



Supplier Quality Manual

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Document control revision history

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1.0 Scope

This information applies to all suppliers who have interest in doing business with Service Mold + Aerospace Inc. It also applies to Service Mold + Aerospace's outsourced partners or subsidiaries.

1.1 Introduction

Service Mold + Aerospace Inc. (SMAI) are a machining and tooling source for the Aerospace and Molding Industries. The scope of the company is to provide precision machined tooling and fixtures used in different types of build and fabrication assemblies. Service Mold + Aerospace are actively involved in production of molds and tooling for automotive and other commercial sectors.

Manufacturing - Precise machining of parts and sub components as per required specifications, to be used for aerospace tooling and assembly fixtures. Machine work includes state of the art 3-axis and 5-axis machining to achieve intricate features on part to fulfill the parts end use.

Engineering services include retrofit modifications and review customer designs/drawings to ensure end user function and part approval is achieved once production is complete. Use of advanced industry software for design analysis and GD&T verification (Unigraphics/Catia V5)

Technical Services provide project engineering & project management support and documentation as required (Job updates/time lines). Provide final QA reports to verify end user specifications or build requirements (CMM/FARO Laser)

1.2 Company Quality Policy

Stop

THINK

Evaluate

Proceed

Do it once, do it right, look for ways to improve.

2.0 Supplier Qualification Process

All suppliers of production materials to SMAI must be qualified suppliers. The extent of the qualification process is dependent upon the critical aspects of product purchased and other factors determined by SMAI. The qualification process in its most complete form consists of three parts:

- A questionnaire completed by the supplier.
- A quality management system self-assessment completed by the supplier, using the SMAI supplier assessment survey form. This is returned, along with the supplier's quality manual and documentation for review by SMAI.
- An on-site assessment by SMAI personnel or their authorized agents.

SMAI periodically re-evaluates suppliers through the use of quality performance data and/or on-site assessments.

2.1 New Supplier Questionnaire

In the early stages of the supplier selection process, potential suppliers are sent a questionnaire. This questionnaire solicits general information about the company such as location(s), size, capabilities, and financial stability as well as detailed questions regarding the Company's quality management system and quality history.

2.2 New Supplier Self-Assessment

When a new supplier is being considered, they are sent a quality management system self-assessment survey form. The supplier completes the self-assessment and returns it along with a copy of their quality manual and supporting documents (if applicable). SMAI will review the quality manual, procedures, and survey to determine if the documented quality system meets SMAI's requirements.

2.3 On-Site Assessment

For suppliers of critical components, an on-site assessment of the supplier's facility is performed. The on-site assessment includes three components:

- A quality assessment to determine whether the supplier's quality management system is in place and functioning effectively.
- A business assessment to determine whether the supplier has financial resources, production capacity, and other business resources needed to fulfill SMAI's production needs.
- A technology assessment to determine whether the supplier has the needed technical resources, including production and inspection equipment, facilities, engineering resources, etc.

If the assessment team determines that the supplier meets SMAI's requirements, SMAI qualifies the supplier to bid on new business and supply production materials.

2.4 Periodic Re-evaluation

SMAI periodically re-evaluates current production suppliers through the use of quality performance data and/or on-site assessments. If requested, the supplier shall make their facility available for on-site process verification by SMAI personnel, with reasonable notice.

3.0 Drawing Changes and Revisions

3.1 Change Control

The supplier must have a documented system for assuring that the latest SMAI drawings are in effect at their facility. The supplier must contain a documented procedure that describes the method used for the receipt, review, distribution, and implementation of all changes to drawings and specifications. In addition, the procedure must address control of obsolete drawings and specifications. A documented procedure should also detail the method used to contain new or modified parts until approved by the customer.

3.2 Changes, Engineering Changes

Suppliers must have a system in place to control changes to drawings, specifications, processes, or produced parts. Systems shall be capable of handling changes that are requested by the customer, and also changes requested by the supplier.

