

SQE010 – Purchase Order Quality Notes

Owner: Supplier Quality Engineering		Rev. DE
Requirements: AS9100 Element: 7.4.2		
References: n/a		
Purpose: Defined quality requirements for purchased production items		
Scope: Korry purchase order		
A P P R O V A L S	Major:	
	Supplier Quality Assurance, Purchasing Manager	
	Significant:	
	Supplier Quality Assurance	
V A L S	Minor:	
	Quality Assurance (QA) Coordinator or Supplier Quality Assurance	

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Q1 Control of Quality

The Seller shall maintain a registered quality system that complies with the specifications of AS9100, ISO 9000, ISO 13485, or ISO 16949.

Sellers without registered systems shall submit to review by Korry Supplier Quality Engineering to determine the adequacy of processes.

Compliance to seller specifications does not relieve the seller of the responsibility to furnish acceptable supplies or services.

The Seller shall maintain ~~a~~

- A Foreign Object Debris/Damage (FOD) prevention Program compliant with NAS 412.
- A Counterfeit Prevention Program compliant with AS5553 if providing electronic assemblies and/or components (current revision).
- The Seller shall retain all quality records for a minimum of 11 years from PO delivery date.

Q2 Report of Discrepancy

Deviations from drawings, specifications, or procurement requirements require Korry approval prior to shipment. Suppliers must obtain a documented waiver from their respective supply chain representative. Supplier shipping documentation must reference Korry waiver number, Purchase Order number, and Purchase Order line number. A copy of the approved waiver must accompany the affected shipment.

Korry approval of a deviation does not absolve the supplier of responsibility or ensure Korry's acceptance upon receipt.

NOTIFICATION OF ESCAPE – If a Seller finds any non-conformance, which has any effect on delivered product quality or reliability, Seller shall submit a disclosure report to Korry within 24 hours.

The disclosure report shall include the following information:

1. Description of the non-conformance.
2. Part number and Traceability numbers which identifies the non-conforming parts (e.g. Serial number, Lot or Batch number).

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3. Delivered quantity.
4. Containment efforts taken and immediate corrective action proposal. In addition, the Supplier shall report root cause and corrective action to Korry as soon as possible or within mutually agreed time frame.

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Q3 First Article Inspection & Key Characteristic Control

KORRY ELECTRONICS CO requires that all First Articles are fully compliant to AS9102. First-article samples must be accompanied by the supplier's first-article inspection report, showing results of actual measurements, tests, and applicable drawing notes.

New Parts (the first time a supplier is building a specific part) require inspection of ALL characteristics and notes.

FAI report must be included with the affected shipment unless submitted via Net-Inspect.

FAI report must be submitted via Net-Inspect (www.net-inspect.com) if the order is procured as part of a Boeing Commercial Aircraft contract and the supplier has been so notified. Korry always prefers FAI reports be submitted via Net-Inspect.

The FAI report must have "Korry Electronics Co. – Everett" selected as the customer or it will not be accepted as a Net-Inspect submitted FAIR.

Per AS9102 the following Seller-initiated scenarios require re-performing the FAI:

1. Change in the process (sources, inspection methods, tooling, materials, locations)
2. Change in the control programs (CNC, test software, other programs that control the manufacture of the article)
3. Natural or man-made event (fire, flood, sabotage)
4. Production lapse of two or more years

If this is the first time build or a design change then a AS9102 FAI is required.

When re-performing the FAI it is acceptable to conduct a partial-FAI checking only the affected characteristics. Note that partial-FAI reports should reference the previous full FAI report.

The first article samples are to be tagged or otherwise identified. Material certifications for any raw material used and certifications for all outside processes must also be submitted with FAI report.

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Drawings with Key Characteristics flagged shall be managed by the Seller in a process compliant with AS9103. Key Characteristics are identified by the following drawing symbol:



KEY

Records of Key Characteristic control will be periodically reviewed by Korry Supplier Quality. Submission of records with the shipment may be required by additional note on the Korry Purchase Order.

