



**Freudenberg-NOK General Partnership
Supplier Manual**

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1.0 OVERVIEW

1.1 FREUDENBERG-NOK GENERAL PARTNERSHIP MISSION STATEMENT

Freudenberg-NOK

Our Mission

Valued by our Customers,
Trusted by our Associates,
Respected by our Suppliers,
Embraced by our Communities,
Envied by our Competitors,
.....and Benchmarked for our Performance.

1.2 STATEMENT OF PURPOSE AND INTENT

A total commitment to customer satisfaction and continuous quality improvement must be shared by FREUDENBERG-NOK General Partnership (FNGP) and all of its suppliers. As a part of the supply chain, together we must maintain effective quality management systems if we are to remain competitive in the market place. FNGP quality is complemented by the combined efforts of its suppliers.

It is the intent of FNGP to purchase from suppliers who consistently meet FNGP expectations for quality, delivery, value and service as well as share in our attitude toward prevention versus detection. This manual is a tool to inform suppliers of FNGP expectations and how they will be measured against these requirements. The requirements set forth in this manual shall apply to all suppliers including, but not limited to those providing production materials, production or service parts, heat treating, painting, plating, or other finishing services to FNGP.

1.3 APPLICATION

The requirements stated in this manual are in addition to (and do not replace or supersede) any of the requirements outlined in FNGP issued purchase orders, engineering drawings, specification requirements, FNGP Terms and Conditions of purchasing, or other FNGP supplier requirements. They do not relieve the supplier from the responsibility of ensuring that all materials supplied to FNGP meet all of the requirements specified by FNGP. In addition to this manual, some FNGP locations may issue supplements detailing specifics relative to their location. Always check with your FNGP Commodity Manager or Supplier Development Engineer for additional information.



1.4 VALIDATION OF SUPPLIER QUALITY SYSTEMS

As a supplier to the automotive industry, FNGP adheres to the ISO/TS-16949:2002 standard as the fundamental quality system standard. FNGP requires suppliers to be third party certified to ISO-9001:2000, or ISO/TS-16949:2002. Unless otherwise specified by FNGP, suppliers to FNGP shall be third party registered to ISO 9001:2000 or ISO/TS 16949:2002 by an accredited third-party certification body. FNGP recognizes American Association for Lab Accreditation (A2LA) or ISO 17025 in lieu of the above standards for laboratory and calibration services.

The FNGP Supplier Manual as well as other quality systems requirements and associated supplements can be obtained from the Automotive Industry Action Group (AIAG), <http://www.aiag.org>.

To assure FNGP expectations are met, on-site surveys, self-surveys and supplier profile information may be requested for potential or current suppliers. Other disciplines subject to evaluation via on-site surveys may include, but are not limited to quality, management structure, cost, delivery, technology, and the supplier's expertise in Lean/Synchronous production techniques.

2.0 SUPPLY BASE MANAGEMENT

2.1 ORGANIZATIONAL RESPONSIBILITY

All raw material and component purchases are managed through the Corporate Supply Chain Management and Logistics (SCM&L) structure. Under this structure, each purchased raw material or component is assigned a commodity type. This ensures consistent sourcing considerations across all suppliers within that commodity and all sites within FNGP. Each commodity is assigned a manager. The Commodity Managers' responsibilities include; establishing a list of suppliers, submitting requests for quotes, awarding new business, and establishing commercial terms and conditions for suppliers within their commodity.

2.2 NEW SUPPLIERS

A new supplier is a company that has never done business with FNGP or a past supplier who has not supplied product to FNGP within the last three years. All new suppliers must be qualified prior to the awarding of new business. The complete list of current / approved suppliers resides in FNGP's quality management system, QSI. This list is maintained by Corporate SCM&L.

The qualification process includes passing the FNGP cross functional evaluation and evidence of 3rd party ISO 9001:2000 or ISO/TS 16949:2002 registration by an internationally recognized 3rd party registrar.



