



# **SUPPLIER QUALITY AND PACKAGING REQUIREMENTS MANUAL**

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# CVG Supplier Quality and Packaging Requirements Manual

Subject	Table of Contents	Page Number
<b>Table of Contents</b>		<b>2</b>
<b>General information</b>		<b>4</b>
Definitions		
Supplier Requirements		
Supplier Development		
<b>Corporate and Plant Listings</b>		<b>5</b>
<b>Product Approval Process (PPAP)</b>		<b>6</b>
Supplier Sample Submission Procedure		
Deviations		
Chemical Suppliers		
Laboratory and Test Analysis		
Legislated Requirements		
Initial Approval		
Annual Re-certification		
Material Certification/Warrant Requirements		
<b>CONTINUOUS IMPROVEMENTS</b>		<b>7</b>
Cost Monitoring		
VA/VE: Value Analysis/Value Engineering		
<b>DOCUMENT AND DATA CONTROL</b>		<b>8</b>
Engineering Drawing and Specification Control		
<b>DOCUMENT / DATA APPROVAL and ISSUE</b>		<b>8</b>
Engineering Change		
Engineering Change Notification		
<b>PURCHASING</b>		<b>8</b>
Evaluation of Suppliers and Sub Suppliers		
Run at Rates		
Potential Suppliers		
Current Suppliers		
Systems Improvement		
Supplier Performance Indicators		
Quarterly Performance Report		
Verification of Purchased Product		
<b>IDENTIFICATION AND TRACEABILITY</b>		<b>9</b>
Lot Control / Traceability		
<b>PROCESS CONTROL</b>		<b>10</b>
Maintaining Process Control - Capability Studies		
<b>PROCESS CHANGE</b>		<b>10</b>
<b>VERIFICATION OF JOB SET UPS</b>		<b>10</b>
First/Last Piece Inspection		
<b>CERTIFICATES OF COMPLIANCE (ANALYSIS)</b>		<b>11</b>
<b>NONCONFORMING PRODUCT</b>		<b>11</b>

<b>REVIEW and DISPOSITION OF NONCONFORMING PRODUCT</b>	<b>12</b>
Reject Parts Per Million (PPM)	
Product Disposition	
Containment Plan	
Containment Level	
Removal from Containment	
<b>CORRECTIVE ACTION</b>	<b>14</b>
Eight Discipline (8D) Response	
Unresolved Quality Concerns – Phase Meetings	
<b>PACKAGING and LABELING</b>	<b>14</b>
Packaging	
Packaging Approval	
Labeling	
Inventory Control Labels	
<b>DELIVERY</b>	<b>15</b>
In-Bound Freight	
Out-Bound Freight	
Physical Condition	
Premium Freight	
Logistical Concerns	
Customer and Production Schedules	
Non-Delivery, Delayed Deliveries or Short Shipments	
Interruption/Shutdown	
<b>CONTROL OF QUALITY RECORDS</b>	<b>17</b>
Chemical Suppliers - Record Retention	
<b>CONTROL CHARACTERISTICS</b>	<b>17</b>
Unidentified Key Product/Control Characteristics (KPC/KCC's)	
Key Product/Control Characteristics (KPC/KCC's)	
Component Supplier Statistical Data Submission	
Cp and Cpk Indices	
Chemical Supplier Statistical Data Submission	
<b>ENVIRONMENTAL GUIDELINES</b>	<b>18</b>
<b>CORPORATE SOCIAL RESPONSIBILITY REQUIREMENTS FOR SUPPLIERS</b>	<b>18</b>
<b>WARRANTY GUIDELINES</b>	<b>18</b>

## GENERAL INFORMATION

All requirements and standards stated in the Addendum pertain to those specific requirements of CVG. All references to Commercial Vehicle group refer to CVG Divisions and any of (CAB Systems, Seating, Wiring Harness, and Specialty Products). All suppliers shall obtain a copy and must comply with the Quality System Requirements of ISO /TS 16949 as supplied by the AIAG (Automotive Action Group) in Southfield, MI ([aiag.org](http://aiag.org)) phone 248.358.3003.

Other reference books needed to comply with the technical specification referred to and available through the AIAG are: Advanced Product Quality Planning and Control Plan (APQP/CP), Failure Mode and Effect Analysis (FMEA), Measurement System Analysis (MSA), and Fundamental Statistical Process Control (SPC), Production Part Approval Process (PPAP).

### A. DEFINITIONS

**[3.1]** All statements contained within this document referring to “**SUPPLIER**” refer to your company regardless of sourcing arrangements. All statements referring to “**SUBCONTRACTOR**” refer to providers of materials, parts, or services to the supplier. All statements referring to “**CUSTOMER**” refer to the CVG Divisions, facility, location, plant, contact, etc. All statements, which refer to “**CORPORATE QUALITY**”, shall henceforth refer to CVG Divisions - Corporate Supplier Quality Assurance and Development Department.

### B SUPPLIER REQUIREMENTS

**[7.4.1]** Suppliers to CVG Divisions are required to be third party certified, at a minimum, to the quality standard ISO 9001:2000. This requirement applies to every location of each supplier providing goods or services used in the production processes of CVG Divisions.

