# SUPPLIER MANUAL

albar industries inc.
780 Whitney Drive
Lapeer, MI 48446-2570
(810) 667-0150 · FAX (810) 667-2197

**ALBAR INDUSTRIES, INC.**
**SUPPLIER REQUIREMENTS MANUAL**

Table of Contents


**1.0 INTRODUCTION**

1.1 Purpose
1.2 Scope
1.3 Supplier Code of Conduct

**2.0 QUALITY SYSTEM REQUIREMENTS**

2.1 Quality Manual and Procedures
2.2 System Concepts
  2.2.1 Components of a Quality System
2.3 Quality Assurance Organization
  2.3.1 Management Policy for Quality
  2.3.2 Management Commitment for Quality
  2.3.3 Management Participation
  2.3.4 Commitment to Improvement
2.4 Advanced Quality Planning
2.5 Supplier-Requested Changes
2.6 Albar Changes
2.7 Management of Secondary Suppliers
2.8 In-Process Material Control
2.9 Control Plans
2.10 Statistical Process Control
2.11 Inspection Records and Traceability
2.12 Performance
2.13 Material Status
2.14 Preventive Maintenance
2.15 Gage & Measuring Device Control/Calibration
2.16 Gage & Measuring Device R&R
2.17 Material Review
  2.17.1 Review Requirements
  2.17.2 Non-Conforming Material Handling
2.18 Final Audit
2.19 General Housekeeping
2.20 Packaging, Labeling and Handling
2.21 Customer Satisfaction
2.22 Service Requirements
2.23 Warranty Related Issues

**3.0 PRODUCT DEVELOPMENT AND SERIAL PRODUCTION**

3.1 Production Part Approval Process (PPAP)

3.1.1 When a PPAP is required

3.1.2 What is required in the Submittal?

3.1.3 Test Data

3.1.4 PPAP Requirements for directed Suppliers

3.1.5 Additional Requirements

3.1.6 TAM Requirements (Vendor Tooling Asset Management)

**4.0 CONTINUOUS IMPROVEMENT**

4.1 Supplier Development for Continuous Improvement

4.2 Reduction of Incoming Inspections

**5.0 SUPPLIER PERFORMANCE RATING SYSTEM**

5.1 Categories of Performance

**6.0 NON-CONFORMING MATERIAL**

**7.0 MATERIAL CERTIFICATION / ACCREDITATION'S (OTHER THAN PPAP)**

7.1 PPAP Requirements (section 3.0)

7.2 Material certification raw material suppliers

7.3 Material certification other than raw material

7.4 Failure to comply with Requirements

**8.0 CONTROLLED SHIPPING**

**9.0 EARLY PRODUCTION CONTAINMENT**

**10.0 MATERIALS & LOGISTICS**

10.1 General

10.2 Packaging

10.3 Labeling

10.4 Material Planning & Forecasting

10.5 Releases

10.6 Documentation

10.7 Communication

10.8 Consignment Inventory

10.9 Continuity of Supply - Contingency Planning

10.10 MMOG/LE) Materials Management Operations Guidelines Logistics Evaluation

**11.0 ALBAR SPECIAL CHARACTERISTICS**

## 1.0 INTRODUCTION

### 1.1 PURPOSE

The purpose of this manual is to outline the basic expectations, requirements and standards that are applicable to all suppliers providing materials and services. It is the intent of Albar to develop partnerships with suppliers to ensure the highest level of quality standards are maintained throughout the entire supply chain.

### 1.2 SCOPE

This manual applies to suppliers of prototype components, production components, paint, packaging, containment services and calibration services. The quality and delivery requirements defined herein are to be considered an addendum to the purchase order issued to suppliers.

### 1.3 SUPPLIER CODE OF CONDUCT

Suppliers will, at all times, conduct business with Albar in a spirit of collaboration and mutual respect. In the course of interaction with Albar, suppliers should recognize that information of a confidential nature, including but not limited to, business plans, financial data, and intellectual property, may be disclosed. Suppliers are expected to maintain the integrity of this privileged data within the supply relationship.

This manual is available on Albar's website at www.albar.com.

## 2.0 SUPPLIER QUALITY MANAGEMENT SYSTEM

2.1 Quality Manual and Procedures

All suppliers will be required to document their quality system in a written manual. The manual is to reflect all the processes and procedures utilized in their manufacturing system. The manual must be reviewed and updated annually.

2.2 System Concepts

Albar Supplier Requirements Manual specifies the quality elements and supporting activities necessary to satisfy Albar's minimum requirements for suppliers of purchased components and services.

The following concepts are fundamental to Albar requirements for supplier quality systems:

a) Goal of Supplier conformity with ISO TS 16949 may be met with either of the following:
    a. Supplier to achieve accredited third party certification to ISO/TS16949, or the current version of ISO 9000.
b) Suppliers are also required to submit all renewed certificates for each manufacturing location at time of renewal. Information on all certificates must match the name and address of record of the manufacturing location.
c) Emphasis on preventative quality assurance techniques and the use of statistical methods.
d) Supplier responsibility for development and maintenance of a process flow description, PFMEA and control plan for each part or part family supplied.
e) Supplier responsibility for continuous product improvement and quality planning.
f) Ongoing Albar assistance in supplier quality system refinements, quality planning, and efforts to reduce product variability.
g) Assurance that suppliers are aware of Albar's requirements and are supplying defect free products.

2.3 Quality Assurance Organization

This section defines the requirements that must be reflected in the supplier's policies and procedures.

2.3.1 Management Policy for Quality

<u>Stated Objectives:</u>

Suppliers must have a written policy statement that reflects their philosophy and/or goals and shall ensure that the quality policy:

a) Is appropriate to the purpose of the organization.
b) Includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system.

c) Provides a framework for establishing and reviewing quality objectives.
d) Is communicated and understood within the organization, and
e) Is reviewed for continuing suitability.

2.3.2 Management commitment for quality:

a) Commitment to a system that prevents defective material from being produced and demonstrates process control.
b) Commitment to using employee input and suggestions.
c) Evidence of a systematic flow of information downward within the organization. Vehicles such as department meetings, bulletin board postings and newsletters offer evidence that information is shared.
d) Actions to increase management and engineering emphasis on quality.
e) Measurements of customer perceptions and concerns.
f) Goals and objectives for improved performance
g) Assessment of the strengths and weaknesses of the organization with respect to quality.
h) Programs for continuous improvement.
i) Organizational Responsibilities: The supplier must support the philosophy that quality is every employee's responsibility. This requires employee involvement in quality-related decision making, direction of activities, and attention to quality performance on an ongoing basis. The quality function's responsibilities should include planning, forecasting, measuring, reporting and directing improvement activities.
j) Quality Organization Autonomy: The organizational structure should be established and operated so that quality procedures are not violated for the expedience of other functions.

2.3.3 Management Participation

<u>Internal Audits:</u>

Periodic internal audits of the quality system are necessary to verify that appropriate practices and procedures have been established and are being properly used. The supplier must have a written procedure for conducting internal audits. Internal audits must include evidence of the items audited. The audit is to be conducted by qualified personnel independent of the activity being audited. Results must be distributed to the manufacturing plant manager and staff for information and corrective action. These internal audits allow the supplier to monitor its own activities effectively.

Albar may require copies of supplier internal audit reports. During the onsite system survey, Albar will determine that internal auditing is being performed and adequate response to unsatisfactory results is being provided. The frequency of internal audits should be determined by the supplier based on performance. The minimum frequency is once per year.

Quality Costs:

The management of quality costs is an important tool in the ongoing effort to improve the quality of products and services delivered to the customer as economically and effectively as possible. Quality cost reporting encompasses expenses incurred in prevention, appraisal, internal and external failure. In practice, prevention costs must be incurred and some appraisal costs will be unavoidable. The total elimination of failure costs should be a permanent goal. Properly reported quality costs often provide ample justification for necessary preventive and corrective actions and will also verify the results of such actions. In addition to defining and measuring quality costs, the supplier should interpret and compare the costs against an index such as, percent of sales, profit, etc. Quality costs should be reported to management on a regular basis. Quality cost improvement plans are vital to the basic objective of reducing quality costs. Not only should valid estimates of cost improvements be made for forecasting purposes, but actual cost improvements should be monitored regularly to determine the effectiveness of each improvement plan.