3.0 QUALITY PLANNING

3.1 ADVANCED PRODUCT QUALITY PLANNING

Advanced product quality planning is a structured method of defining and establishing the steps necessary to assure that a product satisfies the customer.

Suppliers are required to become involved early in the product development process. Suppliers are responsible to understand the use of their material and its impact on the quality of the finished product. All aspects of material performance and expectation should be clearly understood by the supplier. Supplier may be required to participate in FNGP plant level APQP programs. This may include but not limited to technical review, design reviews, logistics planning, pre-PPAP planning and other activities as defined by FNGP manufacturing, engineering or SCM&L. Suppliers shall implement project planning and are encouraged to follow the five APQP phases and incorporate the seven elements of APQP to ensure timely delivery of material or components and achievement of program cost and timing goals. Suppliers shall inform receiving FNGP site, corporate commodity manager and corporate supplier development engineer of APQP timeline, goals and progress.

For quality planning FNGP suppliers shall reference the following ISO/TS 16949:2002 core tools: PPAP, FMEA, APQP, MSA and SPC.

3.2 PROTOTYPE PARTS

Prototype or sample material may be required for functional testing and plant trial run purposes. Facility personnel will coordinate requirements with suppliers.

3.3 PPAP

FNGP follows the AIAG Production Part Approval Process (PPAP) for validation of all purchased materials required for production applications. The PPAP manual is necessary to understand and comply with submission requirements. Suppliers shall obtain a list of specific PPAP requirements from the receiving FNGP site. PPAP submissions are to be submitted to the receiving FNGP site Quality department.

Customer specific requirements are in addition to any FNGP or PPAP requirements and take precedence. Suppliers are responsible to keep up to date with any and all end customer specific requirements.

3.4 SUBMISSION REQUIREMENTS

The default PPAP submission level will be to AIAG PPAP manual Level-3 requirements. The receiving FNGP site has the option to change the submission level requirements. FNGP requires that all PPAP documentation shall be completed and available for review, regardless of the submission level requested. In addition to the level-3 submission, any applicable MSDS shall be included with PPAP submissions as well as all documentation for any customer specific requirements.



Once FNGP has approved the supplier PPAP submission, the part is considered production ready, and the ongoing supplier performance measurement and maintenance is in accordance with Section 5.0 Supplier Performance of this document.

3.4.1 Heat Treat Requirement

All suppliers of heat treated material to FNGP shall provide documentation of an AIAG CQI-9 audit performed by a second party for each heat treat service provider used by the supplier. If the supplier performs heat treating, they shall either supply an audit performed by a Tier 1, OEM customer or submit to an audit by FNGP. Any identified "not satisfactory" or "needs immediate action" items shall have a documented action plan. This documentation shall be updated and provided to FNGP on an annual basis.

3.4.2 "Not Satisfactory" or "Needs Immediate Action" Items

Suppliers shall not submit a PPAP with non-conforming characteristics without previous written approval from the receiving FNGP site(s). Any "not satisfactory" or "needs immediate action" items identified in the PPAP package affecting product fit, form, functional performance or quality shall require and action plan for improvement and may be grounds for PPAP denial. In addition, any previous and current product lots must be tested for proof of acceptability use. If non-conforming conditions exist, the supplier shall immediately notify the receiving FNGP site(s), Supplier Development Engineer, and Commodity Manager. All suspect products are to be placed into containment until disposition approval is granted by the receiving FNGP site(s) and/or Supplier Development Engineer.

3.5 PROCESS FLOW DIAGRAM, PFMEA and CONTROL PLAN

The Process FMEA shall document the manufacturing process, any significant characteristics and the actions implemented to reduce the Risk Priority Number (See RPN number in appendix). When not specified by end customer requirements, FNGP requires that any RPN number over 100 be addressed with an action plan for improvement. Use of the AIAG FMEA Manual as a guideline is suggested.