In the case of multiple sites, the supplier shall maintain all relevant documentation of such certification and provide in response to CVG Divisions inquiries within 24 hours of a request. All materials must be processed, controlled, inspected and/or tested in accord with requirements as presented in the ISO 9001:2002 specification, this addendum, supply agreements, purchase orders and any other requirements stated on CVG Divisions documents.

CVG Divisions Supplier Requirements is a supplement to the quality standard ISO 9001:2000 which defines the guidelines for meeting CVG Division’s specific requirements to the supply base.

### C SUPPLIER DEVELOPMENT

**[7.4.1.2]** In the event that third party certification is an extreme burden to the supplier, a supplier development program is an alternative, under certain conditions. A supplier may apply to the CVG Divisions Quality Group for consideration of the circumstances and the need for the product[s] produced by the supplier.

If it is determined that circumstances warrant, arrangements will be made for a second party evaluation of the ability of the supplier to become compliant to the requirements of ISO 9001:2000. Recommendations will then be made for any corrective action needed and after they are implemented, a second party certification will be given to the supplier.

**D. SUPPLEMENT SECTION - CORPORATE AND PLANT LISTING**

**[3.1]**

**Commercial Vehicle Group Corporate Headquarters**

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 Phone (614) 289-5360  
 Fax (614) 289- 5361

**CVG**

<p><b>Chillicothe OH</b>                  75 Chambers Drive, Chillicothe, Ohio 45601                  Phone (614) 772-5998                  Fax (614) 775-1400</p>	<p><b>Dublin, VA</b>                  320 Newbern Road, Dublin, Virginia 24084                  Phone (540) 674-6229                  Fax (540) 674-6427</p>
<p><b>Kings Mountain, NC</b>                  629 S Battleground Ave., Kings Mountain, NC 28086                  Phone (704) 676-6542                  Fax (704) 397-4443</p>	<p><b>Michigan City</b>                  527 West Highway 20, Michigan City, Indiana 46360                  Phone (219) 861-2500                  FAX (219) 879-4578</p>
<p><b>Norwalk, OH</b>                  55 N Garfield St., Norwalk, OH 44857                  Phone (419) 668-8132                  Fax (419) 668-1096</p>	<p><b>Shadyside, OH</b>                  60581 State Route 7, Shadyside, OH 43947                  Phone (740) 676-6542                  Fax (740) 676-9273</p>
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## CVG

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<b>Belgium</b> Chausse de Mons 55 B-1780 Seneffs (Brussels), Belgium Phone 32 0 6 427 3470	<b>China</b> No. 599 Huibao Road, Waigang Jiading District Shanghai, China 201806 Phone 86-21-5958 Fax 86-21-5958-5802

## **Product Approval Process (PPAP)**

### **A. Supplier Sample Submission Procedure**

**[7.3.6.3]** All suppliers shall follow the instructions provided in the latest version of the Production Part Approval Process (PPAP) manual and use the appropriate AIAG forms when applicable. PPAPs are to be submitted following “**level 3**” requirements unless otherwise directed.

If applicable, suppliers shall obtain Restricted and Reportable Materials or substance report and include such documentation in sample submissions sent to the Corporate Quality

### **B. Deviations**

**[8.3.4]** Deviation requests must be submitted and incorporated on the part drawing prior to sample submission for production approval by the CVG Divisions customer and the Corporate Purchasing Department.

### **C. Chemical Suppliers**

**[7.3.6.3]** If applicable, chemical suppliers must submit samples and technical information to CVG Divisions Product Engineering Department or as specified on purchase order or other document.

#### **D. Laboratory and Test Analysis**

**[7.6.3]** A current laboratory accreditation Certificate (per end-customer accreditation policy) must accompany all laboratory analysis reports. The test results must reflect a period not greater than 12 months and indicate laboratory name, address, date, specification number, specification limits, lot number, test results, and a signature of a responsible individual. Lab scope of facility shall be documented. Certification to 17025 is a requirement.

#### **E. Legislated Requirements**

**[7.4.1.1]** All products supplied to the customer, which are to be installed into a vehicle interior, are subject to FMVSS 302 or other OEM or government/safety regulated requirements. Documentation assuring requirement compliance must be submitted with, or prior to, delivery of each lot of material.

#### **F. Initial Approval (Assembly or Raw Material)**

**[8.2.4]** Once the customer PPAP Specialist has evaluated the submission, the customer will notify the supplier of the submission status through the warrant. Production shipments are to be initiated only after the receipt of sample approval, receipt of releases, and receipt of instructions from the customer Corporate Purchasing Department.

##### **Initial Approval (Tooling)**

All tooling suppliers shall complete and submit a Tool Certification at the time of delivery for each tool cavity. Approval will be given after product is PPAP approved by the user plant/OEM.

#### **G. Annual Re-certification**

**[7.2.1]** Test data must be less than one year old. Annual material testing must be performed to validate ongoing conformance to requirements. Material test results are to be kept on file at the supplier location and be available to the customer upon request within the same business day. All records are subject to periodic audit review by customer personnel. The unavailability of the supplier's data would result in a noncompliance and could result in a plant rejection. If this occurs, the supplier will receive a problem solving report (PSR) and be required to submit a written corrective action plan using the 8D format. NOTE: A complete dimensional/material analysis shall be made available upon request.