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Q4 Chemical and Physical Test Reports

All purchase orders for chemicals must be accompanied by one legible and reproducible copy of all chemical and physical test reports. The report must contain the signature and title of the authorized representative for the agency performing the test and must conform to specifications. The purchase order number must be included on the report.

Q5 Functional Test Reports

Functional test reports are required per the purchase order, the shipment must be accompanied by a legible and reproducible copy of the actual test results identifiable with the test parameters and products submitted. These reports must contain the signature and title of the authorized representative for the agency performing the test and must conform to specific requirements.

Q6 Printed Circuit Boards

A potted microsection reflecting complete manufacturing processes performed must be retained as a record for each lot of new date coded boards.

Q7 Product Identification and Traceability

The Seller shall maintain traceability records of product during all production processes from Seller's material receipt to Korry's delivery. Seller's records shall include the material certs from their sub-tier suppliers.

The Seller shall establish and maintain documented procedures for unique identification of individual product serial or lot numbers and their revision or other configuration identifier.

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Q8 Certificate of Conformance Including Mil Spec Parts

Each shipment must be accompanied by one legible copy of a Certificate of Conformance (C of C). The purpose is to certify that the supplier's material, processes, and finished parts were controlled, inspected and tested in accordance with the applicable specifications. If a signed copy of the "Supplier Statement of Quality" is on file, a C of C is not required with each shipment; however, the C of C must be available upon request.

By signing the C of C the seller is attesting that articles provided to Korry are not counterfeit or suspect and that all accompanying documents are truthful and accurate.

Mil Spec Parts require traceability back to a vendor who is on the QPL.

All Electronic Components, off the shelf material, processes, and raw materials supplied to KORRY ELECTRONICS CO for the item delivered, must be traceable to the Original Manufacturer, and acquisition traceability as identified on the Purchase Order or KORRY ELECTRONICS CO Bill of Materials.

Copies of these certifications and acquisition traceability ARE REQUIRED TO ACCOMPANY all shipments from Distributors.

If the Seller uses multiple production lots to fulfill the order each will be separately identified. The Seller shall not represent multiple lots as a single lot.

Parts and Assemblies delivered to KORRY ELECTRONICS CO shall not include Restocked Electrical Components.

The C of C shall include the following data elements at a minimum:

1. Name and address of manufacturer
2. Purchase Order Number
3. Part number and revision
4. Lot number or serial number(s)
5. Quantity delivered
6. Date of Manufacture or Date Code
7. Signature, Title and date of the authorized quality representative of the issuing organization

8. QPL Vendor for Mil Spec Parts

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Q8 Certificate of Conformance for Calibration Vendors

Calibration vendor certifies the following:
Quality Management System conforms to
AS9100 or ISO 9001,
ISO/IEC 17025,
and ANSI/NCCL Z540-1 or Z540-3

All calibrations performed are (1) traceable to NIST; (2) obtained from independent reproducible standards derived from acceptable values of natural physical constraints; or (3) derived from the ratio type of self-calibration techniques.

Calibration C of C shall record the following at a minimum for each asset calibrated:

1. Asset number: Unique number identifying the individual equipment.
2. Date calibration was performed.
3. Calibration interval in weeks.
4. Date T&ME item will be due for calibration.
5. List of standards used to perform calibration.
6. Temperature at which calibration was performed.
7. Percent humidity at which calibration was performed.
8. Calibration facility/source performing calibration.
9. Unique number identifying the calibration certificate.
10. Calibration technician's identity.
11. This is the Time required to complete calibration process.
12. Date and serial number of out-of-tolerance report, if required.
13. OUT OF TOLERANCE NOTES/CALIBRATION NOTES: Comments relative to the calibration performed including actual measured value for out of tolerance condition.
14. SEALS O.K.: "Y" or "N" indicating whether the item was received with tamper seals intact
15. Number identifying the calibration procedure used.
16. REV: Current revision of the calibration procedure.

