

#

Supplier Quality Assurance Requirements

Carlisle Interconnect Technologies

SQAR- 01

Quality Department

9/22/2010

REVISION HISTORY 4

FORWARD..... 5

INTRODUCTION..... 6

1.0 GENERAL REQUIREMENTS..... 6

 1.1 APPLICABILITY6

 1.2 RIGHT OF ACCESS6

 1.3 NOTIFICATION OF ORGANIZATION CHANGES.....6

 1.4 PURCHASE ORDER REQUIREMENTS.....6

 1.5 RESPONSIBILITY FOR PRODUCT CONFORMANCE.....7

 1.6 COMMUNICATIONS7

 1.7 PROTECTION OF CARLISLE INTERCONNECT TECHNOLOGIES & THEIR CUSTOMERS PROPRIETARY INFORMATION7

 1.8 COUNTERFEIT PARTS PREVENTION.....7

 1.9 MATERIAL OBSOLESCENCE8

2 SUPPLIER ASSESSMENT/QUALIFICATION..... 9

 2.9 METHODS OF SUPPLIER ASSESSMENT.....9

 2.9.2 *Supplier Quality Questionnaire*9

 2.9.3 *Supplier Quality Audit*.....9

3 QUALITY MANAGEMENT SYSTEM REQUIREMENTS..... 9

 3.9 GENERAL9

 3.10 QUALITY RECORDS10

 3.10.2 *Records Control*10

 3.10.3 *Records Retention*.....10

 3.11 MANAGEMENT RESPONSIBILITY10

 3.12 RESOURCE MANAGEMENT10

 3.13 PRODUCT REALIZATION10

 3.13.2 *Customer Related Processes (Contract Review)*10

 3.13.3 *Design and Development*.....11

 3.13.4 *Purchasing*.....11

 3.13.5 *Supplier Sup-tier control*11

 3.13.6 *Product and Service Provision*11

 3.13.7 *Control of Monitoring and Measuring Devices*.....12

 3.14 MEASUREMENT, ANALYSIS AND IMPROVEMENT12

 3.14.2 *Monitoring and Measurement of Product*.....12

 3.14.3 *Ship to Stock*12

3.14.4	Supplier First Article Inspection (FAI).....	12
3.14.5	Control of Non-Conforming Product.....	13
3.14.6	Nonconforming Material Reports (NCR).....	13
3.14.7	Corrective Action	13
3.14.8	Corrective/Preventive Action Extensions.....	14
3.14.9	Verification of Corrective Actions	15
4	SHIPPING DOCUMENTATION REQUIREMENTS.....	15
4.9	PACKING SLIP	15
4.10	CERTIFICATE OF CONFORMANCE	15
4.11	SUPPLIERS OF AGE SENSITIVE MATERIALS	15
	APPENDIX 1: ASSOCIATED DOCUMENTS.....	17

Revision History

Rev.	Changes	Release Date	Author/Revised by
A	Initial Release	04/01/2010	Ahmed Tanahy
B	<ul style="list-style-type: none">- Added Section 1.9 Material Obsolescence.- Added "Customer Requirements" to Forward section	09/22/2010	Ahmed Tanahy/Jackie Elhard

Forward

Competing in today's global market, requires that products and services must be of high quality and competitive cost. In order for Carlisle Interconnect Technologies to be successful in meeting our customer requirements, we must have the processes and tools in place that will encourage and support our suppliers in meeting certain strict quality requirements. These requirements are driven from both AS9100 and ISO9001 and customer requirements.

Our suppliers play an essential role in our success. To ensure this, and to share this success with our suppliers, we involve our suppliers as partners in our global success.

The objective of this manual is to provide our suppliers with the basic quality requirements that we expect them to meet.

We look forward to your support as a partner and we believe that by working together to meet these requirements, we can develop customer-supplier relationship that will benefit both our supplier and Carlisle Interconnect Technologies.

