

<b>UNISON INDUSTRIES LLC QUALITY DIRECTIVE</b>		
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DOCUMENT NUMBER: <b>QD 4.6.2.1</b> REVISION: <b>02/02/09</b>	AUTHOR: <b>LEE EAKIN, PATTI LEARY-KREITZER JOHN PYLES</b>	APPROVED BY: <b>JOHN PYLES</b>
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**TITLE:** SUPPLIER QUALITY ASSURANCE GENERAL REQUIREMENTS

**PURPOSE:** Establish minimum quality system requirements for suppliers providing product (materials or services) to Unison Industries

**1.0 RESPONSIBILITIES AND PROCEDURE**

**1.1 GENERAL**

**1.1.1 SUPPLIER FACILITY ACCESS**

- 1.1.1.1 Unison personnel, or contracted third-party agencies representing Unison, will be permitted access to review business practices applicable to the contract, including Supplier subtier sources.
- 1.1.1.2 Unison customers, including regulatory agencies, will be permitted access to review business practices applicable to Unison’s contract, where the Supplier is acting as a subtier to the primary contract.
- 1.1.1.3 Supplier subtier sources must comply with the same access requirements as the Supplier.

**1.1.2 SUPPLIER QUALITY SYSTEM APPROVAL**

- 1.1.2.1 Unison reserves the right to approve the Supplier Quality System in any manner deemed appropriate (e.g. audit, performance ratings, manual/procedure review and approval, receiving inspection, etc.).
- 1.1.3 The Unison-Buyer will be the primary point of contact for all communication unless otherwise specified.
- 1.1.4 The requirements within this document apply throughout all levels of the supply chain, regardless of the Supplier or Subtier status as an FAA recognized Production Approval Holder (PAH) of the product.

**1.2 SUPPLIER**

**1.2.1 SYSTEM COMPLIANCE**

- 1.2.1.1 Order of precedence;
  - 1.2.1.1.1 Contractual requirements of the;
    - 1.2.1.1.1.1 Purchase Order,
    - 1.2.1.1.1.2 LTA, or Purchase Agreement.

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1.2.1.1.2 Applicable elements of AS9100,

1.2.1.1.3 This document,

1.2.1.1.4 By commodity;

NOTE: Revisions to this section must result in revision to these same requirements expressed in UIQP 4.6.3.

1.2.1.1.4.1 **NON-MATERIAL SUPPLIERS**, processors, ground support equipment suppliers, distributors and warehouses): AS/EN/JIS Q 9100 - "Aerospace Basic Quality System Standard"

1.2.1.1.4.2 **RAW/APPLIED MATERIAL SUPPLIERS** (as identified by GE-A): ISO9001 - "Model for Quality Assurance in Design, Development, Production, Installation, and Servicing".

1.2.1.1.4.3 **PROCESSORS** (as identified by Unison): AS/EM/JISQ 9100 or AC7004 – "NADCAP Audit Criteria for Inspection and Test Quality System"

1.2.1.1.4.4 **DISTRIBUTORS AND WAREHOUSES** (Non-Unison facilities acquiring material from sub tiers): SAE STD AS 7103, Level C/ Level A - "Requirements For Accreditation of Pass Through Distributors" or AS 7104 - "Requirements For Accreditation of Full Distributors" or, SAE AS 9120 – "Quality Management Systems - Aerospace Requirements for Stocklist Distributors" and/or applicable portions of AS/EN/JISQ 9100- "Aerospace Basic Quality System Standard".

## 1.2.2 **CONTRACT REVIEW**

1.2.2.1 Processes must exist which ensure procured materials, services, or sources comply with the Purchase Order on a continuing basis.

## 1.2.3 **DESIGN**

1.2.3.1 Maintain records of change incorporation, regardless of internal or external origin.

1.2.3.2 Notify Unison of design changes to items not designed by Unison, prior to release of affected material, excluding clerical/typographical changes.

1.2.3.2.1 An approved Supplier Request Form 23G03 must be received prior to incorporation of Unison design changes.

1.2.3.2.2 Unless otherwise specified, and beyond a full initial FAI, a delta only FAI will be submitted when design changes occur (e.g. drawing revision, specification change, etc.).

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#### 1.2.4 DOCUMENT AND DATA CONTROL

- 1.2.4.1 Maintain revision-controlled technical requirements applicable to the contract and product.
- 1.2.4.2 Unison controlled documentation will be obtained through Unison.
- 1.2.4.3 Use of Government or Industry Standards.
  - 1.2.4.3.1 Use latest revision of documents that superseded a cancelled document.
  - 1.2.4.3.2 Use last revision of canceled documents not superseded.