Control Plans shall be developed identifying significant characteristics and noting the control mechanisms and reaction plans in the event of the failure of the mechanism. Use of the AIAG APQP and Control Plan Manual as a guideline is suggested.

3.6 EARLY PRODUCTION CONTAINMENT

It is highly recommended that suppliers implement an early production containment program in ensure a smooth launch with FNGP. At the request of the receiving FNGP site or corporate SCM the supplier shall implement an early production containment program. This program shall last for 30% of the first year's volume or 90 days which ever is longer. In the case of this request, a Pre-Launch Control Plan consisting of additional controls, inspection audits, and testing to



identify non-conformances during the production process shall be developed. Depending on the dominant factor(s) of the production process (set-up, machinery, fixture, tooling, operator, material/components, preventative maintenance, climate) additional controls shall include:

- Off-line, separate and independent check from the normal production process whenever possible
- Mandatory 100% inspection, as determined by the supplier and receiving FNGP site, for all pre-production and pilot parts shipped
- Increased frequency/sample size of receiving, process and or shipping inspections after pre-production and pilot
- Mandated sub-supplier containment and or sub-supplier support/audits
- Addition of inspection/control items
- Increased verification of label accuracy
- Enhanced process controls such as error proofing
- Error proofing validation through introduction of known defects

Early Production Containment data shall be retained per quality system requirements and available upon request by FNGP Supply Chain Management and/or the receiving FNGP site(s). Data should include date and quantity of product manufactured, inspection findings and countermeasures taken. Early Production Containment shall remain in place until such time as the risk of shipment of nonconforming product is minimized or exit is approved by the receiving FNGP site.

4.0 ONGOING QUALITY REQUIREMENTS

4.1 MATERIAL CERTIFICATIONS, CERTIFICATES OF COMPLIANCE and PROOF OF CONFORMANCE

Suppliers may be required to submit Certificates of Compliance or Material Certifications with each shipment of material. These certificates should state actual test results or measurements for each Significant Characteristic (SC) listed on the purchasing specification and/or print. The Material Certification is to identify the purchase order, lot or batch and specific quantity of material covered by the certification.

The Material Certification shall be provided to the receiving FNGP site before or at the time of material arrival at FNGP. When it is not required to send material certifications to FNGP, proof of conformance must be retained at the supplier location and made available upon request by FNGP. In addition, supplier shall maintain lot traceability and proof of material conformance records for three years. This information shall be made available to FNGP upon request.



4.2 SPC AND PROCESS CAPABILITY

Statistical Process Control information may be required to be submitted to FNGP on a regular basis as supporting verification of material quality. Each FNGP receiving site may have SPC requirements in addition to the ones outlined in this supplier manual. Each FNGP receiving site may have different requirements for SPC at PPAP (short-term) and during production (long-term). In addition, minimum requirements for process capability studies may differ between FNGP sites. Please contact your receiving FNGP site, corporate commodity manager or supplier development engineer for specific details.

At a minimum, Significant Characteristics, Critical Characteristics and those characteristics with safety implications shall be identified on the control plan and shall be recorded and monitored with out-of-control conditions noted. Suppliers shall ensure that out-of-control material is verified as compliant to Specifications before being released for shipment to FNGP. Special causes of variation should be investigated, identified and eliminated.

Where applicable, Cpk shall be calculated and monitored to ensure long-term process capability of material supplied to FNGP. Suppliers shall target a minimum Cpk of 1.33 to ensure production with minimal variation. Other measures of long term capability and stability of material will be considered on a case-by-case basis depending on the type of process and risk level of the material.

Use of the AIAG SPC Manual as a guideline is suggested.

4.3 GAGES AND MEASURING SYSTEMS

Gages and measuring instruments used for verification of quality must be maintained and calibrated in accordance with ISO/TS16949 requirements. Use of the AIAG MSA Manual as a guideline is suggested. All gages used to measure Significant Characteristics must have a gage R&R <10% or a signed deviation by the receiving FNGP site.