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Q9 Preservation and Packaging - Basic

Unless otherwise specified by the item drawing, specification, or Purchase Order, Packaging shall meet the following:

The seller is responsible for assuring that all items are delivered without damage or deterioration and are efficiently and economically packed for the method of transportation and type of handling involved.

Identification - Each shipping container and intermediate package shall be identified with:

- Purchase Order number
- Part number
- Quantity
- Electro Static Discharge (ESD) sensitive warning (when applicable)
- Cautionary Handling Instructions (as applicable)

Q10 Right of Entry

The supplier shall allow KORRY ELECTRONICS CO and KORRY ELECTRONICS CO's customers and regulatory agencies to determine and verify the quality of work, records and material at any place, including the plant of the supplier and its subcontractors. The supplier agrees to provide reasonable assistance to these efforts.

Q13 Identification of Shelf Life

Seller must identify each item, package, or container of shelf life material with its cure or manufacture date, expiration date, and any special storage and handling conditions in addition to the standard identification requirements.

The supplier must certify that a minimum two thirds of the useable shelf life is available at time of delivery or obtain prior approval in the form of a modified purchase order from Korrry prior to shipment.

This expiration date information shall also be recorded on the C of C.

This requirement also applies to any manufactured item sold which contains uncured Shelf Life Materials (examples include cut PSA, or applied but uncured adhesives).

Note: many old extended descriptions call out Q-note Q13A or possibly Q13B. Interpret Q13A and B as Q13.

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Q14 Certified Supplier

Items on this purchase order are subject to the requirements of the KORRY ELECTRONICS CO Dock to Stock Certified Supplier Program. Supply Agreement Certification requirements apply to this purchase order. Shipping documents shall show evidence of the shipment being a Dock to Stock Certified Supplier Shipment via the authorized dock to stock acceptance “star” stamp.

Note: the Seller is responsible for administering the star stamp usage at their site. The person applying the star stamp is certifying that the Seller’s product conforms to Korry PO and technical requirements.

When conforming to Q3 (First Article Inspection), Seller will NOT use the KORRY ELECTRONICS CO Quality stamp on Certificate of Conformance, packing list, or any other provided documentation. KORRY ELECTRONICS CO Receiving Inspection shall be the sole authority for final approval.

Q15 Product Obsolescence Requirements

As an approved KORRY ELECTRONICS CO supplier, you are required to notify KORRY ELECTRONICS CO if a part listed on this order or any of its material components, are planned for obsolescence by you or your sub-tier suppliers. All efforts must be made to keep KORRY ELECTRONICS CO informed of the future viability of the item(s) listed on this order.

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Q16 Traceability (multi-level)

The Seller of any assembled product shall maintain traceability records of all purchased items and materials utilized in the creation of said assembly.

The Seller shall be able to trace backward from the shipment to Korry through each level of test and integration back to each lot or serial number (as applicable) of purchased items and materials.

On request, the Seller shall provide:

- The purchased component name
- Component part number
- Component revision
- Reference designator(s)
- Quantity used per assembly
- Lot number(s) or serial number(s)
- Certificates of Conformance tracing back to the OEM for each component. Suppliers are required to provide OEM traceability within 48 hours of request. OEM packslips/documentation that include component traceability/lot code details are acceptable in lieu of OEM Certification. Component traceability must provide complete chain of custody through delivery to KORRY ELECTRONICS CO

The Seller's traceability system must account for all components that require replacement past initial installation. The traceability must be maintained throughout the manufacturing process from work order launch to shipping to Korry Electronics.

In addition to the component traceability, the Seller shall, upon request, provide all necessary processing history for the assembly in question. This shall include process name, date and time, location, and operator ID of the personnel performing the process function.

The Seller's traceability records shall provide adequate documentation to determine the exact configuration of the product shipped to Korry.