#### **H. Material Certification/Warrant Requirements**

**[7.4.2]** When required, a certification/warrant document shall contain:

- Supplier name, address, phone number, date
- Customer location address
- Purchase order number
- Quantity shipped
- Shipper number
- Date shipped
- Lot/batch number for traceability
- Product name/number
- Listing of Specification compliant to
- Authorization signature or authorization name if supplied electronically.
- Characteristics controlled (specification values with tolerance & units of measure)
- Actual test methods and results for a particular lot/batch
- **Certificates of Compliance** – Analysis reports must show the “**requirement range and the test results**”.

### **CONTINUOUS IMPROVEMENT**

#### **A. Cost Monitoring**

**[7.3.2.2]** The supplier is expected to cooperate with the customer in an effort to reduce costs and selling price both prior to and during mass production. The supplier must be willing to share suggestions and cost reduction benefits with the customer.

## **B. VAVE: Value Analysis/Value Engineering**

**[7.3.2.2]** VA/VE is a systematic problem solving process that involves identifying the functions of a product, determining the cost of those functions, and providing those functions reliably at the lowest overall cost. VA examines current products in an effort to detect and correct value problems and reduce costs.

VE focuses on new products in an effort to identify and prevent value problems before production. This ensures that cost avoidance is designed into the product.

CVG Divisions expects its suppliers to participate pro-actively in the VA/VE program when called upon.

## **DOCUMENT AND DATA CONTROL**

### **Engineering Drawing and Specification Control**

**[4.2.3.1]** Assistance in obtaining part drawings and specifications, clarification of specifications, and information on components can be acquired through the customer Corporate Purchasing Department. Information, as it applies to tooling suppliers, can be obtained through the Customer Product Engineering Department.

## **DOCUMENT / DATA APPROVAL and ISSUE**

### **A. Engineering Change**

**[7.1.4]** The supplier shall have written authorization from the Corporate Purchasing Department prior to making any production/engineering changes. Any product shipped containing deviations without having prior change authorization from the customer User Plant(s) will be subject to **REJECTION** and/or **RETURNED** at the suppliers' expense.

### **B. Engineering Change Notification**

**[7.1.4]** In order to prevent any manufacturing problems should engineering changes be made directly to the supplier at the request of the OEM/end-customer; component suppliers shall immediately contact CVG Divisions Supplier Quality prior to the first revised production shipment. Prior notice shall include change number, lot number, and date of first shipment. The first approved shipment shall bear a brightly colored printed label with notification of changed material to inform that a change has occurred. Chemical suppliers shall place the brightly colored sticker on the bill of lading as notification of change.

## **PURCHASING**

### **A. Evaluation of Suppliers and Sub Suppliers**

**[7.4.3]** The customer reserves the right to visit the supplier and/or sub supplier manufacturing facility to verify the quality of purchased parts and to review quality systems at any time. Such assessment could be to update current supplier information, evaluate potential suppliers, or to review systems due to on-going quality related problems, etc. The customer will use the results of these assessments in business partner determination.

### **B. Run at Rates**

**[7.3.6.3]** The customer reserves the right to participate in, or initiate, run-at-rate assessments of the suppliers' manufacturing capability to meet quoted capacities and quality requirements. These evaluation methods may be requested at the start-up of new programs, during pilot/launch phases, when the product is critical to the customers' production, etc.

### **C. Potential Suppliers**

**[7.4.1]** Prior to the placement of business, potential suppliers may be required to complete a self-assessment for submission to CVG Divisions Corporate Purchasing

#### **D. Current Suppliers**

**[7.4.3.2]** The customer recommends that the supplier be prepared to demonstrate documented evidence of procedures, statistical data, current/historical records, and continuous improvement during on-site evaluation, as well as make available all relevant personnel. The assessment results, as well as other performance indicators, determine the supplier rating and if unacceptable, may affect future business in that they may cause the initiation of "Quotation Probation" and/or the resourcing of business.

#### **E. Systems Improvement**

**[8.2.3]** If inadequate systems are evident, the supplier will be required to submit a corrective action plan illustrating targeted activities, timing expectations, and responsible persons. This may, if determined adequate, result in an increase to the suppliers' rating. If requested corrective action is not submitted, the supplier's rating may be decreased. The supplier may be asked to meet with the Corporate Quality and/or Purchasing Departments at an appropriate location to resolve performance and/or systems concerns. Also, the supplier may submit, at any time without customer request, documentation substantiating system improvements that, upon approval, may increase ratings.

#### **F. Supplier Performance Indicators**

**[7.4.3.2]** All suppliers are monitored as appropriate for:

- Reject Parts Per Million (PPM)
  - **CVG Division's requirements of "QUALITY" rejected part per million is "25 PPM's"**
- Delivery on time (PPM)
  - **CVG Division's requirements of "DELIVERY" rejected part per million is "0 PPM's"**
- Corrective Action Response
- Line/operation interruptions
- End-customer assembly plant shutdowns
- Corrective action plans
- Logistical discrepancies (on time delivery)
- Statistical data submissions
- Certification data
- Sample submissions (PPAP)
- Self-assessments
- Repetitive problems

#### **G. Quarterly Performance Report**

**[7.4.3.2]** On a calendar quarterly basis, selected suppliers will receive a Quarterly Performance Report that consists of a compilation of all supplier performance indicators. Noticeable negative changes in supplier performance may initiate contact for corrective action.