Suppliers are obligated to inform FNGP of material shipped and found to be manufactured with damaged or out-of-calibration equipment.

4.4 NONCONFORMING MATERIAL

4.4.1 Customer Notification of Nonconforming Material

Suppliers are obligated to immediately notify FNGP of nonconforming or suspect material that may be in transit or already delivered. Such action is appreciated by FNGP and may reduce the severity of the quality incident. Communication should be to the receiving FNGP site, corporate Commodity Manager and corporate Supplier Development Engineer.

4.4.2 Containment of Nonconforming Material at the Supplier Facility

Suppliers are expected to react immediately and authoritatively to contain the nonconforming material and ensure the impact on FNGP production is minimal. Nonconforming material shall be immediately contained by the



supplier. Suppliers shall implement a 100% off-line inspection of suspect lots. Suppliers shall certify future shipments and mark all certified stock appropriately for a period of time as determined by the receiving FNGP site. Records of nonconforming material and customer notification shall be retained per quality system requirements and available upon request by FNGP Supply Chain Management and/or the receiving FNGP site.

4.4.3 Nonconforming Material at FNGP

Suppliers shall inform FNGP of any material that could be consider suspect at the receiving FNGP site. FNGP has the option to request assistance from the supplier for on-site inspection of nonconforming material at either, or both, FNGP and the end user's facility. If non-conforming material is found in at a receiving FNGP site, 100% 3rd party containment may be implemented at the supplier, FNGP or end customer site until the root cause is determined and a permanent corrective action is demonstrated. The receiving FNGP site or end customer shall determine the length of time for 3rd party containment. A report detailing the daily fallout from 3rd party containment shall be provided to FNGP during this period. All costs incurred from on-site inspection and/or 3rd party containment will be at the supplier's expense.

Nonconforming material will count against the supplier's quality performance score and PPM rating. Quality performance will be communicated to the supplier through the Supplier Performance Feedback report.

4.4.4 Disposition of Nonconforming Material

Each FNGP manufacturing site shall determine the disposition of supplier non-conforming material. A multi-discipline team convenes as necessary to evaluate the risks of using the nonconforming material and consider the impact on the production schedule and customer delivery. All costs associated with returning or disposing of supplier non-conforming material will be at the supplier's expense.

4.4.5 Visually Nonconforming Material

Unless other arrangements are made in advance, FNGP expects all materials to be supplied with consistent appearance (consistent color, texture, shape, packaging, etc.). Visually non-conforming materials will be rejected and a SCAR will be issued, unless FNGP is notified in advance that the non-conforming material is being shipped. The advanced notification shall include (1) a description of how the material differs from conforming material, (2) the reason for the non-conformance and (3) a detailed explanation of why the supplier considers the visually non-conforming to be acceptable for use. FNGP reserves the right to reject the visually non-conforming material regardless of the content of the advanced notification.



4.5 SUPPLIER CORRECTIVE ACTION REQUESTS

FNGP has implemented a uniform Supplier Management process utilizing our company wide quality software system, QSI. A Supplier Corrective Action Request (SCAR) is documented by the plant when a supplier issue occurs. The plant personnel will enter a supplier issue into QSI and designate the SCAR as Delivery (DE), Product Related (PR), Documentation (DO), Customer Service Error (SE) or Commercial Problem (CP). A Delivery SCAR may impact the supplier's delivery rating. A Quality SCAR will impact the supplier's quality rating. (See Section 5.3). Issues requiring a response from the supplier will be communicated to the supplier in a timely manner. Suppliers are expected to respond to the SCAR within 24 hours for acknowledgement, 72 hours for containment and 30 days for closure or within the required timing as directed by the receiving FNGP site.

Suppliers are expected to use structured problem solving techniques such as 8D or 5-why, to generate a timely response with corrective actions that permanently eliminate the root cause of the defect. (See Structured Problem Solving section). Responses are expected in common electronic format (e.g. MSWord, MS Excel) and should be submitted via e-mail.