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Q17 Contract Manufacturer Key Performance Indicators

The Seller shall:

- Have a documented process to assure components perform
- Have a documented process to identify and record component replacements
- Have a documented process to identify and correct component replacements that are indicative of replacement trends, equipment needing repair or other potential component problems
- Reports of component replacements and corrective actions shall be submitted to the buyer at least quarterly

This data will be used at Korry to show compliance to our Electronic Components Management Plan (ECMP) and meet the requirements of TS 62239, IEC (shown here for reference only):

4.5.3 Plan owner in-house continuous monitoring

The plan owner shall have a process to assure the required performance of components prior to delivery of the equipment. This process includes various levels of processing, assembly and test of the equipment.

A process for identification, recovery and recording of component removals or replacements during in-house processing and testing shall be documented. Significant component replacement trends, equipment repair actions or a pattern of component replacements that are indicative of a potential component problem shall be investigated to determine the root cause. Appropriate corrective actions shall be conducted.

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Q18 Preservation and Packaging for Electronics

Unless otherwise specified by the item drawing, specification, or Purchase Order, Packaging shall meet the following:

The seller is responsible for assuring that all items are delivered without damage or deterioration and are efficiently and economically packed for the method of transportation and type of handling involved.

Identification - Each shipping container and intermediate package shall be identified with:

- Purchase Order number
- Part number
- Quantity
- Electro Static Discharge (ESD) sensitive warning (when applicable)
- Cautionary Handling Instructions (as applicable)

Electronic components preservation requirements

(Applicable to manufacturers of circuit card assemblies, integrated electronic assemblies and any Seller of electronic components)

- The Seller shall manufacture products per J-STD-001 and inspect per IPC-610 (current rev) class as directed by drawing.
(If the drawing is silent then the Seller shall use Class 3)
- The Seller shall maintain a FOD control plan per NAS 412.
- The Seller shall assure that the shipping, handling & storage, manufacture, test, rework and repair processes for products have no short or long term quality or reliability impact.
- The Seller shall maintain an ESD Control Program compliant with an industry recognized standard such as MIL-HDBK-263, ANSI S20.20, or IEC 61340-5-1
- The Seller shall assure that moisture sensitive components are processed in accordance with IPC/JEDEC J-STD-20

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Q19 Flowdown of Supplier Quality Requirements

The Seller is responsible to flowdown key provisions of the Korry supplier quality system requirements to their suppliers for items purchased in support of Korry orders. The key provisions to flowdown to the Seller's suppliers are:

1. Q1 - Control of Quality
Supplier must have a registered quality system (AS9100 or ISO9000).
Supplier must have a Counterfeit Control Program compliant with AS5553,
Supplier must have a FOD control program compliant with NAS 412.
Supplier must retain quality records for a minimum of 11 years.
2. Q2 – Report of Discrepancy
Supplier must submit deviations to the Seller.
Supplier must notify seller of quality escapes.
3. Q3 – First Article Inspection & Key Characteristic Control
Supplier must comply with AS9102
Supplier must comply with AS9103
4. Q7 – Identification and Traceability
Supplier shall maintain documented procedures for identification of product from receipt and during all processes of production and delivery. Supplier shall establish and maintain documented procedures for unique identification of individual product or batches; this identification shall be recorded.
5. Q8 – Certificate of Conformance
Supplier must provide a signed C of C traceable to the specific lot or serial number provided to the Seller.
Supplier must certify that articles provided are not counterfeit or suspect and that all accompanying documents are truthful and accurate.
6. Q9 – Preservation and Packaging
Supplier must identify and package articles to assure they are free of damage and deterioration.
Supplier must assure that their processes do not cause damage or deterioration to the articles they provide from
-shipping, handling, storage,
-manufacturing, test, rework or repair,
-ESD, or
-Moisture sensitivity

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Q20 Flowdown of Electronics Component Management Plan requirement

The Seller shall develop and comply with an electronic component management plan (ECMP) that meets the applicable requirements of TS 62239 (current revision).

This quality note is considered satisfied if this supplier meets the requirements of D35524-001 Subcontractor Assembly Facility Requirements Flowdown per ECMP for Korry Electronics Co. either by developing an internal procedure that complies with it or by adopting D35524-001 as the Supplier's ECMP.

