

GOODRICH CORPORATION (Hereafter referred to as "The Company" in this document)			
TITLE	SUPPLIER QUALITY ASSURANCE REQUIREMENTS		
ORIGINATOR	Bill F. Steinmetz	Cage Code	31645
DATE	11-22-2024	xClass ID #	5328205
Electronically approved and maintained in a Document Management System			
LIST OF ACTIVE PAGE NUMBERS Prefix Pages: 1-2 Document Body Pages: 3-13 Appendix Pages: None		QUALITY DIRECTIVES INCORPORATED	
Customer/FAA Approval Statement (If Required): The Quality FAA focal must forward a PDF copy of this document to the FAA MIDO Office in Minneapolis each time it is revised.			
DESCRIPTIONS OF PRIOR REVISIONS AND APPROVALS ARE MAINTAINED ON FILE			
DESCRIPTION OF CURRENT CHANGES: Removed references to ASQR-01 and replaced with COL-ASQR-PRO-0003 throughout the entire document. Updated the term "Deliverable(s)" or "DI" to "Product" and throughout the entire document. Updated text in "Purpose" Updated Referenced Documents Removed Electronics from the list of NADCAP exempt processes in QC PARA 115.5. Updated ASQR-09.2 reference paragraphs in QC PARA 136. Updated Section 4.0 to require separation of conforming and non-conforming product. Added Definition #8, 9 & 10 Added to and modified Section 9 Renumbered Section 11 to 13 Added/revised Section 11.0 "CARGO SYSTEMS SUPPLIER PORTALS FOR DOCUMENT EXCHANGE" Added new section 12.0 Calibration Service provider requirements Updated QC Paragraphs 115 & 115.5 Added New QC Paragraph 115.3 Text changes to QC Notes 134 & 139			

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A: Purpose

This document defines Collins Cargo Systems Supplier Quality requirements, procedures and/or processes to be used when reviewing, inspecting, verifying, or analyzing for the potential acceptability of Production Product against those requirements.

B: Scope

This Document and Content applies to all Production Product, Equipment, Supplies or Services.

C: Referenced Documents

AMS 2759	HEAT TREATMENT OF STEEL PARTS GENERAL REQUIREMENTS
AMS 2770	HEAT TREATMENT OF WROUGHT ALUMINUM ALLOY PARTS
AS9103	VARIATION MANAGEMENT OF KEY CHARACTERISTICS
AS9102	AEROSPACE FIRST ARTICLE INSPECTION REQUIREMENT
ANSI/ASQC Z1.4	SAMPLING PROCEDURES AND TABLES FOR INSPECTION BY ATTRIBUTES
AS9100	QUALITY MANAGEMENT SYSTEMS
ASQR-09.2	PRODUCTION PART APPROVAL PROCESS (PPAP)
ASQR-01 Form 9	QUALIFIED DISTRIBUTOR LIST REQUEST
BAC 5307	PART MARKING
COL-ASQR-FRM-0003	SUPPLIER REQUEST FOR INFORMATION (SRI)
COL-ASQR-FRM-0006	NOTIFICATION OF POTENTIAL QUALITY ESCAPE (NOPQE)
COL-FRM-0055	CONTAINMENT SUPPLIER CORRECTIVE ACTION REQUEST (SCAR)
COL-FRM-0054	ACTION RESPONSE SUPPLIER CORRECTIVE ACTION REQUEST (SCAR)
COL-ASQR-PRO-0003	COLLINS SUPPLIER QUALITY REQUIREMENTS
CP1105	CALIBRATION OF EQUIPMENT BY OTHER THAN "THE COMPANY" PERSONNEL
DPS 3.02	THE BOEING COMPANY: IDENTIFICATION OF PARTS AND ASSEMBLIES
D6-51991	QUALITY ASSURANCE STANDARD FOR DIGITAL PRODUCT DEFINITION (DPD) AT BOEING SUPPLIERS
D1-4426	THE BOEING COMPANY: APPROVED PROCESS & SOURCES
MP9001	MANAGEMENT SYSTEM MANUAL
MP2027	CAD/CAM/CAI DATASET EXCHANGE AND QUALITY ASSURANCE PROCEDURE
MP2033	CONFIGURATION MANAGEMENT
MP1067-2	FROZEN PROCESS PROCEDURE
MD20323	COUNTERFEIT PARTS CONTROL PLAN (CPCP)
PS2025	STANDARD SHOP PRACTICES
PS2018	IDENTIFICATION OF PROPRIETARY PRODUCTS
SJ11077-1	HOW TO COMPLETE AN INSPECTION ON A VENDOR AS9102 FIRST ARTICLE INSPECTION REPORT
WI1010-2 Form 1	QUALITY REQUIREMENTS FOR MAINTENANCE OVERHAUL AND REPAIR PROVIDERS
WI9301	SUPPLIER DEVELOPMENT / GET-TO-GREEN PROCESS
WI3320	VENDOR MATERIAL REVIEW REQUEST (VMRR)

