

# Supplier Quality Requirements Manual

ISO-020-1  
Revision G     January 20, 2012

## Table of Contents

Quality Commitment and Expectations .....	3
SECTION 1- Introduction.....	4
Policy and Vision .....	4
Purpose.....	4
Scope.....	4
Responsibility .....	4
Manual Distribution .....	5
SECTION 2- Supplier Requirements.....	5
A. Supplier Selection and Approval Process .....	5
1. ISO/TS 16949:2009 Registration.....	5
2. Myco Enterprises Supplier Evaluation and Z-Score.....	5
3. Approved Supplier Lists .....	5
4. Customer dictated sources .....	5
5. De-source policy and procedures.....	6
B. Supplier Launch Readiness.....	6
1. Supplier Classification .....	6
2. Myco Enterprises 5-Phase Supplier Launch Readiness.....	6
3. Advanced Product (Quality Planning APQP).....	6
4. Production Part Approval Process (PPAP).....	7
5. Run @ Rate.....	7
6. Initial Program Containment.....	7
7. Government Regulatory Compliance .....	7
8. Packaging.....	7
9. Lot Control/Traceability .....	8
C. Continuous Improvement Process .....	8
1. Supplier Performance Reporting.....	8
2. Plan Do Check Act- (PDCA).....	8
3. Concern Management/ Problem Solving.....	9
4. Supplier Request for Engineering Change (SREA).....	9
5. Periodic Verification .....	9
6. Contingency planning .....	10
7. SPC Requirements .....	10
8. Receiving Inspection, Incoming Material Control.....	10
9. In-Process Material Control.....	11
10. Inventory Control.....	11
11. Error Proofing / Poke Yoke.....	11
D. Contract Review.....	12
1. Labeling, Lot Control and Packaging .....	12
2. Shipping Authorization.....	12
3. PPAP /Contract Review .....	12
E. Reference .....	14
Appendix A – Global 8 Disciplines .....	14

## **Quality Commitment and Expectations**

### EXPECTATIONS AND PHILOSOPHY

Myco Enterprises, Inc. competes for business in possibly the most competitive market in the world – the automotive industry. To do this, we must constantly improve our performance, our technologies, and our costs to remain competitive. Our suppliers are critical to our ability to succeed and must fully support our efforts in these activities.

The goals for Myco Enterprises and our suppliers are simple; be the very best at what we do and do it at the lowest cost. We must have the best quality, the lowest cost and the highest level of customer satisfaction to survive and to ensure profitable growth. To achieve this, we must have a highly flexible, highly motivated and highly robust supply base.

Myco Enterprises requires 100% on-time delivery from all suppliers. We expect zero defects and rigorous continuous improvement from suppliers. We expect 100% on-time and first time approval for PPAP from all suppliers. We expect flawless supplier launches.

The procedures and policies defined in this manual will help support our suppliers' efforts toward our shared objectives.



Frank Firek, Jr.  
President

## **SECTION 1- Introduction**

### Policy and Vision

Myco Enterprises has developed a policy to ensure that all suppliers fully accept the competitive goals, the quality requirements, and continuous improvement objectives needed to be world class in quality, delivery, and pricing.

Myco's vision is to develop a network of suppliers who are willing to provide a product of the best quality at the best price, and on time, every time. We form partnerships with suppliers who can be depended upon to communicate and support all stages during the life of a product. It is our vision that by forming long term relationships with suppliers who share this vision, we will continue to be successful and position ourselves to be a leader in our market place. By being successful, we will enable our prime suppliers to grow and be successful as well.

### Purpose

The purpose of the Myco Enterprises Supplier Quality Requirements Manual is to clearly define the expectations and policies for suppliers to Myco Enterprises.

### Scope

This manual applies to all direct material and service suppliers to Myco Enterprises. In addition, many of the policies and procedures defined in this manual apply to indirect material and service providers when indicated on the purchase order.

### **Responsibility**

1. Suppliers are responsible for meeting the requirements defined in this manual, the TS 16949:2009 or ISO9001:2008 standard, and other requirements as specified on the Myco Enterprises purchase order.
2. Failure to meet these requirements may result in the loss of existing or future business with Myco Enterprises. Any/all costs associated with supplier failures will be the responsibility of the supplier.
3. Suppliers are responsible for 100% on-time delivery and zero defects.
4. Suppliers are responsible for supporting Myco Enterprises' continuous improvement activities.
5. Suppliers are responsible for supporting Myco Enterprises' efforts and procedures for ensuring flawless launches.
6. Suppliers are responsible for developing and implementing part specific and executable contingency plans for ensuring continued delivery of product and services in the event of unplanned events, including catastrophic events.
7. Suppliers are responsible for adhering to all government regulations and industry safety and health standards. Safety, health and environmental responsibility are required.
8. Suppliers are responsible for providing all shipping and release documents in a timely manner as required. Any failure to do so may result in DMN, fees and expedited freight costs which will be the responsibility of the supplier.

