



PURCHASE ORDER QUALITY CLAUSES

Rev. B

R. A. Miller (RAMI) suppliers shall comply with the Quality requirements that are identified below when they are specifically included as Clauses or Attachments to the Purchase Order. All accompanying documents submitted to us by the supplier shall be of a nature which will allow legibility and reproduction.

QNR Quality Not Required: This note requires no Quality Management System or action by the supplier.

QS Quality System: The supplier shall maintain a documented Quality System Manual. Quality System records for the following must be retained for a minimum of 7 years (these records shall be made available to RAMI, its customers or regulatory agencies, upon request): Calibration, Inspection, Design, Nonconforming Material and Change Management.

The supplier shall require it's sub-tier suppliers to comply with RAMI's record retention requirements.

If specified, retention periods must comply with Q24.

Calibration Service - Suppliers of Calibration services shall maintain a Quality System in accordance with one of the following: ISO 10012, ISO 17025:2005, ANSI Z540-1.

Fastener Manufacturers must be 'Accredited Laboratories' and shall comply with the 'Fastener Quality Act (FQA), Public Law 101-592'.

Non Conformances - The supplier must notify the Buyer of product or process anomalies, and changes in product definition. All nonconformances to requirements shall be promptly reported to RAMI Purchasing.

Changes - The supplier must notify RAMI Purchasing if there are any changes to products that include but are not limited to 'Manufacturing Location, Process, Equipment, Sub-tier Suppliers or Base/Raw Materials'.

Flow Down - The supplier shall flow all applicable P.O. Quality Clauses (if any) to sub-tier suppliers.

Right of Access - RAMI, its customers, and regulatory agencies reserve the right of access to the supplier's facility at any reasonable time during performance of the Purchase Order.

Prohibited Materials - The use of unalloyed tin, cadmium or zinc is prohibited in the construction and surface finish of space hardware. Parts with tin alloys containing less than 98 % tin are acceptable. Parts containing cadmium alloys or zinc alloys (e.g. brass) must be completely over-plated with an approved metal. Parts shall contain no corrosive solder flux. Any exceptions to these prohibitions must be approved by RAMI in writing.

Q1 CERTIFICATE OF CONFORMANCE: The Supplier shall provide a-Certificate of Conformance with each shipment. The Certificate shall include as a minimum:

- Supplier's name and location
- Manufacture's name and location (if different)
- Date of Manufacture / **expiration if applicable**
- Date of Certification
- RAMI Part Number, Revision level, and Description
- RAMI Purchase Order Number
- Quantity
- Identification of the lot, batch, serial number **if applicable**.
- All required Governing specifications and revisions as specified on the RAMI Purchase Order and/or Material specification.
- All pages will be numbered using the following format: Page X of X.
- A statement of conformance indicating that all requirements have been met

Q2 CHEMICAL TEST REPORT - RAW MATERIAL: A test report must accompany each shipment. The report must indicate the actual percentage of each element that makes up the chemical composition properties of the



PURCHASE ORDER QUALITY CLAUSES

Rev. B

raw materials. The report shall specifically identify the material by indication of the number of the melt, batch, lot, or other designators, as well as the applicable specification and revision. All certifications must be issued from the OEM or a 17025 certified lab.

- Q2A PROHIBITED MATERIAL CERTIFICATION:** Certify per Q2 and provide an XRF or equivalent test or mill report. The report should quantify the prohibited materials. A statement that the supplied product either contains no prohibitive materials and or meets the specific limits of the prohibitive materials noted in Quality Clause QS.
- Q3 PHYSICAL TEST REPORT - RAW MATERIAL:** A test report must accompany each shipment. The report must indicate the actual physical properties of the raw materials. The report must specifically identify the material by indication of the number to the melt, heat, batch, lot, or other designators, as well as the applicable specification and revision. The suppliers name and address shall appear on the certificate. All pages will be numbered using the following format: Page X of X.
- Q4 DIMENSIONAL INSPECTION REPORT:** The supplier shall submit dimensional inspection acceptance data, identifiable to the material supplied, with each shipment made. Data is to include sampling plan (if applicable), actual dimensions, and quantities inspected, accepted and rejected. Unless otherwise specified, 100% inspection of all materials, notes, and features required on all parts. Sampling plan, if approved, must be specified in the RAMI Purchase Order Line Item Detail Notes. The suppliers name and address shall appear on the certificate. All pages will be numbered using the following format: Page X of X
- Q6 MATERIAL SAFETY DATA SHEET:** A Material Safety Data Sheet (MSDS) must accompany initial shipment made against this Purchase Order.
- Q7 MANDATORY INSPECTION POINT - Completed items:** require inspection and test verification by RAMI Quality at the Supplier's facility prior to shipment. Supplier shall provide 72 hours advance notice of activities to RAMI purchasing to permit scheduling of Source Inspection.