4.6 STRUCTURED PROBLEM SOLVING

Structured problem solving is a given standard within the automotive industry and suppliers to FNGP are expected to implement and support a system of structured problem solving. Suppliers are welcome to use their systems or the FNGP system as long as a cross-functional team is able to identify the root cause of a problem and implement permanent corrective actions.

The root cause definition should include the "process" root cause (how did the manufacturing process fail) and the "system" root cause (how did the quality system fail) and the "detection" root cause (why was the nonconformance not discovered). Suppliers should evaluate the effectiveness of the corrective actions for long-term system support within their company. Contact the FNGP Supplier Development Manager for more information. The AIAG CQI-10 Effective Problem Solving Guideline is suggested as a reference for structured problem solving method.

4.7 CHARGEBACK

The supplier shall be held responsible for all costs associated with shipment of non-conforming material. In the event of dispute, both FNGP and the supplier shall agree to promptly meet in a good faith effort to try to resolve the dispute before judicial proceedings.

Any supplier chargeback(s) will follow the existing or as modified Supplier Chargeback Policy as provided to the supplier upon request. A Supplier Request for Corrective Action (SCAR) will be issued and no supplier chargeback(s) will be issued or approved by FNGP Supply Chain Management until the earlier of (a) root cause of the defect has been determined or (b) 30 days from initial issuance of the SCAR.



4.8 MATERIAL/PROCESS/EQUIPMENT/STRUCTURE CHANGES

Suppliers shall request, in writing, approval from FNGP for **ALL** changes prior to their implementation. Requests for changes shall be submitted using the attached Supplier Product Change Notification (PCN) form and sent to the following email address or fax number:

Email: ProductChange@fngp.com

Fax: (734) 354-2544

Change requests to FNGP are not considered acknowledged until the requesting supplier receives a confirmation back from FNGP after the PCN has been submitted. A request and/or an acknowledgement does not guarantee an approval will be granted. Changes shall be handled in conformance with ISO/TS16949 and AIAG PPAP manual requirements. Upon review of the request for changes, the suppliers will be notified of denial of the request, the requirement to submit PPAP for the change or approval of a waiver of PPAP. FNGP reserves the right to determine the timeline for change implementations.

No change will be allowed without approval from the receiving FNGP site. FNGP and the end customer have the right to evaluate the impact the change will have on their end product and advise the supplier of acceptability and requirements for implementing the change. FNGP may require test samples for plant trial run requirements.

All suppliers are expected to notify FNGP when a change in the management structure and/or ownership of the organization occurs.

4.9 DEVIATION REQUEST

Suppliers are obligated to quarantine any nonconforming, suspect, or unapproved material (see 4.4.2). Under certain circumstances, suppliers may be granted a deviation in order to continue shipments. A deviation request shall be directed to the receiving FNGP site and copied to the corporate Commodity Manager and Supplier Development Engineer. FNGP will evaluate the risks of using the nonconforming material and consider the impact on the production schedule and customer delivery before approval of the request (See Section 4.4.4). Material may not be shipped until the deviation has been approved in writing by the receiving FNGP site. Deviations are to be for a specific quantity of material or for a specific time period which will be determined by the receiving FNGP site. If a deviation is granted and these parts are shipped to FNGP, the parts shall be labeled at a minimum on all four sides of the shipping container. The receiving FNGP site may request additional labeling of these parts at the expense of the supplier.

4.10 LABELING

Labeling shall comply with all requirements defined on purchase orders or other documented communications from FNGP SCM or the receiving FNGP site.

Suppliers are to label each shipping container of material in such a way that the material lot/batch number, purchase order number and quantity are immediately evident to FNGP receiving and production personnel.