Introduction

In order to meet our competitive global market requirements, Carlisle Interconnect Technologies realizes the importance of working together with our suppliers to develop a successful relationship. The foundations of this relationship rely on the following strategies:

- Close interaction between Engineering, Manufacturing and Quality personnel of Carlisle IT and its suppliers.
- The assurance of meeting the quality requirements of ISO9001, AS9100 and all applicable regulatory requirements.
- To provide our suppliers with continuous feedback about their quality performance to support them in improving their quality and on-time delivery.

1.0 General Requirements

The following are mandatory General Requirements we expect our suppliers to fulfill.

1.1 Applicability

- 1.1.1 All suppliers are to fully comply with the stated requirements of this manual.
- 1.1.2 Individual waivers on certain elements may be granted at the discretion of Carlisle Interconnect Technologies.

1.2 Right of Access

Suppliers shall provide access to their premises and facilities for Carlisle Interconnect Technologies, our customers and regulatory authorities for co-operation on product, process and business issues.

1.3 Notification of Organization Changes

Changes to the supplier's organization that may affect quality and/or finance, shall be communicated in advance to Carlisle Interconnect Technologies. These changes may include; Company ownership, company name, manufacturing location, quality approvals, significant changes to process or inspection techniques.

1.4 Purchase Order Requirements

The supplier shall adhere to all Purchase order Terms & Conditions and any stated special instructions. The PO is the controlling document and overrides any requirements specified in this document. The latest Purchase Order Terms and Conditions can be found on Carlisle Interconnect Technologies website www.Carlisleit.com.

1.5 Responsibility for Product Conformance

- 1.5.1 Carlisle Interconnect Technologies and its customers expect our suppliers to deliver material that is 100% compliant with all the Purchase Order (PO) requirements.
- 1.5.2 Suppliers & their sub-tier supplier(s) shall be responsible for Quality, Reliability & Safety of their products/services to meet all Form, Fit, Function, Industry and Regulatory requirements.
- 1.5.3 Carlisle Interconnect Technologies reserves the right to reject any material that doesn't meet the fit, form, function, industry, regulatory and Carlisle's P.O requirements.

1.6 Communications

- 1.6.1 All communications related to the fulfillment of Purchase Order(s) shall be carried out through the Carlisle Interconnect Technologies Purchasing Department.
- 1.6.2 Carlisle Interconnect Technologies Quality Department reserves the right to contact Suppliers and their sub-tier Supplier, for all quality related questions, issues, request for failure analysis, corrective/preventive actions or any other quality related concerns.
- 1.6.3 Under no circumstance is the supplier to make a direct approach to Carlisle Interconnect Technologies' customers in relation to agreed business dealings.

1.7 Protection of Carlisle Interconnect Technologies & their customers proprietary information

Any information the supplier receives from Carlisle Interconnect Technologies must be kept confidential and not disclosed to any third party without the prior written agreement of Carlisle Interconnect Technologies. The proprietary information can include, but is not limited to all versions of electronic data, drawings and documentation, tooling and materials.

1.8 Counterfeit Parts Prevention

- 1.8.1 "Counterfeit Parts" shall mean a part, component, module, or assembly whose origin, material, source of manufacture, performance, or characteristics are misrepresented. This term includes, but is not limited to, (A) parts that have been (re)marked to disguise them or falsely represent the identity of the manufacturer, (B) defective parts and/or surplus material scrapped by the original manufacturer, and (C) previously used parts pulled or reclaimed and provided as "new".