4.0 Packaging and labeling

The supplier must adequately plan for packaging of material shipped to SMAI. The supplier will maintain proper labeling of SMAI jobs by including associated purchase order, Job numbers, detail numbers, on all customer paperwork. Packaging will be designed to provide protection from any damage that may occur. Packaging, labeling, and shipping materials must comply with the requirements of common carriers to secure the least transportation costs.

5.0 Corrective action

SMAI requires suppliers to utilize a closed-loop corrective action system when problems are encountered in their manufacturing facility, or after nonconforming product has been shipped to SMAI.

5.1 Corrective Action Process Approach

The corrective action system utilized should be similar to the process outlined below. The focus should be on identifying the root cause(s) of the problem and taking action to prevent its recurrence.

- Use a team approach
- Describe the problem
- Contain the problem
- Identify and verify root cause(s)
- Implement permanent corrective actions
- Verify corrective action effectiveness
- Close the corrective action

5.2 Supplier Corrective Action

SMAI issues a Corrective Action Request (CAR) to a supplier when non-conforming parts are found during inspection, production, testing, or by a SMAI final customer. The supplier is required to respond by returning the CAR back to SMAI. The following provides a brief outline of the CAR procedure that suppliers to SMAI shall comply with:

- 5.2.1 SMAI requires that the supplier take immediate containment action upon notification of the nonconformance. The supplier must submit a written response to SMAI, reporting the Supplier's initial observation and defining the containment plan within 48 hours of notification.
- 5.2.2 The containment plan must clearly define the actions at the supplier's facility to assure that no nonconforming product is shipped to SMAI. If suspect product has already been shipped, the supplier must identify and address all suspect parts in transit and any parts at SMAI's facility.
- 5.2.3 Within 2 weeks after the original notification, the supplier must report the results of the Supplier's investigation into the cause of the problem.
- 5.2.4 Within 3 weeks from the initial notification date, the supplier must submit the corrective action to be taken to prevent recurrence of the problem, and the effective date (the date the corrective action will be implemented.)
- 5.2.5 The supplier is required to keep SMAI informed of progress towards implementing the corrective action. When corrective action implementation is complete, the supplier and SMAI verify that the corrective action is effective in preventing the problem's recurrence.

6.0 Non-conforming part Control

- 6.1 If a supplier's parts are found to be defective, the supplier will be notified by SMAI personnel to provide immediate containment and support to resolve the problem. Problems shall be addressed by the outlined steps in section 5.2 Corrective action. A most serious concern is when a supplier product/process shuts down SMAI production making delivery to a SMAI customer late. Any condition causing shutdown and late shipment warrants the supplier's immediate action to eliminate the condition. The supplier is responsible to address containment of the problem at their facility, parts in transit, parts in SMAI stocks and at SMAI end customer(s). If a supplier defect causes SMAI's finished product to be reworked or scrapped, all charges incurred will be the responsibility of the supplier. All other related costs will be charged to the supplier including eventual costs from SMAI customer.
- 6.2 If a supplier detects non-conforming product prior to shipment to SMAI, the supplier must immediately determine the extent of the problem and take action to correct the problem. If suspect material has been shipped, the supplier must notify all user plants and implement all necessary actions to prevent the material being used in SMAI production. Any rework or repairs to suspect material must be conducted in a controlled manner that assures that the reworked or repaired product meets SMAI specifications.
- 6.3 A copy of the vendor complaint will be distributed to the supplier when defective material has been found, initial response with initial containment must be completed and returned latest within 24 hours, long term actions must be defined and reported within 7 calendar days unless otherwise agreed. The supplier is expected to implement all necessary actions to remedy the NC within 30 calendar days unless otherwise agreed. The supplier will be notified if any aspect of the report is not acceptable and will be required to resubmit the updated report in a timely fashion. A vendor complaint may also be issued for other reasons.
- 6.4 Some examples include, but are not limited to:
- 6.4.1 Repeated early or late delivery, or late delivery without prior notification.
 - 6.4.2 Repeated over/under shipments.
 - 6.4.3 Incorrect items sent.
 - 6.4.4 Lack of shipping and/or certification paperwork.
 - 6.4.5 Lack of timely response to vendor complaints.
- 6.5 Actions are being taken to eliminate the causes of nonconformities in order to prevent recurrence. Corrective actions are appropriate to the effects of the nonconformities encountered.