D: DEFINITIONS AND ACRONYMS:

- Products:** The "Product or Service(s)" hereafter the "Product"; is the as designed or defined part, article, component, material, sub-assembly or assembly; and is that Product which is defined for delivery by, but not limited to, Released Engineering, Purchase Order or other Requirement(s) and is to be inspected for potential acceptability against those requirement(s).
- Released Engineering:** Is revision-controlled Engineering Drawings, Revision or Change Notification(s) (ERN/ECN(s)), Hereafter "Drawing(s)"; CAD Models, Specifications & other controlled documents(s), that are valid, approved, and stored in the Company, Customer, or Industry authorized repository.

Reference Notes:

- The applicable Drawing documents may have "Letter" Revision nomenclature. (eg, A, B C~). A notable Company exception is: " – " (dash) which typically precedes "A" but seldom actually issued as "Released Engineering".*
- Some Drawing revisions are released as A1; B1 & etc., and this indicates the Drawing is compliant ONLY with the corresponding ERN/ECN.*

- c. *Company Released Engineering Drawings do exist as Numerical revisions as the Company has absorbed more than a few other facilities Drawings. (See section 8(1)).*
 - d. *Company Development Drawings are numerically controlled (eg, 1, 2, 3~) after which upon approval are rolled as a Letter Revision and usually at "A". Refer to MP2033 "Configuration Management"*
3. **Engineering Revision/Change Notice (ERN, ECN)** The document that summarizes change(s) from revision to revision and provides disposition of Product in work, stock or transit.
 4. **Configuration Control Sheet (CCS);** The Company document that lists and identifies Product revision(s) and any Special Quality Requirements(s) paragraph(s) and or exceptions not otherwise listed on Drawings, Purchase Orders, or other Resource locations and or exception(s) not otherwise defined.
 5. **Product Assembly:** The sum of Product (component(s)) where Released Engineering defines the Product condition(s) and structure.
 6. **First Article Inspection (FAI):** A documented physical and functional inspection process document compliant to AS9102 and COL-ASQR-PRO-0003 that verifies the prescribed production methods have produced an acceptable article as specified by Released Engineering and other requirement(s).
 7. **Vendor Material Review Request (VMRR)** The VMRR process (WI3320) is utilized when the Supplier has Non-Conforming Product in custody and/or control. Refer to section 4.0 SUPPLIER RESPONSIBILITY FOR NON-CONFORMING PRODUCT AND CORRECTIVE ACTION for additional details.
 8. **Supplier Request for Information (SRI Form "COL-ASQR-FRM-0003)** Suppliers shall utilize this document when requesting clarification or interpretation of Specifications, Requirements or Drawing Details.
 9. **Supplier Sub-tier Requirement(s) Flow down:** Supplier shall ensure Sub-Tier requirements compliance.
 10. **Traceable Feature(s):** are; date code(s), sold to name & address, heat lot number, batch number & etc..

1.0 SUPPLIER QUALITY ASSURANCE REQUIREMENTS FLOWDOWN

Supplier Quality Assurance Inspection and Requirements are defined herein including but not limited to; COL-ASQR-PRO-0003, unless otherwise specified herein are applicable.

2.0 TRACEABILITY

- 1) The Supplier shall control the unique identification of the Product and maintain records for Product where an exclusive manufacturer(s) is specified or where the Product is completely Drawing defined.
- 2) Traceability for Raw Material used to manufacture Product is required and records shall be retained.
- 3) Traceability requirements include:
 - a) The ability to trace all Product manufactured from the same batch of raw material, or from the same manufacturing batch to the final destination (e.g., delivery, scrap),
 - b) For an assembly, the ability to trace its components to the assembly and then to the next higher assembly, and
 - c) For a Product, a sequential record of its production (manufacture, assembly, inspection/verification) to be retrievable.
 - d) Suppliers shall provide traceability records at the request of the Company within two (2) business days of notification.
- 4) Traceability shall be established via one of four methods:
 - a) **Method 1, Cradle to Grave:** An Original Equipment/Component Manufacturers (OEM) Certificate of Conformance (C-of-C), Purchase Order (PO), shipper or equivalent from each institution that took ownership of the Product, starting with the OEM (or mill in the case of raw material traceability) and ending with Supplier. Each C-of-C, PO, shipper, or equivalent shall have traceable feature(s) that links the subsequent or previous document to itself.
 - b) **Method 2, Abridged:** A C-of-C or shipper from the OEM that includes traceable feature(s) plus C-of-C from the Supplier that denotes the same lot number being provided.