## **Manual Distribution**

1. The Myco Enterprises' Supplier Quality Requirements Manual will only be available online at ([www.mycoent.com](http://www.mycoent.com)). All printed copies will be *uncontrolled copies*. Myco Enterprises will ensure all updates are posted and available to suppliers. It is the supplier's responsibility to ensure they have the most current revision.

## **SECTION 2- Supplier Requirements**

### **A. Supplier Selection and Approval Process**

1. ISO/TS 16949:2009 ISO 9001:2008 Registration
  - Suppliers to Myco Enterprises must be third party certified to ISO9001:2008 or TS 16949:2009. Myco Enterprises will also recognize ISO9001:2008 for those suppliers that are not manufacturers and, therefore, may not be able to comply with TS 16949:2009.
  - Suppliers must also satisfy the appropriate AIAG standards, including the latest revisions of the Production Part Approval Process (PPAP), Advanced Product Quality Planning (APQP), Potential Failure Mode and Effects Analysis (PFMEA), Measurement Systems Analysis (MSA), and Statistical Process Control (SPC). All AIAG standards and forms referenced here in are available at [www.aiag.org](http://www.aiag.org).
  - Suppliers must understand and comply with the Myco Enterprises Supplier Requirements Manual
2. Myco Enterprises Supplier Evaluation and Z-Score
  - All potential suppliers to Myco Enterprises will be evaluated based on the scores defined in *Myco Enterprises Supplier Evaluation Summary*.
  - All potential suppliers to Myco Enterprises will have their score on *Supplier Z-Score* and Financial Assessment evaluated to determine financial stability.
  - All potential suppliers will complete a self-assessment utilizing the Myco Enterprises Supplier Evaluation Summary and **Z-Score** forms. Upon review of the evaluation documents, Myco Enterprises Purchasing/SQE will decide whether to accept the results of the self-assessment or conduct an onsite evaluation.
3. Approved Supplier Lists
  - Myco Enterprises Purchasing will maintain a *Approved Suppliers List* which will be used to record supplier approval status, performance classification, and evaluation results.
  - Suppliers will be considered for new business based on their classification on the Approved Supplier Lists and the current rating at Myco Enterprises user plants.
4. Customer dictated sources
  - Customer dictated sources must also comply with the requirements defined in this manual.

5. De-source policy and procedures
  - Suppliers that can not or do not comply with the requirements defined in this manual may be removed from the *Approved Supplier List* and will not be allowed to quote or receive new business. The process for removing suppliers can include:
    - a) Probation/ New-business Hold
    - b) Formal containment activities including third party audits
    - c) Immediate removal of tools and transfer of business.

## **B. Supplier Launch Readiness**

Suppliers will be required to follow formal procedures for launching new product as defined in the latest revision of the *A.I.A.G. Advanced Quality Planning and Control Plan* manual as well as steps identified in TS16949:2009 and Myco's *Supplier Quality Plan*. Successful launches and submitting launch documentation on time will be key performance metrics for suppliers.

### 1. Supplier Classification

Suppliers are classified into categories which define the level of participation and type of documents a supplier must submit to support a new product launch. Categories are as described below:

Category A- Current supplier with a positive performance record/experience with this type of part. The part is similar to other parts in current use. Minimal risk to Myco's customer. Carry over part / or part with very minor engineering change.

Category B- Current Supplier with minor concerns or issues with product, program, or previous launches. New material, process or minor differences in parts that have not been proven or where supplier lacks experience. Parts with planned engineering changes that could affect program launch.

Category C- Any new supplier to Myco. Any unique or new type of product where Myco and the supplier lack history or experience. A high risk part / very critical component where the launch team believes maximum control and tracking is required. Customer dictates sources. When Myco is not familiar with the supplier and has no history or experience with the launch for that supplier.

### 2. Myco Enterprises 5-Phase Supplier Launch Readiness

Myco Enterprises has a 5-Phase launch process for suppliers. The phases include:

- Phase 1- Supplier Selection Phase
- Phase 2- Product/Process Review
- Phase 3- Supplier Readiness
- Phase 4- Launch + 30 days
- Phase 5- Production

### 3. Advanced Product (Quality Planning APQP)

Suppliers to Myco Enterprises must meet the requirements defined in the AIAG APQP Manual- latest edition. Specifically, Myco Enterprises requires suppliers to include process parameters in the PFMEA and Control Plans and not just product parameters.