Continuous Improvement:

To achieve continuous improvement the supplier must demonstrate that methods are effective in improving quality. Formalized long-range planning should direct and prioritize efforts to upgrade equipment and methods. Specific plans should be available for all areas of the organization, with evidence to demonstrate plans are being carried out in a timely fashion.

2.3.4 Commitment to Improvement

Training programs should include a plan for the qualification and training of all personnel in:

a) The skills necessary to perform their job.
b) Fundamental quality procedures appropriate to each individual's job requirements.
c) Statistical techniques.

Education and training should include:

a) Documented training requirements for existing, new or transferred employees.
b) Assignment of responsibility for ensuring the training is accomplished.

The organization should:

a) Actively solicit contributions of employees through quality circles, improvement teams, etc.
b) Have a program for updating equipment.
c) Allocate funds for quality improvement.

## 2.4 Advanced Quality Planning

Advance Quality Planning reviews the important activities that must occur prior to production of new products or of new suppliers producing existing designs. A properly organized and systematic approach assures the best possible tool and process design. It also assures that necessary training, controls and gauging are in place when production occurs. There must be a clearly defined method of design review by all key individuals involved in the manufacturing process. This review and subsequent activities should follow specific guidelines to assure complete and thorough planning. Print reviews must take place with the customer so requirements and design intent are clearly understood. APQP includes such items as: DFEMA, Flow Diagram, PFEMA, Control Plan, and Validation Process.

Follow the AIAG format for advanced quality planning and control plans.

NOTE: Chrysler, Ford and GM have specific APQP guidelines.

Meeting a production date is critical to Albar. Timelines must be developed to track the project and assure parts meeting blueprint specifications are available when scheduled. Albar will require project status updates.

## 2.5 Supplier-Requested Changes

Changes cannot be made by the supplier without prior written authorization from Albar. Supplier changes are considered as a program within Albar. Suppliers seeking changes in product design, manufacturing processes, methods, procedures, and/or control measures must request approval by Albar prior to implementation so that re-qualification actions can be accomplished when deemed necessary by Albar.

Unauthorized changes are the basis for product rejection and possible disqualification of the supplier. The supplier will be held responsible for all direct, indirect, and consequential damages which arise from or are related to the unauthorized change.

## 2.6 Albar Changes

Often, engineering changes or deviations are needed during the production process to meet customer requirements or improve quality. When this situation occurs, Albar suppliers must be prepared to implement the required changes.

If change is requested by Albar or the customer, the Albar Buyer will communicate any changes. It is up to the supplier to determine if the change will affect cost, delivery, tooling, gauging , any process revisions, any anticipated defect rate change in parts per million (PPM) and any other pertinent items.

## 2.7 Management of Secondary Suppliers

Suppliers are responsible for ensuring that all products and services purchased from secondary-suppliers conform to Albar requirements. Albar's suppliers must work with their sources to develop a defect free level of quality and continuous improvement. Suppliers must ensure that the quality systems of their sources conform to the same requirements, outlined in this manual, for Albar primary suppliers.

NOTE:
In all the cases, when a supplier is considered a distributor, the latest version of ISO-9000 compliance will be required to the secondary supplier.

When source changes are planned, the supplier must notify the Albar Buyer in advance. A change in secondary-suppliers may require the supplier to submit samples to Albar for approval with a PPAP.

## 2.8 In-Process Material Control

### 2.8.1 Operating Methods

Set up sheets must be established and documented with evidence of control on all shifts. Written operator and inspection instructions, which include inspection frequencies and sample size, must be readily available at each workstation. Written inspection instructions may be supplemented with standardized tests, work instructions or special engineering or manufacturing instructions.

Inspection instructions must be based on the latest engineering drawing and process level and must include:

a) Part name, part number, and revision level
b) Specification of statistical techniques, including sample size and sample frequency, to be used for inspection or test of material.
c) Special Characteristics or features to check.
d) Lab checks or reference to a lab procedure.
e) First piece inspection prior to production runs and after each machine set-up, die change, or process change to assure compliance to specification.
f) The measuring equipment required. This equipment must be part of the supplier's gage control system.

Records must indicate that inspections and tests are being performed in accordance with the supplier's written procedures and instruction sheets.
These records should be accurate, properly dated, and signed or initialed by the inspector or operator.

Regular audits must be conducted to verify compliance with inspection instruction sheets. Responsibilities must be defined and corrective action required if not in compliance.

Examples of process audits include a review of the methods used to conduct the following:

a) Definition of process parameters.
b) First piece inspection after a tool or die change.
c) Operator checking of in-process inspections.
d) In-process inspections.
e) Manual or visual checks.
f) Conformance to control plans and process flow descriptions.

2.9 Control Plans

The supplier's manufacturing operations must adhere to the following requirements:

a) Current control plans must be adhered to for all Albar parts.
b) Non-capable processes must be 100% inspected at the supplier's expense. When processes are found not capable, written plans must be developed for achieving capability. The plans must include actions, responsibilities, and timing.
c) Where appropriate, visual aids can be used as inspection standards. Common examples of visual aids include photographs, operation sheet pictorials, physical parts, etc.
d) Routing sheets and process sheets are necessary to assure that the proper tools; fixtures, materials, manpower, and processing methods are used.
e) All Special Characteristics must be included in the supplier's Control Plans. The methods of control should be appropriate for the Special Characteristic and must be approved by Albar as part of the control plan. See Section 6.0 for more information on Special Characteristics.

2.10 Statistical Process Control

Statistical methods must be used as an integral part of the supplier's process to provide the information necessary for continuous improvement in quality and productivity. In addition to Special Characteristics, the supplier may also select other significant process sensitive characteristics to be monitored using statistical methods.

The supplier must ensure that production processes remain in statistical control. The responsibility for maintaining statistical control must lie with those directly involved in the process.

2.11 Inspection Records and Traceability

Quality system and performance records must be made available for review by Albar representatives; those records must be kept for three years and furnished upon request. The lot control code must provide traceability of material and records from the point of shipment back to the point of origin.

## 2.12 Performance

Inspection instructions must be reviewed with each operator/inspector during training or when changes occur. Employees should know customer requirements and, whenever possible, be given visual aids. Wherever possible, production operators should be given responsibility for the quality of the output of their processes, with authority to take proper corrective action.

## 2.13 Material Status

The supplier must have formal procedures for material identification and control. The supplier must have effective controls in place to provide accurate part number identification throughout processing, storage, packaging, and shipping. Material certifications from an accredited lab must be available upon request. The supplier is responsible for identifying the status (accept, reject, sort, hold for rework, etc.) of the product through all stages of the process. Non-conforming material must be clearly identified to ensure it cannot be mixed with conforming material.

## 2.14 Preventative Maintenance

A significant element in producing a high quality part over a sustained period of time is effective preventative maintenance for machines and tooling.

An effective program contains the following:

a) Identification of preventative maintenance activities.
b) Development of tracking system.
c) Assignment responsibilities.

## 2.15 Gage & Measuring Device Control/Calibration

The supplier must have a written plan to verify the accuracy of gages and other measuring and test devices at sufficiently frequent intervals to ensure continued accuracy. Frequency of calibration should be decided by the supplier considering the accuracy and use. Albar recommends that the calibrations be performed at least once per year. Masters, standards and/or calibration services used must be traceable to the National Institute of Standards and Technology (NIST formerly NBS) or equivalent. Records of the inspection and calibration are to be maintained. These records should include gage identification, location, date, numerical results of the inspection or calibration, and the date of the next scheduled inspection. The documented calibration system may be a manual or computerized system with all information retained for a minimum of three (3) years. The supplier's system for gage control must ensure that gauging will not be used beyond the calibration due date. Albar may request evidence of supplier calibration schedules.

## 2.16 Gage & Measuring Device R&R

Since the use of measuring and testing equipment is a source of variation, appropriate statistical studies should be conducted to determine stability and capability. Prior to release for use, all new gages, inspection devices and test equipment must be inspected to design specifications,

calibrated and approved based on gage accuracy and gage R&R studies. Gage R&R's must be performed prior to process capability studies. Gage R&R's are required on Special Characteristics, and should be equal to or less than 10% to be considered acceptable. Production tools, fixtures, tool masters and other such devices are not to be used as gages.