- c) **Method 3, OEM's Authorized Distributor:** A C-of-C or shipper from the OEM's authorized distributor. Evidence of a distributor's authorization from the OEM shall be provided.
- d) **Method 4, Certificate of Analysis (C-of-A):** A C of A from the Supplier shall be provided. The C of A shall be accompanied by supporting analysis/test evidence including but not limited the requirements defined within MD20323 on the Product to ensure compliance with the type design. Any Product containing a C of A shall be submitted for evaluation of acceptability utilizing the VMRR process.

3.0 SUPPLIER DELEGATION PROGRAM

- 1) The Supplier shall meet the following criteria within an agreed upon time frame; to be documented and monitored IAW WI9301 between the Supplier and the Company:
 - a) For High Volume Suppliers ($\geq 10,000$ pc supplied annually) - Achieve less than or equal to 100 defects per million (Average) for the previous six months
 - b) For Low Volume Suppliers ($< 10,000$ pc supplied annually) – Achieve less than or equal to 1 escapes for the previous six months
 - c) Have an established business relationship with the Company for greater than 6 months and have received at least 20 different shipments.
 - d) Evidence of AS9100 Compliance via on-site audit or registered and listed on the IAQG Oasis database
 - e) Close any audit findings from on-site Process Audit
 If the Supplier has met these conditions and is recommended by the commodity team for Delegation, a formal notification will be sent to the Supplier notifying them of the status change.
- 2) After FAI requirements are met, as applicable and unless otherwise notified, Delegated Suppliers shall continue to provide with each Product shipment, a C-of-C. The Supplier shall retain all certification(s), manufacturing process, test, inspection report(s) or other details as required.
- 3) Delegated Suppliers shall provide upon the Company request and within two (2) business days all certification(s), manufacturing process, test, inspection report(s) and/or other details. If Supplier cannot demonstrate compliance to the request, Supplier may be subject to Delegation removal and have to submit a full certification package with every Product shipment.
- 4) If at the end of the agreed upon time frame the Supplier has not met the above criteria, the Company may require the Supplier to pay for source inspection until the criteria has been met.
- 5) The Company reserves the right to remove a Supplier from Delegation due to Supplier quality performance degradation and/or increased risk.

4.0 SUPPLIER RESPONSIBILITY FOR NON-CONFORMING PRODUCT AND CORRECTIVE ACTION

- 1) Non-Conforming Product discovered after shipment by the Supplier (**Supplier Escape**) shall be immediately disclosed to the Company via the Notification of Potential Quality Escape (NOPQE) form: COL-ASQR-FRM-0006. Refer to COL-ASQR-PRO-0003 for additional information on non-conforming Product.
- 2) Non-Conforming Product, upon discovery at the Company or disclosed by the Supplier (NOPQE) shall result in the generation of a Quality Notification(s). In either example the Supplier shall immediately work to mitigate the exposure and report upon request:
 - a. Containment Actions (CA) via COL-FRM-0055 within five (5) business days.
 - b. Root Cause Corrective Action (RCCA) via COL-FRM-0054 within 10 business days (or sooner as defined by the Company).
 - c. Extensions shall only be granted if requested prior to the due date of the Corrective Action(s).
 - d. Supplier approved forms may be utilized in lieu of the above listed documents with approval from Collins Supplier Quality.
- 3) Product that is Non-Conforming and in custody and/or control of the Supplier shall be:
 - a. Communicated to the Company via the Vendor Material Review Request (VMRR) process. See document "WI3320" and
 - b. Shipment shall be held at the Supplier until such time the Company Engineering Material Review Board (MRB) provides disposition.
 - c. VMRR may be issued at the Company request or as otherwise defined to mitigate additional circumstance(s).

- d. Supplier shall separate conforming and non-conforming material into separate shipping batches.
- e. VMRR shall only be requested for non-conforming quantity to be shipped. If the Non-Conforming product quantity will require multiple shipments, a VMRR shall be requested for each shipment.
- 4) Company requests for a Return Material Authorization (RMA) number shall be satisfied within two (2) business days. If an RMA# is not provided in a timely manner, the Company buyer may assign the QN# as the RMA# and process the return.
- 5) Regardless of the Company notification method(s), Product dispositioned as Scrap are not allowed to be reworked or resupplied to the Company as a production Product. Additionally, the Company may require the Supplier to:
 - a. Provide evidence of destruction.
 - b. Provide publication to the Government-Industry Data Exchange Program (GIDEP).
- 6) QN Grief Notices (Griefs) (i.e. paperwork errors, omissions, clarifications) are considered escapes. Each Grief will count as one escape and a one-piece rejection against the Supplier Quality Scorecard. All Grief(s) shall be resolved within two (2) business days or sooner as requested by the Company.

