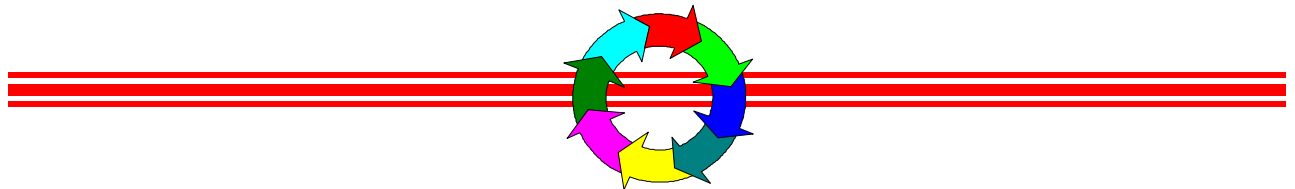


Specialty Engine Components L.L.C.

Quality Management System

*Supplier Quality Development
SQD-9000*



Original Issue: December 1998

Revised: August 2007

Prepared by:
Specialty Engine Components L.L.C.
Quality Management

Foreword

Specialty Engine Components L.L.C. is committed to continually improving its products and services to maintain our position as a world leader in our industry. An important part of this commitment is the development of a supply base capable of providing excellence in quality, value, delivery, technology, and service. SQD-9000 is the cornerstone of this development process.

This Supplier Quality Development document was developed to communicate our requirements while maintaining consistency with our customer's requirements. Suggestions for improvements to this document are encouraged and should be directed to your *Specialty Engine Components L.L.C.* Purchasing contact.

Steve Brown
Senior Quality Manager
Specialty Engine Components
Quality Management

Contents

Forward1

Contents2

Introduction3

 Goal3

 Purpose3

 Applicability3

 Implementation3

Quality System Requirements3

 Quality System3

 Quality System Assessment3

 Verification of Purchased Product3

General Requirements4

 Special Characteristics4

 Material Certification4

 Process Certification4

 Restricted Material4

 Regulatory Conformity4

 Lot Traceability4

Label Requirements4

 Metal Bar Stock Suppliers4

 Manufactured Component Suppliers4

 Production Process Suppliers4

 FIFO Processing Requirement5

 100% On-Time Delivery5

 Delivered Product Quality5

Nonconforming Material5

 Discrepant Material5

 Sorting as a Separate Operation5

 Sorting Included with Packaging5

 Sorting as Provided by a Third Party5

 Cost of Defective Material5

 Excess Freight5

 Customer Disruptions and Warranty Claims5

Part and Process Development6

 Quality Planning6

 Advanced Product Quality Planning (APQP)6

 Quality Planning Tools6

Production Part Approval Process (PPAP)6

 PPAP Requirement6

 When PPAP is Required6

 PPAP Submission Level7

 Where to Submit PPAP7

 SEC PPAP Approval7

Non-Conforming Material Report (NCMRs)7

 NCMRs7

 Supplier Response7

 Certified Product7

Supplier Rating System8

 Quality Rating8

 Delivery Rating8

 Supplier Cost Reduction Effort (SCORE)8

 CAR Demerits8

Introduction

Goal	The goal for Supplier Quality Development SQD-9000 is supplier registration to ISO/TS 16949:2002 by an accredited third-party certification body. Conformity with ISO 9001:2000 is the first step in achieving this goal.
Purpose	This document defines the fundamental quality system expectations of <i>Specialty Engine Components</i> for external suppliers of production and service parts, components, services and materials. The term "supplier" used in this document is synonymous with the term "subcontractor" as defined in the ISO/TS 16949:2002 terms and definitions and refers to providers of production and service parts, components, services and materials directly to <i>Specialty Engine Components</i> .
Applicability	This system applies to all external suppliers of production and service parts, components, services and materials to any <i>Specialty Engine Components</i> location.
Implementation	<p><i>Specialty Engine Components</i> requires that the supplier establish, document, and implement an effective quality system based on ISO/TS 16949:2002. All applicable requirements of ISO/TS 16949:2002 are to be incorporated in the supplier's quality system and described in the supplier's/subcontractor's quality manual. ISO/TS 16949:2002 is an input document for the development of a quality manual.</p> <p>ISO 9001:2000 and ISO/TS 16949:2002 is copyright protected property of the International Organization for Standardization, Geneva, Switzerland.</p> <p>ISO/TS 16949:2002 was prepared by the International Automotive Task Force (IATF) and Japan Automobile Manufacturers Association, Inc. (JAMA), with support from ISO/TC, Quality management and quality assurance.</p> <p>Only those third party certification bodies/registrars qualified for ISO/TS 16949:2002 by the International Automotive Task Force (IATF) are permitted to issue a registration certificate with the term ISO/TS 16949:2002.</p> <p>The related ISO/TS 16949:2002 manuals are available from the Automotive Industry Action Group (248) 358-3003.</p>