#### **H. Verification of Purchased Product**

**[7.4.3]** CVG Division's Customers contractually reserve the right to visit the supplier manufacturing site to verify quality of purchased products prior to shipment.

### **IDENTIFICATION AND TRACEABILITY**

#### **Lot Control/Traceability**

**[7.5.3]** A lot number shall appear on all labels, and where applicable, on each item shipped, per engineering drawing specifications. Records of lot shipment destination(s) shall be maintained for the life of the program or a minimum of 7 years.

All suppliers shall maintain a lot control and traceability identification system to track all main components, materials, and chemicals to their origin. This system shall also be in effect for any product that has been reworked or repaired. Chemical suppliers shall also maintain proper identification of all pipelines, tankers, control valves, etc.

## PROCESS CONTROL

### Maintaining Process Control - Capability Studies

**[8.2.3.1]** Where applicable Preliminary process potential study data shall be gathered in rational subgroups and used to develop preliminary control limits, which demonstrate the stability of the process. Critical characteristics shall be monitored by acceptable technique of process control monitoring. When out-of-control conditions are observed, component suppliers shall 100% sort or determine capability to the last point in control. Once correction is implemented, samples shall be taken, and results recorded and plotted on the charts. Chemical suppliers shall concentrate on specification requirements with subsequent attention to Cpk calculations. Chemical suppliers shall conduct statistical studies to evaluate the results of receiving inspection, in-process testing, formula changes, etc. These studies shall be performed on an on-going basis during development and shall include the development of process controls, test methods, and both product and process specifications.

## PROCESS CHANGE

The supplier shall notify the applicable (CVG) customer product approval activity, supplier quality, purchasing and material departments of any design, process (including process location), material and or sub-supplier sourcing changes. The supplier shall make notification in writing utilizing the included Process Change Notification form. A full PPAP Level 3 will be required for any such changes unless PPAP is waived in writing by the authorized CVG approval activity.

### Customer Notification

The supplier shall notify the responsible customer product approval activity, supplier quality, purchasing and material departments and of any design and process changes as indicated below.

### Process Change Notification Requirements:

- 1 A new or changed product or tooling (specific part, material, color, plating, etc)
- 2 Correction for any previously submitted part
- 3 Engineering changes to parts or material
- 4 Change in process or process location
- 5 Change in supplier or supplier location (including sub-suppliers)
- 6 Products produced after tooling or supplier location has been inactive for twelve months or more.
- 7 Any change that could affect Fit, Form, Function, Performance, and/or Durability
- 8 Supplier shall inform customer of change whether supplier believes change effect the part.

## VERIFICATION OF JOB SET UPS

### FIRST/LAST PIECE INSPECTION

**[7.5.1.3]** When component first piece inspection is used to certify a new set-up, the first piece should be retained throughout the production run and located at the operation whenever possible. It is also recommended that the last piece, once compared to the first piece and accepted, be kept until the next run of that product. Tooling suppliers shall perform 'all piece' inspection, and chemical suppliers shall inspect product(s) during appropriate process intervals.

### RECEIVING INSPECTION AND TESTING

**[7.4.3.1]** CVG Divisions prefers to keep receiving inspection to a minimum therefore on-line usage of components and chemicals may determine acceptance. With the exception of tooling, all shipments received by the customer shall have been inspected and tested to ensure compliance to specifications and shall include the material certification/warrant documentation. Entire lots of material may be rejected at the first sign of a discrepancy in quality conformance. Chemical suppliers of temperature sensitive supplies are reminded to provide temperature monitoring devices on each shipment as required.

Third party certification to ISO 9001:2000 may be used in lieu of submitting statistical data and material certifications/warrants for component suppliers. However, this does not exempt the supplier from using statistical methods such as C=Zero sampling plan and maintaining records for review by the customer.

### **SUPPLIER LABORATORY REQUIREMENTS**

**[7.6.3]** The supplier shall use a schedule or tracking procedure for tests being performed both internally and externally. When test performance requirements can not be completed during the shift from which the product was taken, that product shall be held pending successful test completion. When regulatory control is required by specification, records shall be maintained for review to illustrate compliance. Suppliers using outside laboratories must use laboratories that are accredited laboratories that meet the end-customer requirements. Certification to 17025 is a requirement.

### **CERTIFICATES OF COMPLIANCE (ANALYSIS)**

The supplier shall provide a Certification of Compliance for all product identified by the CVG using plant. Suppliers shall utilize the CVG QF – 167 form.

### **NONCONFORMING PRODUCT**

**CVG Division's requirements of "QUALITY" rejected part per million is " 25 PPM's".**

#### **A. Supplier Tests**

**[8.3]** Product performance test failure shall be cause for the supplier to quarantine production shipments immediately pending analysis of the process and corrective action. The supplier shall immediately notify each customer location of the failure, shipment suspension, and suspect lot identification. After the root cause of the failure is determined, corrected, and verified and approval by the customer in writing, the supplier may resume shipments.