## 2.17 Material Review

### 2.17.1 Review Requirements

The supplier must have a formal method of documenting problems and the corrective action taken. It should contain the following:

a) Procedure for addressing in-house deviations with multi-disciplinary sign-offs.
b) Defects should be analyzed and include root cause and process corrective action.
c) Corrective action should be verified.
d) Responsible personnel for C.A. should be identified.
e) Customer complaints/returns must be analyzed for feedback and corrective action in a timely manner. A delayed response will affect a supplier's quality rating. A 24-hour written confirmation of containment response is required.

### 2.17.2 Non-Conforming Material Handling

The supplier must have a formal procedure for controlling nonconforming material. Non-conforming material must have defects clearly identified, be segregated and moved to a clearly marked area for non-conforming material. Rework operations must be documented and material must be re-inspected through normal inspection procedures.

## 2.18 Final Audit

Final inspection tests or dock audits of product and packaging are necessary supplier functions, and should be monitored and recorded preferably by the Quality Department.

The supplier must have formal written instructions/procedures including sampling method and size, date, revision level and authorizing signature. The sampling method must be based on zero defects. Packaging audits must include product identification, and when applicable, deviation number.

There should be evidence of analysis and documentation of actions taken based on the results.

## 2.19 General Housekeeping

Suppliers are responsible for maintaining cleanliness and practicing good housekeeping in their manufacturing facilities.

## 2.20 Packaging, Labeling and Handling

The supplier must have a system in place to prevent damage to raw and in-process materials. Stockroom areas should be clean and offer protection from adverse conditions. Packaging, identification and shipping instructions should be available at shipping.

SAMPLE, PILOT AND PREPRODUCTION
Since sample, pilot and pre-production materials have limited availability and are highly valuable; the packaging of these materials must protect the part to prevent damage during transport and storage. Therefore, extra care must be used when choosing and implementing a packaging system.

## 2.21 Customer Satisfaction

Suppliers must have a method of periodically surveying their customers for feedback on overall performance. There should be evidence of analysis and documentation of actions taken based on the results. Suppliers should also have evidence of recognition from their customers in the form of letters, plaques or certificates.

## 2.22 Service requirements

Service plays an integral part of Albar's overall commitment to our customer base; suppliers are required to have means to provide service parts where applicable. Costing should be included in the initial return of the Request for Quote.

## 2.23 Warranty related issues

Supplier will be solely responsible for all warranty issues that derive from purchased components at Albar Industries, Inc and our customers.

## 3.0 PRODUCT DEVELOPMENT AND SERIAL PRODUCTION

3.1 Production Part Approval Process (PPAP)

An integral part of product development or product change and the associated quality planning activities is the verification of the initial parts for use in production. This process begins with supplier input at the conceptual design phase including the design review and continues throughout the product life. All costs incurred for a component PPAP (up to 300 pieces or agreed upon quantity) and/or including all cavities will be the responsibility of the supplier. Tooling invoices will not be paid unless full PPAP approval has been documented.

**For production parts,** product for PPAP shall be taken from a significant production run. This significant production run shall be from one hour to eight hours of production, and with the specific production quantity to total a minimum of 300 consecutive parts, unless otherwise specified by the authorized Albar representative.

This significant production run shall be conducted at the production site, at the production rate using the production tooling, production gauging, production process, production materials, and production operators. Parts from each unique production process, e.g., duplicate assembly line and/or work cell, each position of multiple cavity die, mold, tool or pattern, shall be measured and representative parts tested. Any testing required for P.V, must be completed utilizing a production ready line.

When appropriate, Albar Supplier Quality representative will be on site to validate run-at-rate, and testing.

Supplier must submit PPAP using the latest AIAG revision available.

3.1.1 When a PPAP is required
The requirements for initial sample approval must be completed:

a) PRIOR TO the first production shipment of a new product.
b) PRIOR TO the first shipment following an engineering change. All engineering revisions, regardless of whether or not actual dimensional changes occur, must be responded to for approval to that revision level.
c) PRIOR TO the first shipment following a process change. A change in secondary suppliers is considered a process change.
d) PRIOR TO the first shipment from a new die or mold.
e) PRIOR TO the first shipment from a different manufacturing location utilizing both new or relocated tooling and equipment.

Any other requirement set forth by AIAG (PPAP) requirements

Albar and the supplier will agree upon an initial sample due date, which will precede the first production shipment.

Production shipments are not to be made until written approval is received from Albar.

3.1.2 What is required in the submittal?

PPAP's must include all items required for a **level 3 submission** per the latest edition of the **AIAG PPAP** book. There may be exceptions to this based on the PPAP requirements, PPAP book, and our customer or Albar requirements.

For all non-automotive products a Level II PPAP will be required. For all BULK material such as screws, pins, rivets and all fasteners a Level 3 PPAP will be required, for resins, and all raw metals such as Zinc, Brass and Aluminum a material certification will be required.

Suppliers should retain an appropriate amount of samples from each tool cavity per PPAP submission for the life of the program.

3.1.3 Test Data:

Refers to **all** test data necessary to provide evidence of compliance to specifications on all details of an assembly or component. This applies to raw material, durability, validation and performance requirements on the primary part drawing and any detail drawings. Test data must meet the following criteria

a) Testing must be performed by a facility registered to ISO/ TS16949:2002 or an ISO-17025 accredited lab as described above.
b) All data must be on the letterhead of the test facility.
c) Each data set must be legible, signed, and dated.
d) Data must be current (**less than one year old**).
e) A copy of the registered facilities accreditation certificate must accompany the PPAP.

A general statement indicating the parts conform to specifications **is not acceptable**. If the supplier does not have access to the equipment needed to supply this information, outside sources should be employed at the supplier's expense. If complete data is not provided the samples will be rejected and returned to the supplier.

3.1.3.1 DEFINITIONS:

**Accredited Test Lab**:
An accredited lab has been evaluated and approved to ISO-17025 standards by an accreditation body (e.g. SCC, A2LA, SINALP, etc.). This body then accredits the lab to perform testing to specific methods and standards. The laboratory is subject to periodic reassessment.

**Registered Test Lab:**
A registered lab has completed a satisfactory assessment by an Accredited Registrar certified by a national body (e.g. RAB, Registrar Accreditation Board). The audited facility is registered as meeting the requirements for a given commodity. The laboratory is reassessed at appropriate intervals. Any non-conformance to the specifications must be corrected prior to sample submission unless prior approval to submit has been received from the Albar Buyer. A Temporary Deviation Request will be requested with submittal. Initial production samples must be manufactured on production tooling using the

production processes. Temporary approval for prototype tooling may be required until production tooling is available. The quantity of sample parts required for initial sample approval would be 3 pieces. This may also include separate, unprocessed components, inserts or test slabs as requested. In the case of multi-cavity tooling, an analysis must be performed on the specified number of parts from each cavity See the AIAG (PPAP) book for multi-cavity tooling. The paperwork and sample parts submitted to Albar must be clearly marked to ensure that the data is traceable to an individual cavity and inspected parts.

3.1.4 PPAP REQUIREMENTS FOR DIRECTED SUPPLIER

For all suppliers that are directed by our customers, it will be required a PPAP level 3 Submission, if we do not obtain such documentation, Albar will require an approval from our customer before approving any other PPAP Level submitted.

3.1.5 ADDITIONAL REQUIREMENTS

**CAPABILITY AND R&R STUDIES**

**Statistical Tools**
Identification of Statistical Tools – The supplier should use the latest edition of AIAG SPC for manufacturing process controls and AIAG MSA for measurement system equipment management. Minitab is the recommended statistical software package for preparation of Measurement System Analysis, and Process Capability studies.

Supporting Documentation, Forms or Reference:
• www.aiag.org
• Reference TS16949 Clause 8.1.1

**CAPABILITY STUDIES FOR PPAP**
150 piece capability studies are required at the time of PPAP for all Significant and Critical Characteristics specified by Albar (see Section 11.0). Products with multiple cavities must have separate capability studies on each of the cavities. In the case of multiple cavities, documented approval from Albar is required in advance if less than 150 samples are used from each cavity. On the initial process studies for Significant and Critical Characteristics the supplier needs to demonstrate that the process is stable and in control through the use of a control chart. Normality **(P value)** and capability must also be demonstrated. Capability Six Pack, within Minitab can be employed for these calculations. Other software such as Excel can calculate Normality using the Anderson/Darling formula or similar methods. See Section 11.0 for more information on Special Characteristic requirements for PPAP and in-process capability index target minimum values.