Quality System Requirements

Quality System	<p>The supplier, as a fundamental principle in its quality system, shall: Establish, document, and implement an effective quality system, with the goal of compliance to all applicable elements of ISO/TS 16949:2002.</p> <p>Incorporate all requirements of <i>Specialty Engine Components</i> SQD-9000 into the supplier's quality system.</p> <p>Prepare a quality manual that addresses all requirements of ISO 9001:2000. The manual must include or reference documented procedures to support the specified requirements within the quality manual.</p>
Quality System Assessment	Supplier quality system assessments to ISO 9001:2000 by an accredited third party certification body/registrar is the only acceptable method. The Supplier is required to send a copy of their registration certificate to the SEC Corporate Quality Office upon the issuance of a SEC purchase order and at each re-certification thereafter. If a change in the supplier's registration status occurs, the supplier shall notify the appropriate <i>Specialty Engine Components</i> purchasing contact.
Verification of Purchased Product	<i>Specialty Engine Components</i> and its customers shall be afforded the right to verify at the supplier's premises that product conforms to specified requirements. Such verification shall not be used as evidence of effective control of quality by the supplier. Verification by the customer shall not absolve the supplier of the responsibility to provide acceptable product/service, nor shall it preclude subsequent rejection by the customer.

General Requirements

Special Characteristics Some products will have features which are designated as special characteristics. These may be identified by *Specialty Engine Components* or may be passed through from requirements of a *Specialty Engine Components* customer. For these characteristics, SPC data verifying a minimum 1.33 Cpk or greater process capability, shall be furnished with each shipment, unless waived in writing by *Specialty Engine Components*. When a *Specialty Engine Components* customer special characteristic is shown on the drawing or referenced in the specification, the supplier is required to comply with the *Specialty Engine Components* customer's requirement. It is the supplier's responsibility to understand all requirements shown on drawings or specifications. Please contact your *Specialty Engine Components* Purchasing function if you do not understand the requirements.

Material Certification The supplier has the responsibility to ensure that purchased production material supplied to *Specialty Engine Components* is in compliance with all material specifications shown on the drawing and/or purchase order.

Material certification containing actual measured results are required from the following supplier groups:

Metal Bar Stock Suppliers - Mill certification with each shipment.

Manufactured Component Suppliers - Mill or raw material certification with each shipment.

Process Certification The supplier has the responsibility to ensure that production processes supplied to *Specialty Engine Components* are in compliance with all specifications shown on the drawing and/or purchase order.

Process certification containing actual measured results with a minimum 1.33 Cpk acceptance level must be maintained at the processing location and be made available upon request.

Restricted Material The supplier shall comply with all current governmental and safety restraints on restricted, toxic and hazardous materials; as well as environmental, electrical and electromagnetic considerations applicable to the country of manufacture and sale.

Regulatory Conformity All purchased products or materials used in supplier's process, product, or service shall conform to all applicable regulatory requirements.

Lot Traceability The supplier is responsible for maintaining lot traceability while the product is at the supplier's location. Lots are not to be mixed together.

Label Requirements

Metal Bar Stock Suppliers The minimum information to be shown on labels for bar stock is supplier's name, material type and grade and a supplier initiated unique traceability number that can be used to trace the material to its manufacturing process.

Manufactured Component Suppliers The minimum information to be shown on labels for component parts is the supplier's name, purchased part number and a supplier initiated unique traceability number that can be used to trace components to their manufacturing process and raw material used.

Production Process Suppliers (Heat Treat, Plating, Grinding, etc.) It is the supplier's responsibility for marking the Lot Process Traveler label (tracking label) on each container of parts that passes in-process inspection. Preferably this marking will be the operator's initials and the date. This label, when initialed, signifies accepted product. It also identifies the last process completed. If the parts have to be trayed after the process has been completed, it is the responsibility of the supplier to transfer the information from the Lot Process Traveler to a label attached to each pallet of trays.

FIFO Processing Requirement	The supplier is responsible for utilizing the FIFO (first in, first out) concept when processing <i>Specialty Engine Components</i> parts. The lot traceability number is the number that each supplier shall use for following the FIFO concept.
100% On-Time	100% on-time delivery is required of all suppliers. Appropriate planning information and purchase commitments to enable suppliers to meet this expectation is provided by the <i>Specialty Engine Components</i> Purchasing function. Subcontractor delivery performance is monitored and is an element of the supplier rating. Appropriate corrective actions are to be taken in the event of failure to meet delivery requirements.
Delivered Product Quality	The supplier shall adopt an acceptance criteria policy of zero defects on raw material, products and services supplied to <i>Specialty Engine Components</i> . Delivered product quality performance is monitored and is an element of the supplier rating. Appropriate corrective actions are to be taken in the event of failure to meet delivered product quality requirements.

