



Supplier Quality Manual	
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1. Scope

- 1.1 This supplier quality manual has been designed to provide flow down requirements to suppliers with respect to the purchasing expectations and quality requirements for products and / or services supplied to Collins Aerospace Mountainhome and is supplementary to the requirements in COL-ASQR-PRO-0003 and the RTX Terms and Conditions.
- 1.2 All referenced Collins Aerospace documents can be found on the J.A. Reinhardt Supplier Portal: (<https://portal.rockwellcollins.com/web/thermal-electronic-systems/ja-reinhardt1>).

2. Responsibility

- 2.1 It is the responsibility of the Quality Manager or the Supplier Quality Engineer to maintain and support the elements found within the supplier quality manual.
- 2.2 It shall be the responsibility of the Suppliers to Collins Aerospace Mountainhome to comply with, and flow down the requirements defined within the supplier quality manual to their supplier.

3. References

- AS9100, Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations
- COL-ASQR-PRO-0003, Aerospace Supplier Quality Requirements
- COL-ASQR-FRM-0003, Supplier Request for Information
- COL-ASQR-FRM-0006, Notice of Potential Quality Escape (NOPQE)
- MTH-QLT-PRO-0902, AS9102 First Article Inspection Requirements
- MTH-QLT-PRO-1102, Mountainhome Workmanship Standard
- GT-PRO-4100 Jurisdiction Classification

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GT-PRO-4200 Harmonized Systems Classification

GT-PRO-6200 Transfer of Intangible Items

MTH-MGT-PRO-0302 ITAR/Global Trade Compliance

4. General Requirements

4.1 Order of Precedence

4.1.1 In the event there is a requirement that appears to conflict with another requirement, the following order of precedence applies:

1. Contract
2. Purchase Order (PO)
3. Drawings/Specifications referenced on PO/Contract
 - 3.1. Collins Aerospace Mountainhome Specifications Referenced on Drawing
 - 3.2. Industry Specifications Referenced on Drawing
4. MTH-QLT-PRO-0401
5. COL-ASQR-PRO-0003

4.2 Compliance

4.2.1 The supplier shall establish compliance to this document within 60 days of the document effective date, unless contractually obligated otherwise, or unless otherwise specified in the Buyer publication notification.

4.2.2 Requests for waivers, exclusions, or alternative methods to comply with these requirements shall be submitted to Collins Aerospace Mountainhome for approval (Refer to 4.7 Communication with Collins Aerospace Mountainhome/Supplier Communication). In addition, the supplier shall maintain a copy of any approved exceptions and make available for review by Collins Aerospace Quality Assurance or other personnel upon request.

4.3 Requirements Flow Down

4.3.1 Suppliers shall flow down all applicable design documentation requirements (e.g., drawings, specifications, models, acceptance documents, test plans, descriptions, etc.), and all applicable requirements within this document to their suppliers. The supplier is responsible for ensuring compliance to all applicable requirements throughout their supply chain.

4.3.2 For items where Collins Aerospace Mountainhome is the design authority, the supplier shall indicate that Collins Aerospace Mountainhome is the Customer and has design authority within the text of the purchase order to, or contract with, their suppliers.



4.4 Employee awareness

4.4.1 The supplier shall ensure that all personnel working for, or on behalf of the supplier, in activities relevant to the realization of product or services provided to, or for Collins Aerospace Mountainhome, are aware of:

- Their Contribution to product or service conformity
- Their contribution to product safety
- The importance of ethical behavior

4.5 Workmanship

4.5.1 MTH-QLT-PRO-1102, Mountainhome Workmanship Standard contains the requirements that Collins Aerospace Mountainhome follows when handling parts. It is not required that suppliers follow these requirements, however, it is required to handle Collins Aerospace Mountainhome parts in a way that aligns with the processes in the Mountainhome Workmanship Standard. The latest revision of this document can be found on the supplier portal (link in paragraph 4.7.1).

4.6 Shelf-Life and Environmental Storage Conditions

4.6.1 For environment-sensitive or age-sensitive material, the supplier shall provide information regarding shelf-life start date (e.g., manufacturing or cure date), shelf-life expiration date or time period, pot life requirements and recommended storage conditions (e.g., temperature and humidity), as applicable. This information shall be affixed on the material container and included on the supplier's Certificate of Conformance/Compliance (CofC) and/or Test Report. At a minimum this information shall include the following:

- Shelf-life start date in MM/DD/YY format.
- Shelf-life expiration date in MM/DD/YY format, or expiration time period (e.g., 1 year).
- Any required storage conditions such as temperature and humidity.

4.6.2 For environment-sensitive material, the supplier shall package material in a suitable manner and provide for controlled conditions (e.g., temperature and humidity monitoring), to maintain environmental storage requirements throughout shipment and delivery to Collins Aerospace Mountainhome.

