



Supplier Quality Requirements

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Table of Contents and Revision History

Table of Contents

<i>Table of Contents and Revision History</i>	2
<i>Introduction and Scope</i>	3
<i>Definitions</i>	4
<i>Supplier Quality Requirements</i>	5

Revision	Description of Changes	Date	Author
Rev 1	Added DPD language to section “D”, Added the following Requirement sections: X,Y,Z,AA,BB,CC,DD,EE, and FF	08/17/2022	JM, JAV
New		03/22/2022	JAV

Introduction and Scope

Technical Tooling's Company policy is:

“Technical Tooling LLC is focused on meeting customer, regulatory, and statutory requirements by manufacturing composite layup molds and vacuum fixtures to customer requirements and delivering on time, while continually reviewing and improving the effectiveness of our quality management system.”

Technical Tooling understands the importance of our Supply Chain in achievement of this policy and requires a similar desire and commitment to excellence from our Suppliers and their staff. With open communication between us, we can strive for mutual success for both of our organizations.

Technical Tooling has created this Supplier Quality Requirements (TTSQR) document to clearly communicate our requirements.

- 1.1. This document defines general and specific quality system requirements for Suppliers.
- 1.2. This document applies to all suppliers/sub-contractors whose products or services are included in Technical Tooling end items.
- 1.3. This document is intended to explain and supplement, but not replace or nullify any specifications, standards, terms and conditions, purchase order terms, purchase agreements or other contractual agreements.
- 1.4. The requirements outlined in this document are designed to ensure that the supplier's quality practices comply with Federal regulations, industry standards, and Technical Tooling practices; specifically:
 - The requirements of SAE Aerospace Standard AS9100D Standards
 - Best industry practices for aerospace supplier quality management and
 - Technical Tooling specific specifications, standards, forms, processes, and practices.
- 1.5. All supplies and services received by Technical Tooling shall be subjected to inspection verification after receipt, as necessary to assure conformance to purchase order requirements. Technical Tooling shall not be obliged to subject non-conforming supplies to complete inspection. **Unless otherwise authorized in writing by Technical Tooling, the Supplier shall furnish only articles which are in complete compliance with all purchase order requirements.**
- 1.6. ANY DEVIATIONS TO THE REQUIREMENTS OF THIS DOCUMENT MUST BE APPROVED WITH WRITTEN CONSENT OF TECHNICAL TOOLING QUALITY ASSURANCE.
- 1.7. Suppliers shall ensure that all their employees are aware of:
 - their contribution to product or service conformity
 - their contribution to product safety
 - the importance of ethical behavior

Definitions

AS9100: Aerospace Standard- Standard developed by a technical Committee including all elements of ISO9000 with additional requirements needed for the Aerospace Industry

Contract: Purchase Order (PO)

Commercial, off-the-shelf (COTS): This is product which is ready-made and available for sale, lease, or license to the general public

Foreign Object Debris (FOD): A substance, debris or article that has invaded a product, assembly, or system, and would potentially cause damage

Original Equipment Manufacturer (OEM)- An organization that manufactures products or components that are purchased by a company and retailed under the purchasing company's brand name. OEM refers to the company that originally manufactured the product

Technical Tooling (TT): This includes Technical Tooling LLC employees and representatives

Supplier: Any external provider that include:

- 1) **D- Distributors**
- 2) **R- Raw Materials**
- 3) **M- Manufacturing**
- 4) **F- Finishing and Special Services**
- 4) **S- Support Services**

Supplier Quality Requirements

The table below describes and defines those requirements for which Suppliers are responsible. The applicability column defines which Suppliers are affected by the requirement.

