OBJECTIVE

The objective of this document is to provide additional Supplier Quality Assurance requirements (amendments) to the corporate Carlisle Interconnect Technologies Supplier Handbook. By structuring this document to match the handbook, our goal is to enhance your ability to understand our additional needs so that we can collectively meet customer requirements.
The Table of Contents of the SQAR is divided in two, showing Tri-Star and Harnesses product requirements.
It matches our corporate handbook with amendments noted in blue with an identifying letter. The amendment letter is referenced in the body of the document with amendment text italicized in blue.
Our goal is to provide complete detailed information, but should you find you have questions, please contact your buyer for assistance.

Corporate Policies: Suppliers are expected to establish and implement corporate policies that align with Carlisle. The details of Carlisle's commitment can be found on the corporate web site below.

https://www.carlisleit.com/supplier-handbook/

The quality requirements at the corporate site are invoked in addition to the quality requirements herein.

Contents

I. GENERAL REQUIREMENTS TRI-STAR

1. ***CERTIFICATE OF CONFORMANCE*:**
C of C is required. The C of C shall specify the Carlisle Interconnect Technologies (CIT)/Tri-Star Electronics International (TSEI) purchase order number, the part number, the part revision, the quantity shipped, the lot number, the part identification and/or material certified, the applicable specification and the statistical technique use for the inspection and/or acceptance of the material being shipped. The C of C shall be clear and legible. The C of C shall have the original signature and title of the supplier's authorized agent at the bottom of certification.

2. ***CHEMICAL AND PHYSICAL TEST REPORTS:***
When applies, material delivered under purchase order shall be accompanied by chemical and/or metallurgical test reports for each lot which substantiate conformance of the material to the specification requirements.

2a. ***HEAT TREAT CHARTS*:**
When applies, the supplier shall furnish one (1) copy of the heat treat charts or certification with each lot, batch, or heat treat number.

3. ***Deleted***. Replaced by Supplier Handbook Pg. 27. (05/29/2019)

4. ***LIMITED SHELF LIFE MATERIAL:***
a) Materials or articles having characteristics subject to degradation with age shall be marked in a manner to indicate the date of manufacture, lot# and expiration date. The supplier shall not deliver articles with less than 85% of shelf life remaining at the time of delivery.
b) Suppliers of rubber goods shall document the cure date of rubber-molded article and the compounding date of uncured rubber material. When uncured rubber in stock exceeds six (6) months shelf life, a new ASTM test slate must be submitted to TSEI.

5. ***Deleted***. Replaced by Supplier Handbook Pg. 17. (05/29/2019)
6. ***Deleted***. Replaced by Supplier Handbook Pg. 8. (05/29/2019)

7. ***FAI (AS9102):***
Supplier shall supply a First Article Report; IAW AS9102 (Latest Revision). On the case of precious metals (e.g. gold, silver, palladium or rhodium) or Off-the-Shelf items, a FAI is not required.

8. ***PACKING OF ELECTROSTATIC SENSITIVE DEVICES:***
Semi-conductor devices and other products considered to be electrostatic sensitive devices must be delivered in enclosed ESD protective materials and labeled indicating that the contents contain electrostatic sensitive devices.

9. ***SPECIAL PROCESSES*:**
Any process such as heat-treating annealing, plating, chemical etching, anodizing, soldering, welding, brazing, x-ray, magnetic particle, and penetrate inspection shall be accomplished by a TSEI and/or government/customer approved supplier using approved equipment and personnel. Each shipment of processed material must include a C of C and any specified test data or additional documentation as required by TSEI Purchasing and Quality Assurance departments.

10. ***Deleted***. Replaced by Supplier Handbook Pg. 11. (05/29/2019)

11. ***Deleted***. Replaced by Supplier Handbook Pg. 9. (05/29/2019)

12. ***DOCUMENTATION RETENTION:***
Seller shall maintain documentation defining all processes and related quality function, including but not limited to; procurement, manufacturing, test, inspection, packaging and shipping for a period of ten (10) years.

13. ***Deleted***. Replaced by Supplier Handbook Pg. 26. (05/29/2019)

14. ***PLATING THICKNESS:***
Plating thickness measurements must accompany the shipment.

15. ***DFARS 252.225-7014, PREFERENCE FOR DOMESTIC SPECIALTY METAL, ALT1*:**
Any specialty metals (as defined in paragraph [a] of the clause) included in any article delivered under this purchase order much comply with the clause, and must flow down, 7017 Alt 1, to all vendors supplying any articles delivered under this purchase order that included specialty metals.

