

Document Title	Aerospace & Defense Supplier Quality Requirements		
Doc #	WI-078	Issued by: K. Nelson	Date: 8/23/19
Revision	0	Approved by: B. Cvetichan	Date: 8/23/19

Purpose

To define the quality requirements imposed upon suppliers by Midwest Precision LLC.

Scope

This document serves as the quality requirement document for suppliers and their sub-tiers to Midwest Precision.

1 – Quality System Requirements

Suppliers should maintain a third-party registered quality system (ISO 9000, AS9100, TS16949, etc.). This is the expectation set by Midwest Precision. **As a minimum**, all suppliers shall maintain documented systems for the following:

1. A supplier approval and evaluation system
2. An incoming inspection process
3. A process to identify and segregate suspect material, and to disposition nonconforming material out of the production stream
4. A final inspection process (including verification that product has completed all necessary operations, as well as generation of test reports, certificate of conformance, and other documents required to accompany shipment)
5. Appropriate process controls during manufacture of product
6. A process to define, implement and document appropriate operator training
7. A process to manage all documents, including the process for managing documents when a change is made after order acceptance
8. A process to identify and maintain calibration for all instruments or gauges used to verify or inspect product or processes made or performed for Midwest Precision.
9. A process to formally investigate and respond to non-conformance reports and requests for corrective action from Midwest Precision.

2 – General Requirements

Q2-1. Confirmation of Purchase Order Requirements & Late Deliveries

The supplier shall acknowledge, in writing, acceptance of a Midwest Precision Purchase Order. Midwest Precision will place a requested delivery date on the PO. The supplier will be expected to confirm the delivery date that is attainable by the supplier.

After confirming a delivery date, if it appears that this commitment will not be met, the supplier shall inform the listed Midwest Precision Buyer/Representative of the proposed delay. Please do this as soon as there is awareness of possible slippage. At a minimum, this should be at least 3 business days prior to the confirmed delivery date. The notice shall also include an updated delivery plan.

Q2-2. Right of Access

With reasonable notification, representatives of Midwest Precision, Midwest Precision Customers and Regulatory agencies have the right of access to the supplier and sub-tier supplier facilities.

Midwest Precision reserve the right to perform initial and periodic reviews, onsite audits, reviews of quality documents, quality system surveys, and source inspections in order to verify and validate the effectiveness of the quality management system.

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Q2-3. "Frozen Process" Requirement

Prior to implementing any change to facility, process, product or service, or material, or change in sub-tier supplier, or change in manufacturing location, the supplier shall send notice to Midwest Precision Purchasing or Quality. Shipments incorporating the proposed changes will not be accepted until Midwest Precision has approved the changes in writing.

Q2-4. Use of "Bulk Parts" or Consumables

For any "bulk parts" or consumables used in the manufacture of Midwest Precision products, the supplier shall maintain date / lot / batch identification with the consumable, along with expiration date, if appropriate. Lot / date / batch identification shall be recorded on production documentation (router, traveler, etc.).

Q2-5. Record Retention

The supplier and sub-tier suppliers shall maintain records related to the product/process such as, but is not limited to: material certifications, test reports, completed process routers, inspection reports, process control charts, batch records, operator training.

Records will be maintained for:

- A period as specified by the contract
- Indefinitely for Aerospace/Defense parts/processes
- Ten (10) years for Quality System records (internal audits, management reviews, supplier surveys, etc.)
- The period specified for time sensitive products (shelf life)

Records may be stored in electronic (if backed up regularly using a documented process) or hardcopy (if protected from damage) format. The supplier is responsible for ensuring that records remain legible, readily identifiable and retrievable.

The supplier is responsible for the transfer of records to Midwest Precision in the event that the supplier will no longer be in operation or no longer performing the process.

Q2-6. Sample Retention

The supplier shall maintain required test coupons or samples that are traceable to the lot/batch that they were processed with. The test coupons or samples will be submitted to Midwest Precision when requested.

Q2-7. Source Inspection

With reasonable notification, representatives of Midwest Precision, or a named delegate, always reserve the right to conduct source inspection of products prior to shipment from the supplier's facility. When it is known at the time that the Purchase Order is issued, the requirement will be specified on the PO. (See clause REQ010). Otherwise, notice shall be provided in writing by Midwest Precision to the supplier in an appropriate time prior to the scheduled ship date.

When source inspection, or any other requested process / product verification activity is to be performed at the supplier's place of business, the supplier shall provide all necessary facilities, equipment, documentation and personnel required to perform any inspection at no additional cost to Midwest Precision.

Q2-8. Request for Deviation

All requests for deviation shall be submitted to Midwest Precision for approval prior to shipment of product. Requests should be directed to a representative of the Midwest Precision quality department, who will coordinate documentation, engineering review, and purchasing contact as necessary. A copy of the approved deviation request must accompany the shipment, referencing all nonconformities.

