



*An ESCO Technologies Corporation*

# **SUPPLIER QUALITY REQUIREMENTS**

**SQR - 9000**

**Revision Z**

# Record of Revisions

Rev.	Description	Approved By	Date
N/C	Major Revision	S. Harbison	3/29/1996
A	Revised for clarification; added approval signatures	M. Boas	6/15/2000
B	Revised supplier scoring; corrected typos; added reference to AS 9102 (FAIR)	M. Boas	2/17/2003
C	Revised as noted to align with AS 9100, Section 1 requirements	M. Boas	12/21/2003
D	Revised as noted to better meet intent of AS 9100, Section 1 requirements; expand Quality Assurance Clauses and refine Supplier Performance Rating system.	M. Boas	2/18/2004
E	Expanded Quality Assurance Clauses and refine Supplier Performance Rating system.	M. Boas	4/06/2004
F	Added reference to AS9100; Self-Release guidelines and FAIR format requirements	M. Boas	8/10/2005
G	Expanded QC 9 to better define requirements.	B.Bellingham	12/8/05
H	Updated referenced sampling specification. Included reference to WI3200.1	B. Bellingham	10/05/06
I	Revised Supplier Performance Categories. Re Para 5.3 Added Crissair, Inc. customer approved sources to Para 3.10 Updated guidelines for Self Release Delegation to Para 3.7.1	B. Bellingham	03/28/07
J	Added re-evaluation definition.	J. Miconi	6/30/2009
K	Added "All material shall be compliant with Specialty Metals Act, DFAR 252.225 unless otherwise specified on the Purchase Order."	J. Miconi	7/22/2009
L	Added "The supplier shall maintain an effective FOD prevention program, to prevent delivery of contaminated hardware" In Policy Section. Added Crissair De Mexico C of C requirement. Removed various revisions, added "...as Revised". Corrected various formatting errors.	J. Miconi	4/20/2010

Rev	Pg	Description	By	Date
M	3,4,	Removed 3.7.1 Self-Release Delegation QAC Clause 2 amended Crissair De Mexico uses.....of Conformance	J. Miconi	5/7/2010
N	-	Removed Quality Clauses and incorporated into the procedure, moved and revised AS9102 FAIR requirements to para 3.5, consolidated inspection requirements, moved Chemical and Physical test Reports requirements to para 3.5, added charge for rejected material para 3.11.1, removed sampling data requirements, para 4.0, Right of Access condensed to para 3.3, pg 9 and last changed 30 days to 15, revised Table of Contents	J. Miconi	5/11/2010
O	6th and last	Para 3.1 Added ...sub tier suppliers are required to flow down all product requirements to their sub tier suppliers as flowed down by Crissair. Added VDR Form	J. Miconi	7/20/2010
P	9	Changed page 9 and page 13 from 15 days to 30 days. Added Revision to cover page.	J. Miconi	10/11/2010
Q		Para 2.0 Add access to records, Remove AS9003, clarify quality system vs inspection system, added: Pages 6 & 7 added: Inspection and Tests Crissair will allow its Customers, FAA and Regulatory agencies to: a) Inspect its quality system, facilities, technical data, and manufactured products or articles; b) Witness any tests including any inspections or tests at any supplier facility (within supply chain) necessary to determine compliance with the applicable subchapter. c) Crissair will ensure access and cooperation of all involved facilities in the supply chain for themselves or their representatives. Page 6 Nonconforming Material escapes that affects safety or reliability must be reported to Crissair in within 48 hours.	J. Miconi	6/14/2011
R	All	Remove NDT requirement . Re-numbered paragraphs 3.0 thru 4.4. Updated Table of Contents.	J. Miconi	4/11/12
S	5, 7, 9, 13	Added to 2.0 "AS6174", <b>REMOVED ANNUAL TESTING REQUIREMENT?</b> , added DFAR Nos., para 3.7 clarified "Procurement Control", Supplier Performance, removed "fifteen", added "thirty" two places.	J. Miconi	10/30/12
T	7 and 10	Removed from para 3.4 requirements for additional testing of raw materials. Removed from para 3.9.1 "A Certificate of Conformance must accompany each shipment." Added at end of sentence, "when applicable." Added to para 3.9.1 Non-production parts e.g. tools, machine bits, supplies, etc. do not require Certification of Conformance unless otherwise specified on purchase order.	J. Miconi	4/30/2013
U	ALL	Added sections after par 3.7 "Counterfeit Part Prevention" and "FOD Prevention Program" Changed Par numbers on Par 3.8 to 4.4 Updated table of contents	D Courtney	8-15-13
V	7	Modified Par 3.4 to reflect changes in DFAR document numbers. Was DFAR 252.225-7009 & 7014; IS DFAR 252.225-7009 only Removed attachment 1 Add not to request form from contract rep	D Courtney	3-18-14
W	All	Revised for relocation	A Romero	11-26-2014
X	5	Updated paragraph 1.0 to include applicability. Updated paragraph 2.0 Policy to include REACH requirement.	M. Dotter	02/02/2015
Y	5-9	Par 2.0 deleted & merged verbiage into specific requirement paragraphs Par 3.3 Added industry Spec requirements Par 3.5 Added REACH requirement from para 2.0 Par 3.6 Added Calibration requirement Par 3.7 Clarified wording and reformat <b>Par 3.11 Added reference to NAS 412 FOD requirements</b>	D Courtney	2/24/15