16. ***EC-DIRECTIVE 2002/95/EC (ROHS) COMPLIANCE:***
ALL material, surface finishes, and **ALL** production processes used for the purchase order must not contain or apply any in ROHS

directive restricted substances. The product to be delivered under this contract may not contain or be manufactured using class I and /or class II ozone depleting substances.

17. ***Deleted***. Replaced by Supplier Handbook Pg. 9. (05/29/2019)

18. ***LANGUAGE:***
Supplier shall make specified quality data and / or approved design data available.

19. ***Deleted***. Replaced by Supplier Handbook Pg. 9. (05/29/2019)

20. ***Deleted***. (04/20/2014)

21. *The product to be delivered under this contract may not contain or be manufactured using class I and /or class II ozone depleting substances.*

22. ***WORK TRANSFER:***
The organization shall establish, implement, and maintain a process to plan and control the temporary or permanent transfer of work, to ensure the continuing conformity of the work to requirements. The process shall ensure that work transfer impacts and risks are managed.

23. ***Deleted***. Replaced by Supplier Handbook Pg. 11. (05/29/2019)

24. ***Deleted***. Replaced by Supplier Handbook Pg. 22. (05/29/2019)

25. ***BOEING ACCEPTANCE AUTHORITY MEDIA (AAM) REQUIREMENTS:***
Seller shall comply with the AS/EN/JISQ 9100 requirements and 14CFR Part 21.2 regarding the application of the Acceptance Authority Media (AAM) requirements. Seller shall, within its organization and its supply chain, ensure that the use of AAM is clearly defined within its Quality Management System (QMS). Seller shall, upon Boeing request, be able to demonstrate evidence of communication to its employees and to its supply chain; use of AAM must be considered as a personal warranty of compliance and conformity. Seller shall maintain compliance to the AAM requirements by assessing its process and supply chain as part of its internal audit activities. The areas of focus of this assessment shall include but not limited to:

Authority Media Application Errors (i.e. Omission, Typos, Legibility, etc.)

- *Authority Media Application Untimely Use (i.e. Documentation is not completed as planned, "Stamp/Sign as you go", etc.)*
- *Authority Media Application Misrepresentation (i.e. uncertified personnel, falsification of documentation, work not performed as planned, etc.)*
- *Authority Media Application Training Deficiencies (i.e. ethics, culture awareness, proper use of authority media, etc.)*

II. GENERAL REQUIREMENTS HARNESSES

1. Notification of organization Changes-AMENDMENT B

   ***Notification of Changes**: In addition to the Supplier Handbook, changes that need to be communicated in advance include significant changes to process or inspection techniques, key personnel, workmanship standards, calibration and other systems which may impact form, fit and function of a product.*

2. Disaster Recovery Plan-AMENDMENT C

   ***Disaster Recovery**: Suppliers shall define and implement a plan to mitigate the potential impact of risks to the normal operation of their business in the event of a disaster. The primary objectives are to safeguard company assets (employees, facilities, equipment and other capital assets), maintain customer service and to communicate responsibly with all those who have a need to know should the supplier experience a significant business disruption.*

   The Business Continuity and Disaster Recovery Plan addresses the key areas necessary in the event of a disaster occurrence, to ensure the supplier has a plan to maintain business operations; maintain financial and accounting activities; meet contractual obligations and requirements; meet legal and regulatory requirements; safeguard company assets and maintain customer service.

3. Supplier Request for Deviation
4. Carlisle IT Owned Tooling and Supplier Product
5. Material Obsolescence
6. Supplier Relationship Management (SRM) Requirements

III. Environmental Requirements/Regulatory/Ethical Business

1. Dodd Frank Act (Conflict Minerals)
2. Counterfeit Parts Prevention-AMENDMENT D

Compliance to the Department of Defense policies for detecting, avoiding and remediating is required of our suppliers as defined in DoD 4140.67, DoD Counterfeit Prevention Policy.

"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".
As used herein, "authentic" shall mean
(A) Genuine;

"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.

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.

Supplier shall maintain a documented system (policy, procedure, or other documented approach) that provides for the prior notification and Carlisle Interconnect Technologies approval before materials are purchased from sources other than OEM's/OCM's (Original Equipment Manufacturer/Original Component Manufacturer).

To further mitigate the possibility of the inadvertent use of Counterfeit Parts, Supplier shall only purchase authentic parts/components directly from the 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.

Supplier shall provide original OCM/OEM certificate of conformance with each shipment supporting this Contract/Purchase order.

Supplier shall flow the requirements of this document to its subcontractors and suppliers at any tier for the performance of this Contract/Purchase Order.

Receipt of suspect material will result in official reporting to GIDEP (Government Industry Data Exchange Program) by Carlisle Interconnect Technologies.