4.11 ONGOING QUALITY REGISTRATION

Suppliers are responsible for maintaining current ISO-9000:2000 or ISO/TS 16949:2002 registration if they supply items affecting product quality. Evidence of current registration must be presented prior to the supplier being approved and entered into the approved supplier list. Suppliers are responsible to provide evidence of current registration to ensure that a lapse does not occur. This evidence must be supplied to SCM as it is renewed by the supplier.



5.0 SUPPLIER PERFORMANCE

5.1 PURPOSE

The purpose of providing supplier performance feedback is to:

- 5.1.1 Communicate to suppliers FNGP's assessment of their performance so that appropriate improvements can be implemented.
- 5.1.2 Provide an internal measurement system in order to better evaluate and manage our supply base.
- 5.1.3 Assist in determining new business awards.

5.2 FREQUENCY OF ASSESSMENT

Supplier performance feedback will be provided to current suppliers on a quarterly basis. Overall performance of suppliers will also be summarized annually.

5.3 SUPPLIER PERFORMANCE REPORTING SYSTEM

5.3.1 SCORING MODEL (100 points total)

Element	Measure	Result	Points Awarded
Quality	PPM	0-25	40
		26-75	30
		76-150	20
		151-250	10
		>250	0
Delivery	On-Time Delivery	0 Delivery SCARs	30
		1 Delivery SCAR	20
		2 Delivery SCARs	10
		>2 Delivery SCARs	0
Technical	Supplier's Technical Capability	As outlined in	10
		Supplier Technical	8
		Ratings (available	6
		upon request)	4
			2
Cost Improvement	% of Quarterly Sales	5% and above	20
		4%	16
		3%	12
		2%	8
		1%	4
		0	0



5.3.2 HOW SCORES ARE DERIVED

5.3.2.1 PPM (Parts per Million) is the number of non-conforming units divided by the total number of units shipped to FNGP, multiplied by one million. The rating is derived by comparing the resulting PPM against the scoring model above.

5.3.2.2 Technical Scores of up to 10 points will be awarded annually by the Commodity Manager per the Supplier Technical Ratings guidelines.

5.3.2.3 The On-Time Delivery rating is based on material or components being received in a timely manner such that the FNGP manufacturing process is not interrupted. This should not be construed to diminish FNGP's requirement for 100% on-time delivery of the correct number of parts delivered on the date specified by the using facility. Ten points will be deducted from your on time delivery score for every interruption of the FNGP manufacturing process.

5.3.2.4 Cost Improvement performance - FNGP expects its suppliers to implement cost reduction activities. The goal is equal to 5% of the supplier's sales to FNGP annually. Four points are awarded for each percentage point of documented cost savings to FNGP. Cost reduction ideas should be sent to the appropriate Commodity Manager.

Note: If no shipping activity occurs from a supplier during a rating period a score of zero is given, and the annual score is an average of the active periods.

5.4 OVERALL PERFORMANCE RATING LEVELS

The following are the levels achievable through the FNGP supplier report card system.

5.4.1 PARTNER Rating = 100-91

5.4.2 PREFERRED Rating = 90-81

5.4.3 APPROVED Rating = 80-61

5.4.4 NEEDS IMPROVEMENT Rating = 60-0

If a supplier falls below the minimum Supplier Performance Feedback score of 61 for two consecutive quarters they will be placed in a "Probation" status.

In the event a supplier reaches NEEDS IMPROVEMENTS or PROBATION status the following actions may occur. (Note that this applies to individual supplier locations, as well as their corporate aggregate score.)