5.0 SUPPLIER CONTROL OF: MODEL BASED DEFINITION (MBD)/DIGITAL PRODUCT DEFINITION (DPD) DATASETS

- 1) Supplier(s) who receive the Company MBD datasets shall be compliant to the configuration management requirements of AS9100. The Company, IAW inspection process MP2027 reserves the right to survey and / or review the Suppliers MBD/DPD-quality assurance management system.
- 2) Supplier(s) must be approved by the Company prior to receipt of Boeing DPD dataset(s) and shall be compliant to D6-51991.
- 3) Product can be totally MBD/DPD generated, defined, and controlled (to include but not limited to specifications and raw material details) and have features that are difficult to inspect and record/report without CMM/Laser and or use of other equipment and processes to validate dimensions or materials. In these events the Supplier shall provide inspection report(s) and other compliant evidence for review. Refer to Note 139.

6.0 DESIGN AUTHORITY

The Company's Drawing(s), ERN/ECN(s) represent the approved design configuration and is the design authority unless otherwise stated. If there are any discrepancies between the Drawing, ERN/ECN(s) and any other media, (e.g., CAD Model) the Drawing(s), ERN/ECN(s) is the final authority.

7.0 SPECIFICATION REVISIONS

- 1) Unless otherwise specified on the Drawing or Configuration Control Sheet (CCS), the latest specification revision in effect at the time the lot of raw material/Product was originally manufactured or processed shall apply.
- 2) In the event a document has been superseded, the latest revision of the superseding document shall apply. Product in which the Company does not have design authority (see note 115/115.3 for Boeing D1-4426) shall be IAW that Company's guidance.
- 3) Supplier shall coordinate with the Company Buyer for the list of Supplier applicable Specifications and current revisions.
- 4) All changes to specifications shall be implemented within six months of the specification issue date.
- 5) All Industry* or Military* specifications are to be procured by the Supplier.
- 6) Additional reference COL-ASQR-PRO-0003 section 6.6 .

**Note: Regarding Boeing's D1-4426; In the event of a cancellation and/or supersession of an Industry or Government standard, the latest revision of the cancelled specification shall apply until Boeing Engineering accepts the replacement specification. Reference D1-4426 prior to manufacturing.*

8.0 STANDARD SHOP PRACTICES AND MATERIAL / PART SUBSTITUTIONS

- 1) Unless otherwise specified on the Drawing, Standard shop practices IAW PS2025 shall apply to all legacy Drawings regardless of callout/linkage through the title block. Legacy Drawings include, but are not limited to, Western Gear, Lucas, TRW and/or Goodrich.

- 2) Material and part substitutions are not allowed unless specifically allowed on the Drawing or through reference to PS2025 located in the Drawing title block.
- 3) As defined by PS2025, Nonconventional machining or techniques not specifically allowed by the Drawing are prohibited.
- 4) Nonconventional Machining includes, but not limited to the following processes.
 - a) Electrochemical Machining (ECM)
 - b) Electrochemical Grinding (ECG)
 - c) Electrical Discharge Machining (EDM) – Fast Hole, Sinkers, Wire
 - d) Laser Beam Machining (LBM) – Cutting, Drilling, Marking
 - e) Abrasive Water Jet Cutting (WJC)