Z	9	Updated 3.12.3 to include mistake proofing	C. Dunnagan	4/28/2016
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1. **SCOPE:**

This document defines the quality system requirements necessary for inclusion on the Crissair, Inc. Approved Supplier List for each independent supplier as well as standard requirements imposed through the Crissair purchase order. The general requirements contained in this document are applicable to Crissair purchased production materials, components, assemblies, suppliers, and processes that become a part of the product that Crissair delivers to its customers. These requirements do not apply to purchases of tools, services, and materials such as shop wipes, cleaning solutions, abrasive wheels, equipment lubricants, tapes, etc that do not become a part of the delivered product.

2. **Deleted**

3. **GENERAL SUPPLIER REQUIREMENTS:**

Any procedure, specification, regulatory standard etc. listed or stated herein, the revision status will be "as revised." Unless otherwise specified by drawing and/or customer requirements, Crissair Workmanship Standards apply.

The following paragraphs define the requirements necessary to correctly execute purchase orders issued by Crissair, Inc. The supplier shall maintain an effective Quality Inspection System commensurate with the size, complexity and core competency of the facility and product being manufactured. The system shall clearly define the suppliers' organization and establish a direct relationship between Quality Control and executive management.

- Notify Crissair in writing within 30 days if the quality system certificate is suspended or revoked.
- Notify Crissair in writing 30 days prior of any changes in product, processes, sub-tier-sources, or facility location.
- Notify Crissair in writing within 30 days of any major changes in management or in the quality system

3.1 **Purchase Order Review:**

The supplier shall have a system in place that addresses review of Crissair, Inc. purchase orders and changes thereto. Evidence of purchase order review shall be documented. The review shall ensure that all materials submitted to Crissair, Inc. are in conformance with Crissair, Inc. purchase order requirements. Sub tier suppliers are required to flow down all product requirements to their sub tier suppliers as flowed down by Crissair purchase order.

3.2 **Terms and Conditions:**

By the acceptance of work associated with each purchase order constitutes acceptance of all terms and conditions within this document.

### 3.3 **Documented Procedures:**

The supplier's quality system shall be controlled by written procedures that meet the intent/requirements of ISO 9001, AS9100, NADCAP, ISO 17025, ISO 10012-1 or ANSI 2540 and provide for compliance with Crissair, Inc. purchase order requirements. These written procedures and instructions shall address the following important areas/items:

- All inspection requirements and acceptance criteria shall be documented under specific established procedures.
- Inspection records shall be maintained throughout the supplier's system (incoming through shipping). These records shall reflect the type of inspection performed, the number of pieces inspected from the lot, and shall document any discrepancies observed. A Final Inspection Record (format may be of supplier's choosing) shall be included with delivery of material.
- A method of identifying inspection status of products by using stamps, tags, routing cards, labels, or other means of control shall be utilized.
- A corrective action program that includes notification of discrepancies to subcontractors and customers is to be in place.
- Accepted, rejected, or withheld materials shall be identified and segregated.
- Nonconforming Material escapes that affects safety or reliability must be reported to Crissair in within 48 hours.