**Gage R&R (Measurement System Analysis)**
Unless otherwise agreed upon with Albar:

Gage R&R's shall be completed on all measurement systems identified on the control plan. This includes hand tools such as micrometers or calipers, as well as those features checked by a CMM, Optical Comparator, Smart Scope, attribute gages, etc. Shall be included in PPAP submission for Special Characteristics and those features that will have capability studies submitted at the time of PPAP. Minitab is the recommended statistical software package for preparation of Measurement System Analysis.

**RUN AT RATE REQUIREMENTS**
A Run at Rate will be required for all Albar production component suppliers. Run at Rate data must be provided to Albar's Engineering or Quality Departments. The onsite verification of this data will be at the discretion of Albar SQE dept. based on component, supplier, process or customer request (ex. new process, new supplier, component complexity, customer request, etc.)

**ANNUAL LAYOUTS AND WARRANT REQUIREMENT**
Annual layouts of dimensions and a Level I PPAP submission will be required per customer specific requirements (Ford, Chrysler LLC, GM & others). Once your initial PPAP has been completed a yearly layout of all dimensions on a minimum of 3 pieces or one from each cavity will be required as well as a Level I PPAP submission. Failure to do so will result in charges from Albar for any external or internal cost incurred to complete annual layouts.

**PART INSPECTION**
It is required that the personnel responsible for part inspection have a strong understanding of GD&T.

Special areas of concern when inspecting with a CMM are as follows:

When establishing a datum plane enough points must be taken to ensure that the calculated plane is representative of the true geometric counterpart.

When checking features and geometric controls enough points must be taken to ensure functionality of the part as intended by the ASME standard specified on the drawing.

The practice of averaging points when measuring features or defining datum(s) is strictly prohibited.

When a CMM is used to establish conformance, the supplier must provide a data file (i.e. .xlsx or .txt file) containing all the raw data points that were used.

**ENVIROMENTAL REQUIREMENTS**
Suppliers of Albar should have an environmental management program that supports the industry, state or federal guidelines for the particular commodity that is being

produced at their facility. Guidelines should be patterned after ISO 14001, with the emphasis on continuous improvement in line with your organization policy.

**TRACEABILITY**
When required by our customer, traceability of material from our subcontractors and there tiers two / three sub-contractors will be in accordance with all applicable customer and Albar requirements. Clear, concise marking will be performed to identify the material being used. This may be by means of heat numbers, lot numbers, etc. or whatever means necessary to permanently maintain traceability.

**RIGHT TO VISIT**
Where specified in the contract, the customer or designated representative will be afforded the right to verify product conformance to the requirements at the suppliers / sub-contractor's premises.

**IMDS (International Material Data System)**
OEM automotive suppliers now require their suppliers to use the IMDS to disclose and quantify the chemical and recycled content of the article and hazardous material of the products purchased and incorporated into the finished product.

1. Albar Industries, Inc requires suppliers to utilize the IMDS for reporting and disclosing 100% substance and recycled contents to SSC prior to their PPAP submission.

2. The PPAP Part Submission Warrant (PSW) 4th edition must identify the IMDS ID number or numbers and version in the comment section.

3. Also as part of the PPAP submission, suppliers are required to include a hardcopy receipts from IMDS containing the following verbiage.

a) Article name
b) IMDS ID#(s) and version #(s)
c) Albar Industries, Inc. Part Number
d) IMDS transmitted date
e) Verbiage acknowledging the part or parts as "Accepted" by Albar.

Failure to submit "acceptable" data via IMDS and provide a hard copy receipts showing the data "acceptable" by Albar will result in the PPAP rejection.

Each supplier is responsible to contact EDS (the creator of IMDS), submit an online registration form to obtain the access to the IMDS, and receive appropriate training on entering and receiving data via the system.

Information for the IMDS is available as follows:

- Website for IMDS is located at www.mdssystem.com
- IMDS help desk North America is 717-506-1461
- Hours are 8AM till 5PM Eastern time

(Please note that the phone number, web site, help line and hours of operation are subject to change)

**Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)**

As of June 2007, the European **Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)** entered into force.

REACH affects all industries, including the Automotive Industry (AI). As the AI is made up of vehicle manufacturers and many tiers of the supply chain, it has several roles and obligations under REACH. Action is required from the OEMs and suppliers, some immediately and some over the coming 11 years and beyond.

In order to be prepared for REACH, representatives of all the major vehicle manufacturers and the automotive supply chain around the world developed an "Automotive Guideline on REACH" which can be used to get a quick overview of REACH, its requirements and the recommended actions arising. This guideline can be found at: www.acea.be/reach

## CONFLICT MINERALS COMPLIANCE

Supplier must meet the Conflict Minerals Compliance requirements specified in the Terms and Conditions on the Purchase Order.

## PLANT TRIAL VERIFICATION

All parts are subject to PTV to confirm compatibility to the equipment at Albar. This applies to new suppliers of previously run parts.

## SPECIAL PROCESS SYSTEM ASSESSMENTS (CQI-9/W-HTX, CQI-11, CQI-12, CQI-15, CQI-17)

Suppliers shall conduct special process system audits annually using the AIAG assessments: Heat Treat System Assessment (CQI-9 / W-HTX), Plating System Assessment (CQI-11), Coating System Assessment (CQI-12), Welding System Assessment (CQI-15) and Soldering System Assessment (CQI-17).

Individual assessments are required for each heat treat, plating, coating, welding, and soldering process used in the supply chain (this includes all sub-suppliers). If multiple suppliers/sites are used for process, an assessment must be conducted for each supplier/site.

**MISC.**

**NO OUT OF TOLERANCE DIMENSIONS SHOULD BE SUBMITTED ON THE INITIAL PPAP.**

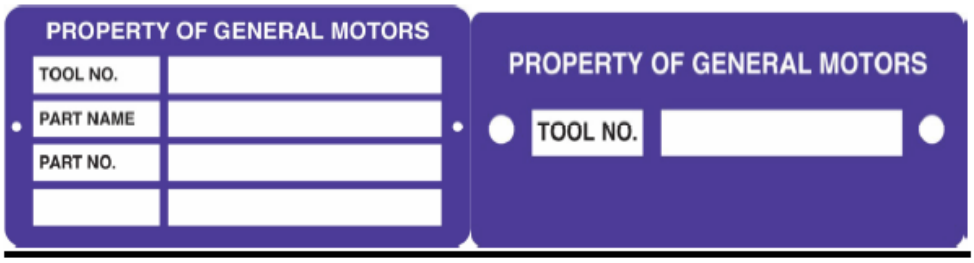
**ALL NON-CONFORMING ITEMS SHOULD BE HANDLED THROUGH PURCHASING AND ENGINEERING AND TAKEN CARE OF BEFORE SUBMITTAL**

3.1.6 **TAM REQUIREMENTS (TOOLING ASSET MANAGEMENT)**

The TAM is a customer specific requirement related to the management of assets like tooling that is located at a Supplier location and it's owned by either Albar or one of our customers. As part of this process, the following are the specific requirements that all Albar Suppliers must comply with, before receiving PPAP APPROVAL.

3.1.6.1 All tooling must be identified with a tag or engraved with a legend that includes property of "(General Motors, Albar, Chrysler, etc…) this information must be: Legible, Permanently Affixed to Tool (engraved or riveted to the tool), Glue or Tape will NOT be accepted and must include the Tool Asset Number.

Example:




3.1.6.2 Supplier must provide tooling general information like (tooling, dimensions, capacity, tool location, etc.) All of this information must be filled in the proper Albar format that will be provided by the appropriate Project Engineer.

3.1.6.3 Supplier must provide photos of the tooling.
• Pictures need to meet the 100kb file size limit in JPEG Format
• Picture of the tool and the tag, 3 separate pictures: Tag, Tool Open, Tool Closed
• Pictures can NOT be in Power Point
• NO People

**NOTE: TAM requirements should be completed before PPAP APPROVAL, failure to do so will delay PPAP APPROVAL and tooling payment.**

## 4.0 CONTINUOUS IMPROVEMENT

4.1 Supplier Development for Continuous Improvement

The following continuous improvement elements must be incorporated into the supplier's quality systems. These elements will help assure cost effective quality parts delivered on time.