9.0 MATERIAL AS UTILIZED FOR PRODUCT:

- 1) The Supplier shall fulfill all purchasing agreements for Product to the Company with material that is/are in a new or unused condition.
- 2) New Material (ore, mineral) is:
 - a) Made from previously un-used material, whether manufactured from virgin material, recovered, or refined material in the form of raw material.
 - b) Materials and by-products generated from and re-used within an original manufacturing process where compliant to applicable specification(s) or allowed by contract.
- 3) Recovered Material (plastic, composite) is:
 - a) Waste materials and by-product recovered or diverted from solid waste. Not acceptable.
 - b) Materials and by-products generated from and re-used within an original manufacturing process. Not acceptable, except where compliant to applicable specification(s) or allowed by contract.
- 4) Supplier shall utilize Section 2.0 Traceability; Paragraph 4-D “Method 4” for consideration of Re-stocked or Broker Procured Product.
- 5) The Company strictly controls Suppliers and/or Supplier Subcontractor(s) Material procurement/acquisition channel(s) (*including but not limited to Raw Material*) via the Collins Aerospace Qualified Distributor List (QDL). (<https://www.rtx.com/suppliers/United-Technologies-Suppliers/United-Technologies-ASQRD>) Suppliers and/or Supplier Subcontractor(s) shall ensure procurement from those distributors listed in the QDL. Coordinate with The Company Purchasing/Procurement department to ensure access to the current QDL listing. (*Requests to add distributors to the Corporate QDL are made via ASQR-01 Form 9.*)
- 6) Boeing document D1-4426 strictly controls:
 - a) Raw Material Sources of supply (OEM Mills.) Raw Material includes primary and secondary raw material, ingot and extrusion when it is produced outside of the USA*.
 - b) Special Process Suppliers (*See also note 7 below*)
 Boeing Approved Source(s) of Supply for “a*” and “b” above are listed within document D1-4426.
- 7) COL-ASQR-PRO-0003 requires NADCAP certification for Special Processing; (*All special processes except for Conventional Machining, Non-Metallic Manufacturing and Non-Metallic Material Testing*) Special Processing (Chemical) includes PAINT, PRIMER AND PASSIVATION. Additionally:
 - a) Boeing Programs require an approved source as listed in D1-4426 (*CCS Note 115*) (*For NADCAP information, including certified processors, access the PRI Home Page (<http://www.pri-network.org>), click on “NADCAP”*)
- 8) Original Equipment Manufacturer (OEM's) Name Changes (Suppression/Acquisition) are acceptable with proper documentation of link to the original design authority. Includes OEM Cage Code manufacturing Location Changes. Useful link: <https://cage.dla.mil/Search> See also CCS Note 134
- 9) Note For Bearings:
 - a) When the OEM(s) Product are procured with preservative or alternate lubrication or lubrication shelf life is expired, re-lubrication of OEM(s) parts to meet applicable Drawing requirements is permitted.
 - b) Only OEM(s) manufacturer approved sources holding OEM(s) lubrication approval/certification authorization are permitted to perform re-lubrication.



- c) C-of-C from OEM(s) for the Product purchased shall be submitted with the shipment. (*Refer to D.1-5 for requirements as necessary*)
- d) A re-lubrication certificate from the OEM(s) authorized re-lubricator shall be submitted with the shipment. The re-lubrication certification shall contain:
 - (1) The Company part number and the OEM(s) part and lot number prior to re-lube;
 - (2) Utilized Lubricant Part, batch, lot number and Expiration date;
 - (3) Re-lubrication Specification(s) employed;
 - (4) OEM(s) part and lot number after re-lubrication;
 - (5) The name of the agency that performed the re-lubrication process.

10.0 PACKAGING AND SHIPPING

- 1) The Supplier, when possible, shall limit the weight of shipping package(s) to 40 lbs., maximum.
- 2) The Supplier when shipping package(s) over 40 lbs. shall label the package(s) as "Heavy".
- 3) The Supplier, when practical and as time permits, shipping multiple packages over 40 lbs. should consider palletizing the shipment.
- 4) Refer to COL-ASQR-PRO-0003 Section 6.14 for additional Product preservation and delivery requirements.

11.0 CARGO SYSTEMS SUPPLIER PORTALS for FAI's & DOCUMENT EXCHANGE.

- 1) The Supplier shall utilize Net Inspect for FAI document submittal. (*net-inspect.com*) "Discus" software (optional) is likewise available for bubble drawing creation and submittal into Net Inspect.
- 2) The Supplier shall utilize the Company document exchange portal "MoveIT" for the exchange of technical data. <https://mft-utas.utc.com> (*Technical data shall not be emailed unencrypted and/or not password protected*)

12.0 CALIBRATION SERVICE PROVIDER REQUIREMENTS

Calibration service providers and their sub-tier providers shall adhere to the requirements identified within CP1105 and any additional requirements defined within COL-ASQR-PRO-0003.

13.0 SPECIAL QUALITY REQUIREMENT(S) PARAGRAPHS AND/OR EXCEPTIONS.

Suppliers shall be In Accordance With (IAW) the following Special Quality Requirements which are selective, and as applicable, their paragraph number will appear on the Purchase Order (PO) Configuration Control Sheet(s) (CCS).

010. Removed.

011. VARIATION MANAGEMENT OF KEY CHARACTERISTICS

The Supplier shall meet the requirements of AS9103 and COL-ASQR-PRO-0003 to develop and monitor a process to meet variation management requirements for Key Characteristics. Records pertinent to such shall be available for review and delivery to the Company upon request.