### 3.4 **Right of Access:**

The supplier shall allow Crissair representatives, its customer representatives, and/or the US government or regulatory agencies to access their facilities for the purpose of evaluating the supplier's conformance to contractual requirements. This right of access clause shall be flowed-down by the supplier to its sub-tier sources.

Including but not limited to:

- a) Inspect its quality system, facilities, technical data, and manufactured products or articles;
- b) Witness any tests including any inspections or tests at any supplier facility (within supply chain) necessary to determine compliance with the applicable subchapter.
- c) Crissair will ensure access and cooperation of all involved facilities in the supply chain for themselves or their representatives.

### **3.5 Raw Material Control:**

Adequate procedures, instructions, and facilities shall be established for controlling the inspection, handling, storage, and issuance of all raw materials. These controls shall be maintained from the time of receipt of the material until delivery to Crissair, Inc. and shall prevent damage, deterioration, loss or substitution.

The supplier shall require that material test reports are furnished with procured raw material. All material shall be compliant with Specialty Metals Act, DFAR 252.225-7009 and the requirements of **REACH** (Registration, Evaluation, Authorization and Restriction of Chemicals). The details of these requirements can be found at [www.acq.osd.mil/index.html](http://www.acq.osd.mil/index.html) & [www.echa.europa.eu](http://www.echa.europa.eu).

Chemical and Physical Test Reports- Suppliers furnishing material must submit, with the shipment, a single copy of the certification showing evidence of chemical and physical compliance with the applicable specification. **Copies must be legible.**

#### **3.5.1 Control of Crissair Inc. Furnished Materials, Parts, or Tools:**

The supplier is responsible for inspecting the material/products to determine conformance to specification. Any discrepancies of furnished materials and/or products such as damaged and/or lost shall be documented and immediately communicated to the Crissair, Inc. purchasing department.

### **3.6 Calibration**

The supplier shall have and maintain a calibration system compliant to ISO 17025, ISO10012-1, or ANSI Z540

### **3.7 Inspection Requirements**

#### **3.7.1 Final Inspection**

The supplier shall provide clear and complete instructions for performing final inspection. All applicable specifications, instructions, and drawings relative to the job shall be available to the inspector at the time of final inspection. The final inspection shall include all drawing dimensional characteristics and notes that are applicable.

Final Inspection shall be documented on a form that addresses the inspection findings and details non-conformances as a minimum (format may be of supplier's choosing). A copy of the final inspection form shall be included with each lot of parts shipped. Shipments received without this data (e.g., inspection sheets and/or certifications) will be held in Receiving Inspection until the data is received.

#### **3.7.2 Sampling Inspection:**

Unless otherwise specified in the purchase order, sampling inspection of manufactured material is permissible. Sampling inspection shall be conducted per ANSI/ASQC Z1.4 as revised previously MIL-STD-105, Level II, Single-Normal with acceptance based on "C=0" (accept no defectives) at final inspection.

#### **3.7.3 Receiving Inspection:**

The supplier shall inspect incoming material to ensure conformance to specification requirements and suitability for use. **Use of Crissair, Inc.-supplied materials, tools or gages does not waive this requirement.** This inspection shall be documented.



### **3.8 First Article(s)**

Suppliers are required to perform a First Article Inspection Report (FAIR) and document the results in accordance with AS9102 requirements.

Supplier must have a current FAIR on file and available to Crissair at **all times**.

When a first article inspection is conducted, a copy of the First Article Inspection Report (FAIR) shall be included with the shipment of parts. Format for this report shall be to the requirements of AS 9102. A tag shall be affixed to the inspected "First Article" part and shall be included with the shipment.

### **3.9 Outsourcing**

The supplier shall not outsource any process-work from any Crissair purchase order without written authorization from a Crissair Quality representative with following exceptions: broaching, honing, grinding, and lapping. When such sources are authorized by Crissair, the source shall be an approved Crissair supplier, or the supplier must have documentation of supplier evaluation on file that meets AS9100. In addition, the supplier shall flow down to the requirements of the purchase order and this document as requirements of the purchase agreement.