4. Production Part Approval Process (PPAP)  
Suppliers must submit parts and processes for approval following the AIAG PPAP Manual guidelines. All suppliers must submit to Level 3 unless notified in writing.
5. Run @ Rate  
Suppliers may be required to submit Run @ Rate data to the Myco Enterprises Launch Team. The Launch Team will determine if run @ rate is required. (*USE GP-9 Run @ Rate Report*)
6. Program Launch Containment:  
Suppliers will be required to perform 100% containment activity during the launch phase of any program. The quantity of parts to be contained during the launch phase will vary based on annual volume and complexity of the part (will usually be between 2,000–10,000 parts), but can and will be extended if any non-conformities are found. The containment activity will verify the effectiveness of the supplier's process and control plan. The supplier will be responsible for managing the containment activity in such a manner as not to jeopardize or delay any shipments. Any non-conformities found during the containment should be treated as though the part made it to the customer and initiate problem solving techniques to determine root cause.
7. Government Regulatory Compliance  
Suppliers shall comply with all applicable government regulations and safety standards. Registration to ISO 14001 is strongly recommended. At a minimum, suppliers shall have a formal process in place to ensure compliance to government regulations, health and safety of employees, and a positive impact on the environment.

*End-of-Life Vehicle Directive (ELV)*

The European Commission implemented the End-of-Life Vehicle Directive (ELV) which prohibits the use of mercury, lead, cadmium and hexavalent chromium in vehicles and components. The Directive is intended to minimize the impact of end-of-life vehicles on the environment. This is mandated for all European Union (EU) Member States and is also required by North American and Japanese vehicle manufacturers.

*Restrictive/Prohibitive Material Reporting*

North American OEM companies require all suppliers to supply detailed information for all restricted and/or prohibited materials found in their products. The format for this is the International Material Data System (IMDS) Spreadsheet. The IMDS can be found at [www.mdsystem.com](http://www.mdsystem.com) **NOTE: Suppliers must provide the proper information to satisfy this requirement before they can achieve PPAP approval.**

8. Packaging  
Myco Enterprises and the supplier will agree upon packaging during the development phase of the contract review. Myco Enterprises' Packaging Requirement Form will be used to document approval and will define the packaging details. Wherever possible, returnable packaging will be utilized.

Suppliers are responsible for developing contingency packaging (expendable) should the returnable containers not be available. (*Packaging Requirements Form*)

Basic requirements will include:

- All packaging must have a proper label that complies with AIAG barcode label guidelines.
- There shall be only one part number on each container and only one part number on each pallet. (Unless otherwise agreed upon during launch planning with the Myco Enterprises Launch Team)
- Packaging must be robust enough to protect the component / materials and prevent damage or contamination during shipment. Myco Enterprises may require formal, independent testing.

9. Lot Control/Traceability

Lot control and traceability are essential requirements for suppliers to Myco Enterprises. The size of the lot reflects the amount of risk should a problem with product occur and, therefore, must be managed accordingly. Traceability ensures quick and effective retrieval of information for containing suspect material and for problem solving.

Suppliers must have effective systems in place for ensuring incoming materials and components from their sub-suppliers are also controlled properly and quickly retrieved.

**C. Continuous Improvement Process**

1. Supplier Performance Reporting

Myco Enterprises will update supplier performance semi-annually and provide suppliers with access to the performance reports. It is the supplier's responsibility to communicate the importance of these metrics within their organization. It is also the supplier's responsibility to develop an improvement plan and implement the required improvements.

Myco Enterprises will establish key performance indicators (KPI) with suppliers. The basic requirements will include zero *defects* as measured in parts per million (PPM) and 100% on-time delivery. In addition, suppliers will be monitored for on time PPAP and APQP and first time approval rate for both processes. Suppliers may also have specific objectives for cost improvement, engineering support and EDI support.

2. Plan Do Check Act- (PDCA)

Suppliers must incorporate the Plan, Do, Check, Act process for monitoring key performance indicators. (KPI)

Plan- Establish the objectives and processes necessary to deliver results in accordance with customer requirements and the organization's policies.

Do- Implement the processes as planned



Check- Monitor the processes and product against policies, objectives and requirements for the product and report the results.

Act- Take action to continually improve process performance.

3. Concern Management/ Problem Solving

Myco Enterprises requires its suppliers to use industry standard Global 8-D problem solving methodology. The 8 Discipline approach to problem solving is a proven method for identifying root cause and developing corrective actions. When a supplier is notified by Myco Enterprises that an issue has developed, a team must be assembled to detail each portion of the corrective action. The requirements and expectations for suppliers for problems solving and corrective action are shown in appendix A. The 8-D outlines a disciplined, formal approach for problem solving and specifies the approach required for each step.