050. Removed.

060. FIRST ARTICLE INSPECTION.

- a) The Supplier shall submit an FAI report that conforms to AS9102 and COL-ASQR-PRO-0003 requirements on the first production run of Product. (See SJ1077-1 for detailed instructions).
- b) Additional first articles or partial/delta first articles will also be required in the event of a change per AS9102 and COL-ASQR-PRO-0003. (See each document for a list of changes requiring first article validation).
- c) The Supplier should, when practical, clearly identify (mark/tag – non-permanent) the Product (specific unit(s)) used to develop the FAI.
- d) All certifications and test reports required by the PO and/or Drawing(s) shall be submitted with the FAI package which includes a copy of the assembly, sub-assembly, and detail FAI reports as applicable.
- e) The Supplier shall flow down the requirements of AS9102 to their sub-tier(s).

070 and 080. Removed.

090. REGISTERED COMPONENTS (CRITICAL ITEMS)

Your firm has been subcontracted to supply the Company with Registered Components/Critical Items. Based on this, your firm is required to document in detail the critical methods and processing that will be used and to submit to the Company for analysis and approval the information pertaining to the following:

- A. The methods and the type of critical processing to be used (subject to limitations imposed because of proprietary information).
- B. The locations within the processing cycle where inspections, audits, or walk through will take place.
- C. The attributes of the product, which will be inspected at each inspection point.
- D. The materials and methods of preservation and packaging to be used to protect the product.
- E. The handling and transportation precautions necessary to protect the product.

[Note: Any revision or variation made by the supplier after initial approval by the Company to any of the above listed controls shall not take place until the Company has approved the change.

100. PENETRANT INSPECTION

Penetrant inspect all Product(s) per applicable requirement(s). A copy of the certified inspection report shall be submitted with the Products(s) shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained.

100.1 PENETRANT INSPECTION - Boeing

Penetrant inspect all Product per applicable requirement(s). Use Boeing approved source per D1-4426. A copy of the certified inspection report shall be submitted with the Product shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained.

100.2 Removed.

101. MAGNETIC PARTICLE INSPECTION

Magnetic Particle inspect all Product per applicable requirement(s). A copy of the certified inspection report shall be submitted with the Product shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained.

101.1 MAGNETIC PARTICLE INSPECTION - BOEING

Magnetic Particle inspect all Product per applicable requirement(s). Use Boeing approved source per D1-4426. A copy of the certified inspection report shall be submitted with the Product shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained.

101.2 Removed.

102. CERTIFICATION OF X-RAY

All Product requiring radiographic certification shall be processed in accordance with applicable specification(s) and standard(s). A copy of the certified inspection report shall be submitted with the Product shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained. The Supplier shall retain X-Ray films for a minimum of one year.

102.1 CERTIFICATION OF X-RAY - BOEING

All Product(s) requiring radiographic certification shall be processed in accordance with applicable specification(s) and standard(s) and must be performed by a Boeing approved source per D1-4426. A copy of the certified inspection report shall be submitted with the Product shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained. The supplier shall retain X-Ray films for a minimum of one year.

103. & 103.1 *Removed*

104. ULTRASONIC Inspection

Ultrasonic inspect Product per applicable requirement(s). A copy of the certified inspection report shall be submitted with the Product shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained.

104.1 ULTRASONIC INSPECTION - BOEING

Ultrasonic inspect Product per applicable requirement(s). Use Boeing approved sources as required per D1-4426. A copy of the certified inspection report shall be submitted with the Product shipment. This certificate must contain reference to the specification and revision to which the processing conformed and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained.

106. HEAT TREATMENT

A copy of the certified inspection report shall be submitted with the Product shipment assuring conformance to the applicable heat treat requirement(s). This certificate must contain reference to the specification and revision to which the processing conformed, the condition to which the Product was processed, and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained. All test results, including but not limited to hardness and conductivity, as required by applicable process specifications shall be reported.

106.1 HEAT TREATMENT – BOEING

Heat treatment must be accomplished by an approved source as listed in D1-4426. A copy of the certified inspection report shall be submitted with the Product shipment assuring conformance to the applicable heat treatment requirement(s). This certificate must contain reference to the specification and revision to which the processing conformed, the condition to which the Product was processed, and the name of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained. All test results, including but not limited to hardness and conductivity as required by applicable process specifications shall be documented. Hardness testing is required on a per Product basis and inspection reports must verify that 100% of Product/parts have been tested. Note: if multiple Product/parts are produced from a single piece of raw material, each Product/part must be individually tested for hardness.

106.2 *Removed.*

106.3 HEAT TREAT SAMPLING AUTHORIZATION FOR AMS2759

The Supplier may use sampling for hardness testing after final operation when AMS 2759 is required using general inspection level II per ANSI/ASQC Z1.4 to determine Product sample size.