- 5.4.4.1 Corporate Supply Chain Management sends a letter to the management of the supplier notifying them of this situation, requesting immediate attention to the matter, and a formal corrective action plan.
- 5.4.4.2 A meeting with the supplier and FNGP is required. This dialog can be at FNGP or the supplier facility as mutually agreed upon.
- 5.4.4.3 FNGP may offer technical assistance to work with the supplier at their facility to resolve outstanding issues through a supplier improvement plan (SIP).
- 5.4.4.4 A supplier with a Needs Improvement status will not receive any new quotes or awards by the commodity team until the team reviews the supplier's corrective action plans. A team decision will be made as to the acceptability of the corrective action plan and supplier management commitment to resolve the performance shortfalls. The team will consist of Purchasing, Supplier Development and Operating Division representative.
 - 5.4.4.4.1 If the plan and commitment are deemed to be insufficient, the supplier will not be eligible for any quotes or new business awards. The supplier will be identified as "new business hold" status.
 - 5.4.4.4.2 At the discretion of FNGP Supplier Development and/or Purchasing, a supplier may be placed on "new business hold" status.
 - 5.4.4.4.3 If the supplier's plan and management commitment are deemed sufficient, the supplier's status will remain on Needs Improvement status, but no longer on new business hold.
 - 5.4.4.4.4 The supplier can regain "approved" status by achieving the score of 61 or greater on the next 2 quarterly rating periods.



APPENDIX A – ACRONYMS AND THEIR MEANINGS

8-D	Eight Discipline Report
A2LA	American Association of Laboratory Accreditation
AIAG	Automotive Industry Action Group
APQP	Advanced Product Quality Planning
ASN	Advance Shipping Notification
ASTM	American Society for Testing of Materials
CAD	Computer Aided Design
CAE	Computer Aided Engineering
CAM	Computer Aided Manufacturing
CC	Critical Characteristic
CDX	CAD Data Exchange
DFA	Design for Assembly
DFM	Design for Manufacturing
DFMEA	Design Failure Mode Effects Analysis
DMR	Discrepant Material Report (a.k.a. SCAR)
DOE	Design of Experiments
DVP&R	Design Verification Plan and Report
EAU	Estimated Annual Usage
ECN	Engineering Change Notification
ES	Engineering Specification
FEA	Finite Element Analysis
FLTM	Ford Laboratory Test Method
FMEA	Failure Mode Effects Analysis
FNGP	Freudenberg-NOK General Partnership
GD&T	Geometric Dimensioning and Tolerancing
GR&R	Gage Reproducibility & Repeatability
GROWTH®	Get Rid Of Waste Through Team Harmony
ISIR	Initial Sample Inspection Report
ISO	International Organization for Standardization
KCC	Key Control Characteristic (General Motors)
KPC	Key Product Characteristics (General Motors)
LCL	Lower Control Limit (on a control chart)
LSL	Lower Specification Limit (on a control chart)
MCT	Machine Cycle Time
MDR	Material Discrepancy Report (a.k.a. SCAR)
MRO	Maintenance Repair Operations (purchased material classification)
MRP	Material Requirements Planning
MSA	Measurement System Analysis
MSDS	Material Safety Data Sheet
NOK	(Roughly) Nippon Oil Seal
OCT	Operator Cycle Time
OEM	Original Equipment Manufacturer
PCN	Product Change Notification
PFMEA	Process Failure Mode Effects Analysis



PPAP	Production Part Approval Process
PPM	Parts Per Million
PVP&R	Process Validation Plan and Report
QFD	Quality Function Deployment
QOS	Quality Operating System (Ford – In FNGP often BOS)
QP	Quality Procedure
QSA	Quality System Audit
QSI	Quality Systems International. Authors of the System 9000 Automotive quality management software used by FNGP.
QSR	Quality System Requirements
RPN	Risk Priority Number. The score on an FMEA when the Severity, Occurrence and Detection values are multiplied times each other. A high RPN number requires preventive actions be implemented before production to prevent later non-conformances.
RSS	Root Sum Square
SC	Significant Characteristic (Chrysler, Ford)
SCAR	Supplier Corrective Action Request (See DMR)
SCM	Supply Chain Management (includes purchasing commodity managers and supplier development engineering)
SCM&L	Supply Chain Management and Logistics
SDE	Supplier Development Engineer
SDS	System Design Specification
SIP	Supplier Improvement Plan
SOP	Start of Production
SOW	Statement of Work
SP	System Procedure
SPC	Statistical Process Control
SQA	Supplier Quality Assistance
SQE	Supplier Quality Engineer
T&E	Tooling and Equipment (AIAG Supplemental requirements for tooling suppliers, includes audit.)
TLA	Three Letter Acronym
TOPS	Team Oriented Problem Solving
TPM	Total Productive Maintenance
TQM	Total Quality Management
UCL	Upper Control Limit (on a SPC chart)
USL	Upper Specification Limit (on a SPC chart)
VA	Value Analysis
VE	Value Engineering
WI	Work Instruction