- 1.8.2 As used herein, “authentic” shall mean (A) genuine; (B) from the legitimate source claimed or implied by the marking and design of the product offered; and (C) manufactured by, or at the behest and to the standards of, the manufacturer that has lawfully applied its name and trademark for that model/version of the material.
- 1.8.3 “Independent Distributor” shall mean a person, business, or firm that is neither authorized nor franchised by an Original Component Manufacturer (“OCM”) to sell or distribute the OCM’s products but which purports to sell, broker, and/or distribute such OCM products. Independent Distributors are also referred to as un-franchised distributors, unauthorized distributors, and/or brokers.
- 1.8.4 Supplier represents and warrants that only new and authentic materials are used in products required to be delivered to Carlisle Interconnect Technologies and that the products delivered contains no Counterfeit Parts. No other material, part, or component other than a new and authentic part is to be used unless approved in advance in writing by Carlisle Interconnect Technologies. To further mitigate the possibility of the inadvertent use of Counterfeit Parts, Supplier shall only purchase authentic parts/components directly from the Original Equipment Manufacturers (“OEMs”)/OCMs or through the OEM’s/OCM’s authorized distribution chain. Supplier must make available to Carlisle Interconnect Technologies, at Carlisle Interconnect Technologies’ request, OEM/OCM documentation that authenticates traceability of the components to that applicable OEM/OCM. Purchase of parts/components from Independent Distributors is not authorized unless first approved in writing by Carlisle Interconnect Technologies Procurement Representative.
- 1.8.5 Supplier shall flow the requirements of this document to its subcontractors and suppliers at any tier for the performance of this Contract/Purchase Order.

1.9 Material Obsolescence

- 1.9.1 SELLER will notify BUYER at least one (1) year in advance if SELLER anticipates discontinuing the manufacture of any of the materials or spare parts.
- 1.9.2 SELLER shall make discontinued MATERIAL and spare parts available for five (5) years after the MATERIAL or spare parts are discontinued by:
- 1.9.2.1 Finding an acceptable source to provide the discontinued MATERIAL or spare parts to BUYER, or
 - 1.9.2.2 Finding a substitute for the discontinued MATERIAL or spare parts which is acceptable to BUYER, or
 - 1.9.2.3 Carrying an inventory of the MATERIAL or spare parts as required to support BUYER, or

- 1.9.2.4 After exhausting the above alternatives, providing BUYER with the opportunity to make a last-time buy after allowing BUYER a reasonable time to assess its needs.

2 Supplier Assessment/Qualification

2.9 Methods of Supplier Assessment

It is a requirement of Carlisle Interconnect Technologies that suppliers must conform to one or both of the following controls before being listed on our Approved Vendors List.

2.9.2 Supplier Quality Questionnaire

The supplier has completed a Supplier Quality Questionnaire. Supplier Quality Questionnaire shall be completely filled, evaluated and approved prior to placing purchase order with the Supplier. All questions must be appropriately answered and rated. If the Supplier has any questions regarding the Supplier Quality Questionnaire, Supplier may contact Carlisle Interconnect Technologies Purchasing or Quality Department.

The purpose of the questionnaire is to give an initial overview of the supplier's organization. After the completed questionnaire has been evaluated by Carlisle Interconnect Technologies Quality Department, a decision will be made as to the level of approval to be granted.

2.9.3 Supplier Quality Audit

The suppliers Quality System will have been assessed and approved by Carlisle Interconnect Technologies Quality Department.

As part of Carlisle Interconnect Technologies' Supplier Development program and Supplier Control process, all Approved Suppliers may be subject to a Supplier Verification audit. Selected suppliers will be audited as necessary to verify product/process conformance.

3 Quality Management System Requirements

3.9 General

- 3.9.2 It is preferred that all suppliers have a Quality Management System that meets the intent of AS9100 (Quality Management Systems – Requirements for Aviation, Space and Defense Organizations).

- 3.9.3 Supplier shall implement and maintain a Quality Management system, which complies with the applicable Quality System standard or specifications.
- 3.9.4 The supplier shall establish and maintain a clearly documented quality system that provides means of ensuring that products conform to specified requirements. This system shall control the issue of drawings, specifications, procedures etc. Provision shall be made for the control of obsolete copies and their subsequent archiving and disposition.

3.10 Quality Records

3.10.2 Records Control

The supplier shall maintain a documented procedure for record creation, change (handwritten or other), completion and control of Quality records in accordance with the applicable Quality System standard (i.e. – ISO 9001:20xx, AS/EN9100).