Note: Acceptance number in all cases is zero (0).

106.4 HEAT TREAT SAMPLING AUTHORIZATION FOR AMS2770

The Supplier may test random samples of each Product lot for both hardness and conductivity testing after final operation when AMS 2770 is required using a frequency that shall not be less than 25% random sample of each lot. Note: Acceptance number in all cases is zero (0).

107. CHEMICAL TEST REPORT - SEE QC PARAGRAPH 133

108. MECHANICAL/PHYSICAL TEST REPORT - SEE QC PARAGRAPH 133

109-111 *Inclusive.* Removed

112. FUNCTIONAL TEST AND REPORT

Per defined Specification(s) or Test Procedure (TP, TRQ & etc.), Test/Functional Test of the Product is required, results summarized into a report and a copy of the test report shall be submitted with the Product shipment. Traceability from the test report to the Product submitted is required and shall be retained. Test reports must validate conformance to requirement(s).

113. IDENTIFICATION MARKING - GENERAL

Each Product or article submitted for acceptance shall be properly identified per applicable standard. If no standard is specified, refer to PS2018 Code E for part mark requirements. For multiple revision Drawings, the Product revision shall be the revision listed first on the CCS. For raw materials, each Product or article shall include the part number as listed on the CCS.

113.1 IDENTIFICATION MARKING - BOEING

Each Product or article submitted for acceptance shall be properly identified per BAC 5307 or DPS 3.02, as applicable.

114. SHELF-LIFE IDENTIFICATION

1) All Product shall have at least ½ the shelf life remaining on the Product at time of receipt. Unless otherwise specified in the material specification or PO, each container shall be identified to include at a minimum:

- a) Manufacturer Name
- b) Compound & Specification Number (if applicable)
- c) Batch Number assigned by manufacturer
- d) Expiration Date
- e) Storage Temp Requirements (if applicable)

115. SPECIAL PROCESSES - BOEING – Boeing DOCUMENT D1-4426

Supplier or Supplier Subcontractor(s) Procurement shall be compliant to the Approved Special Process Supplier(s) as listed in D1-4426. Note 115.3 Requirements for Raw Material Applies. In addition; COL-ASQR-PRO-0003 requires NADCAP certification for Special Processing. (*Refer to Section 9.6 and 9.7 for detail and definitions*)

115.2 Removed.

115.3 RAW MATERIAL - BOEING – Boeing DOCUMENT D1-4426

Supplier or Supplier Subcontractor(s) **Raw Material** Procurement Outside of the USA shall be compliant to the approved OEM (Mill) Supplier(s) as listed in D1-4426.

115.5 SPECIAL PROCESSES - THE COMPANY

All special processes as listed in COL-ASQR-PRO-0003 must be fulfilled by NADCAP certified processors, except for Composites, Conventional Machining, Non-Metallic Material Manufacturing and Non-Metallic Material Testing. (*Refer to Section 9.6 and 9.7 for detail and definitions*)

116. Certificate of Conformance (C-of-C)

Each Product shipment must be accompanied by one legible copy of a Supplier C-of-C. The Supplier C-of-C shall provide a statement of conformity (e.g., "I hereby certify the materials / service supplied was produced in accordance with the applicable Drawing(s), specification(s), PO(s), CCS (include as required; part(s) list(s), TRIP(s), PSDL(s), ADBL(s) & etc., with revision(s))" and at a minimum include applicable information from COL-ASQR-PRO-0003 Section 7.



When Drawings have only one sheet, the revision may be stated without stating sheet number, i.e., "Sht1-A" may be stated as "A", "Sht1-C" may be stated as "C", etc.), name and address of the company certifying the part. Also include VMRR # when applicable.

For assemblies, only the upper level part number and revision is required on the C-of-C. If the CCS states to purchase to the latest revision of manufacturer's spec, a revision is not required on the C-of-C. However, commercial off the shelf items that are produced to a standard (e.g., NAS, MS, BAC, etc.) shall include the revision on the C-of-C.

117. Removed.

118. SPECIAL PROCESS CERTIFICATION

A copy of the certified inspection report shall be submitted with the Product shipment that assures conformance to all applicable processing requirement(s). These certificates must contain reference to the specification(s) and revision to which the processing conformed, the condition to which the material was processed (when applicable), the name and address of the agency that performed the processing. Traceability from the certification to the Product submitted is required and shall be retained. All lot test and inspection results as required by applicable process specification shall be reported.