Nonconforming Material

Discrepant Material	<p>In cases where discrepant material is discovered at a <i>Specialty Engine Components</i> receiving facility, it is the supplier's responsibility to replace or 100% sort the defective material at the supplier's expense and to reimburse <i>Specialty Engine Components</i> for all associated costs incurred as a direct result of discrepant product or service. There will be a charge of \$50.00 per rejected lot of material to cover administrative costs.</p> <p>Normally, rejected material will be returned to the supplier. If this is the case, the supplier will be issued a Debit Memo and will then need to re-invoice <i>Specialty Engine Components</i> once the material is re-shipped.</p>
Sorting or Rework as a Separate Operation	Under certain circumstances it will be necessary for <i>Specialty Engine Components</i> to rework or sort product in-house so that scheduling requirements are not compromised. In such a circumstance the sorting will take place at the supplier's expense. The charge for this sort or rework will be \$30.00 per man-hour. The supplier will be notified when this occurs.
Sorting Included with Packaging	Under certain circumstances it will be necessary for <i>Specialty Engine Components</i> to sort for a defect as part of the normal packaging operations so that scheduling requirements are not compromised. In such a circumstance the sorting will take place at the supplier's expense. The charge for this sort will be a flat rate of \$120.00 per lot. The supplier will be notified when this occurs.
Sorting Provided by a Third Party	Under certain circumstances it will be necessary for <i>Specialty Engine Components</i> to hire the services of a third party sorting company for sorting at its own facility or at a customer's facility. In such a circumstance the cost of such sorting will be at the supplier's expense.
Cost of Defective Material	The total amount of defective material sorted and scrapped from any particular lot will be charged to the supplier at the cost in the part up to that point.
Excess Freight	The supplier will be held responsible for excess freight costs incurred because of supplier's lack of performance. This includes premium freight charges from the supplier facility to the receiving <i>Specialty Engine Components</i> facility as well any premium freight charges passed on by <i>Specialty Engine Components</i> customer. The supplier will be notified when this occurs.
Customer Disruptions and Warranty Claims	The supplier will be held responsible for all costs resulting from <i>Specialty Engine Components</i> customer disruptions and/or warranty claims, because of suppliers lack of quality performance. The supplier will be notified when this occurs.

Part and Process Development

Advanced Product Quality Planning (APQP) Supplier shall use some form of systematic planning for new products / process changes. The preferred method is described in the Advanced Product Quality Planning and Control Plan reference manual available from the AIAG. Other methods may be used if they achieve the same results.

Quality Planning Tools The following quality planning methods and documentation are required as a minimum for all production parts, materials and processes.

- Process Flow Chart
- Process Failure Mode and Effects Analysis (PFMEA)
- Control Plan
- Measurement System Analysis for all equipment listed in the control plan

Production Part Approval Process (PPAP)

PPAP Requirements The supplier shall comply with all requirements set forth in the Production Part Approval Process (PPAP) reference manual available from the AIAG. Production part approval is granted for a part number, engineering change level, manufacturing location, material supplier(s) and production process environment. Changes to any of these requires approval from the *Specialty Engine Components* receiving facility prior to supplying production parts. Re-submission per PPAP may be required. The quality office of the *Specialty Engine Components* facility receiving the product or service is the approving activity for PPAP submissions.

When PPAP is required The supplier should utilize a part approval process for their suppliers where applicable. Unless waived in writing, production part approval is always required prior to the first production shipment of product in the following situations.

1. A new part or product (i.e., a specific part, material, or process not previously supplied to the specific customer).
2. Correction of a discrepancy on a previously submitted part.
3. Product modified by an engineering change to design records, specifications, or materials.
4. Additionally, the supplier must notify *Specialty Engine Components* and submit for part approval prior to the first production shipment in the following situations unless the responsible part approval activity has specifically waived in writing this requirement for the subject part. If a formal submission is waived, all items of the PPAP file must be reviewed and updated by the supplier, as necessary to reflect the current process. The PPAP file must contain the name of the responsible part approval activity person granting the waiver and the date
5. Use of optional construction, material, or process than was used in the previously approved part.
6. Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling or equipment.
7. Production following refurbishment or rearrangement of existing tooling or equipment.
8. Production following any change in process or methods of manufacture.
9. Production from tooling and equipment transferred to a different plant location or from an additional plant location.
10. Change of source for subcontracted parts, materials or services (e.g.: heat-treating, plating, etc.)