**Update layouts, control plans, process flow descriptions and PFMEA's on a yearly basis, or as changes happen.**

Act upon warranty feedback provided by Albar. Participate in Albar product improvement programs through the achievement of improvements made within the supplier's facility or processes or through suggestions made to Albar procurement.

Recommend to Albar procurement changes which will improve the quality of the product or service provided, regardless of whether the recommendation results in a price increase or decrease. Recommendation may include changes in material, supplier processing, design, packaging, handling, freight or processing by Albar after receipt.

Actively participate with Albar, beginning with the early stages of new programs and new part designs. This includes the following Albar activities.

4.1.1 Simultaneous engineering of both the product and process to ensure that new products are initially designed with a focus on reliability and manufacturability.

4.1.2 Team engineering to resolve key issues and value engineering to take cost out of the product.

4.2 Reduction of Incoming Inspection All Purchased materials for Albar is to be received defect free. To reinspect and verify defect free product is a waste of valuable resources.

4.2.1 Part Certification

Certification of a part indicates that the quality level is high enough to warrant reducing or eliminating routine incoming inspection at Albar. The goal is to have all purchased materials obtain the status of being "Certified". The criteria for "Certified" parts include:

a) An approved PPAP
b) Part history based on quality information from receiving inspection (more details upon request from supplier). Part Certification will be by supplier and part number. For service related parts or extremely low volumes, refer to the PPAP book. Audits of certified parts may take place on a random basis.

4.2.2 Revocation of Part Certification

Once a part has reached the certified status, removal of certification can occur by verification of complaints from Albar or a customer.

## 5.0 SUPPLIER PERFORMANCE RATING SYSTEM

5.1 Categories of Performance

ALBAR purchasing considers supplier performance an important factor in determining the allocation of purchases among suppliers. The evaluation of individual component and overall supplier performance is done by a rating system that will provide a quantitative and comparative measure of competitiveness.

This section will define the supplier performance rating system. The factors that are involved are as follows:

5.1.1 There are four main categories:

- **Quality Performance**
- **Delivery Performance**
- **Cost Performance**
- **Service**

Those categories are broken down as follows:

| **Quality Performance (40/100)** | |
|---|---|
| Score | Criteria |
| 34 – 40 Excellent | PPM < 5000 = 40 Points,<br>Every 2500 PPM's over 5000<br>deduct 1 point |
| 30 – 33 Unsatisfactory | |
| Below 30 Major Unsatisfactory | |

| **Delivery Performance (30/100)** | |
|---|---|
| Score | Criteria |
| 30 Points | 100 % on time |
| 20 – 29 Points | 87% - 99% on time |
| Below 20 points | 86% or less on time |

| **Cost Performance (15/100)** | |
|---|---|
| Score | Criteria |
| 13 – 15 Excellent | Managed cost or initiated reductions |
| 11 – 12 Satisfactory | Maintained costs and offset negative variance |
| 10 or below Unsatisfactory | Absorb some cost and offset negative variance |

| Service (15/100) | |
|---|---|
| Score | Criteria |
| 13 – 15 = Excellent | Base on overall responsive and service during the month |
| 10 – 12 Satisfactory | |
| 9 or below Unsatisfactory | |

5.1.2 Rating Definition:

| COMBINED RATING | |
|---|---|
| Score | Criteria |
| 85 - 100 = Excellent | Preferred Supplier |
| 75 – 84 = Unsatisfactory | Verbal Notification Improvements Required |
| 74 or below = Major Unsatisfactory | Written Notification Corrective Action Required |

**Suppliers will receive their score at a minimum of twice per year**. Suppliers will be monitored throughout the year for PPM and on time delivery and correction actions (Supplier Non Conforming Report) will be issued if warranted.

It is the goal of all Albar suppliers to maintain 5000 PPM; your rating score will be dramatically affected with high PPM.

A supplier with a score of 84 or less will be required to submit a corrective action. Continued scores of 84 or less could result in that supplier being removed; a full MMOG/LE assessment may be required or placed inactive as a supplier to Albar Industries, Inc.

100% on time delivery is required (even though your overall rating score may be in the acceptable range) a corrective action will be required if your individual on-time delivery score is less than 87% for two consecutive months.

This rating system is part of the Albar's computer IT system and is available for review by the Quality Department, Materials, Purchasing and Senior Management.

## 6.0 NON-CONFORMING MATERIAL

6.1 All non-conforming material found at Albar Receiving Inspection would have a SQN number issued and Albar form (FO-QC195) forwarded to the supplier. Samples of nonconforming material will be sent to the supplier at their expense, if so requested. Corrective action will be required if so noted on the SQN. Once the review of material is concurrent or it is agreed upon at the time of rejection, an RMA number will be obtained for return of the material to the supplier. In all instances, the material will be held in the non-conforming area until disposition is determined.

6.1.1 All suppliers will have an RMA number within 3 working days of the initial contact from Albar, if it has been determined that the material is non-conforming and was the responsibility of the supplier. (This applies to both internal and external suppliers)
If no written or verbal RMA number is received within 3 working days, material may be returned or scrapped at the supplier's expense, (This applies to both internal and external suppliers). There may be other situations that will require disposition.

6.1.2. All SQN's written against either Quality or Delivery must comply with the following time of completion and reported to the Albar Industries, Inc. supplier quality representative:

**A.** Containment Actions (24 hrs.)
**B.** Root cause (+ 5 days, after Containment actions)
**C.** Permanent Corrective Actions (+ 10 days, after Root cause)

6.2 Albar will require cost recovery if we have to remove defective parts from a line, sort defective parts, and otherwise incur cost relative to defective parts sent by the supplier. This will include premium transportation incurred to replace defective parts, or to maintain normal shipping operations due to defective material. Also included is any warranty cost incurred from our customer for the duration of the vehicle warranty on which the supplier's part is being used. The seller must promptly replace and or correct any items found defective if the supplier fails to replace or correct any defective material Albar may repair them or have them repaired at the supplier's expense. This will include the expense of purchasing or manufacturing similar items to maintain normal production requirements.

**Corrective Actions**
All corrective actions required per the Supplier Quality Notification will require proof of implementation. This proof must be provided with the corrective action, if the information is proprietary it must be stated on the corrective action or by separate cover. Corrective actions will not be considered closed without this.

## 7.0 MATERIAL CERTIFICATIONS / ACCREDITATION'S - (OTHER THAN PPAP REQUIREMENTS)

7.1 Material certification requirements for PPAP are covered under Section 3.0 subsection 3.1.1

7.2 Material certifications / accreditations for raw material suppliers.

7.2.1 Raw material suppliers shall include material certifications with each shipment.

7.2.2 Material certifications shall be from an accredited / registered source ISO-17025 / ISO/TS 16949, ISO 9000 if it is not from an accredited source, material must be sent out for testing at a qualified lab.

7.2.3 A copy of the accreditation certificate shall accompany the material certification. The **material certification must be updated within one year of the date stated on the material certificate**. All material certifications must be **legible, signed and dated**.

7.2.4 Material certifications shall state **point of origin (producer**) unless the source is the producer.

7.2.5 All respective paperwork shall be sent to Albar Industries, Inc. Lapeer, MI.

7.3 Material certifications / accreditations **other than raw material**.

7.3.1 All products, by design record requirements shall have material certifications; **a statement of conformance is not acceptable**.

7.3.2 **Material certifications shall be supplied and updated at a minimum of once per year, sooner if a new source is used or the material certificate expires before the year time frame**. If the same material is being used to produce the product for more than a year time frame, a letter stating this instead of the yearly update certification is required. Material certifications also include all operations where the design record calls out i.e. plating, heat-treating, etc.

7.3.3 All material certifications shall be from an accredited / registered source ISO-17025 /ISO TS 16949 if it is not, it must be sent out for testing at a qualified lab. All material certifications must be **legible, signed and dated**.

7.3.4 A copy of the accreditation certificate shall be sent with the material certification.

7.3.5 All respective paperwork shall be sent to Albar Industries, Inc. Lapeer, MI.

7.3.6 All material certifications (raw material and production parts) including accreditations will be scanned on the Albar computer system and updated as new or yearly certifications / accreditations are received. Material certifications are stored by part number, accreditations by supplier.

7.4 Failure to comply with requirements

7.4.1 Failure to comply with the above requirements is subject to the Supplier Requirements Manual section 6.0, Non-Conforming material. If testing is required and time restraints prohibit having the supplier test the material, Albar reserves the right to send out material for testing at the supplier's expense.