119. Removed.

121. WELDING

A copy of the certified inspection report shall be submitted with the Product shipment that assures conformance to the welding specification(s), as required, all applicable specification(s) contained therein. This certificate must contain reference to the revision to which the welding conforms, the condition in which the item was processed (when applicable), the name of the agency that performed the testing. Traceability from the certification to the Product submitted is required and shall be retained. All lot test and inspection results as required by applicable welding specification(s) shall be reported. When required by specification, all fabricated Product shall be marked to positively identify it with their approved welding operator. Unless otherwise specified impression stamping is prohibited.

122-130 Inclusive. Removed.

131. KITS

The C-of-C for a Kit shall reference the Kit # (with no revision) and list all details with quantities and revisions per the PO/CCS requirements. The container must be clearly marked with the Kit #.

132. SPECIFICATION CONTROL DRAWINGS

The Supplier shall submit a copy of the approved Drawing(s) for all Product that the Supplier designs to Specification Control Drawings (SCD's). Any changes to the Supplier's Drawing(s) shall be approved by the Company prior to implementation/incorporation.

133. RAW MATERIAL CERTIFICATION

A copy of the raw material certification shall be submitted with the Product shipment that assures conformance to all applicable raw material specification requirements. These certificates must contain reference to the specification and revision to which the material conforms. All chemical, physical, and mechanical properties test results required by the specification shall be retained by the Supplier. Traceability from the certification to the Product submitted is required and shall be retained.

134. APPROVED SOURCES

- 1) All Original Equipment/Component Manufacturers (OEM) and OEM part numbers defined on the Drawing, whether titled Suggested, Approved, or Reference are the only part numbers approved.
- 2) No other OEM(s) or part number(s) shall be provided or utilized without prior approval from Design Engineering and communicated through a Drawing change.
- 3) The OEM(s) Product may be procured from authorized distributors; however, traceability back to the OEM(s) shall be submitted.

- 4) The Supplier C-of-C shall also reference the approved OEM(s) catalog part number provided with the shipment.
- 5) OEM(s) name/site changes are acceptable with proper documentation of link to the original design authority. (See section 9.8 for additional details.)

135. Removed.

136. PRODUCTION PART APPROVAL PROCESS (PPAP)

The Supplier shall submit a PPAP data packet that conforms to the requirements of the Company document ASQR-09.2 on the first production run of Product. See section 4.2.1 of ASQR-09.2 for submission levels. Also, per ASQR-09.2 section 4.2.4, the Supplier shall perform and submit a full or a partial change approval request for affected characteristics when any of the following events occurs:

- a. A new part (e.g., a specific part/material not previously supplied to the member company).
- b. Correction of a discrepancy on a previously submitted part.
- c. A Product modification resulting in a new part number.
- d. Any process/situation change requiring an update or resubmission of all, or portions of the PPAP file.

137. MAINTENANCE OVERHAUL AND REPAIR

- 1) Each part number contained in the PO shall be inspected, handled, repaired, and packaged to the requirements of WI1010-2 Form 1.
- 2) Employees performing certain tasks shall also meet the requirements of WI1010-2 Form 1.
- 3) A copy of the Work Order package shall be submitted with each part number IAW WI1010-2 Form 1.
- 4) Traceability from the certification to the material submitted is required and shall be retained for the life of the Product plus 10 years.
- 5) All documents and records must be in English.

138. FROZEN PROCESS –MP1067-2 Process Control Document (PCD)

- 1) Supplier shall manufacture Product as per the PCD which defines and establishes the authorized methods of manufacturing or processes that are approved by the Company.
- 2) Supplier shall not make changes to Product manufacturing or processes without first obtaining documented Company approval.
- 3) Process changes or deviations include, but are not limited to:
 - a) Material changes
 - b) Order of Operations / Process Flow Sequence
 - c) Method of Manufacture
 - d) Equipment / Tooling changes
- 4) The Supplier C-of-C shall list the Company approved frozen process PCD and Revision numbers.

139. SUPPLIER CONTROL OF: MODEL BASED DEFINITION (MBD)/DIGITAL PRODUCT DEFINITION (DPD) DATASETS

In satisfaction of the Company requirements to MP1004-2(this document) Section; 5.0 SUPPLIER CONTROL OF: MODEL BASED DEFINITION (MBD)/DIGITAL PRODUCT DEFINITION (DPD) DATASETS (Reference Boeing DPD document D6-51991 and or as applicable the Company MBD Internal MP2027 document).

The Supplier shall provide with the Product shipment; a C-of-C and compliant evidence satisfying Product requirement(s) to include but not limited to; CAD measuring, material(s), material processing & other Product validation(s). Applicable documentation shall contain reference to the requirement(s) and/or specification(s) and revision to which the processing conformed and the name of the agency(s) that performed the processing. Supplier shall provide all test results as required by applicable requirement(s) and specification(s)