#### 1.2.5 SOFTWARE QUALITY ASSURANCE

- 1.2.5.1 Software used in the design, manufacture, inspection, and test of Unison products must be controlled (excludes commercially available software).
- 1.2.5.2 Procedure must address;
  - 1.2.5.2.1 Development,
  - 1.2.5.2.2 Software identification,
  - 1.2.5.2.3 Test/prove-out,
  - 1.2.5.2.4 Authorizations/approvals,
  - 1.2.5.2.5 Revision control,
  - 1.2.5.2.6 Library control assuring only approved programs are available and used,
  - 1.2.5.2.7 Modifications permitted without retest or approval,
  - 1.2.5.2.8 Documentation that provides objective evidence of completion of the above.

#### 1.2.6 SUBTIER SUPPLIERS

- 1.2.6.1 Unless otherwise specified, the Supplier is to assure all subtier sources utilized to support Unison contracts comply with this document.
- 1.2.6.2 Unison approved sources,
  - 1.2.6.2.1 Utilize only approved sources defined in Unison QD-4.6.2.4 for Special Processes.
  - 1.2.6.2.2 Use of Unison approved sources does not relieve the Supplier of assurance that contract compliance, or product conformance conditions are met.
- 1.2.6.3 Furnish subtier sources with applicable technical data.

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1.2.6.3.1 Proprietary Information Agreement must be on file at the Supplier for all sub-tier sources utilizing Unison, customer and/or government proprietary data associated with a Unison contract.

**1.2.7 PRODUCT IDENTIFICATION AND TRACEABILITY**

1.2.7.1 Where applicable by Purchase Order, QD 4.6.2.3 will be complied with.

**1.2.8 PROCESS CONTROL**

1.2.8.1 Changes to processes affecting form, fit, or function require the submittal and Unison approval of form 23G03 prior to implementation.

1.2.8.2 Changes not affecting form, fit, or function do not require Unison approval, but require an FAI be submitted with the subsequent release, indicating verification of no affect.

**1.2.9 INSPECTION & TEST**

1.2.9.1 Assure product conforms to all applicable technical requirements, or report nonconformance as further described within this document.

1.2.9.2 Record and maintain results per record retention requirements.

1.2.9.3 Submit an FAI with the initial release of the product in accordance with Unison QD 4.6.2.2.

1.2.9.3.1 Unless otherwise specified, a delta only FAI will be submitted when product or process changes occur (e.g. drawing revision, process sequence change, etc.).

**1.2.10 PROCESS MONITORING PLAN (LESS THAN 100% INSPECTION)**

1.2.10.1 When utilized, plan must be per ANSI/ASQC Z1.4, minimum Level II with zero (0) as acceptance criteria.

**1.2.10.2 VISUAL ACUITY AND COLOR VISION**

1.2.10.2.1 Personnel administering tests will be medically qualified or trained.

1.2.10.2.2 Records will be retained providing objective evidence of compliance.

**1.2.10.2.3 PHYSICAL TESTING PARAMETERS**

1.2.10.2.3.1 Acuity testing must be performed once per calendar year.

1.2.10.2.3.2 Acceptable results must be obtained in at least one eye, either corrected or uncorrected.

1.2.10.2.3.3 Individuals performing non-weld related visual inspection must meet near vision requirements

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of Snellen 14/18, (20/25), Jaeger 2 at 14 inches, or Ortho-Rater 8.

1.2.10.2.3.4 Individuals performing weld related visual inspections on welds must meet American Welding Society Standard (AWS) D17.1.

1.2.10.2.3.5 Individuals performing nondestructive testing (NDT) must meet Aerospace Industries Association National Aerospace Standard (AIA/NAS) 410

1.2.10.2.3.6 Color-vision testing is required one time only, and must indicate a capability to distinguish colors used in the certification.

**1.2.11 PURCHASING**

1.2.11.1 Ensure processes are established and documented, which result in the flowdown of applicable Unison controlled technical data internally and to subtier sources.

1.2.11.2 To assure conformance to Quality standards, applicable Unison Quality Directives and other Quality requirements will be documented within the contract (e.g. Purchase Order, LTA, Purchase Agreement, etc).

**1.2.12 MEASUREMENT & TEST EQUIPMENT**

1.2.12.1 Calibration of inspection equipment will be in accordance with ISO 10012-1 or ANSI/NCSL Z540-1, and will be traceable to NIST.

1.2.12.2 Calibration and condition will be checked at intervals necessary to assure continued accuracy.

1.2.12.3 Records will be maintained and made available upon request.

1.2.12.4 Control, care and calibration of Unison furnished M&TE the responsibility of the supplier.

**1.2.13 NONCONFORMING MATERIAL CONTROL**

1.2.13.1 Clear identification and segregation practices must be utilized.

1.2.13.2 Containment action must be taken to assure product within the Suppliers control is not released, until the condition is properly resolved.

1.2.13.2.1 Release of unresolved nonconforming material to Unison must be disclosed on form 23G03, and approval obtained prior to release.

1.2.13.2.2 Supplier Material Review Board actions must be disclosed on form 23G03, and approval obtained prior to release.

1.2.13.2.3 Immediate notification must be provided regarding the release of nonconforming material not processed under one or both of the

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approved methods above, specifying the; part number, traceability data, quantity, known/suspected extent of condition, and dates/timeframe.