APPENDIX B – FORMS



Supplier Initiated Product Change Notification (PCN)

Submit by Email

Company Name	<input type="text"/>	Contact Name	<input type="text"/>
Address1	<input type="text"/>	Contact Phone	<input type="text"/>
Address2	<input type="text"/>	Contact e-mail	<input type="text"/>
City	<input type="text"/>	State	<input type="text"/>
		Zip Code	<input type="text"/>

What Products Will Be Changed?

Product Description

Effected P/Ns

How Will the Product Change?

	Changing from...	Changing to...
Product Name	<input type="text"/>	<input type="text"/>
Packaging/Package Size	<input type="text"/>	<input type="text"/>
Specification/Dimension	<input type="text"/>	<input type="text"/>
Manufacturing Location	<input type="text"/>	<input type="text"/>
Process Conditions	<input type="text"/>	<input type="text"/>
Equipment Used	<input type="text"/>	<input type="text"/>
Raw Material/Component	<input type="text"/>	<input type="text"/>

Material is being discontinued.

Recommended Replacements

When Do You Propose That the Change Take Place?

Notification Date Notes:

Proposed Change Date

Samples Available Date

Why Is the Change Necessary?

Submit by e-mail using the button at the top of the form or print out and fax to (734) 354-2544



Company Identification

Company Name:	<input type="text"/>	Supplier ID (DUNS) Number:	<input type="text"/>
ISO-9000/TS-16949 Certificate Number:	<input type="text"/>	Renewal Date:	<input type="text"/>

Site Locations

Location/Site	Corporate Offices	Manufacturing Site	Manufacturing Site
Street			
City			
State			
ZIP Code			
Country			
Phone			
Fax			
Web Site			

Contact Information

Title	Name	Phone Number	Email
Management Team Leader			
Quality Manager			
Account Manager			
Engineering/Technical			
Customer Service			

Please return this completed form to Amanda Pugh through one of the following:

Email:
ap@fngp.com

Fax:
(734) 927-1384

US Mail:
47690 East Anchor Court, Plymouth, MI



FNGP SCAR #		Part Name		
Date Opened		FNGP Part Number		
		Supplier Part Number		
1. Team Details <u>Name</u> <u>Department</u>		2. Problem Definition		
3. Containment Action(s):		% Effect	Implementation Date	
4. Root Cause(s)		% Contribution		
5. Chosen Permanent Corrective Action(s):		% Effect	Verification	
6. Implemented Permanent Corrective Action(s):		Implementation Date		
7. Action(s) to Prevent Recurrence:		Implementation Date		
Review/Modify/Create				
FMEA <input type="checkbox"/>	Control Plan <input type="checkbox"/>	Work Instructions <input type="checkbox"/>	Visual Aids <input type="checkbox"/>	Training <input type="checkbox"/>
Has Process or Procedure been changed?		YES <input type="checkbox"/>	NO <input type="checkbox"/>	
If yes, date of audit		Auditor		
8. Congratulate your team Champion		Close date	Reported by: Name: Department:	

FNGP Supplier Quality Manual

Comments and suggestions for changes or improvements may be forwarded to:

Corporate Supplier Development Manager
Freudenberg-NOK General Partnership
47690 East Anchor Court
Plymouth, MI 48170-2455

(734) 451-0020

