

### 1. PURPOSE

The purpose of supplier containment is to protect the customer by preventing non-conforming material from being shipped to Delphi Technologies or subsequently passed to Delphi Technologies' customers.

*Note: This procedure does not provide an authorization to ship.*

### 2. SCOPE

This procedure applies to all parts, materials, and/or processes produced for Delphi Technologies, and will be used for proactive and reactive containment in both Advanced Quality Planning (APQP) and current production. Containment will be applied as outlined in this procedure for start-up and acceleration of a new product or manufacturing process, after a change requiring PPAP, after an extended shutdown period, for new or change in workforce, for problem resolution, or as deemed necessary by the supplier or supplier quality engineer to ensure product quality to Delphi Technologies.

### 3. DEFINITIONS:

- 3.1 Pre-Launch Control Plan** -The early production period containment control strategies are documented in the pre-launch Control Plan. The pre-launch Control Plan is a significant enhancement to the supplier's production control plan, and increases confidence that all early production containment shipments will meet or exceed Delphi Technologies' quality expectations. The Pre-Launch Control Plan also serves to validate the production control plan. (Reference AIAG Advanced Product Quality Planning and Control Plan Manual for the initial building blocks. Delphi Technologies Supplier Quality will communicate any additional requirements.)
- 3.2 Supplier Quality Engineer** - Refers to the responsible Delphi Technologies Supplier Quality Engineer (AQE-Advanced Quality Engineer or SQE-Supplier Quality Engineer) for purchased parts or materials.
- 3.3 Supplier** - A provider of purchased parts or materials (pre-production, production, or service) that is not affiliated with Delphi Technologies (i.e. external supplier)
- 3.4 Early Production Containment Period** - Production runs during the start-up and acceleration of a new or changed product or manufacturing process.
- 3.5 Change** - Any change in a part or process in which PPAP or customer approval is required. Suppliers should refer to the AIAG PPAP manual for understanding and compliance to the approval requirements.
- 3.6 Value Stream** - A value stream contains all the actions currently required (value added and non- value added) to bring a product from raw material to the form specified by the customer.

## 4. RESPONSIBILITIES

The PBU Director(s) is responsible for overseeing the implementation of this procedure with Delphi Technologies' external suppliers. The appropriate Supplier Quality Engineer is responsible for ensuring that processes are implemented to meet this procedure.

## 5. PROACTIVE CONTAINMENT

### 5.1. EARLY PRODUCTION CONTAINMENT

5.1.1. The minimum timeframe for the **early production containment period** is (30) regular production days. **The pre-launch control plan** strategies are utilized for all early production containment program requirements (i.e. pilots, PPAP builds, etc.) and continue for the duration specified by the procuring location. The duration may be revised, as directed by the supplier quality engineer, to reflect Delphi Technologies' acceleration plans to full production rate or other Delphi Technologies specific requirements. (See 8.2.1 for exit criteria).

#### 5.1.2. **The pre-launch control plan:**

5.1.2.1. Must have the controls that are documented in the regular production control plan fully implemented. In addition, special efforts over and above the production control plan requirements should be implemented. The pre-launch control plan takes into consideration all known critical conditions/characteristics of the part as well as potential areas of concern identified during PPAP, and should comprehend part variation within a product family.

5.1.2.2. Is a living document throughout the early production containment period. Delphi Technologies and supplier/Delphi Technologies approved modifications to the plan, should be made as necessary to incorporate lessons learned during each early production run. Any non-conformances that are found during pilot/prototype runs should be appropriately comprehended.

5.1.2.3. Must be submitted for PPAP and each time a revision is made following the initial PPAP submission

5.1.3. A gate chart should be kept during all runs prior to PPAP. The gate chart and the prototype control plan should help determine some of the items to be checked in the pre-launch control plan. To ensure accurate reporting, operators should set aside questionable parts

for review by management before those quantities are added to the gate chart.