1.2.13.3 Items previously rejected by Unison may be resubmitted provided causes of rejection have been eliminated.

1.2.13.3.1 Reference will be made to the previous rejection document, either on the product or the shipping document.

**1.2.13.4 CORRECTIVE ACTION**

1.2.13.4.1 Utilize appropriate problem solving tools (fishbone, DOE, TOPS8D, Apollo, etc.) to determine root cause of the non-conformance,

1.2.13.4.2 Actions taken must preclude recurrence of the issue causing non-conforming hardware to be released (error proofing tools are strongly suggested).

1.2.13.4.3 Upon implementation of the corrective action, monitor effectiveness and report further issues to Unison.

1.2.13.4.4 Plans will be submitted to the Unison-Buyer, and will be subject to approval by Unison Quality.

1.2.13.4.5 Corrective Action requirements apply to deficiencies disclosed due to noncompliance and nonconformance.

**1.2.14 HANDLING, STORAGE, PACKAGING, PRESERVATION AND DELIVERY**

1.2.14.1 Components susceptible to electrostatic discharge damage will be handled, stored and packaged in accordance with the following order of precedence; Purchase Order, Unison specification, or MIL-STD-1686 requirements.

1.2.14.2 Supplier will assure that parts are preserved and packaged in such a manner to protect the parts from deterioration or damage in accordance with the following order of precedence; Purchase Order, Drawing, Unison Specifications, or MIL-STD-1686 requirements.

**1.2.15 CONTROL OF QUALITY RECORDS**

1.2.15.1 Traceability between components and associated quality records will be maintained (e.g. serial number, lot number, heat number, etc.).

1.2.15.2 Records for Unison designed parts will be maintained for a period of at least ten years.

1.2.15.3 Records (electronic or hardcopy)

1.2.15.3.1 Entries must be in blue or black permanent ink.

1.2.15.3.1.1 Rejection stamps may be applied in red.

1.2.15.3.2 Entries must be legible / readable / interpretable.

1.2.15.3.2.1 It is recommended that signatures be accompanied by the printed name of the individual providing the signature.

1.2.15.3.3 Corrections will be made by lining-out, entering new data, initialing or signing, and dating the new entry (white-out is not permitted).

1.2.15.4 Records stored at the Suppliers facility must be available for review within one calendar day, or within three calendar days when stored offsite.

1.2.15.5 Supplier will submit the following documentation, including subtier related, to certify requirements of the Purchase Order have been met.

DOCUMENT	TYPE	WHEN REQUIRED
Qualification Test Record	Personnel records of process certification/test (e.g. welding, soldering, nondestructive testing, etc.).	One time requirement prior to shipment of First Article sample-re-qualification as required by spec. Or process. (Ex: welding every three years).
Certificate of Compliance (Form ENP 6 or equivalent)	Multi-Use Form for: 1. Manufacturing 2. Inspection 3. Processing	For each shipment received at Unison: 1. First Article samples 2. Each lot received against a purchase order.
SPC Data	Cpk Chart	For each key characteristic called out by the Purchase Order, drawing or specification.

## 2.0 REFERENCES

- AS/EN/JISQ 9100 Aerospace Basic Quality System Standard
- AS9120 Requirements for Stocklist Distributors
- ANSI/ASQC Z1.4 Sampling Procedures and Tables For Inspection by Attributes
- ANSI/NCSL Z540.3 Requirements for the Calibration of Measuring and Test Equipment
- DOD-STD-2168 Software Quality Program
- ISO 9001 Model for Quality Assurance in Design, Development, Production, Installation, and Servicing
- ISO 10012 Quality Assurance Requirements For Measuring Equipment
- MIL-STD-1686 Electrostatic Discharge Program For Protection of Electronic Parts
- SAE AS7103 Requirements For Accreditation of Pass-through Distributors
- SAE AS7104 Requirements For Accreditation of Full Distributors
- SAE AS9003 Aerospace Basic Quality System Requirements
- Unison QD 4.6.2.2 First Article Inspection Requirements
- Unison QD 4.6.2.3 Supplier Identification
- Unison QD 4.6.2.4 Special Processes & Process Controls

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QWS

Quality Workmanship Standards (Unison)

### 3.0 DEFINITIONS/ABBREVIATIONS/FORMS

#### DEFINITIONS/ABBREVIATIONS

**Technical Requirements** – Data affecting or defining the conformance or compliance of the products to the required design data (e.g. print, specification, ATP, etc).

#### FORMS

23G03 - Supplier Request Form

### 4.0 REVISION HISTORY

#### DESCRIPTION OF LATEST CHANGE:

General rewrite (JP) 1.2.3.2 - Aircelle Groupe Safran Corrective Action #570-08-F00675, and PowerSuite CAR #646 regarding addressing allowance to make typographical/clerical changes (LE). 1.2.13.4 Corrective action requirements clarified (PLK).

#### DESCRIPTION OF PREVIOUS CHANGES:

Superseded Rev N released August 8, 2008.

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