4.6.3 The supplier shall provide material/items with $\geq 75\%$ shelf-life remaining, at time of receipt, unless otherwise authorized in design documentation or approved via a deviation/waiver from Collins Aerospace Mountainhome.

4.7 Communication with Collins Aerospace Mountainhome/Supplier Communication

4.7.1 All communications defined within COL-ASQR-PRO-0003 and this quality manual shall be communicated via email to the Collins Aerospace Mountainhome Supplier Support email address (JARSupplierSupport@collins.com). This email address and the associated



forms can be found on the Collins Aerospace Mountainhome Supplier Portal (<https://portal.rockwellcollins.com/web/thermal-electronic-systems/ja-reinhardt1>).

4.8 Supplier Performance

4.8.1 Supplier performance will be monitored based on escapes, on time delivery (based on the promise date of each delivery), and total defective parts per million (DPPM) over a running 6-month period. **Table 1** defines the performance expectations:

Table 1 – Supplier Metric Threshold

Quality		Delivery	Resulting 6 Month Performance
Low-Volume Supplier	High-Volume Supplier*		
≤ 1 Escape	≤ 100 DPPM	≥ 95%	Performing
≤ 6 Escapes	≤ 250 DPPM	≥ 90% and less than 95%	Progressing
> 6 Escapes	> 250 DPPM	< 90%	Underperforming

*A high-volume supplier is one who delivers more than 10,000 pieces over 12 months.

4.8.2 Supplier Performance Escalation Process

4.8.2.1 When a supplier defect is received, a Quality Alert may be issued to the supplier with a written request for the supplier to take action to prevent the defect from occurring a second time. No formal response is required from the supplier unless a return material authorization (RMA) number is subsequently requested. If an RMA is requested, it shall be provided within 5 business days of the Quality Alert.

4.8.2.1.1 All supplier defects are reviewed and dispositioned by the Collins Aerospace Mountainhome Quality Clinic team (a team of individuals from differing departments and specialties within the business) prior to formal disposition. However, a supplier may still petition a Quality Alert within 2 business days of notification, or receipt of the part (if applicable, and whichever is later) by submitting a written request to the Collins Aerospace Mountainhome Supplier Quality Engineer. An additional review will be performed, and the findings will be conferred with the supplier team as desired until alignment is attained.

4.8.2.2 When a supplier defect is received a second time, and after 30 days of the delivery of a Quality Alert, a Supplier Corrective Action Request (SCAR) may be sent. The supplier shall respond within 30 days of the open date of the SCAR and shall complete the SCAR (with adequate effectivity review) within 100 days of the open date of the SCAR.

4.8.2.2.1 A SCAR may be issued to the supplier for a major or a high-pain supplier escape without initially issuing a quality alert.

4.8.2.2.2 In the case of low production volume, a SCAR closure date may be extended to after the verification of the next production lot.



- 4.8.2.3 When a supplier is classified as “Underperforming” for either quality or delivery in accordance with paragraph 4.8.1, Collins Aerospace Mountainhome may invoke activities such as, but not limited to, source inspection (at the supplier’s cost), increased audit frequency, manufacturing process reviews, process failure mode and effects analysis (PFMEA), and other activities as defined in COL-ASQR-PRO-0003.
- 4.8.3 The escalation processes defined in paragraph 4.8.2 may also be used in the instance of a consistent issue with on time delivery.
- 4.8.4 The supplier’s scorecard may be requested for review at any time by providing a written request to the JAR Supplier Support email address found in paragraph 4.7.1.

5. Product Planning and Control

5.1 First Article Inspection

- 5.1.1 First Article Inspection (FAI) is essential to initially qualify a part / process for Supplier approval. Furthermore, a new FAI may be requested if there is an extended gap of time since last production. The FAI shall be performed in accordance with MTH-QLT-PRO-0902. The latest revision of this document can be found on the supplier portal (link in paragraph 4.7.1).

5.2 Product Acceptance Inspection

- 5.2.1 Type 1 Machining & Manufacturing Suppliers (i.a.w. COL-ASQR-PRO-0003) shall meet the following additional requirements:

- 5.2.1.1 A 100% characteristic check shall be performed for the first part of any production run.

- 5.2.1.2 An inspection report shall be delivered with each shipment, including a ballooned drawing to link the measurements in the inspection report to the drawing.

- 5.2.1.3 After the first production part is verified, an Acceptable Quality Level (AQL) inspection may be performed for the entire lot in lieu of COL-ASQR-PRO-0003 Inspection Sampling requirements. The alternative AQL inspection process shall include at a minimum:

- Any Key Characteristics identified on the engineering drawing or purchase order.
- Any characteristics that have been identified as a defect via an escape to Collins Aerospace Mountainhome.
- Any characteristics that define the overall Length, Width, and Thickness of the part.
- Any characteristics that contain threaded holes.
- Any characteristics with a dimensional tolerance less than 0.005” (for a maximum of 5 features).
- Any characteristics with surface finish requirements less than 125 RA.