## 8.0 CONTROLLED SHIPPING

8.1 General

Controlled Shipping is a demand by Albar to a supplier to put in place a redundant inspection process to sort for non-conforming material resulting from an out-of-control process. This redundant inspection at the supplying location is in addition to normal controls. The data obtained from the redundant inspection process is critical as both a measure of the effectiveness of the secondary inspection process and the corrective actions taken to eliminate the initial nonconformance. Controlled shipping MUST become a corrective action process at the supplier. It is not just an inspection process.

Two levels of Controlled Shipping exist:

a) **Level I Controlled Shipping** is defined as a redundant inspection process enacted by the suppliers employees at the suppliers location in order to isolate Albar from receipt of non-conforming parts/material.
b) **Level II Controlled Shipping** is the same activity but the person(s) performing the sort is an impartial third party selected by Albar and paid for by the supplier. In special cases, the Level II activity may be required to be performed outside the supplier's facilities at the third parties location or at a facility deemed appropriate by Albar.

The key points of this process:

a) Consensus within Albar management that current controls by the supplier are not sufficient to insulate Albar from the receipt of nonconforming parts/material.
b) Determination by the customer location which level of controlled shipping is required.
c) Communication to the supplier of impending action (Level I or Level II) to be taken including exit criteria.
d) An Albar Supplier Management Meeting with the supplier's management (Quality Manager, Plant Manager or equivalent representative will be required for both Level I and Level II containment. Travel by the supplier representative to either Albar or a customer location must occur within 5 days of original notification for a full explanation of the containment process to be implemented and the roles and responsibilities of the involved parties is also required.

The **mandatory** meeting must follow these steps:

Describe the purpose of the meeting:

a) Albar has determined that Level I or II Controlled Shipping is being implemented at their facility
b) The production source is out of control and that the non-conforming / material must be isolated

Meeting agenda must include the following:

a) Review of the process flow diagram
b) Description of the problem
c) Definition of the roles and responsibilities
d) Establish the controlled shipping plan details
e) Definition of the exit criteria
f) Definition of the communication plan

Albar involvement would include the following people: purchasing, supplier quality, operations managers and the plant manager or staff representative from the respective department. An 8-D within 48 hours or sooner, prior to the mandatory visit will also be required. These supplier meetings are mandatory if level I or II containment is invoked, but it will be Albar's decision to call a supplier in prior to any containment actions if the situation warrants it.

8.2 Determination of the need for Level I or Level II Controlled Shipping

Albar makes the determination whether the supplier can effectively correct the situation through the SQN process and/or isolate Albar from the problem. Standard guidelines for implementation of Controlled Shipping may consider one or several of the following:

a) Repeat SQN's
b) Duration and severity of the problem
c) Incapable processes
d) Quality problem in the field
e) Inadequate containment and/or resolution of non-conformance's via the SQN process

Based on consideration of the above, Albar decides whether Level I or Level II would be appropriate. Albar management may include the Plant Manager, Purchasing manager, the plant Quality Manager and appropriate process engineering resources. Level II situations are characterized as situations where the suppliers past actions have proven ineffective and the next step of hiring a third party inspection company to isolate the plant is warranted.

8.3 Level I Controlled Shipping process:

An Albar employee (usually from the SQA group) communicates in writing defining the problem, the need for additional inspection, containment efforts and the exit criteria.

The supplier is required to:

a) Complete the Controlled Shipping Confirmation Reply form and return it to Albar.
b) Immediately establish a separate sort area at their location.
c) Commence the sort activities and display the results in a public and visible location.
d) Track breakpoints of nonconforming material.
e) Management must meet daily at the sort location to review the results and ensure that corrective actions taken are effective or require changes.

f) Communicate results of sort activities to customer location.
g) Request exit from controlled shipping by providing documentation on performance to appropriate customer location representative. (Albar will notify Supplier Quality representative).

Albar evaluates if exit criteria have been met and communicates, in writing, that the supplier is no longer considered in Controlled Shipping.

Controlled Shipping containment guidelines:

a) Containment area must be highly visible and properly lighted, equipped, etc.
b) Must have well defined efficient material flow including clearly identified areas for incoming and outgoing parts/material.
c) No repair must be done in the containment area.
d) Sorting area must be independent of the supplier production process.
e) Information boards must prominently display non-conformances, measures, actions taken and results of containment activity.
f) Charts must be updated on a daily basis and reviewed by top supplier management.
g) Problem solving must be formal, data driven and documented.
h) Containment operators must have available to them proper job instructions, quality standards, boundary samples, etc.
i) Operators must be properly trained.
j) Preventive maintenance must be employed if required.

8.4 Level II Controlled Shipping process:

The Albar representative will analyze the non-conformance situation and determine if Level II is required.

Communication in writing to the supplier management, from Albar's Buyer (or other appropriate management representative) describing:

a) The action being undertaken
b) The non-conformance
c) The inspection checks required
d) Exit criteria required to be achieved

Supplier must complete the Controlled Shipping Confirmation Reply form and return it to Albar.

Roles and responsibilities:

**Customer Location Supplier Quality Engineer / Plant**

a) Participates in decision of which contract engineering firm will conduct the Level II containment activities. This decision will also include the appropriate staff of Supplier Quality and plant management.
b) Defines the required checks
c) Facilitates definition of the exit criteria
d) Drives resolution of all issues

**Purchasing (buyer)**

a) Assumes responsibility for all commercial and financial issues arising from the controlled shipping activity.
b) May participate in the decision of which contract engineering firm will conduct the Level II containment activities, if requested.

**Controlled Shipping Partner (Third Party)**

a) Provides people to perform the inspection activity and record results.
b) Provides documentation to the supplier and the SQE on the progress of the controlled shipping activity.

**Production (supplier) source**

a) Issue a purchase order to the Controlled Shipping Partner (Level II third party). Supplier is responsible for all costs of the contract engineering firm either performing the actual containment activities or supervising the supplier's employees in the supplying location.
b) Provide proper space and tooling to perform reinspection activity
c) Drive permanent corrective actions

8.5 Information boards should prominently display the following:

a) Quality standards such as boundary samples, technical specifications, drawings, etc.
a) Non-conformance's and action plans.
b) Process Control Plan highlighted to show where non-conformance occurred.
c) Operator instructions.
d) Gate charts showing number of discrepancies found, PPM, SNCR's, etc.
e) Measurable charts (Pareto, Trend, etc), must be available on a daily basis.

8.6 Communication plan should address the following:

a) Format and frequency of communication to the customer location.
b) Primary focus is progress toward the exit criteria.
c) Controlled Shipping Level II source is to report ALL issues identified during the containment.
d) Exit criteria to remain constant.

8.7 Exit criteria must:

a) Include clear and measurable elements.
b) Must be specific and relevant to the non-conformance issues to be addressed.
c) Provide a timetable to ensure corrective actions taken are permanent.

8.8 Albar evaluates if exit criteria have been met and communicates in writing that the supplier is no longer considered in Controlled Shipping.

## 9.0 EARLY PRODUCTION CONTAINMENT (GP-12 Process)

9.1 SUPPLIER RESPONSIBILITY

The Supplier must do the following:

1) Establish a containment process that contains the following elements:
   a) Identification of the person responsible for the containment process.
2) Development of a Pre-Launch Control Plan consisting of additional controls, inspection audits and testing to identify non-conformance's during the production process. Depending on the dominant factor if the production process (set-up, machinery. fixture. tooling. operator. material/components, preventative maintenance and climate) additional controls could include:
   a) Increased frequency/sample size of receiving. process and or shipping inspections
   b) mandated sub-supplier containment and or sub-supplier support/audits
   c) Addition of inspection/control items
   d) Increased verification of label accuracy
   e) Enhancement of process controls. such as error proofing
   f) Error proofing validation through introduction of known defects
   g) Increased involvement and visibility of top management
3) Prompt implementation of containment/correction when non-conformances are discovered.
4) Identification of the measurement equipment and data collection devices/activities to be used where applicable
5) Document the Pre-Launch Control Plan, including functional testing and error proofing, using the Control Plan format referenced in the Advanced Product Quality Planning and Control Plan Reference Manual. The development and documentation of the Pre-Launch Control Plan are expected to occur during the Advanced Product Quality' Planning process. The Pre-Launch Control Plan is not a substitute for the Production Control Plan but is over and above the Production Control Plan and is used to validate it.
6) Utilize the Early Production Containment Plan for all pre-production requirements (e.g... pilot, prototype, start of fiscal year) and for the production ship quantity or duration specified by the appropriate SQE or until the Production Control Plan is validated, whichever occurs later. Typically, the specified production quantity or duration is intended to reflect the customer's acceleration plan to full production rate. If not specified by the appropriate SQE, the production ship quantity is a minimum of 1200 pieces, in addition to any pre-production quantities required.
7) To indicate compliance with the GP-12 requirements, attach to each shipping label a green dot signed by a designated senior management representative, typically the highest level manager at the production facility. (The green dot should have a diameter of 1.25 to 2 inches.)