Q2-9. Flow-down of Requirements

The supplier shall flow down all applicable requirements contained in the purchasing information, including key characteristics, to sub-tier suppliers. Flow-down pertains to any applicable requirements on the PO, as well as this or other PO-referenced documents.

Where Midwest Precision customers mandate the use of designated sources, the supplier shall also use those sources, as defined by Midwest Precision.

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Q2-10. Packaging

The supplier shall package and preserve products so that they are suitably protected from damage either at the supplier facility or during transit. All part numbers shall be sub-contained from other part numbers in packages and uniquely labeled (no mixing).

Q2-11. Compliance

It is the responsibility of the supplier to ensure that all products produced for Midwest Precision and all services rendered to Midwest Precision are in full compliance with all statutory and regulatory requirements.

Q2-12. Workmanship Requirements

Unless defined otherwise on an engineering drawing, the product or service provided to Midwest Precision shall be provided in compliance with "Workmanship Standards."

Q2-13. Certificate of Conformance Required

The supplier shall provide a Certificate of Conformance for each shipment. The C of C shall contain part number and revision, drawing number and revision (if different than part number and revision) purchase order number, quantity, date shipped, suppliers authorized signature and applicable specifications. In addition the supplier shall provide, as applicable, heat numbers, lot numbers, serial numbers, batch numbers and/or date codes.

Q2-14. First Article Inspection

The supplier shall perform first article inspection (FAI) per SAE Standard AS9102, and include a copy of the report with the shipment. The sample selected for FAI must represent production materials and processes. FAI shall be performed and provided to Midwest Precision on the first lot, or if there is a two-year lapse in production, when a change occurs which includes a change to the frozen process, a change is provided by Midwest Precision, or there is an equipment move.

Q2-15. Special Processes

Special processors need to be either Nadcap approved, have customer specific approval (i.e. Parker, Goodrich, Boeing, P&W, Lockheed Martin, etc.), or be approved by Midwest Precision. The supplier shall provide a certification of the process being provided, including the specification/requirement.

Special processes include, but are not limited to: heat treating, brazing, chemical processing (passivation, chem film, anodize, plating, etc.), welding, EDM, coatings.

Q2-16. Counterfeit Prevention

The supplier shall have a counterfeit prevention program to prevent counterfeit parts from being delivered to Midwest Precision. The counterfeit prevention program will contain how parts, materials and assemblies are procured.

3 – Flow-down Requirements

Q3-1. Flow-down

The supplier is responsible for all quality and technical requirements imposed by Midwest Precision. This applies to sub-tier suppliers that the supplier may use to provide the product/process to Midwest Precision. The supplier's responsibilities will include:

- Flow-down of quality and technical requirements
- Flow-down of this document to sub-tier suppliers and verification that this has been implemented.
- Selection and control of sub-tier suppliers, unless otherwise specified in the contract.
- A controlled counterfeit program
- Flow-down of purchasing information required to clearly fulfill the contract.

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4 – Inspection Requirements

Q4-1. Foreign Object Damage Prevention (FOD)

The supplier shall implement a FOD program including establishing procedures to implement into the quality management system. The FOD program shall include as a minimum:

- Practices are in place to detect foreign objects in order to eliminate the cause which can include, but is not limited to burrs, blast media, grind equipment, manufacturing chips, packaging dust/debris, cleaning solution, abrasives, airborne debris.
- Food and drink are removed from the final cleaning and part packaging area.
- A review of all processes to ensure cross contamination does not occur from processes next to other processes.

A training program is established and implemented for the detection and removal of FOD. Training records shall be maintained on file.

Removing items that are not necessary for the manufacture/process of the immediate item are not in the work area.

Q4-2. First Piece Inspection

Midwest Precision may request a first piece to inspect prior to processing parts/process. First piece documentation shall be maintained on file.

Q4-3. Final Inspection

Final inspection data shall be maintained on file. Midwest Precision may request this data with each shipment.

Q4-4. Statistical Process Control (SPC)

The supplier is encouraged to use SPC as defined in ANSI Z1-1 to reduce the variation within processes.

Q4-5. Sampling Plan C=0

It is acceptable to use a sampling plan for inspection. The lot acceptance is C=0. The supplier shall be able to satisfactorily justify sampling upon request.

Q4-6 Control of Monitoring and Measuring Equipment

Monitoring and Measuring equipment shall be controlled in order to ensure product/processes verified or validated with the equipment conforms to specified requirements. Monitoring and Measuring equipment shall be calibrated at specified intervals, prior to use, against measurement standards traceable to NIST.