- 5.1.4. Work instructions, training, verification of gauges, data collection, reaction plans and management auditing, all need to be included. In some cases, certain early production containment controls may remain as part of the production process flow and should be documented as such in the production control plan. .
- 5.1.5. The Supplier establishes an overall early production containment strategy that includes/addresses the following.
- 5.1.5.1. Identification of the person responsible for the overall early production containment process.
- 5.1.5.2. Development of a pre-launch control plan (Reference SPDP Appendix 11: A-8 Control Plan Checklist)
- 5.1.5.3. Based on historical production process factors, PFMEAs, prototype control plans, statistical data, etc., additional controls may include:
- Increased frequency/sample size of receiving, process and/or shipping inspections
  - Mandated sub-supplier containment and/or sub-supplier audits
  - Addition of inspection/control items and functional testing
  - Increased verification of label accuracy
  - Statistical evaluations
  - Enhancement of process controls
  - Increased verification of error proofing devices
  - Increased involvement and visibility of top management
  - Increased audits, verifying key manufacturing quality fundamentals such as standard work, part handling, adherence to established quality practices
- 5.1.5.4. Establishment of a reaction plan for immediate containment of non-conforming material and notifying Delphi Technologies if non-conforming material has been shipped.
- 5.1.5.5. Identification of the measurement equipment and data collection devices/activities to be used.

- 5.1.5.6. Special characteristics 100% checked during the early production containment period. Process parameters, that have a direct effect on special characteristics should also be monitored and documented at an increased frequency. If this is not possible, sampling should be done at a Delphi Technologies agreed upon frequency and monitored for variation over time/operator/set up.
- 5.1.5.7. Increased reactive containment that might be needed prior to an established additional inspection area, focusing on any specific issue(s) that are discovered during the additional established inspection.
- 5.1.5.8. When specifically instructed by Delphi Technologies, the supplier will implement an early production containment activity utilizing all, or elements of, the **controlled shipping II process** stated in section 6.2. The criteria for conducting this containment will be established by the supplier and the appropriate Delphi Technologies Supply Chain Management representatives.
- 5.1.5.9. Supplier should attach to each shipping label a green dot signed by a designated senior management representative to indicate compliance with the pre-launch control plan. (The green dot should have a diameter of 1.25 to 2 inches (3 to 5 centimeters) or as defined by other customer specific requirements or instructions.
- 5.1.6. The supplier quality engineer reviews the supplier's pre-launch control plan prior to or in conjunction with the PPAP package. The supplier quality engineer evaluates the overall plan including the specific items listed below. The analysis team should include the AQE, supplier and Delphi Technologies Plant Quality
- PRR, prototype, and pilot issues are addressed
  - High RPN's are addressed by the pre-launch control plan and recalculated as necessary based on early production first time quality or data collection that may change the occurrence and detection numbers.
  - The supplier used the PFMEA and statistical data to determine where additional controls are necessary, including adequate consideration of special characteristics.

- Past issues from similar parts past parts and processes are incorporated.
- FTQ process is implemented correctly and the data is reviewed to ensure the objectives of the early production strategies are being met and the customer is protected.

### 5.2. PROVISIONAL CONTAINMENT

Provisional Containment is a proactive action taken when special conditions create a heightened risk of producing or shipping non-conforming parts or material. These conditions include, but are not limited to: production start-up after extended shutdown periods for vacations, holidays, or strikes; significant tool or equipment repair; power outage; abnormal shifts in product quality; out-of-control or incapable processes; new or significant change in workforce; or other applicable circumstances.

In general, the supplier is expected to self impose this containment, but it may also be directed by Delphi Technologies. The provisional containment process may consist of elements from the early production process outlined in section 5.1 or controlled shipping 1 process outlined in section 6.2. The process implemented must have the necessary rigor and discipline to manage the condition and eliminate risk to Delphi Technologies.

## 6. REACTIVE CONTAINMENT

### 6.1. Problem Report - Containment Information

The problem report document will be issued as a result of a complaint communicated by Delphi Technologies (e.g. Problem Solver, phone call, email, etc) to the supplier. The immediate containment sections, of the problem report, documents the necessary activities to immediately prevent future nonconforming product from reaching Delphi Technologies or Delphi Technologies' customers.

The supplier provides an initial response consisting of the following information, at a minimum, within one (1) business day of receiving the problem report:

- Immediate and ongoing containment actions to be taken by the supplier to prevent further shipments of nonconforming parts or material. Containment includes data collection and analysis.

- Disposition of the nonconforming parts or material at the DELPHI TECHNOLOGIES location and in-transit. The supplier analyzes the entire value stream chain to identify any suspect material at, or in-transit, to any Delphi Technologies location.
- Date of the next shipment of conforming parts or material, including how it will be identified. The supplier takes into account the conforming material ship dates of all Delphi Technologies plants receiving the corrected parts or material.
- Name, title, and phone number of the supplier representative who provided the above information.