#### **B. Nonconforming Product Detection and Reporting – Failure Costs**

**[8.3]** The supplier shall be debited for any/all product failure costs determined to be the responsibility of the supplier, regardless if said failure occurred prior to or after shipment to the end/final customer. Product nonconformance will be reported through the use of a problem solving report (PSR). This form will also be used to inform the supplier of the request to complete a corrective action form for problem resolution outlining containment action and a plan for long term improvement.

#### **C. Nonconforming Product Detection – Notification by Supplier**

**[8.3]** If shipment of nonconforming or suspected nonconforming product has been detected by the supplier and is in transit or has been delivered to the customer, the supplier shall immediately notify, by phone, the Quality Department at each customer receiving location. Corrective action documentation shall be submitted to the customer(s).

For all tooling issues, suppliers shall contact customer location(s) as well as the customer Corporate Product Engineering Department. Customer receiving locations may require tooling suppliers to submit an 8D for problem resolution, with corrective action to be submitted to the requesting customer location with a copy submitted to the Customer Product Engineering Department and the customer Corporate Department.

For chemical issues, suppliers shall contact the customer location(s) Materials Department, Corporate Purchasing, and Product Engineering Department.

#### **E. Nonconforming Product Detection – Notification by Customer**

**[8.3]** If nonconforming product has been detected by CVG Divisions, the supplier will be notified via facsimile or email utilizing the PSR. Upon notification, the supplier shall, within 24 hours, review the concern and provide authorization for disposition. Disposition timing may be decreased if specified by the receiving customer due to the individual manufacturing schedule requirements. Disposition possibilities include:

- Supplier personnel sort at customer location
- Customer personnel sort at customer location
- Destroy and dispose of at customer location
- Return product to supplier “freight collect” for credit with replacement product due
- Third party sorting if deemed necessary by the customer due to quality concerns

Costs associated with nonconforming product that causes a line interruption or shutdown at CVG Divisions or the end-customer will be the responsibility of the supplier.

## REVIEW and DISPOSITION OF NONCONFORMING PRODUCT

### A. Reject Parts Per Million (PPM)

**[8.4.1]** Dividing the number of parts rejected by the number of parts received and multiplying the result by 1,000,000 calculate PPM; for example,  $5 \div 2,500 \times 1,000,000 = 2,000$  PPM.

Any product which is not **‘TO SPECIFICATIONS’** will be defined as **REJECTED** and will be assessed as such against the supplier in PPM reporting. Rejected prototype and experimental product(s) shall not be assessed as PPM at any time. When the customer location has insufficient space to take delivery of all product(s) shipped (providing that the quantity shipped equals the quantity ordered), excess product shall not be assessed as rejected. Not ‘right first time’ incident details will be reported by PSR. Product which is not ‘right first time’ includes product which must be:

- Reworked prior to use\*
- Repaired prior to use\*\*
- Scrapped
- Returned to the supplier
- Short quantity associated with count, not associated with mislabeling or foreign material

\*Examples of reworked product would be those that must be altered to meet specification, e.g. must be bent, cleaned, reassembled, etc. prior to insertion into the mold. Rework would include chemicals that must be re-formulated or mixed to meet specification.

\*\*Examples of repaired product would be those that must be taken off-line for major repairs, e.g., re-welded, heated, file burrs, steamed or re-sewn (could not be used without completing or repeating a process).

### B. Product Disposition

**[8.3]** It is to the suppliers’ advantage to visit the customer location for product disposition. This provides the opportunity to view component usage, and allows products to remain in the facility for sorting, reworking, or repairing. Upon sorting, product which is found to be ‘right first time’ and can be ‘used as is’ will not be assessed against the supplier PPM. If materials are returned, they will be considered not ‘right first time’. All not ‘right first time’ products impact the supplier on PPM, which is reflected on the Quarterly Performance Report (QPR) and the Monthly Reject Report (MRR).

When the quantity in question is extremely large, the supplier and plant quality personnel may negotiate the best method to disposition the material. In some cases the quantities are so high that sorting within the CVG Divisions facility would not be feasible and all products should be returned to the supplier for sorting. It is up to the supplier and plant quality personnel to negotiate the PPM value to be counted against the supplier. This is at the discretion of the plant quality personnel.

To avoid imminent production shutdown, the customer may perform, at the suppliers’ expense the necessary sorting inspection, and repairing/reworking operations to maintain production.

### C. Containment Plan

**[8.2.3.1]** Customer personnel may place the supplier into containment if they experience repetitive concerns with a supplier, during the first ten percent of annualized volume produced for a new program, or during pilot/launch phases. Containment will be required when consensus within CVG Divisions management determines that current supplier controls are not sufficient to insulate CVG Divisions from the receipt of nonconforming parts/material. If this occurs, the supplier will then be notified verbally, followed by a PSR or other written documentation.

CVG Divisions personnel at the location experiencing the part/material nonconformance makes the determination whether the supplier can effectively correct the situation through the PSR (Problem solving report)/8D process and/or isolate CVG Divisions from the problem. It is the customer's discretion to determine which and how many characteristics to be inspected until customer confidence has been restored. Standard guidelines for implementation of containment may consider the following:

- Repeat defects
- Duration and severity of the problem
- Incapable processes
- Quality problem at CVG Divisions, customer or in the field
- Inadequate containment and/or resolution of nonconformances via the PSR/8D process

With the exception of tooling suppliers, suppliers shall employ the "green dot" or other containment plan, which is temporary in nature, until process capabilities and process controls have proven effective. Suppliers shall also initiate an internal containment plan in situations which could effect production, e.g., manpower, materials, products, tools, processes, engineering change, etc. The plan shall provide a method to ensure that all defective and suspect defective products do not reach the customer.