Requirement	Applicability	Comments
a. The supplier shall conduct a review of all the Technical Tooling Purchase Order requirements, to ensure their product or service conforms to those requirements.	All Suppliers	The supplier may be asked to present evidence of review during an audit.
b. The supplier's Quality Management System shall address the requirements contained in this document.	All Suppliers	Upon request, you may be asked to provide Technical Tooling with a copy of your Quality Manual.
c. Quality related documentation and certifications shall be retained and available to Technical Tooling for a period as defined in your internal procedures or a minimum of ten (10) years, unless otherwise stated in the contract.	All Suppliers	The supplier may be asked to present such records during an audit.
d. The supplier shall notify Technical Tooling of any substitutions or changes in their product and/or process definition. Technical Tooling reserves the right to determine which changes affect fit, form or function.	All Suppliers	All changes must be approved by Technical Tooling, prior to shipment. Digital Data provided by Technical Tooling must be protected and controlled from unauthorized use.
e. Supplier shall notify Technical Tooling in the event of changes in the following production processes: <ul style="list-style-type: none"> • Manufacturing relocation • Changes in personnel (CEO, Plant Director, Quality Director, etc.) or ownership • Major changes/revisions to the Quality Management System. 	All Suppliers	Supplier should submit product to First Article Inspection, after relocation or major changes.

Requirement	Applicability	Comments
<p>f. In absence of specific packaging requirements on the drawing or purchase order, the supplier shall provide packaging that protects the component from mechanical and environmental damage during transport and storage.</p>	All Suppliers	-None-
<p>g. Nonconforming and suspected nonconforming material shall be segregated and clearly marked as such within the Supplier's facility. Reworked product will be submitted for re-inspection before release.</p>	All Suppliers	When the Supplier identifies a nonconformance to requirements, the Supplier has the option to submit an Advance Rejection to Technical Tooling for disposition, <u>prior</u> to shipment of product.
<p>h. Within 24 hours of discovery, the Supplier shall notify Technical Tooling in writing of nonconforming or suspected nonconforming materials shipped to Technical Tooling.</p>	All Suppliers	The Supplier shall take prompt action to correct conditions which have resulted or could result in the submission to Technical Tooling of products which do not conform to drawing, specification and/or purchase order requirements.
<p>i. Suppliers shall plan, implement, and control processes, for the prevention of counterfeit or suspect counterfeit part use and their inclusion in products delivered.</p>	All Suppliers	Ref: AS9100D 8.1.4
<p>j. The Supplier shall submit a Certificate of Conformance (C of C) with each product shipment. C of C is to include:</p> <ul style="list-style-type: none"> • Part Number • Lot # • Quantity Shipped • Technical Tooling's PO # • Specification/Drawing & Revisions <p>k. C of C is to be signed by an authorized supplier representative.</p>	All Suppliers	Before shipment to Technical Tooling, Suppliers shall have a system to verify all proper documentation and certification is included.
<p>l. All products that are manufactured to Technical Tooling requirements shall be submitted with all special processing, raw material test reports and/or certification, with each shipment.</p>	All Manufacturers	Certification must show acquisition and full traceability throughout the Supplier's system.

Requirement	Applicability	Comments
m. Suppliers will at appropriate points in production, have a method of inspection/validation of first piece, in-process and/or final inspection before release to further processing or delivery.	All Manufacturers	The Supplier is required to maintain adequate records of all inspection, test and other quality control activities and shall be available for review by Technical Tooling and/or our customers.
n. All products manufactured to Technical Tooling's drawing shall have a First Article Inspection per AS9102. A copy is to be submitted with the first delivery of production parts.	All Manufacturers	First Article Inspection Report must be re-accomplished under the following circumstances: <ul style="list-style-type: none"> • Drawing revision • Lapse in production greater than 2 years Changes to Suppliers facility
o. Suppliers will have a system to define the appropriate operators and sequences to produce the product/service to Technical Tooling's requirements.	All Manufacturers	-None-
p. Supplier procured parts, materials, and processing to be used on Technical Tooling end items shall be subjected to a receiving inspection to assure conformance to applicable drawings, specifications, and requirements of the Technical Tooling purchase order.	All Suppliers, except Distributors	Acceptance requirements shall include test reports, certifications, or inspection verification of physical and chemical properties of raw materials traceable to the source.
q. The supplier will develop work instructions to clearly describe all operations which affect conformance to Technical Tooling requirements.	All Suppliers, except Distributors	This is generally considered to be manufacturing planning and/or process control procedures, and these methods are documented. The supplier may be asked to present evidence during an audit.
r. The Supplier shall provide and maintain tooling, gages and other precision measuring and test equipment to the extent necessary to ensure that supplies and services conform to the technical requirements and will not compromise the quality of Technical Tooling end items.	All suppliers except Distributors	Tools shall be calibrated/validated in accordance with established intervals using Technical Tooling accepted standards or methods that are traceable to the National Institute of Standards and Technology (N.I.S.T.). Records shall be kept of calibration activities.