3.10.3 Records Retention

Unless otherwise approved by Carlisle Interconnect Technologies in writing, Supplier shall retain all required records for a minimum of Seven (7) years after completion of the last purchase order received from Carlisle.

3.11 Management Responsibility

The supplier shall make known a person to Carlisle Interconnect Technologies, who will have the necessary authority to assume responsibility for product quality. It is expected that the named person will provide evidence of the supplier's commitment to the development and implementation of the quality management system and continually improving its effectiveness.

3.12 Resource Management

The supplier shall determine and provide the resources needed to maintain the quality system and continually improve its effectiveness, and enhance customer satisfaction by meeting Carlisle Interconnect Technologies requirements. Personnel performing work affecting product quality shall be competent on the basis of appropriate education, training, skills and experience. The supplier shall determine, provide and maintain the infrastructure needed to achieve conformity to product requirements.

3.13 Product Realization

3.13.2 Customer Related Processes (Contract Review)

- 3.13.2.1 Orders or contracts shall be formally reviewed to ensure that the supplier has the technical and logistical capabilities to meet the requirements. Any discrepancies or queries shall be resolved

before the order or contract is accepted. Amendments to orders or contracts shall be formally reviewed. Records of contract review shall be maintained.

3.13.3 Design and Development

3.13.3.1 If Design activities are undertaken for Carlisle Interconnect Technologies by the supplier, design inputs and outputs shall be adequately specified (e.g. by specifications). Formal documented reviews shall be held at appropriate stages of design. Designs shall be checked by verification (theoretical check) and validation (practical check). All design changes shall be documented and approved by Carlisle Interconnect Technologies Engineering personnel before implementation.

3.13.4 Purchasing

- 3.13.4.1 Supplier shall not sub-contract any work awarded by Carlisle Interconnect Technologies without the prior written approval from Carlisle Interconnect Technologies.
- 3.13.4.2 Supplier shall maintain records of lot code traceability throughout the product life.
- 3.13.4.3 The supplier shall establish and implement activities to ensure that purchased material is conforming to applicable requirements.

3.13.5 Supplier Sup-tier control

3.13.5.1 The supplier shall ensure that subcontractors/suppliers are evaluated and selected on their ability to meet specified requirements. A list of approved subcontractors/suppliers shall be maintained. Purchasing documents shall clearly describe the relevant drawings and specifications including issue status and the quality requirements to be applied.

3.13.6 Product and Service Provision

3.13.6.1 Manufacturing processes shall be defined by documented procedures. Criteria for quality shall be defined in a clear and practical manner. Where processes cannot be verified by subsequent inspection or testing, such processes shall be performed by qualified operators or have suitable process control parameters established.

3.13.7 Control of Monitoring and Measuring Devices

3.13.7.1 All measuring and test equipment used to demonstrate conformance of product shall be calibrated with reference to international or national standards. Such equipment shall be clearly marked with identification of its calibration status, including expiry date. Records of calibrated equipment shall be maintained. When equipment is found to be out of calibration, actions shall be taken to identify and rectify any affected product including product already dispatched.

3.14 Measurement, Analysis and Improvement

3.14.2 Monitoring and Measurement of Product

3.14.2.1 The supplier shall monitor and measure the characteristics of the product to verify that the product requirements have been met. This shall be carried out at appropriate stages of the product realization process in accordance with the planned arrangements.

3.14.3 Ship to Stock

3.14.3.1 It is our policy to reduce the duplication of inspection by Carlisle Interconnect Technologies and our suppliers wherever there is an established history of satisfactory quality

3.14.3.2 Suppliers selected to participate in Carlisle Interconnect Technologies "Ship to Stock" program will be notified by the Quality Department and will undergo strict qualification process.