**ALL** costs associated with the supplier being placed on containment, regardless of reason or sourcing arrangement will be at the expense of the supplier.

#### **D. Containment Level**

**[8.2.3.1]** Level I containment is defined as a redundant inspection process enacted by the supplier's employees at the supplier's location in order to isolate CVG Divisions from receipt of nonconforming parts/material. This containment effort is to be conducted in a separate area from production with qualified personnel.

Level II containment is the same activity but "person(s) performing the sort" is an impartial third party selected by CVG Divisions 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 party's location or at a facility deemed appropriate by CVG Divisions.

#### **E. Removal from Containment**

**[8.2.3.1]** In order to be removed from containment, the supplier must provide the customer location with a minimum of three (3) defect-free shipments, both at the supplier and at the customer location, documented proof of a Cpk index higher than 1.33 for related or requested Key Control Item as determined by the customer, an updated control plan addressing the problem, and a completed and approved 8D response with effective permanent corrective action (copied to Corporate Quality).

It is the discretion of the customer whether to place a supplier in containment, and to determine what should be in containment, and the length of the containment.

Containment is generally for thirty (30) days or three (3) shipments, but may be reduced, lengthened, or for an undetermined period of time, depending on performance, customer confidence level, and meeting the criteria for removal which includes the approval by the customer for:

- Sufficient quantities (determined by the receiving customer) shipped with zero defects
- An updated control plan to address the problem

- Statistical data and/or Cpk and Cp data of 1.33 or > for related or requested characteristics
- Approved 8D response to ensure permanent corrective action with no recurrence

The objectives for using a containment plan are to demonstrate a management commitment to proactive containment of all detectable defects, to ensure all processes are capable, and to implement process control. Termination of containment occurs only when the customer notifies the supplier of termination after there is no recurrence of the problem and that the documentation submitted has been accepted.

## **CORRECTIVE ACTION**

### **A. Eight Discipline (8D) Response (See Supplement D for form) (Where is supplement D?)**

**[8.5.2.1]** The 8D-reporting format is designed to be a useful tool in identifying and eliminating concerns. Only one defect is to be included on an 8D form. The supplier must include the PSR number on the 8D report. A copy of all 8D reports must be submitted to the Corporate Quality. If an 8D is closed verbally through the requesting plant or meetings, the supplier is to contact the Quality Specialist in the Corporate Quality.

If an 8D response is required of the supplier by the customer, notification will be provided through use of the PSR or other documented request. In an effort to improve communication and facilitate the 8D review process, simple illustrations depicting the problem product, system or process should be included whenever possible. If the root cause (D4) cannot be determined within 48 hours, an updated 8D response report must be provided to the customer location and a copy to the Corporate Quality Department within the next 30 calendar days and every 30-calendar day thereafter until closed. The customer may request an initial 8D response sooner to ensure quality product is being delivered.

### **B. Unresolved Quality Concerns – Phase Meetings**

**[8.4.1]** If a supplier has a large quantity of rejections within a one month period, as indicated on the Monthly PPM Report, or if a suppliers' performance is declining and/or resolution to quality issues is not permanently corrected, the CORPORATE QUALITY Department may conduct Phase Meetings for resolution. The Phase Meetings are conducted in three steps in which each step addresses a corrective action plan. If corrective action fails, and performance remains unacceptable, the next step is conducted with an increased level of management. The third phase includes the CVG Divisions Commodity Manager if the supplier is considered for resource.

## **PACKAGING and LABELING**

### **A. Packaging**

**[7.5.5]** The choice of packaging could have a significant effect on product quality and is to be considered during feasibility evaluation. Shipping trials should be considered to evaluate the ability of the packaging to preserve product quality.

Containers shall be ergonomically designed to reduce the exposure to injury when handling pallet-sized containers. Containers shall conform to AIAG size standards. For less than pallet-sized containers, total package weight, when full, shall not exceed agreed weight maximum.

All suppliers shall operate under written packaging and labeling procedures in accordance with AIAG standards. Each separate unit of packaged product shall have label on two adjacent sides or as specified by the customers' Corporate Packaging Department. Failure to comply with customer requirements on labeling is cause for **REJECTION**. For specific requirements, contact the customer Materials Management Department at each receiving location.

### **B. Packaging Approval**

**[7.5.5]** Approval for packaging will be determined by the CVG Divisions Personnel during the APQP Process. Packaging shall be suitable to protect and preserve product from shipment to the point of production use. Tooling suppliers shall contact the appropriate customer Program Engineering or Application Engineer. All MRO suppliers shall contact the customer Corporate Purchasing Department. The supplier shall not make packaging changes without formal engineering change request for the supplier.

### **C. Labeling**

**[7.5.5]** Due to the variety of products purchased and manufactured by the customer, component suppliers shall use bar code shipping labels (reference AIAG Shipping/Parts Identification Label Standard, AIAG-CODE 39. These labels require all of the following information, unless other arrangements have been made with Corporate Purchasing.