## 9.2 EXIT CRITERIA

Supplier will be eligible to exit Early Production Containment on its own accord after meeting the criterion listed below. If the supplier is unable to meet the exit criteria or the supplier's GP-12 plan continues to identify non-conformances the supplier is expected to continue the necessary containment measures to insulate the Customer Plant up to the time when the quality concerns have been resolved to the satisfaction of both the Supplier and the Customer and the Supplier's Production Control Plan is validated.

1) Ship the number of pieces or for the duration specified by the appropriate SQE with no discrepancies or customer plant SQN's and supplier can self exit from the Early Production Containment Process.
2) If supplier does not meet self-exit criteria to exit GP-12 all SQN's must be closed by the Customer Plant.
3) In the event the self exit criteria has been met but the GP-12 plan continues to identify non-conformances, the GP-12 plan must be kept in place until process controls and capabilities have proven effective and the Production Control Plan is validated.

## 10.0 MATERIALS AND LOGISTICS

10.1 General Requirements

A Supplier shall design their Materials and Logistics processes to support on time delivery to Albar and include elements to support MMOG/LE.

10.2 Packaging

The supplier is responsible for completing and submitting the Albar Packaging Data Sheet (FO-EG027) to the appropriate Albar packaging contact. Packaging proposals must comply with AIAG/VDA standards and Global REACH requirements.

All solid wood packaging materials, pallets and crates must comply with ISPM #15 International Plant Protection Convention Standards.

Suppliers are to insure packaging is designed to protect the materials in a manner that maintains a defect free condition during transit and storage.

Suppliers are responsible for ensuring returnable containers are free of debris, clean and old labels are removed before packing finished goods into them.

10.3 Labeling

The supplier is to have a robust labeling system in place to eliminate the possibility of human error during their labeling process. All container labels must include human readable text / graphics and scanner readable bar coded symbols and comply with AIAG.

AIAG Compliance: Labels are to adhere to the specifications as detailed and illustrated in the Automotive Industry Action Group's publication "Shipping/Parts Identification Label Standard" (AIAG-B-10) Version 3, June 2004.

For a copy or additional information contact the Automotive Industry Action Group at (248)-358-3003, 26200 Lahser Road, Suite 200, Southfield, Michigan 48034-7100, or on their web site: http://www.aiag.org/

Excerpts of AIAG-B-10 are included herein. Areas of the label not specified in AIAG-B-10, left to Albar's option, are denoted by (*). In case of conflict, Albar Supplier Labeling Requirements take precedence.

**General Label Specifications:**

Label Size (AIAG): 4.0 inches (102mm) high by 6.0 inches (152mm) or 6.5inches (165mm) wide

Label Quantity and Placement: Minimum 2 labels per Shipping Pack on 2 different sides.

Label Color: White in color with black printing.

Adhesives: Adhesive types can be pressure sensitive or dry gummed as long as adherence to the package substrate is assured and application is wrinkle-free. Note: If labels are applied to returnable packaging, the adhesive must not leave a residue after the label is removed, and the label must be easily removed without tearing. Paper is not preferred on returnable packaging.

Returnable Packaging: Card holders are recommended to contain and protect labels in conjunction with returnable packaging. Adhesive-backed labels shall be applied directly to placards or to stretch/shrink wrap.

DO NOT APPLY LABELS DIRECTLY TO THE RETURNABLE, unless the label stock is polyester material or equivalent AND the adhesive is classified as a "removable" type.

The supplier is responsible for the removal of all old container labels prior to shipping.

Data Identifiers: Use data identifier codes as defined by ANSI DI/AI standard MLH10.8.2 available from the American National Standard Institute (212)-642-4900 or their web site: http://www.ansi.org/.

Human Readable Zeroes (θ): Show human readable zeroes (θ) with a diagonal slash to differentiate them from alphabetic Os.

10.4 Materials Planning and Forecasting

Suppliers are to ship to material releases that are issued by Albar's Materials Department. It is the supplier's responsibility to contact their Albar Material representative in the event they are unable to meet all released requirements.

Suppliers must review and respond to all releases received by Albar and ensure their own supplies of components are available to meet demand. Likewise, capacity planning must be done at appropriate intervals to ensure 100% on time delivery.

Supplier obsolesce claims must be submitted to Albar's Buyer within 30 days of the final release.

10.5 Documentation

All shipments of material to Albar must be delivered with a packing slip that includes the following:

1) Shipment date
2) Packing Slip number
3) Ship to address
4) Individual line item for each part
5) Part number and description
6) Purchase order for each part
7) Quantity shipped
8) Total number of cartons, pallets and weight

10.6 Communication

Albar communicates through the use of various forms of media and with suppliers globally. The primary language to be used between Albar and its suppliers is English. If an alternate language is needed please contact the Buyer.

Supplier contact information is to be update as changes are made and forwarded to the Buyer, Materials Department and Quality Control.

Suppliers must utilize traditional EDI methods or a web based application to receive material release information if required.

10.7 Consignment Inventory

10.7.1 Cycle Counting Responsibility

The Supplier will be responsible for "accurately counting" Albar owned inventory within their facilities, on request. "Accurate counting" may include the use of scales, hand counting, and use of Albar supplied container counts if no materials from that specific container have been handled. The results of the count will be documented by part number, and forwarded to the respective Albar Material Planner. If the supplier performs a non-requested count and identifies an inventory problem as a result of that count, it is the supplier's responsibility to communicate that problem to the respective Albar contact.

10.7.2 Inventory Loss Reporting / Responsibility

Although the consignment inventory is owned by Albar, the supplier has the responsibility to take "due care" in handling and controlling this material. If an inventory loss or gain is identified within the supplier's system the loss or gain will be analyzed by

the respective Albar Material Planner and/or Buyer. Dependent on the results of this analysis, negotiations may follow concerning the responsibility and charge impact of that loss.

10.7.3 Scrap Reporting/Responsibility

It is the responsibility of the supplier to document all scrap incurred within the supplier facilities and forward this documentation to the respective Albar Material Planner. Albar reserves the right to request that this scrap be gathered, documented and returned as necessary. Documentation will include part number, quantity, defect information, and charge responsibility. If the scrap percentage reflects a substantial increase over the set standard it is the responsibility of the supplier to contact the respective Albar Material Planner for approval prior to continuing production /assembly.

## 10.8 Continuity of Supply – Contingency Planning

Suppliers must have back-up/contingency plans for high-risk SCM processes in place to ensure continuity of supply and a return to normal operations.

## 10.9 MMOG/LE

It is not required for suppliers to submit annual MMOG/LE assessments to Albar however; we encourage suppliers to use it as a self audit tool.

The MMOG/LE assessment tool is available at AIAG. https://www.aiag.org

## 11.0 ALBAR SPECIAL CHARACTERISTICS

Special Characteristics designated on Albar documents have particular significance to quality or customer satisfaction. They may be associated with product safety, customer or Albar regulatory compliance (regulations), fit or function. They require control above standard care in the manufacturing process. The use of Special Characteristics is not intended to minimize the importance of other specifications or characteristics which must be controlled by the supplier. The supplier should develop a total manufacturing quality system plan for all parts and characteristics, regardless of category. Albar may use specific symbols on drawings and specifications to designate Special Characteristics. See the charts at the end of this section for specific symbols and requirements.