Requirement	Applicability	Comments
s. Suppliers who are Distributors shall maintain a quality system sufficient to ensure items from original manufacturer meet all purchase order, drawing, specification, and quality requirements.	Distributors only	-None-
t. If the supplied product is life-limited, the supplier is required to furnish either the expiration date, or the material cure date.	All life-limited suppliers.	Life-limited materials shall have at least 50% of the shelf life remaining upon receipt at the Technical Tooling receiving dock.
u. Suppliers of commercially developed and manufactured catalog type items that are available for general purchase, are responsible for ensuring their products conform to drawings, specifications, or applicable industry standards.	Distributors only	-None-
v. Technical Tooling furnished material and tooling shall be identified, separated, and stored in the appropriate area. All material drop-shipped at the Supplier's facility, shall have Technical Tooling acceptance before production can begin on said shipment.	All Manufacturers	Technical Tooling must be notified immediately, if condition of material or tooling received at the supplier's facility is damaged or is not capable of producing to its intended purpose. Technical Tooling furnished material that is processed nonconforming shall be identified and segregated, when returned.
w. Technical Tooling owned tooling stored at the supplier's facilities must be given periodic tooling inspection, as required to verify their continued accuracy.	All Manufacturers	Records shall be kept of verification activities.
x. The Supplier shall allow an on-site audit of their Quality Control System by either Technical Tooling personnel and/or Technical Tooling customers and/or regulatory authorities.	All Suppliers	Advance notice will be given before an audit is conducted.
y. Any corrective action request issued by Technical Tooling shall be completed by the Supplier in a timely manner.	All Suppliers	The response shall be in writing detailing root cause, correction and verification activities to prevent further occurrence.

Requirement	Applicability	Comments
z. Technical Tooling furnished material and tooling shall be identified, separated and stored in the appropriate area	All Manufacturers	<p>Technical Tooling must be notified immediately, if condition of material or tooling received at the supplier's facility is damaged or is not capable of producing to its intended purpose.</p> <p>Technical Tooling furnished material that is processed nonconforming shall be identified and segregated, when returned.</p>
aa. The Supplier shall maintain a system for identifying the inspection status of supplies throughout production.	TT Approved Facilities	<p>When Acceptance Authority Media (AAM) are used (e.g., stamps, electronic signatures, passwords), the supplier shall establish controls for the media.</p> <p>NOTE: Use of AAM must be considered as a personal warranty of compliance and conformity, and communicated to authorized employees.</p>
bb. Suppliers of products manufactured to Technical Tooling's PO requirements shall review their manufacturing capability, work instructions, tooling, fixturing, test equipment, special controls, and the skills required to assure they have the ability to produce products that conform to the requirements.	All Suppliers of raw materials (Resins)	The supplier may be asked to present evidence of review during an audit.
cc. The Supplier shall flow down all the applicable quality requirements stated in Technical Tooling purchase orders, inclusive to this document TTSQR, to any sub-tier suppliers selected by the Supplier.	All Suppliers, except Distributors	Suppliers shall have a system to approve and disapprove suppliers based on their ability to meet Technical Tooling's contractual requirements
dd. Product subject to special processing must be accompanied by certification documents. The documents shall specify the Process Specification and Revision, with a statement of the Suppliers conformance to the requirements of that process.	All Processors	<ul style="list-style-type: none"> • Technical Tooling's Customer Approved. • Technical Tooling's Approved facilities.
ee. Suppliers of raw materials shall provide raw material certifications traceable to the source, with each shipment.	All Suppliers	None

<i>Requirement</i>	<i>Applicability</i>	<i>Comments</i>
ff. Suppliers shall implement all necessary arrangements to prevent, detect and eliminate FOD during manufacturing, assembly, inspection, storage, maintenance, packaging and shipping.	All Suppliers	Ref: AS9100D 8.1.4