5.2.1.4 When performing an AQL inspection, the minimum sample size shall be as identified in COL-ASQR-PRO-0003, or as identified in **Table 2**:

Table 2: Sample Size for AQL Inspection Testing

Lot Size	Sample Size
1 to 5	All
6-13	5
14-150	6
151-500	8
501-10,000	13
>10,000	20

5.2.1.5 All edges and surfaces shall be checked for burrs and cosmetic defects on 100% of the lot. It is recommended to use cotton tipped applicators to identify burrs.

5.2.1.6 The 100% characteristic check shall be performed if production is interrupted at any time after the first production run. Examples of a break in production are, but are not limited to:

- Switching machines in the middle of producing a single batch of parts.
- Routine/preventative maintenance was performed in the middle of producing a dedicated single batch of parts that includes breaking down the machine set-up.
- Any other action or change associated to breaking down the machine set-up.

5.2.2 Type 4 Plating and Special Process Suppliers (i.a.w. COL-ASQR-PRO-0003) shall meet the following additional requirements:

5.2.2.1 A 100% characteristic check shall be performed for the first production lot of any part.

5.2.2.2 After the first production lot, in lieu of COL-ASQR-PRO-0003 Inspection Sampling requirements, an AQL inspection process may be implemented using the minimum sample size in **Table 2** in paragraph 5.2.1.4. The AQL inspection process shall include a 100% characteristic check.

5.2.2.3 A 100% characteristic check shall be performed for the next lot after an escape is identified by Collins Aerospace.

6. Conformance

6.1 Notification of Non-Conformance

6.1.1 The supplier shall notify Collins Aerospace Mountainhome immediately upon discovery of any non-conformances that have escaped their facility and that have either reached or are about to reach the Mountainhome facility using COL-ASQR-FRM-0006 and submitting it per paragraph 4.7.1.



- 6.1.2 Non-conformances which are found within the supplier's facility and have not escaped the building but could negatively impact delivery of product shall require immediate notification to the JARSupplierSupport@collins.com email.
- 6.2 Supplier Request for Non-Conformance Deviation
- 6.2.1 A Supplier shall not knowingly ship product that deviates from the design intent, the drawing, or specification limits, without prior written approval from the Collins Aerospace Mountainhome Buyer.
- 6.2.2 If such a condition exists, the Supplier may petition the Collins Aerospace Mountainhome Buyer to allow shipment of the product under a written nonconformance deviation. The Supplier shall use COL-ASQR-FRM-0003 per paragraph 4.7.1 to submit the written request.
- 6.2.3 Collins Aerospace Mountainhome approval of a deviation is specific to the products for which it has been submitted and approved and shall not be interpreted as a permanent engineering change. The Supplier shall begin work immediately on a corrective action. In all cases, the Supplier will fully contain and segregate all product suspected of being nonconforming.
- 6.2.4 Any parts shipped to Collins Aerospace Mountainhome that have been approved for deviation will be clearly identified as such on the shipping container, and on shipping documentation. A copy of the Collins Aerospace Mountainhome approved deviation document (COL-ASQR-FRM-0003) shall be placed inside of each shipping container.
- 6.3 Special Process Certificate of Conformance / Compliance (CofC)
- 6.3.1 The processor's CofC shall be included with each shipment of material. Special processes defined in COL-ASQR-PRO-0003 shall require a CofC and include at minimum:
- The Collins Aerospace Mountainhome Part Number.
 - The quantity processed.
 - The processor name and address.
 - The process name, specification number and revision that the parts were processed in accordance with, including (as applicable) class, type, and color per the drawing.
 - The processing date.
 - The signature of the quality representative from the processor.
 - The conspicuous identification of the use of Nadcap accredited processes (e.g., Nadcap watermark, text identifying the job as Nadcap accredited, etc.) for the special processes found in COL-ASQR-PRO-0003.



Revision History

Date	Revision	Section(s) Affected	Description of Change
3/24/2020	00	None	New Release of QP-001 with format changes
9/16/2020	01	All, document completely re-written	Changes were made to provide suppliers the specific flow down criteria required by AS9100 Rev D
07/01/2024	02	All, document completely re-written	Changes were made to several sections to better define our processes to our suppliers and remove any requirements that are now adequately covered under COL-ASQR-PRO-0003.

Document Sign Off

Prepared By & Date:
Safety Review and Date: N/A
Mfg. Engineering Review and Date:
Production Review and Date:
Quality Review and Date:

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