The following is a step-by-step approach for an effective reactive containment process:

- Identify the non-conformance or problem. The non-conformance could be identified by Delphi Technologies or by the supplier.
- Quarantine the complete supplier value stream for all impacted Delphi Technologies sites, including material; parts in process, stock, and/or in transit from all affected or potentially affected processes and locations. Consider the impact on service part shipments.
- Clearly label the suspect material and identify the date, part number, non-conformance and the person responsible for follow-up.
- Establish the break points where the non-conformance began and ended.
- Isolate the non-conforming/suspect material to prevent inadvertent use, utilizing a robust process to effectively identify and segregate and include all hidden factories.
- Review the material to determine which of the following actions will be taken:
  - Customer approved rework that meets the specified requirements
  - Accept with or without repair (based on acceptance criteria, engineering permit, etc.)
  - Re-grade for alternative application
  - Reject and scrap

- Notify Delphi Technologies if there is a possibility that non-conforming material has been shipped and of nonconforming material breakpoints. The corrective action plan and the containment plan will be reviewed with Delphi Technologies to assure compliance to Delphi Technologies' procedures. Please see [Customer Specific Requirements](#).
- Re-inspect repaired or reworked product in accordance with the control plan and/or other documented procedures.
- Identify the cause of any non-conformance and pursue short and long-term corrective action.
- Record the activities that took place after the non-conformance was discovered.
- Revalidate the manufacturing process and verify that it is stable and capable. The minimum recommended time period for containment is the equivalent of three (3) shifts of corrected normal production volume supplied to and used by the customer(s). The time period required would be determined by the Delphi Technologies Supplier Quality Engineer based on product/process type, impact to Delphi Technologies and Delphi Technologies' customers, and other factors associated with ensuring zero defects to customers.
- Return to normal process control methods as described in the control plan.

## 6.2. Controlled Shipping

### 6.2.1. General

If appropriate, Delphi Technologies may formally place a supplier on controlled shipping. The intent of controlled shipping is to implement a rigorous process that protects Delphi Technologies from the receipt of nonconforming parts and/or material. controlled shipping is a formal demand by Delphi Technologies for a supplier to put in place an additional inspection process to sort for nonconforming material, while implementing root-cause analysis and corrective actions. The controlled shipping process is in addition to normal controls. The data obtained from the controlled shipping inspection process is critical as both a measure of the effectiveness of the containment process and the corrective actions taken to eliminate the initial nonconformance.

The controlled shipping containment process includes the following:

- A highly visible and properly lighted and equipped containment area.
- A well-defined efficient material flow including clearly identified areas for incoming and outgoing parts/material.
- Provisions for repairs/rework separate from the containment area.
- Containment area separated from the supplier's normal production process.
- Information boards prominently displaying non-conformances, metrics, inspection results (e.g. SPC charts, trend charts, Gate charts, etc.), action plans and status, and other results from the containment activity.
- Daily review of updated charts by top supplier management.
- A documented and data driven team problem solving activity.
- Proper job instructions, quality standards, boundary samples, tools, equipment, and qualified measurement devices to facilitate the containment operations.
- Proper operator training with adequate details of the process
- An area/storage container marked in a way that quickly and clearly identifies any contents as SUSPECT or NON-conforming (work place organization and visual controls).
- Proper preventative maintenance as required.

### 6.2.2. **Determination of the need for Controlled Shipping**

The following are to be considered for determining the need for controlled shipping:

- Repeat problem Cases
- Duration and severity of the problem
- Incapable processes
- Customer quality issues
- Inadequate containment and/or resolution of non-conformances
- Major Disruptions/Spills

Based on the above, Delphi Technologies decides whether Level I or Level II would be appropriate.

### 6.2.3. **Controlled Shipping Levels**



6.2.3.1. **Level I controlled shipping** requires an additional inspection process enacted at the supplier's manufacturing facility. The inspection process ensures that Delphi Technologies will be protected from receipt of nonconforming parts and/or material.

6.2.3.2. **Level II controlled shipping** includes the same processes as Level I controlled shipping, with an additional inspection process that is completed by a third party. Delphi Technologies and the supplier mutually agree upon the third party company and location. The supplier owns the financial responsibility. The Level II inspection is required to be performed outside the supplier's facilities unless otherwise approved by Delphi Technologies.

### 6.2.3.3. **The Key Delphi Technologies Steps of the Process**

- Consensus within Delphi Technologies that current controls by the supplier are not sufficient to protect Delphi Technologies from the receipt of nonconforming parts/material.
- Determination by Delphi Technologies of which level of controlled shipping is required and how it is to be implemented.
- Communication to the supplier of action (Level I or Level II) to be taken including exit criteria.
- If Level II is necessary, it is recommended that a Level II kick-off meeting be held with supplier management to provide a full explanation of the containment process (e.g. containment area, deliverables, and the roles and responsibilities of the involved parties).
- Review of containment status and effectiveness.
- Review of irreversible corrective action plans and updates to the control plans and FMEAs as appropriate.
- Removal of CS status when appropriate.