### **3.10 Counterfeit Part Prevention:**

In accordance with AS6174 the supplier's quality system shall provide the necessary procedures and practices to:

1. Maximize the availability of authentic material
2. Procure materials from reliable approved sources
3. Assure authenticity and conformance of material by methods such as Certification, Traceability, Testing and Inspection
4. Control any material identified as counterfeit to prevent them from entering the downstream supply chain
5. Report suspect or confirmed counterfeit materials to potential users and the authority(s) having jurisdiction

### **3.11 F.O.D. Prevention Program:**

The supplier shall have procedures and practices in place to control, prevent, detect and remove any FOD on the supplied material(s). These procedures and practices shall meet the intent of the requirements found in NAS 412.

### **3.12 Non-Conforming Material:**

The supplier's system shall provide for control of non-conforming material, including procedures for its identification, segregation, notification, and disposition. Any materials found non-conforming are the sole responsibility of the supplier including the cost to rework material furnished to make it compliant. Supplementary instructions defining specific additional purchase order requirements will be invoked when applicable.

### **3.12.1 Non-Conformance found by Crissair, Inc.:**

Non-conforming material found by Crissair, Inc. will be reported to the supplier on a serialized Material Rejection Report (MRR) form. Each Material Rejection Report (MRR) shall carry a \$100.00 charge to the supplier. When returning reworked material to Crissair, Inc., the MRR number shall be referenced on the packing slip and a copy of the MRR shall be attached to expedite handling at Crissair, Inc. When a Corrective Action statement is required it shall comply with the Crissair Corrective Action requirements.

### **3.12.2 Crissair Deviation Request (CDR):**

The supplier may submit a Deviation Request prior to shipment of hardware whenever either of the following conditions occurs:

- The supplier's inspection reveals discrepancies that cannot be reworked.
- The supplier is unable to produce the article to specification requirements due to drawing errors.

The Deviation Request shall not be used to document obvious scrap or to request acceptance of material that can be reworked to specification requirements. The supplier shall not use a Deviation Request as a substitute for corrective action. Effective corrective action must be documented on each Deviation Request.

The recommendation and dispositions of the Crissair, Inc. Material Review Board applies only to the quantity specified on the Deviation Request and is not authorization for acceptance or shipment of future non-conforming products. Repetitive Deviation Requests are not to be submitted against an outstanding purchase order. One Deviation Request is to reflect the total quantity of discrepant parts to be submitted against the open purchase order. When parts are delivered to Crissair, Inc., the supplier's packing slip must show the CDR number, and a copy of the dispositioned CDR shall be attached.

To request a copy of the CDR form please contact your contracts rep and reference form # 8300-03.

### **3.12.3 Corrective Action:**

When the supplier receives a corrective "Action Request" from Crissair, the supplier must investigate the root cause, and establish a corrective and preventive action plan with the objective to establish ways of preventing non-conformance and re-occurrence. When a Corrective Action statement is required, it shall be completed within thirty (30) calendar days from receipt of the Corrective Action Request. Failure to respond to a Corrective Action Request may result in refusal to accept further delivery until an adequate response is provided. No further purchase orders will be issued to a supplier who ignores a request for a Corrective Action response. Once a corrective action has been accepted, the supplier must follow up with the preventive action or mistake proofing to ensure the actions put in place are effective and prevent the same non-conformance from happening again.

Reasonable extensions of time will be granted when valid written requests are provided by the supplier.

### **3.13 Certifications/Records:**

All quality records (e.g., certifications, inspection documents, receiving records, etc.) shall be legible and shall be stored and retained in such a way as to be readily retrievable in facilities that provide a suitable environment to prevent damage or deterioration and to prevent loss. These records are to be maintained for a minimum period of ten (10) years. All certifications shall contain a signature of a responsible member of the supplier's management or a designee and their position in the company.

#### **3.13.1 Certification of Conformity:**

Crissair De Mexico uses Crissair Inc. Work Orders exclusively, for this reason Crissair De Mexico does not have to provide a Certificate of Conformance.

The supplier shall complete a Supplier Certification Report (format may be of supplier's choosing) and submit the original copy with the shipment of parts. The certification shall indicate, as a minimum:

- Crissair, Inc. Part Number
- Applicable Revision Letter and Dash
- Company Name or Logo
- Address (of the Supplier's facility for which the parts were processed/shipped from)
- Purchase Order Number
- Traceable Number (Supplier Lot Number)
- Description of Work
- Quantity
- Serial Numbers (as applicable)
- Date (Certification was signed)
- A statement that attests to the conformance of the product and/or services to the purchase order requirements.