Supplier is prohibited from shipping material for which a Government-Industry Data Exchange was issued.

3. RoHS
4. REACH
5. California Transparency in Supply Chains Act
6. Suppliers of FAA Approved Parts
7. ITAR Compliance
8. DPAS Rated Orders

IV. Supplier Assessment/Qualification

1. Approved Supplier List
2. Methods of Supplier Assessment

a. Risk Assessment Survey/Supplier Quality Questionnaire
b. Supplier Scorecard
c. Supplier On-Site Audit
d. Capacity
e. Qualification Process

V. Quality Management System Requirements

1. General-AMENDMENT E

It is preferred that all suppliers have a Quality Management System that meets the intent of a globally accepted standard as appropriate for the commodity type being manufactured. Acceptable standards include:
− AS9100 Quality Management Systems – Requirements for Aviation, Space and Defense Organizations
− ISO 9001 Quality Management System
− ISO 13485 Quality Management System for Medical
− ISO 14001 Environmental Management Standard
− 21 CFR Part 820 FDA cGMP Quality System Requirement

The Supplier shall implement and maintain a Quality Management system, which complies with the applicable Quality System standard or specifications. 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.

2. Quality Records-AMENDMENT F

a. Records Control

Records
Records and documents must be provided. This includes any correspondence, test reports, inspection results, certificates of compliance, return material authorizations, deviations, requests for changes and any record intended to communicate information.

b. Records Retention

Electronic Records
Records may be maintained in an electronic format such as pdfs or in databases provided appropriate approval signatures are maintained. Data maintained in databases shall be appropriately validated where required per quality standards.

3. Management Responsibility
4. Resource Management
5. Product Realization

a. Customer Related Processes (Contract Review)
b. Design and Development
c. Purchasing-AMENDMENT G

Purchasing: Supplier shall maintain records of lot code traceability throughout the product life.
Suppliers for Printed Wiring Assemblies, Printed Wiring Board Fabrication, etc. shall implement appropriate standards such as:

• ANSI/J-STD-001 Solder Acceptability Standard
• IPC-A-610 Acceptability of Electronic Assemblies
• Supplier Sub-tier control

d. Supplier Sub-Tier Control-AMENDMENT H

Once a supplier is qualified and used for production released products, changes in supplier must be approved in advance by CIT.

e. Product and Service Provision-AMENDMENT I, J

***Product and Service Provision**: The application of Process Controls is strongly encouraged verses 100% inspection. Techniques and tools shall include but be limited to:*
• Process Control Plans
• Risk Analysis such as Failure Mode and Effects Analysis
• Statistical Process Control Plans Cpk = 1.33 or greater
• Gage Repeatability and Reproducibility of <20%
• Measurement System Analysis (MSA)

Note: Cpk values of less than 1.33 will require 100% inspection by the supplier.

***Tooling and Fixture**: The Supplier shall establish and maintain tools, tooling, equipment and fixtures via a Preventive Maintenance program. The program shall include accommodations for Customer owned items to ensure they are properly maintained, calibrated and remain in good working order.*

The supplier shall also establish and maintain procedures for implementing new tools, tooling, equipment and fixtures to ensure the items are properly installed and validated.

f. Control of Monitoring and Measuring Devices
g. Foreign Object Debris (FOD)
h. Packaging/Labeling/Shipment Requirements
i. Purchase Order Schedule Changes

6. Measurement, Analysis and Improvement-AMENDMENT K

All measuring and test equipment used to demonstrate conformance of product shall be calibrated with reference to international or national standards or other CIT approved standard. Standards should include the following as applicable to measurements:
• ANSI/NCSL Z540.3 Requirements for the Calibration of Measuring and Test Equipment
• ISO/IEC Guide 17025 General requirements for the competence of testing and calibration laboratories GB/T 27025-2008 General requirements for the competence of testing and calibration laboratories
• ISO Handbook 10012: Measure Management Systems-Requirements for measurement processes and measuring equipment
• CNAS: China National Accreditation Service for Conformity Assessment

7. Monitoring and Measurement of Product-AMENDMENT L

The supplier shall utilize Measure System Analysis (MSA) practices to ensure monitoring process are appropriate and adequate for the application.

8. Ship to Stock/Certified Supplier Program

9. Supplier First Article Inspection (FAI)-AMENDMENT M, N

(FAI) – Aerospace Components: 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.

The First Article Inspection (FAI) shall include the following as applicable to product:
• 3-piece minimum
• AS9102 Form 1, 2, and 3
• Copy of "bubbled" identifiers for all design characters that correlate to results
• ATP/Test Data where applicable
• Special Process Certificate of Compliance as applicable
• Sub-Tier Certificate of Compliance when applicable
• Sellers Certificate of Compliance

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.

