplier uses an Operator Self-Verification (OSV) program, Seller shall comply with the requirements set forth in SAE Industry standard AS9162, "Aerospace Operator Self Verification Programs", as may be amended from time to time.

Boeing FAA Production Certificate 700 – The following is applicable for standard off the shelf catalog items and items "purchased complete":

The Supplier will place the following statement on the shipping / certificate of conformance documentation of all products, materials, equipment, information and services integrated into products and services:

"Seller hereby acknowledges that the parts and/or materials being shipped under this order are intended for use under Boeing's Federal Aviation Administration (FAA) issued Production Certificate 700 and no articles (or constituent parts thereof) or the accompanying paperwork (e.g., packages, shippers, etc.) contain any Federal Aviation Administration- Parts Manufacturer Approval (FAA-PMA) markings."

The statement may be printed, stamped or attached as a label or sticker to the shipping documentation. It is permissible to replace "Seller" with the company name or "We".

Manufacturing Planning - "Controlled" or "Approved" planning requirements are derived from the part specific Engineering requirements. Planning changes to "controlled" or "approved" planning requires compliance with the associated process prior to implementing proposed changes within seller's production system and commencing manufacture. Seller shall submit manufacturing planning changes to Boeing in accordance with the requirements described within the associated process for approval/re-approval.

Boeing engineering qualification/approvals include material & process approvals and quality engineering approvals (but not limited to):

- Manufacturing plans (e.g. **D6-1276**, **D6-17781**, **BSS7085**)
- Part Qualifications (e.g. **BSS7029**, **BSS7082**, **BSS7119**)
- Process Control (e.g. **D6-36232**)
- Boeing Level 3 Approvals (e.g. **BAC5980**)
- Statistical Sampling Plans (e.g. **BSS7286**)



Supplier Quality Requirements

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FAA Form 8130-9 "Statement of Conformity" - When Seller is approved to complete FAA Form 8130-9 "Statement of Conformity" on Boeing's behalf, Seller shall do so in accordance with Boeing document D6-83570 "8130-9 Conformity Inspection Requirements" and assigned FAA Form 8120- 10 "Request for Conformity" instructions.

AS9117 Delegated Product Release Verification - When Seller delegates product verification, Seller shall conform to the requirements of AS9117, "Delegated Product Release Verification," as may be amended from time to time. Buyer reserves the right to conduct surveillance at Seller's facility to determine that Seller's quality system conforms to the requirements of AS9117.

AS9117 establishes minimum requirements for Seller's delegation of product verification. When delegating product verification, Seller is not relieved of its obligations under this contract.

Clad Aluminum Exterior Aircraft Skins, Boeing document D6-9002 - Effective January 1, 2017, all suppliers providing clad aluminum exterior aircraft skins per Boeing document D6-9002, "Appearance Control of Clad Aluminum Exterior Skins" shall inspect the skins per D6-85354, "Skin Quality Inspection of Clad Aluminum Exterior Skins".



Boeing BDS Product Additional Requirements

The supplier shall flow down the substance of this clause to all subtiers

Material Substitution Prohibition

A. Unauthorized Material Substitution (General)

Unauthorized material substitutions are not permitted on Boeing Goods. Unauthorized material substitution includes any deviation from the engineering definition of a raw material.

Engineering definition includes Buyer design drawing and applicable specifications, product specification, form, size, shape, chemistry, melt method, origin, temper/condition, product testing or surface finish. Alternate materials specified in the engineering definition (and often described as approved material substitutions therein) do not constitute unauthorized material substitution. Terms and definitions for metallic materials and processing used herein are clarified in ARP1917.

B. Metallic Materials (Specific)

Temper or Condition Conversion - Unless specifically authorized by the engineering definition, conversion of a raw material (i.e. heat treat to change the temper or condition of the material) constitutes material substitution of the condition provided by the manufacturer.

Metallic Raw Materials – Boeing’s engineering drawings may refer to obsolete or superseded specifications covering several forms, thicknesses, widths, etc. of the alloy or alloys. The required characteristics of these materials are defined not only by the objective test standards of the specification, but by the processes/methods by which this final form is achieved. These requirements are often captured in the definitions of the required material forms, and may not be explicitly called out in the detailed requirements. The raw material certification results from both the process used to make it and the tests to verify basic properties.

Seller shall ensure that metallic materials covered by current or obsolete/superseded specifications are produced using the standard industry practices designed strictly for the production of stock to the specified thickness, diameter, width or cross sectional area, achieved by thermo-mechanical processing or casting process. Chemical, electrochemical and mechanical methods used for the removal of surface scale or contamination, or the production of the required surface finish, in accordance with the material specification are acceptable.

Raw material must not be re-certified with respect to thickness, diameter, width or cross sectional area or product form. Machining or cutting of thicker product or other product forms shall not be supplied in lieu of specified product unless specifically authorized by Buyer. Raw material certifications for material or parts shall reflect the form and size of the raw material as originally manufactured by the raw material producer.

C. Specification Supersession

For government specifications and standards canceled after June 1994, Seller and subcontractors at all tiers shall use the last active revision of the canceled specification and standard until an acceptable replacement is included in the requirements of this Contract. Contact the Buyer’s Authorized Procurement Representative in the event of any inconsistency in applicable specification or standard.



D. Reports (Full Pedigree from melt to final product)

Raw material certifications shall show clear traceability to the manufacturer(s) of the raw material including ingot source, all thermo-mechanical processing (i.e. forging, rolling, drawing, etc), heat treatment, chemical processing and inspections as required by applicable raw material specification requirements.

E. Chain of Custody (Disguising intermediate ownership)

Suppliers shall not disguise the pedigree of material or chain of ownership by removal of a previous supplier's name, nomenclature or identification.

F. Source of Additional Information

Addition information and guidance may be found through Buyer's Supplier Portal or Buyer's Authorized Procurement Representative.

G. ITAR Requirement

IMPORTANT/CONFIDENTIAL: This PO (and any drawings and/or attachments accompanying it) may contain confidential information, including information protected by United States Government. The information is intended only for the use of the intended recipient(s). Delivery of this PO to anyone other than the intended recipient(s) is not intended to waive any privilege or otherwise detract from the confidentiality of the PO. If you are not the intended recipient, or if this PO has been addressed to you in error, do not read, disclose, reproduce, distribute, disseminate or otherwise use this information, rather, please promptly notify the sender by phone or e-mail, and then destroy all copies of the PO and its attachments, if any.