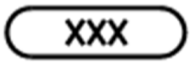
Albar Special Characteristics must be clearly identified on the supplier's documents, including PFMEA, PFD, PCP and operator instructions. Supplier management must assure that all operators are knowledgeable of Special Characteristics existing on the parts being produced at their work station. The Supplier should communicate to Albar Supplier Quality, any expected non-normal distributions so that the capability analysis method and acceptance criteria can be discussed and agreed upon prior to PPAP submission. (Reference TS16949 Clause 7.2.1.1 & 7.3.2.3).

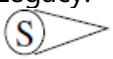
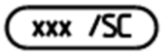
In selecting Special Characteristics, the following items are taken into consideration:

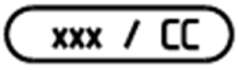
1) Functional or safety-critical product dimensions where ongoing control charting is required on the plant floor.
2) Vehicle interface dimensions.
3) Possible pass-through defects.
4) Design & process knowledge.
5) Past customer returns, recalls, lessons learned
6) Similar part:
7) Control plans.
8) Design & Process FMEA.
9) Process capability
10) Customer requirements
11) Compliance with government regulations

The following are the different Special Characteristics and the process/inspection requirements related to each type of Special Characteristic:

| STANDARD DIMENSIONS – NOT SPECIAL | | | |
|---|---|---|---|
| **Drawing and Document Symbols** | **Process Requirements** | **Minimum Documentation Requirements** | **Response to Nonconforming Material** |
| Standard Dimensions, NOT Special Characteristics.<br><br>No symbols | Reasonable explanation of the control strategy is required at a review of the manufacturing process plan, gage plan, PFMEA, & control plan. | Unless otherwise specified, minimum documentation is a three piece inspection (per cavity) at:<br>• PPAP<br>• Tool repair for identified features or datum affecting an identified feature<br>• Tooling refurbishment<br>• Annually<br><br>Archiving: as defined by manufacturing location document retention procedure. | Albar approved Temporary Deviation Request (TDR) required for use of nonconforming parts. |

| QUALITY CHARACTERISTICS | | | |
|---|---|---|---|
| **Drawing and Document Symbols** | **Process Requirements** | **Minimum Documentation Requirements** | **Response to Nonconforming Material** |
| QC<br>  <br><br>QCI<br>  <br>Checking Dimension<br>  <br><br>QC can be used for identification instead of symbols on documents such as Control Plans. | Documented control strategy, specifically referring to the characteristic in process documentation (manufacturing process plan, gage plan, PFMEA, control plan). | Plant floor documentation is required. Specific documentation requirements are a function of process capability and must be defined on the control plan.<br><br>Unless otherwise specified, minimum documentation is a three piece inspection (per cavity) at:<br>• PPAP<br>• Tool repair for identified features or datum effecting an identified feature<br>• Tooling refurbishment<br>• Annually<br><br>Archiving: 3 years min. | Albar approved Temporary Deviation Request (TDR) required for use of nonconforming parts. |

| SIGNIFICANT CHARACTERISTICS | | | |
|---|---|---|---|
| **Drawing and Document Symbols** | **Process Requirements** | **Minimum Documentation Requirements** | **Response to Nonconforming Material** |
| SC: Fit /Function and/or Safety<br>  <br><br>Legacy:<br>  <br><br>KPC:<br>Fit/Function<br>  <br>Significant Characteristic<br>  <br><br>SC can be used for identification instead of symbols on documents such as Control Plans. | Documented control strategy, specifically referring to the characteristic in process documentation (manufacturing process plan, gage plan, PFMEA, control plan).<br><br>Process Indices Acceptance Criteria:<br>Initial (PPAP) process study:<br>Process Performance Index target **Ppk** > 1.67, & demonstrated statistical control or 100% inspection and/or error prevention.<br><br>Ongoing Process Capability Index target Cpk > 1.33 or 100% inspection and/or error prevention.<br>OR<br>If ongoing capability is demonstrated with an attribute gage on less than all of the parts, the gage must be built to 75% of the specified tolerance.<br>Sample size and frequency to be large enough to demonstrate reliability as approved by the Albar Quality Engineer. | Plant floor documentation is required. Specific documentation requirements are a function of process capability and must be defined on the control plan.<br><br>Albar customer specific requirements must be shown on the drawing and included in the control plan.<br><br>Capability is to be demonstrated on each cavity at:<br>• PPAP<br>• Tool repair<br>• Tooling refurbishment<br><br>Annual layout.<br><br>Archiving: 5 years min. | Albar approved Temporary Deviation Request (TDR) required for use of nonconforming parts.<br><br>When Capability is demonstrated using an in-process attribute gage on less than all of the parts and a part fails, then a full tolerance gage must be used to check 100% of the parts produced since the last acceptable check.<br><br>Reduction in variability required when capability (Ppk / Cpk) is not met or when process is not in statistical control.<br><br>Documented containment plan for all nonconforming parts. |

| CRITICAL CHARACTERISTICS | | | |
|---|---|---|---|
| **Drawing and Document Symbols** | **Process Requirements** | **Minimum Documentation Requirements** | **Response to Nonconforming Material** |
| Safety/ Compliance KPC<br>  <br>Critical Characteristic<br>  <br><br>CC can be used For identification instead of symbols on documents such as Control Plans. | Documented control strategy, specifically referring to the characteristic in process documentation (manufacturing process plan, gage plan, PFMEA, control plan).<br><br>Process Indices Acceptance Criteria:<br><br>Initial (PPAP) process study:<br>Process Performance Index target **Ppk**> 2.0, & demonstrated statistical control or 100% inspection and/or error prevention.<br><br>Ongoing Process Capability Index target Cpk > 1.67 or 100% inspection and/or error prevention.<br>OR<br>If ongoing capability is demonstrated with an attribute gage on less than all of the parts, the gage must be built to 75% of the specified tolerance.<br>Sample size and frequency to be large enough to demonstrate reliability as approved by the Albar Quality Engineer. | Plant floor documentation is required. Specific documentation requirements are a function of process capability and must be defined on the control plan.<br><br>Albar customer specific requirements must be shown on the drawing and included in the control plan.<br><br>**On-going Statistical Process Control: Evidence of this capability <u>will be required with each shipment</u> under separate cover due to shipments to stock.**<br><br>Capability is to be demonstrated on each cavity at:<br>• PPAP<br>• Tool repair<br>• Tooling refurbishment<br><br>Annual layout.<br><br>Archiving: 15 Years min. | Albar approved Temporary Deviation Request (TDR) required for use of parts accepted with a full tolerance gage. When Capability is demonstrated using an in-process attribute on less than all of the parts and a part fails, then a full tolerance gage must be used to check 100%of the parts produced since the last acceptable check.<br>Reduction in variability required when capability (Ppk / Cpk) is not met or when process is not in statistical control.<br><br>Documented containment plan for all nonconforming parts. |

## GLOSSARY OF TERMS

| | |
|---|---|
| AIAG | Automotive Industry Action Group |
| APQP | Advance Product Quality Planning |
| ASN | Advanced Shipping Notice |
| C-TPAP | Customs-Trade Partnership Against Terrorism |
| DFMEA | Design Failure Modes Effects & Analysis |
| DV | Design Validation |
| EV | Engineering Validation |
| FIFO | First In First Out |
| FMEA | Failure Mode and Effects Analysis |
| GD&T | Geometric Dimensioning & Tolerancing |
| GP-12 | Early Production Containment |
| IMDS | International Material Data System |
| ISO/TS 16949 | Quality Management System Requirements |
| ISPM | International Standards for Phytosanitary Measures |
| JIT | Just In Time |
| MMOG | Materials Management Operations Guidelines |
| MSA | Measurement System Analysis |
| MSDS | Material Safety Data Sheet |
| NAFTA | North America Free Trade Agreement |
| OEM | Original Equipment Manufacturer |
| PCP | Process Control Plan |
| PFD | Process Flow Diagram |
| PFMEA | Process Failure Mode Effects & Analysis |
| PPAP | Production Part Approval Process |
| PSW | Part Submission Warrant |
| PV | Product Validation |
| REACH | Registration, Evaluation, Authorization and Registration of Chemicals |
| SOR | Statement of Requirements |
| SPC | Statistical Process Control |
| SQE | Supplier Quality Engineer |
| SQN | Supplier Quality Notification |

| Approval: A. Lawrey | | Author(s): A. Lawrey, D. Smith |
|---|---|---|
| **Revision Log** | | |
| **Revision Date** | **Section(s)** | **Description** |
| 08/28/15 | | Initial Release |
| | | |
| | | |