### 6.2.4. **Level I Controlled Shipping Process**

The controlled shipping process starts with notification by the supplier quality engineer to an appropriate staff level member of the supplying location as follows:

- A live conversation to ensure that the process is initiated appropriately.
- Issuance of Level 1 controlled shipping in Problem Solver registered. Delphi Technologies will issue a written confirmation letter.

**6.2.4.1. Supplier Responsibilities:**

- 6.2.4.1.1. The supplier will respond to the controlled shipping notification through the Problem Solver system. If the supplier is not registered for the Problem Solver system, the supplier will complete the controlled shipping confirmation reply form and return to the appropriate Delphi Technologies contact.
  - 6.2.4.1.2. Immediately establish an additional inspection activity over and above the current process control plan, which includes a monitoring and reaction process.
  - 6.2.4.1.3. Commence the sort activities and display the results on the information board (s).
  - 6.2.4.1.4. Establish breakpoints for conforming material and ensure traceability of nonconforming material.
  - 6.2.4.1.5. Establish appropriate identification to indicate controlled shipping status on outgoing material.
  - 6.2.4.1.6. Conduct management reviews of the results, at a minimum once per shift to ensure that the containment activities are in place and effective to protect the customer.
  - 6.2.4.1.7. Communicate results of sort activities to Delphi Technologies in a format and with a frequency agreed to by the supplier quality engineer.
  - 6.2.4.1.8. Implement permanent corrective actions and verify effectiveness.
  - 6.2.4.1.9. Meet the defined exit criteria.
  - 6.2.4.1.10. Submit a request to exit from controlled shipping including the appropriate data and documentation that the corrective actions are effective to the supplier quality engineer.
- 6.2.4.2. The supplier quality engineer evaluates if the exit criteria have been met and provides a written response (See SPDP Appendix 47) to the supplier.

**6.2.5. Level II Controlled Shipping Process**

- 6.2.5.1. The supplier quality engineer, with input from the receiving plant as appropriate, analyzes the nonconformance situation and determines if CSII is required.

6.2.5.2. A supplier quality engineer notifies the supplier of CSII by calling the appropriate staff level member of the supplying location. This is official notification of controlled shipping status. This notification will be live and not by voice mail or other forms of communication. Issuance of CS11 in the Problem Solver system confirms this conversation. If the supplier is not Problem Solver registered, Delphi Technologies confirms the status in writing to the supplier.

6.2.5.2.1. The Problem Solver communication includes the following:

- The reason for CSII
- The action being undertaken
- The nonconformance(s)
- The inspection checks required
- Exit criteria required to be achieved

Distribution of controlled shipping notifications will be determined by the appropriate DGP personnel as required. (See SPDP Appendix\_45)

The supplier will respond to the controlled shipping notification through the Problem Solver System. If the supplier is not Problem Solver registered, the supplier will complete the controlled shipping confirmation reply form and return to the appropriate Delphi Technologies contact.

6.2.5.3. The following list describes roles and responsibilities of key personnel:

6.2.5.4. **Supplier Quality Engineer**

- 6.2.5.4.1. Reviews, verifies, and approves the containment action plan.
- 6.2.5.4.2. Reviews, verifies, and approves the corrective action plan.
- 6.2.5.4.3. Conduct a supplier production process review, if necessary.
- 6.2.5.4.4. Provide the exit criteria.
- 6.2.5.4.5. Directs resolution of all issues.
- 6.2.5.4.6. Evaluates if the exit criteria have been met and if met provides acceptance of the supplier's request to exit CS11 in the Problem Solver

system. If the supplier is not Problem Solver registered, the Delphi Technologies owner will respond in writing (See SPDP Appendix 48) allowing the supplier to exit.

**6.2.5.5. Delphi Technologies Supply Change Management (Buyer)**

- 6.2.5.5.1. Responsible for resolution of all commercial and financial issues arising from the CSII activity.
- 6.2.5.5.2. Participates in the decision of which CS third party will conduct the Level II containment activities, if requested.