The First Article Inspection Report for a minimum of 3 pieces must be submitted to Carlisle Interconnect Technologies with the first shipment of the impacted product.
(FAI) – Non -Aerospace Components: An FAI shall be performed on the new production assembly (except COTS items). If an FAI has been completed for sample or prototype material, a new full FAI shall be completed on the first production run.
• All characteristics from the drawing used to build the assembly shall be recorded on FAI Report.
• All characteristics shall have a result recorded on the FAI Report.
• All quantitative characteristics shall have the measured result recorded
• All qualitative characteristics shall have pass/fail result recorded

10. Control of Non-Conforming Product-AMENDMENT O

FAI Non-Conformances:

All Non-Conformances shall be recorded on the FAI and the FAI marked as "FAI Not Complete".

Any incomplete FAIs must have a signed approved by Carlisle IT deviation authorizing the non-conformance listed on the FAI in order to ship the parts

After all non-conformances affecting the part are closed and corrective actions are implemented the organization shall do a partial FAI for those affected characteristics and shall record the results

Documentation: Although Carlisle Interconnect Technologies, as a standard prefers AS9102 format for First Article submissions, the organization may use an internal format as long as all the below information is accounted for.
• Part Number
• Part Name: Name of the part as shown on the drawing
• FAI Number: Number created by the organization used to track FAI creation
• Type of FAI performed (Full/Partial)
• If partial FAI is performed, baseline part number and FAI number must be provided
• Serial Number or Date Code as applicable (Serial Number preferred if available).
• Part Revision Level
• Drawing Number
• Drawing Revision
• Additional Changes: Authorized by Carlisle IT deviations
• Work Order number, Router Number, Manufacturing Plan Number, etc. used for traceability
• Organization Name: Name of the organization performing the FAI
• Control of Non-Conforming Product
• 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.
• The advance notification of escape to Carlisle Interconnect Technologies shall, by Supplier &/or its sub-tier, happen within 24 hours of discovery of the non-conformity.
• 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 & in route.

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.
Material Review Board (MRB) disposition authority is not delegated to the supplier.

11. Purchase Order On-Time Delivery
12. Product Process Change Notification
13. Non-Conforming Material Reports (NCR)
14. Corrective Action Request
15. Expectations/Chargeback
16. Corrective/Preventive Action Request (CAPA, CAR, SCAR) Extensions
17. Verification of Corrective Actions
18. Continuous Improvement
19. Development
20. Pricing

VI. Shipping Documentation Requirements

1. Packing Slip
2. Certificate of Conformance-AMENDMENT P

Unless the PO specifically notes otherwise, the 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 with the following content:
• Statement of Confirmation
• Authorized Representative's approval via a signature, printed name and title, date OR controlled Inspection Stamp and date
• Company name, address and phone number of seller
• Unique Purchase Order Number
• Part number (CIT's) and manufacturers part number as listed on PO
• Drawing number and revision as listed on PO
• BOM or Parts List revision
• A Lot, Run, Batch, Date Code or Serial Number for the product
• Distributors shall attach original manufacturer's Certificate of Conformance with their own Certificate of Conformance.
• 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.

3. Suppliers of Age-Sensitive Materials-AMENDMENT Q, R

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.

***Electrostatic Discharge (ESD)** controls will be implemented where and as applicable to ensure product is protected at all times. This is to include ESD workspaces, packaging materials and handling processes of ESD sensitive parts.*

4. Import/Export Compliance Documents
   a. Export Classification
   b. Country of Origin
   c. HTC

Appendix 1: Associated Documents that are listed in this document.

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)
ISO 13458	Quality Management Systems-Medical
ISO 17025	General requirements for the competence of testing and calibration laboratories
21 CFR Part 820	FDA medical
FDA Act	Federal Food, Drug and Cosmetic Act Sections 404 and 505
ANSI/ESD-S20.S20	ESD Association Standard for the Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices).
IPC-A-610	Acceptability of Electronic Assemblies
UL 746D	Underwriters Laboratories Inc. Standard for Safety; Polymeric Materials – Fabricated Parts
UL Labeling	(UL Wiring Harness Program, UL Listed, UL Recognized)
	UL Flame Rating Requirement
GHTF/SG3/N99-10:2004 (Edition 2)	Validation Protocols
EICC	Electronic Industry Code of Conduct
2002/95/EC	Restriction of Hazardous Substances Directive (RoHS)
EC No. 1907/2006	Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
	California Transparency in Supply Chains Act
ITAR/EAR	International Traffic in Arms Regulation (ITAR)
DPAS	Defense Priorities and Allocation System (DPAS)