3.14.4 Supplier First Article Inspection (FAI)

3.14.4.1 First Article Inspection (FAI) shall be performed in accordance with the requirements of AS9102 ("Aerospace First Article Inspection Requirement") as per the revision level established at time of purchase order issuance. First Article Inspection (FAI) shall be performed prior to product acceptance and/or shipment to Carlisle Interconnect Technologies.

3.14.4.2 Supplier system shall provide a process for the inspection, verification, and documentation of a representative item from the first production run of a new part, or following any subsequent change that invalidates the previous first article inspection result.

3.14.4.3 The First Article Inspection Report must be submitted to Carlisle Interconnect Technologies with the first shipment of the impacted product.

3.14.5 Control of Non-Conforming Product

- 3.14.5.1 Seller shall have an established procedure, and require their sub-tier suppliers as well, for advance notification of Carlisle Interconnect Technologies for escaped nonconforming products and make all necessary arrangement for immediate containment and product recall if necessary.
- 3.14.5.2 The advance notification of escape to Carlisle Interconnect Technologies shall, by Supplier &/or its sub-tier, happen immediately upon discovery of the non-conformity.
- 3.14.5.3 The advance notification shall include details of product information, nature of nonconformity, manufacturing date, lot & part traceability information to the point of Origin, containment plan and actions in all locations & en route.
- 3.14.5.4 Supplier agrees to bear all costs associated with the escape of nonconforming products including but not limited to: rework cost, recall cost, nonconforming material cost and any other cost that Carlisle Interconnect Technologies may encounter due to the escape of the non-conforming product.

3.14.6 Nonconforming Material Reports (NCR)

- 3.14.6.1 In case of Carlisle Interconnect Technologies receiving non-conforming materials from the Supplier, or discovery of product field failures, malfunctioning products, or request from Carlisle Interconnect Technologies' customer(s), Carlisle Interconnect Technologies may request from the Seller to conduct a formal investigation and provide failure analysis reports with objective evidence to identify the root cause(s) of the non-conformities.
- 3.14.6.2 The primary purpose of an NCR is for the supplier to provide an effective immediate containment of the non-conforming product.
- 3.14.6.3 Supplier shall provide Carlisle Interconnect Technologies with a Return Material Authorization (RMA) or equivalent to return non-conforming material. The RMA shall include all necessary information to return products to the supplier.

3.14.7 Corrective Action

- 3.14.7.1 When deemed necessary by Carlisle Interconnect Technologies, Supplier shall provide a Corrective Action (CAPA) report with verifiable documents that include implementation & target dates, for nonconformities reported by Carlisle Interconnect Technologies.
- 3.14.7.2 Per request of Carlisle Interconnect Technologies, Supplier shall take immediate action to implement & document the following requirements on the report:

- 3.14.7.2.1 Detailed Description of Nonconformity
- 3.14.7.2.2 Actions taken to assure 100% containment of suspect parts/products/raw materials at all locations & in-transit
- 3.14.7.2.3 Immediate Recovery Plan
- 3.14.7.2.4 Root Cause Analysis of Non-Conformities / Determination of Failure Modes
- 3.14.7.2.5 Corrective Action Measures
- 3.14.7.2.6 Preventive Action Plans to prevent reoccurrence
- 3.14.7.2.7 Verification Method(s)/Technique(s) to Confirm Effectiveness of Corrective & Preventive Action(s)
- 3.14.7.3 Product(s) rejected by Carlisle Interconnect Technologies and resubmitted by Supplier shall be clearly identified as re-submitted product(s) and must also be documented on Supplier's shipping documents that product(s) delivered are either "replacement" or "reworked" product(s).
- 3.14.7.4 Supplier's documents shall include reference to Carlisle Interconnect Technologies' rejection document number and Supplier's copy of corrective & preventive action report as applicable.