- Supplier name and shipping location (all labels)
- Quantity
- Customer inventory code number
- Product description
- Supplier code number
- Customer part number
- Country of origin
- Serial number
- Lot numbers (all labels)
- Manufacturing date

Chemical suppliers are to label containers smaller than a tanker with the following information unless other arrangements have been made with customer Corporate Purchasing.

- Date of manufacture/ Expiration date
- Lot numbers
- Product identification
- Net weight

To prevent mislabeling concerns on returnable containers, it is the suppliers' responsibility to remove all old labels or place new ones over the old labels.

### **E. Inventory Control Labels**

**[7.5.5]** All materials must be shipped in order it was produced by date. FIFO (first in, first out).

## **DELIVERY**

### **CVG Division's requirements of "DELIVERY" rejected part per million is "0 PPM's"**

#### **A. In-Bound Freight**

**[7.5.1.6]** The supplier shall have a program in effect with their suppliers, which allows at any time, for carrier assignment and tracking of in-bound products. The supplier material control activity shall assure raw material and component availability through documented communication between production, manufacturing, and purchasing activities.

#### **B. Out-Bound Freight**

**[7.4.1.3]** Unless otherwise specified, the customer shall be responsible to coordinate freight carrier and schedule. The supplier is required to use customer-designated carriers; however, suggestions for improvement may be forwarded to the customer Corporate Materials Management Department.

#### **C. Physical Condition**

**[7.5.1]** All trailers are expected to be clean and in good useable condition. Any trailer damage shall be reported to the carrier prior to loading of product. Upon receipt of load, the customer shall examine trailer and load, and shall report any package or trailer damage to both the carrier and the supplier. Prior to unloading of the material any damage will be recorded and acknowledged by the vehicle driver.

#### **D. Premium Freight**

**[8.2.2.1]** The supplier shall have a system to monitor all premium freight that shall include documentation describing the necessity and authorization for premium freight. The program shall also include a documented program for reduction/elimination of premium freight that includes corrective action and monthly reporting to the customer on the cause of the premium freight and corrective action taken. The supplier is responsible for all premium freight charges and subsequent charges associated with product that is delayed, due to supplier logistical, quality or scheduling problems.

#### **E. Logistical Concerns**

**[7.5.1]** Logistic concerns will be reported on the PSR or other appropriate forms and will be assessed against the supplier. Logistical concerns receive demerit points that will be assessed against the supplier on the Quarterly Performance Report.

In concurrence with the above report, suppliers may receive a report detailing a past due condition. Receipt of this report shall initiate immediate reconciliation of shipment discrepancies through contact with the Materials Manager of the issuing plant.

#### **F. Customer and Production Schedules**

**[7.5.1.6]** The supplier must generate a production schedule that ensures all customer requirements are met. The supplier shall maintain documentation that shows the correlation between weekly customer requirements and the production schedule, or as specified by the Just In Time (J.I.T.) schedule. Suppliers may receive a report detailing a product past due condition, receipt of which shall initiate immediate reconciliation through contact with the Materials Manager of the issuing CVG Divisions facility.

#### **G. Non-Delivery, Delayed Deliveries or Short Shipments**

**[7.5.1.1]** If non-delivery, delayed deliveries or short shipments are anticipated, **ALL** suppliers shall immediately notify the customer Materials Management Department of the receiving location. Tooling suppliers shall also contact the customer Program Manager or Applications Engineer.

Delays, short shipments, or quality rejections may cause line or operation interruption at the customer, and in severe cases, may result in OEM assembly plant shutdown. In the event of concerns that interrupt production, the following shall occur:

1. The customer shall immediately notify the Material Manager of the supplier.
2. An PSR will be submitted by the customer to the supplier.
3. An 8D response report may be requested.
4. The supplier must complete the 8D response with permanent corrective action and send the original to the customer and a copy to the Corporate Quality Department (see 4.13.E).

#### **H. Interruption/Shutdown**

**[6.3.2]** If a customer location experiences an interruption/shutdown caused by the supplier due to a quality issue, lack of raw materials, etc., the affected customer will contact the supplier verbally. A PSR or other written document will be issued following the contact. An interruption is defined as individual tools/molds/jobs that had to be turned off or skipped. A shutdown is when the entire line is shutdown. This could occur at either or both CVG Divisions or end-customer. Upon verbal notification of the interruption/shutdown, the supplier shall determine appropriate action and advise the customer location of future actions. The supplier also assumes all subsequent premium freight charges incurred by the customer due to the interruption/shutdown.

The supplier may be requested to submit an 8D Corrective Action Response via notification on the PSR or in writing (see element 4.14.2.A). All interruption/shutdown information is maintained and each

incidence is assessed against the supplier in the Quarterly Performance Report (QPR). This report determines supplier quoting status for new CVG business.

## **CONTROL OF QUALITY RECORDS**

### **Chemical Suppliers - Record Retention**

**[4.2.4.1]** All chemical suppliers shall retain samples of both incoming raw materials as well as finished product for a minimum time equal to the shelf life of the lot, or six months after the production of the lot. Where actual samples are not possible, e.g., unstable or volatile chemicals, the supplier must maintain records of analysis.