NOTE: Any source inspection by RAMI or its customer does not absolve the supplier of the responsibility to provide acceptable products.

- Q8 GOVERNMENT SOURCE INSPECTION:** Items are subject to Government Source Inspection at the Supplier's facility prior to shipment. On receipt of this order, promptly furnish a copy to the Government Representative who normally services your facilities, or, if none, to the nearest Defense Supply Agency Inspection Office. In the event the Office cannot be located, contact RAMI purchasing immediately.
- Q9 FIRST ARTICLE INSPECTION:** A First Article Inspection Report is required. A part representing the tooling and methods to be used shall be inspected by the Supplier, and documented in accordance with AS 9102 or the relevant RAMI material specification. The report must include dimensional and functional data as required. The First Article Inspection Report shall accompany prior to the first shipment. A new or revised First Article Inspection Report is required when a change in design, tooling, or methods of the production process occurs.
- Q10 FIRST ARTICLE INSPECTION-SUPPLIER'S FACILITIES:** A First Article Inspection Report is required. A part representing the tooling and methods to be used shall be inspected by the supplier, and documented in accordance with AS 9102 or the relevant material spec, and witnessed by a RAMI Quality Representative or designee. The report must include dimensional and functional data as required. Determination of Acceptability will be made by the RAMI representative and shall be noted on the report. A new or revised First Article Inspection Report is required when a change in design, tooling, or methods of production process occurs.



PURCHASE ORDER QUALITY CLAUSES

Rev. B

- Q11 SPECIAL PROCESS SUPPLIERS:** RAMI Suppliers and supplier Sub-Tiers who perform special processes or tests as identified below must assure personnel are qualified/certified as required. They shall include with each shipment:
- Supplier or Sub-Tier Certification and/or Test report identifying the specifications and revision to which they conform. Certification shall include;
 - o Name and location of the process facility
 - o Date of service
 - o RAMI Part Number, Revision level, and Description
 - o RAMI Purchase Order number
 - o Quantity
 - o Identification of the lot, batch, serial number if applicable.
 - o Materials used and Processes performed
 - o All required processing specifications and revisions as specified, see RAMI Purchase Order Line Item Detail Notes for specific requirement or relevant material specification..
 - o Supporting Test data, Oven Charts, Time/Temperature Charts, Point maps, Data Files, etc. as applicable.
 - o A statement of conformance indicating that all requirements have been met.
 - o Each page of the Test Report shall be numbered using the following format: Page X of X.

Examples of Special Processes are: Firing, Pyrolysis, Autoclave cure, Flame/Metal Spraying, Welding, Heat Treatment, Plating and Coatings, Etching and priming, Nondestructive Testing (i.e. Ultrasonic, Magnetic Particle, Dye Penetrate, and X-ray inspections, etc.), Environmental and Laboratory Testing, De-scaling, Bronzing, etc.

- Q11 SPECIAL PROCESS SUPPLIERS - Customer Approved:** RAMI Suppliers and supplier Sub-Tiers, who perform special processes or tests as identified in Q11, must be approved by RAMI's customer. Contact RAMI purchasing for a list of customer approved special process suppliers. Certification shall be per Q11
- Q12 PART IDENTIFICATION:** Minimum identification shall consist of the Manufacturer's part number, and trademark if applicable. If the part does not lend itself to stamping due to size, composition, etc., the container or tags shall bear appropriate identification. Parts manufactured to RAMI drawings shall be identified as specified on the drawings.
- Q13 CONTAINER IDENTIFICATION:** Supplier shall identify each unit and multiple over-pack container with the Part Number, RAMI P.O. #, Traceability number, recommended storage conditions, and hazardous warnings as applicable. If not otherwise specified, all items shall be protectively packaged to prevent contamination and damage during handling, shipping, and storage.
- Q14 HANDLING & PACKAGING:** When Purchase Order, drawing, and/or specifications do not otherwise specify, at a minimum all items shall be enclosed with wrappings, bags, cartons, boxes, or other container, as applicable to the extent necessary to provide protection from hazards of static electricity, contamination, and physical damage encountered in general handling, shipping, and storage. Material indirect contact with metal surfaces shall not cause or promote corrosion. Packaging material used shall be non-abrasive, chemically neutral (ph 6.5 to 7.5) and have a water-soluble acidity of not more than .02% equivalent sulfur trioxide.
- Q14A HANDLING & PACKAGING of CRITICAL HARDWARE -** The supplier shall provide a Critical Hardware plan indicating special precautions to be taken to meet Q14 on Critical Hardware.
- Q16 CUSTOMER FURNISHED MATERIAL –** Verify quantity received, paperwork matches, visual inspection for identification and possible transit damage.
- Q18 WEIGHT-**The supplier shall provide a weight report for each individual item procured on the PO. Traceability shall be maintained to all Part No's, serial/lot numbers, materials designations, and/or any other specified data/information.