**6.2.5.6. Supplier Responsibilities**

- 6.2.5.6.1. Contact and issue a purchase order to the third party inspection source for controlled shipping Level II activities. The supplier is responsible for all costs of the third party inspection activities. (See SPDP Appendix 43)
- 6.2.5.6.2. Respond to the CS11 notification in the Problem Solver system.
- 6.2.5.6.3. Continue to perform the inspection activity and records results for controlled shipping Level I in conjunction with controlled shipping Level II.
- 6.2.5.6.4. Provide appropriate documents and equipment to the third party inspection source.
- 6.2.5.6.5. Establish appropriate identification to indicate controlled shipping status on outgoing material.
- 6.2.5.6.6. Determine root cause and implement irreversible corrective action(s).
- 6.2.5.6.7. Communicate the action plan and status to Delphi Technologies in a format and frequency agreed to by the supplier quality engineer.
- 6.2.5.6.8. Communicate results of third party inspection activity to Delphi Technologies in a format and with a frequency agreed to by the supplier quality engineer.
- 6.2.5.6.9. Notify their QS Registrar.

## 7. Tracking

Problem resolution and containment progress will be tracked using an agreed upon report format. Weekly controlled shipping progress reports will be submitted to Delphi Technologies via the Problem Solver system controlled shipping section.

## 8. Exit Criteria

8.1. When establishing Exit Criteria:

- Include clear and measurable elements
- Be specific and relevant to the nonconformance issues to be addressed
- Require documentation to demonstrate corrective actions taken are effectively implemented and institutionalized

The supplier will be eligible to exit containment after meeting the established exit criteria. If the supplier is unable to meet the exit criteria or the supplier's containment plan continues to identify non-conformances, then the containment continues.

8.2. Exiting a containment process will be based on the following:

### 8.2.1. Early Production Containment

8.2.1.1. The effectiveness of the early production containment process strategies to meet Delphi Technologies' expectations of zero defects during the procuring location specified ship duration. . (As evidenced by the number of defects received at Delphi Technologies and/or the number of problem cases written related to the specific product covered by the early production process/strategies)

8.2.1.2. All formal customer complaints/problem cases related to this specific product are closed or there is a Delphi Technologies approved plan to close them.

8.2.1.3. Supplier's production control plan is validated. Any Gate charts maintained by the supplier should also be reviewed.

8.2.1.4. The supplier exits from the early production containment process when the Delphi Technologies supplier quality engineer has verified that all exit criteria have been met.

### 8.2.2. Provisional Containment

Self-exit based on Delphi Technologies/supplier approved exit criteria.

8.2.3. **Problem Report**

Exit based on implementation and institutionalization of corrective actions, documentation of lessons learned, look across and overall assurance that the problem has been resolved.

8.2.4. **Controlled Shipping 1 & II**

8.2.4.1. The duration will be as specified by the supplier quality engineer based on the supplier's ability and timeframe required to meet Delphi Technologies' containment objectives and exit criteria. .

8.2.4.2. Data from the containment activity, which demonstrates that the revised production controls are effective for controlling the discrepancy identified in the controlled shipping activity.

8.2.4.3. Evidence in the 5-Why or other areas of the Problem Case showing the root cause was identified and verified.

8.2.4.4. Copies or excerpts of all documentation revised as required (control plan, FMEAs, flow diagram, operator's instructions, etc.), and as requested by the SQE.

8.2.4.5. Note: *Upon exit from CS Level II, the supplier may be required to remain in Level I as determined by the SQE*

8.2.5. When the exit criteria for controlled shipping have been met, Delphi Technologies will communicate through the Problem Solver System that controlled shipping has been removed, and controlled shipping activities can cease. Suppliers cannot exit from controlled shipping or cease the controlled shipping activities without closure of controlled shipping in the Problem Solver system.

8.2.6. Note: Reference Customer Specific Requirements concerning suppliers' responsibility to their 3<sup>rd</sup> party registrar regarding CS11.

## 9. REFERENCES

[Extended Downtime Checklist](#)

[Customer Specific Requirements](#)  
[SPDP Appendix 60 – Containment Checklist](#)  
[Early Production Containment Overview Training](#)

Suppliers will receive the appropriate reference documents from the SQE or at [https://delphi.portal.covisint.com/web/portal/fud/-/journal\\_content/56\\_INSTANCE\\_WREV/107627/21038470/](https://delphi.portal.covisint.com/web/portal/fud/-/journal_content/56_INSTANCE_WREV/107627/21038470/).

### 10. REVISION RECORD

Reason for Revision	Issue Date	Person Responsible
• Initial release	Apr 30, 2018	Jody Buckbee