## **CONTROL CHARACTERISTICS**

**[7.2.1.1]** Characteristics should be mutually agreed upon by the customer and supplier and chosen on the basis of product function, design intent, fit, manufacturing process or other factors that may contribute to an out-of-control condition. CVG Divisions supports the use/benefits of statistical techniques (SPC/SQC).

### **Unidentified Key Product/Control Characteristics (KPC/KCC's)**

**[7.3.2.3]** If the customer has not identified key product/control characteristics, the supplier shall choose process and/or product control characteristics that pertain to product manufacturing. It is recommended that product application be discussed with the receiving customer location(s) Quality Department representative and/or Technology Group for determination of key product/control characteristics affecting manufacturing processes.

## **CONTROL CHARACTERISTICS**

### **A. Key Product/Control Characteristics (KPC/KCC's)**

**[7.2.1.1]** When key product/control characteristic designation is identified on drawings, specifications, supply agreements, or purchase orders provided by the customer, the supplier is required to submit statistical data on that characteristic to the attention of the Quality Manager at each receiving customer location.

### **B. Component Supplier Statistical Data Submission**

**[8.2.3.1]** Component suppliers shall submit summaries of average Cp\* and Cpk\* indices for the combined calendar quarter to each customer location quarterly (to arrive prior to the 7<sup>th</sup> of the following month), or on a schedule mutually agreed upon by the Quality Manager of each customer location and the supplier. Additional, or more frequent, statistical information may be requested for assistance during problem solving.

The supplier must employ a continuous improvement program aimed at maintaining a minimum Cpk of 1.33 with expectations to exceed this minimum and realize a Cpk of 1.67. Out-of-Control conditions and processes with less than 1.33 capability must include corrective action (8D format may be used). If corrective action is not included, demerit points will be assessed on the Quarterly Performance Report (QPR).

It is advised that suppliers submit the data via fax or mail and verify receipt of statistical data to prevent demerit points on the QPR. It is the supplier's responsibility to ensure that the data reached the appropriate personnel to prevent demerit points on the QPR.

### **C. Cp and Cpk Indices**

**[8.1.2]** \*The Cp index indicates whether the process variation is acceptable, that is, if the process were centered correctly, could it produce all products within specification. It does not measure whether or not the process is centered properly. The Cp index is obtained by comparing the size of the specification width (upper specification limit minus lower specification limit) with the size of the total process spread (6).

**[8.1.2]** \*The Cpk index measures the effect of both the center and variation at the same time. If the process distribution is well within specification on the worst-case side, it is sure to be acceptable.

Process capability is valid only if the process is in a state of statistical control. If the process is not in control, it is unpredictable and it is not possible to reliably estimate future performance.

#### **D. Chemical Supplier Statistical Data Submission**

**[8.2.3.1]** Suppliers providing Resin and Catalyst must monitor control characteristics as listed below through SPC/SQC methods. All other chemical suppliers must submit SPC/SQA data on existing COA data. This data shall be submitted for the combined calendar quarter to each customer location quarterly (to arrive prior to the 7<sup>th</sup> of the following month), or on a schedule mutually agreed upon by the Quality Manager of each customer location and the supplier. Additional, or more frequent, statistical information may be requested for assistance during problem solving.

The supplier must employ a continuous improvement program aimed at maintaining a minimum Cpk of 2.24 with expectations to exceed this minimum and realize a Ppk of 1.67. Out-of-Control conditions and processes with less than 1.67 capability must include corrective action (the 8D format may be used). If corrective action is not included, demerit points will be assessed on the Quarterly Performance Report (QPR). It is advised, that suppliers submit the data via fax or mail and verify receipt of statistical data to prevent demerit points on the QPR. A copy of the data is to be submitted to the Chemical Applications Department. It is the supplier's responsibility to ensure that the data reached the appropriate personnel to prevent demerit points on the QPR.

## **ENVIRONMENTAL GUIDELINES**

Commercial Vehicle Group strives to conduct all of its operations in an environmentally sound manner whereby regulatory requirements of global regions, country, states and provinces, and local requirements become the minimum standards of the business. Suppliers to Commercial Vehicle Group (CVG) of production materials, equipment, services and consumable goods are expected to follow these same guidelines as their business practices. It is desirable for all suppliers to have an effective management system for environmental improvements.

Areas of environmental concerns for the performance of suppliers' products and services are:

- Evidence that suppliers comply with regulatory requirements of global regions, country, states and provinces, and local regions are met.
- Non Use of chemicals or materials ingredients in Volvo's black or grey list.

## **CORPORATE SOCIAL RESPONSIBILITY REQUIREMENTS FOR SUPPLIERS**

CVG is committed to ensuring the highest standards of social responsibility throughout our supply chain. The companies we do business with shall provide safe working conditions, treat employees with dignity and respect, and use environmentally responsible manufacturing processes wherever CVG products are made.

## **WARRANTY GUIDELINES**

Supplier warrant that all articles, materials and work supplied conform to the requirements, specifications, drawings, samples or other descriptions furnished or adopted by Commercial Vehicle Group (CVG) that they are free from all defects in manufacture or design and are of merchantable quality and fit the intended purpose. This warranty coincides with Commercial Vehicle Group (CVG) basic and component warranty with OEM and Fleet customers as well as extended warranty and will begin with the date that the vehicle is placed into service (Delivered to the User date).