Non-production parts e.g. tools, machine bits, supplies, etc. do not require Certification of Conformance unless otherwise specified on purchase order.

#### **3.13.2 Special Process Certifications:**

When controlled (special) processing is required to meet purchase order requirements, the supplier shall submit, with the delivered parts, an original (or a legible) and reproducible copy of the process certification from the Crissair, Inc.-approved processing subcontractor. The same certification requirements apply as in section 3.11.1, except the processor must include the process specification(s) and revision used to meet the Purchase Order requirements.

Failure to include special process certifications with the shipment of parts will be cause for lot rejection and delay of payment.

### **3.13.3 Material Certifications:**

All raw materials furnished by the supplier shall be properly certified. The report shall indicate, as a minimum:


- Name of certifying company.
- Material type, including size.
- Material specification number including the applicable revision letter.
- A traceable lot number, batch number, and/or heat code number.
- Chemical and physical properties obtained.
- When requested, a Conflict Minerals Reporting Template (CMRT) form shall be completed annually per the Dodd Frank Act Section 1502.

The certification and test results shall accompany the shipment to Crissair, Inc. Failure to include certifications with the shipment will be cause for lot rejection and delay of payment.

### **3.14 Packaging and Shipping:**

The supplier shall maintain an effective, preservation, packaging, and shipping system that will prevent corrosion, damage, and mixing of parts. If Crissair has shipped parts in protective packaging (e.g., trays, caps, plugs, boxes, bags, etc.); the parts must be returned in the same protective packaging upon completion of work. The system shall also ensure that the purchase order has been reviewed and that the necessary test reports, certifications, or other required documents are included with the shipment.

### **3.15 Statistical Process Control:**

A supplier contributing significantly to the manufacture of a part incorporating dimensional or programmable characteristics identified as  will be required to comply with the same variation reduction processes that apply to Crissair, Inc. Evidence of this process shall be provided to Crissair, Inc. with shipment of hardware upon request.

### **3.16 Age or Shelf Life Sensitive Products:**

For all age sensitive materials (i.e. glues, cement, paint, epoxy, silicone, o-rings, and etc. where shelf life is a requirement, the supplier shall furnish certifications that identify the cure date or date of manufacture and/or shelf life. The supplier shall ensure the material has 75% of the remaining shelf life upon receipt at Crissair.

### **3.17 Electrostatic Discharge (ESD):**

Supplier providing ESD sensitive devices shall implement an ESD control program in compliance with Mil-Std-1686. All ESD sensitive devices delivered to Crissair shall have ESD warning labels affixed to the packaging.

### **3.18 Functional Test Report:**

For assemblies (such as, solenoids, valves, filters, etc.) that require testing as part of the drawing and/or specification requirements, the supplier shall supply with each shipment a functional test report for the actual units shipped to Crissair.

#### 4.0 **Supplier Quality Performance Rating:**

The supplier is responsible for compliance with all purchase order requirements, engineering drawings, and applicable specifications. Crissair, Inc. shall maintain a "supplier quality performance rating program" to evaluate and monitor the quality system effectiveness of each supplier. The Supplier Quality Rating (SQR) is based upon the discovery of a supplier's unreported discrepancies during the receiving inspection process at Crissair, Inc. and upon delivery of material. In addition, quality problems related to discrepant material found during assembly will also affect the supplier rating. Non-conformances submitted by the supplier on a Crissair Deviation Request (CDR) will not impact the Supplier Quality Rating.

#### 4.1 **Supplier Performance Evaluation:**

Crissair evaluates suppliers' performance using a 12-month rolling average to determine the performance level of each supplier. Suppliers are expected to meet a "Preferred Quality Level" as follows:

98 – 100%	Preferred Quality Level
95 – 97.9%	Marginal Quality Level
85 – 94.9%	Needs Improvement
84.9% or less	Unsatisfactory

Suppliers with ratings below a 97.9% Quality Level, and/or who are responsible for isolated rejections are subject to circumstantial control methods employed by Crissair, which may include issuance of corrective action requests, consultation by the procurement-quality team, an on-site assessment or process-audit, suspension, and/or removal from the Crissair Approved Supplier Listing. Suppliers are expected to support Crissair by complying with such control methods in a timely manner as defined by Crissair

#### **APPROVAL:**

*Colleen Schultz*

Director, Quality Assurance