7.0 Counterfeit parts

- 7.1 "Counterfeit Parts" are parts that contain unlawful or unauthorized reproductions, substitutions, or alterations that have been knowingly mismarked, misidentified, or otherwise misrepresented to be an authentic, unmodified part from the original manufacturer, or a source with the express written authority of the original manufacturer or current design activity, including an authorized aftermarket manufacturer. Unlawful or unauthorized substitution includes used Work represented as new, or the false identification of grade, serial number, lot number, date code, or performance characteristics.
- 7.2 "Suspect Counterfeit part" means parts that for which credible evidence (including, but not limited to, visual inspection or testing) provides reasonable doubt that the Work part is authentic.
- 7.3 Supplier shall only purchase products to be delivered or incorporated as work to SMAI directly from the Original Component Manufacturer (OCM)/Original Equipment Manufacturer (OEM), or through an OCM/OEM authorized distributor chain.
- 7.4 SMAI may use another source only if:
- 1) The foregoing sources are unavailable.
 - 2) SMAI's inspection and other counterfeit risk mitigation processes will be employed to ensure the authenticity of the work.
 - 3) Sources needed are proprietary in nature and can only be obtained from a single source.

8.0 Product Safety and Product conformity.

- 8.1 All jobs shall be worked upon in a manner that allows efficient performance of the tool prior to shipment to customer and features that are critical on jobs are assessed with greater detail. Product safety is addressed through criteria listed on individual job travelers, SMI color chart SMI-F093, and Shop work orders.
- 8.2 Job travelers indicate risk levels for each tool. Product safety of jobs is maintained through customer specified tolerances from 2D prints and customer line up sheets. These requirements are communicated to all departments and appropriate suppliers.
- 8.3 Suppliers will be provided a work order which outlines the scope of work and critical features (if applicable) for outsourced jobs. Other documents can be sent such as 2D prints/3D data, customer line-up sheets, and customer instructions via email or FTP.
- 8.4 Application of above steps will ensure product safety throughout the entire life of the tool build, including when it is sent to the customer.

9 Awareness

- 9.1 At no time should any customer, or person at SMAI's facility, be exposed to hazardous material or situations that are not inherent in a component's structure. Residues, films, out-gassing products and packaging materials should comply with OSHA (Occupational Safety & Health Association) standards. For items with inherent hazards, safety notices must be clearly observable. As applicable, MSDS sheets must be provided during the First Article process. These requirements also apply to vendors and suppliers that are interacting with SMAI jobs.
- 9.2 Safety is not limited only to the jobs and tools in which employees are involved with. The behavior of employees should hold professionalism in high regard to allow for a productive work flow and an ethical and safe work environment. Employees that have work related issues should be aware of the appropriate personnel to bring their concerns to within SMAI and also at supplier's facilities.

10.0 Maintenance

- 10.1 The supplier must maintain all facilities, manufacturing machines, tools, measuring devices, and other equipment in a manner that the supplier can support SMAI's production requirements, and the quality of parts manufactured for SMAI is not degraded in any way.

Section 9 Related Documents

- SMI-F004 (Job Traveler)
- SMI-F028 (Audit Checklists)
- SMI-F050 (Job Updates)
- F4.3.1.7 Work Order
- SMI-F018 (Cut File Check list)
- F4.4.3.5 (Surface Information sheet)
- SMI-F250 (Customer Satisfaction Survey)