A copy of the D35524-001 (current revision) can be found on this web page:

<http://www.esterline.com/controlsystems/KORRY/SupplierInformation.aspx>

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Q21 Special Requirements for Distributors

Korry limits procurement from distributors to Authorized Distribution only.
Korry defines a distributor as authorized* if they are listed as such on the web site:
<http://www.sourceesb.com/>

Korry specifies the OEM source. The Seller acting as a distributor (or value-added distributor) must be identified as authorized by sourceesb.com for that OEM to meet the requirement of this Q-note. The Seller must not substitute other equivalent but not Korry-specified OEM sources.

Korry may authorize specific distributors to act as an extension of the Korry purchasing department. These "Korry Authorized Distributors" are verified by on-site audit. Authorization is reviewed and renewed annually. Korry Authorized Distributors are allowed to source parts from the original manufacturer or from the manufacturer's authorized distributors (only) on behalf of Korry.

The seller of complex assemblies which contain purchased parts acquired from distribution must adhere to the same restriction on use of distributors as Korry. The seller must source components and materials from the Original Manufacturer, Authorized Distributor, or Korry Electronics Co. (only).

Sourcing from other non-authorized distributors is considered brokering.

Sourcing from distributors who buy from other distributors (multiple handoffs beyond OEM) is considered brokering.

If Korry finds evidence or suspicion of brokering then this will likely lead to the Seller's removal from Korry's approved supplier list.

The only exception to this brokering rule is for Purchase Orders accompanied with a PUR 004 Purchase Order Waiver for Use of Non-Authorized Distributor.

*Note: the term "authorized" (approved by OEM) rather than "franchised" (special business relationship with OEM) is used in this Q-note for the purpose of consistency with the evaluation website www.sourceesb.com .

Record of Revision History

Date YYYY-MM-DD	Revision	Description	Approved By (sign and date current rev)
Prior	none	Various.	Ken Thornock
3/1/13	None	Added Q17, key performance indicators for contract manufacturers.	Jack Lee
9/6/13	A	Reformat. Q1: clarified requirements for suppliers who lack registered quality systems. Q3: clarified requirements for AS9102 conformance. Q6: removed reference to "for military orders only". Apply Q6 to any time included on purchase order. Q8: clarified purpose of certificate of conformance signature. Listed minimum data requirements. Forbade representing multiple lots as a single lot. Q13A: added allowance for shipping with less than 2/3 of shelf life if PO modified. Q16: updated language allowing use for any subcontracted electronic assembly. Q18: (new) Preservation and packaging for electronics Q19: (new) Flowdown of Korry Supplier Quality Requirements to sub-tier suppliers.	Jack Lee
2/24/14	B	Added "not technical data" footer	Jack Lee
3/22/14	C	Q19: added requirement to flowdown the AS5553 compliant counterfeit plan to the Seller's sub-tier suppliers Q20: (new) TS62239 compliant electronic component management plan In Minor approval block titles, replaced Stamp Control Authority with Supplier Quality Assurance.	Hal Verrell Shirley Bailey
9/18/14	D	Q1: added AS5553 requirement. increased record retention interval to 11 years. Q3: added AS9103 requirement. Added Net-Inspect. Q8: removed exceptions for distributor CoC submittal and for restocking. Added that signature must be Quality representative. Q13: simplified into a single note (combined part A & B) Q5, 7, 16: tweaked wording for clarity. Q17: rewritten for better TS62239 compliance Q18: added J-STD-1/IPC610 class 3. Q19: moved AS5553 to Q1, added AS9103 to Q3, deleted Q20 reference. Q20: removed redundant AS5553 reference. Q21: (new) Special Requirements for Distributors	Jack Lee

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<u>3/2/2016</u>	<u>E</u>	<u>Q1: Added ISO16949 and 13485, clarified AS5553</u> <u>Q2: Updated requirements for Deviation Requests</u> <u>Q8: Added Mil Spec Requirements (traceability)</u> <u>Q16: Added OEM Certification Retrieval Time</u>	<u>Shaun Wurzner</u> <u>3/2/2016</u> <u>Mike Hughes</u>
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