PURCHASE ORDER QUALITY CLAUSES

Rev. B

- Q19 MATERIAL RETENTION:** The Supplier shall retain for a period of at least 12 months from the date of shipment, sufficient material of the same lot of each shipment to perform 2 sets of certifiable tests as required by specifications and/or drawings pursuant to this Purchase Order.
- Q20 CALIBRATION:** Supplier shall provide a calibration certificate. The calibration standards used shall be traceable to NIST or other standard.
- Validity of previous inspections shall be recorded when adjustment to a gage is necessary. Gages requiring MSA studies must be <10%. Results between 10% - 30% require documentation explaining the continued use of the gage. No calibrated instruments are to be used where the results are > 30%.
- Q21 STATISTICAL PROCESS CONTROL:** Statistical Process Control (SPC) techniques must be used on *Key Characteristics* on this part. See RAMI Purchase Order Line Item Detail Notes or RAMI material specification for specific requirement.
- Q22 LIFE LIMITED MATERIAL:** The Supplier shall identify the material and the Certificate of Conformance with the date of expiration, including (if applicable) out-time requirements. At the time of shipment, at least 90% of the Shelf Life must be remaining. Life Limited Materials shall be packaged to assure required storage temperatures and life limited requirements are not adversely affected by the transport and/or interim storage prior to deliver. When required by specification, temperature recorders shall be included.
- Q23 MATERIAL CERTIFICATIONS:** Supplier shall provide a Certificate of Conformance for all raw materials purchased from a sub-tier used in deliverable items to RAMI. See RAMI Purchase Order Line Item Detail Notes or RAMI Material Specification for specific requirement.
- Q24 ADDITIONAL RECORD RETENTION REQUIREMENTS:** Supplier records must be retained for 30 years minimum with regard to any test/inspection points. Records shall be available for review by customers and regulatory authorities
- Q25 RAMI has incorporated this material into the Counterfeit Part Risk Mitigation Program to address know risk of receiving suspect/counterfeit material. This material can only be procured from the OCM/OEM or one of its Authorized Distributors. The supplier shall provide the required documentation in accordance with RAMI procedure SOP 018 Counterfeit Parts Procedure**



PURCHASE ORDER QUALITY CLAUSES

Rev. B

REVISION HISTORY

REV	CLAUSE	DESCRIPTION	DATE	APPROVED BY
A	N/A	Initial Release	4/22/11	Richard Conaway
B	Q25	Added Counterfeit Parts reference	9/1/17	Eric Zattlin

REQUIRED CLAUSES

PRODUCT/SERVICE	STANDARD CLAUSES	SPECIAL CLAUSES (As Applicable)
Generic Program P.O.'s – Unless QNR is Specified	QS, Q1, Q13	Q14
Fastners (MS, NAS Parts etc)	QS, Q1, Q13 & Q14	Q14A, Q2A
Machining/Machined Details	QS, Q1, Q4, Q13, Q14, and Q23	Q2, Q2A, Q3, Q7, Q7A, Q9, Q10, Q12, Q14A, Q18
Special Processes	QS, Q11, Q13 and Q14 - Q11 is often Added to Machined Detail Clauses	Q2A, Q7, Q7A, Q9, Q10, Q14A
Tooling	QS, Q1, Q4, , Q23 – Q4 & Q23 are often waived on minor tool orders.	Q2, Q2A, Q3, Q7, Q7A, Q14, Q14A, Q18
Testing	QS, Q11, Q13 and Q14	Q7, Q7A, Q14A
Life Limited Materials (Adhesives, etc)	QS, Q1, Q13, Q14, and Q19	Q6, Q23, Q14A
Primary Raw Materials *	QS, Q1, Q6 and Q23	Q2, Q2A, Q3, Q19,
Chemicals	QS, Q1, Q6 and Q23	
Calibration & Thermocouples	QS, Q20	