- plating, etc.).
11. Product re-released after the tooling has been inactive for volume production for twelve months or more.
 12. Following a customer request to suspend shipment due to a supplier quality problem.

IF THERE IS ANY QUESTION CONCERNING THE NEED FOR PRODUCTION PART APPROVAL, CONTACT THE *Specialty Engine Components* PURCHASING DEPARTMENT.

PPAP Submission Level The *Specialty Engine Components* receiving facility will identify the submission level that will be used with each supplier. *Specialty Engine Components* choice of levels for a supplier will be determined by such factors as supplier compliance to ISO 9001:2000 requirements, supplier quality recognition status, part criticality, experience with prior part submissions, and the supplier's expertise with the specific commodity.

PPAP Level and Document Submission Requirement Submit the following documents to *Specialty Engine Components* Receiving Facility at the requested level:

- Level 1 Warrant only
- Level 2 Warrant, Parts, Drawings, Inspection Results, Laboratory and Performance Results
- Level 3 Warrant, Parts, Drawings, Inspection Results, Laboratory and Performance Results, Process Capability Results, Process Flow Chart, PFMEA, Control Plan, and Measurement System Studies
- Level 4 Per Level 3, but without parts
- Level 5 Review at supplier location: warrant, Parts, Drawings, Inspection Results Laboratory and Performance Results, Process Capability Results, Process Flow Chart, PFMEA, Control Plan, and Measurement System Studies

Where to Submit PPAP Unless otherwise notified, the supplier shall submit PPAP to the quality office of the *Specialty Engine Components* facility that will receive the product shipment.

SEC PPAP Approval The supplier must receive *Specialty Engine Components* approval prior to shipping production product. The Quality Assurance Manager at the *Specialty Engine Components* receiving facility is the approval authority. Simply receiving a material release or a purchase order does not constitute PPAP approval nor does it imply authorization to ship product without PPAP approval.

Non-Conforming Material Report (NCMR)

NCMRs *Specialty Engine Components* uses the Non-Conforming Material Report (NCMR) to communicate quality concerns to the supplier. Supplier will be notified of a NCMR via e-mail. Where supplier does not have an active e-mail account, supplier will be notified by telephone facsimile.

Supplier Response Supplier must respond to request as outlined within the e-mail or telephone facsimile.

Certified Product Upon receiving a NCMR, all affected material awaiting shipment or that has been returned for rework or sorting shall:

1. Be 100% sorted and/or reworked, as applicable.
2. Label each container as CERTIFIED PRODUCT after the sort/rework has been done.
3. Identify the NCMR number on the label.
4. Identify what work was performed, i.e.:
 SORTED FOR (specify condition)
 REWORKED FOR (specify condition)
 Note: If trays are being used, identify entire pallet with several certified labels.
5. Indicate on the return shipper the NCMR number and that it is certified product.
6. Certify the next three consecutive lots to be defect free.

Following is an example of the information to be on the CERTIFIED PRODUCT label:



Supplier Rating System

Promotion of Supplier Monitoring *Specialty Engine Components* promotes supplier monitoring of the performance of their manufacturing processes.

Supplier Rating The supplier rating is based on quality, delivery, cost reduction, and responsiveness to customer concerns. The supplier rating (SR) is calculated as three quarters of the Quality Rating (QR) plus one quarter of the Delivery Rating (DR) plus SCORE points less CAR demerits, less customer disruptions.

$$SR = 0.75 \times QR + 0.25 \times DR + \text{SCORE points} - \text{CAR demerits} - \text{customer disruptions}$$

Quality Rating Quality Rating = $50 \times (.02 - \text{lot quantity rejected} / \text{total lot quantity received}) \times 100$.
 No points awarded if rejection rate is above 2%.
 100 points max.

Delivery Rating Delivery rating = $\text{number of shipments received on time} / \text{total number of shipments received} \times 100$.
 100 points max.

Supplier Cost Reduction Effort (SCORE) SCORE Point Bonus
 Supplier rating will be increased by adding one (1) bonus point to rating for each one percent (1%) direct cost reduction. This could raise a suppliers rating above 100. Bonus points are carried over for 12 months.

Customer Disruptions Supplier rating will be reduced by 5 points for each customer disruption including field failures.

CAR Demerits Supplier Rating will be reduced by subtracting Corrective Action Response (CAR) demerits per the following table. Demerits are carried over each month until an acceptable Corrective Action is received.

	Demerits
Late > 10 Days	1
Late > 20 Days	3
Late > 30 Days	5
Late > 45 Days	7
Late > 60 Days	9
Late over 60 Days	10
Rejected C/A	10

*Corrective Actions may be rejected if it does not appear to effectively address root cause, permanent action, valid verification methods, or positive preventive action.