3.14.8 Corrective/Preventive Action Extensions

- 3.14.8.1 Supplier shall make all efforts to fulfill the corrective action requirements including meeting all action dates and providing objective evidence. If the supplier is unable to fulfill the CAPA requirements, the supplier may contact Carlisle Interconnect Technologies Supplier Quality Representative to request an extension. Supplier shall formally request the extension at least (48) hours before the CAPA is due. Extensions are reviewed and approved by Carlisle Interconnect Technologies Quality Department on a case by case basis. A reasonable explanation shall be provided by the supplier with extension requests.
- 3.14.8.2 Failure to meet CAPA due dates and/or requesting an extension prior to the assigned due date may result in a negative impact on the Supplier's quality rating which may potentially lead to disqualification of the Supplier.

3.14.9 Verification of Corrective Actions

3.14.9.1 Carlisle Interconnect Technologies Quality Department reserves the right to request objective evidence that the CAPA has been effectively implemented.

3.14.9.2 If deemed necessary, Carlisle Interconnect Technologies may conduct Supplier Audit or Surveillance to verify the effectiveness of submitted CAPAs.

4 Shipping Documentation Requirements

4.9 Packing Slip

Supplier shall provide a packing sheet or attachments for each separate shipment with the following minimum requirements:

4.1.1. Supplier's company name and address.

Note: The manufacturing/ shipping address that has been surveyed and approved by Carlisle Interconnect Technologies for the supplier code listed on the purchase order must be noted on the packing slip or certification.

4.1.2. Purchase order number, line item(s) and part numbers.

4.1.3. Carlisle Interconnect Technologies dispositioned nonconformance document number(s); if applicable.

4.1.4. Evidence of Carlisle Interconnect Technologies and/or Government Source Inspection acceptance when applicable.

4.10 Certificate of Conformance

4.10.2 Supplier shall provide a Certificate of Conformance (C of C) assuring that all work performed in connection with the purchase order conforms to requirements therein. The C of C may be a separate document or included on the packing sheet. The supplier's Quality management or designee must sign and/or stamp this document.

4.10.3 Distributors shall attach original manufacturer's Certificate of Conformance with their own Certificate of Conformance.

4.10.4 In the event of shipping multiple lot codes of the same part number, each lot code and the corresponding quantity must be stated on the C of C.

4.11 Suppliers of Age Sensitive Materials

Supplier shall provide original manufacturing/cure date, and lot number(s), and the shelf life expiration date (if indefinite or unlimited, so state). The supplier shall

physically identify the shelf life expiration date on the deliverable product or the unit packaging according to the applicable standard. In addition, Supplier shall forward any special storage/handling instructions to Carlisle Interconnect Technologies. Supplier is responsible to determine if acceptance test report submittal is required in accordance with applicable material specification. Date sensitive materials must have at least 85% of their active life remaining at the time of shipping to Carlisle.

Appendix 1: Associated Documents

ISO 9000	Quality Management Systems – Fundamentals and Vocabulary
ISO 9001:2000	Quality Management Systems- Requirements
ISO/IEC 17025	General requirements for the Competence of Testing and Calibration Laboratories
ISO 19011	Guidelines for Quality and/or Environmental Management Systems Auditing
ISO/IEC 9003	Software Engineering – Guidelines for the Application of ISO9001:2000 to Computer Software
ISO 14001	Environmental Management Systems- Requirements
AS9100	Quality Management Systems- Aerospace – Requirements
AS9102 (R)	Aerospace- First Article Inspections – Requirement
AS9110	Quality Maintenance Systems- Aerospace - Requirements for Maintenance Organizations
AS9120	Quality Management Systems- Aerospace – Requirements for Stock list Distributors
AS9006	Quality Management Systems – Aerospace – Requirements for Software
ATA Specification 300	Specification for Packaging of Airline Supplies
14 CFR Part 121.303	FAA “Operating Requirements: Airplane Instruments & Equipment” (FAA Standards & Handbook)
14 CFR Part 145.217	FAA “Repair Stations: Contract Maintenance” (FAA Standards & Handbook)
14 CFR Part 145.223	FAA “Repair Stations: FAA Inspections” (FAA Standards & Handbook)