The 8D report is one of the most common problem solving formats in the automotive industry. Myco Enterprises has attached an example of the proper form in this procedure, but will accept a “generic” form from the supplier providing it contains all the appropriate steps and information as described in this procedure. (See Myco Enterprises Supplier *8D* Report) For further detail, see Appendix A. The supplier is responsible to document that all suspect material in the pipeline is accounted for and has been certified. This includes WIP, Outside services and processes, material in-transit and finished goods. All costs incurred by Myco or Myco’s customer due to a product concern caused by a supplier, will be the responsibility of that supplier.

The industry standard 8D report is also available for download or purchase at the AIAG Web Site: [www.aiag.org](http://www.aiag.org) or you can call (248) 358-3570

4. Supplier Request for Engineering Change (SREA)

Any changes to process, product or location of product MUST be approved by Myco Enterprises prior to implementation of the change. Failure to obtain approval before any change is implemented can result in immediate containment of parts and 100% inspection at the supplier’s expense. Business “hold” and removal from the Myco Enterprises Approved Suppliers List, as well as immediate loss of the existing business is also possible. (*Supplier Request for Engineering Approval*)

5. Periodic Verification

A Myco Enterprises representative and/or our customer’s representative shall be afforded the right to verify at the supplier’s premises that the products/services conform to specified requirements. Such verification shall not be used by the supplier as evidence of effective control of quality by the supplier. Verification by Myco Enterprises/our customer shall not absolve the supplier of the responsibility to provide acceptable product, nor shall it preclude subsequent rejection by the customer. Upon request, Supplier is required to provide verification that product being produced meets all contract, print specifications and requirements.

## 6. Contingency planning

The need to have detailed contingency plans can not be stressed enough. Risk management is a forward thinking activity that is necessary to prevent massive expenses incurred in maintaining continuity of product to the supply line. Every element of the critical path must have a contingency plan documented and in place so that known and proven options are available for maintaining production and services. Suppliers must prepare for unplanned emergencies and document the preparation using the forms and checklists found in AIAG M12. The contact lists provided in this standard must be kept current at all times, including alternate contacts. These lists will be forwarded to Myco Enterprises Corporate Purchasing. AIAG M12 Crisis Management for the Automotive Supply Chain Suppliers to Myco Enterprises must also comply with the AIAG M12- "Crisis Management for The Automotive Supply Chain". This standard ensures suppliers are prepared for natural disasters and man-caused events that can disrupt business practices.

## 7. SPC Requirements

Statistical process control must be an integral part of the supplier's manufacturing process in order to improve and maintain an increased quality performance. The purpose of SPC is to identify areas of variation so that actions can be implemented to improve. Statistical process control is mandatory for all process parameters and characteristics that are deemed significant items. It is the supplier's responsibility, based on his expertise and process knowledge, to determine the initial list of characteristics requiring long-term and short-term statistical process control. The list of supplier's recommendations should be submitted to Myco Enterprises during the APQP meeting for review. Once the characteristics are determined, it is up to the supplier to develop and maintain appropriate statistical evidence to show control and continued improvement over time.

### **Machine and Process Potential Studies**

Machine and process potential studies are short-term statistical analyses of a machine or process. The study must be conducted before the start of production and should be used to establish initial capability and identify potential problems.

### **Process Capability Studies**

After potential capability has been established and process conditions are stable and under normal measurable. A Cpk of 1.33 or greater is required for the process to be considered acceptable.

### **Reaction to Out of Control Conditions**

When a process is found to be unstable, out of control, or having an unacceptable Cpk the supplier must have a written procedure in place to identify actions needed to correct and improve the process. A minimum of containment action, assignable cause, interim controls, and corrective action is required.

## 8. Receiving Inspection, Incoming Material Control

The supplier is required to have written procedures in place to assure that incoming material meets all physical, chemical, visual, and dimensional

requirements. In many cases, this written procedure will be established by Myco Enterprises and provided to the supplier to insure that material received is properly controlled through the entire process. Quarantine areas or other methods to prevent non-conforming material from being inadvertently released to production must be identified and implemented. The supplier is responsible for ensuring incoming material is correct, whether it is their own material or provided by Myco Enterprises. The supplier will also be responsible for verifying the quantity of parts received is correct.

9. In-Process Material Control

The supplier must have systems in place to monitor product quality during all phases of the manufacturing process. Inspections and tests are to be conducted at the appropriate time of the process and identified in the process control plan. The verification should take place as close to the manufacturing process as possible and is to involve the production operator.

The supplier is responsible for developing tools in the quality system that maintain in-process controls. These controls must include but not be limited to:

- Written Inspection Instructions readily available to appropriate personnel.
- Evidence of compliance to instructions must be maintained.
- Inspection and test results posted at appropriate intervals in plain view. This must take the form of daily inspection reports, test or laboratory results, first piece samples, control charts or other documentation.
- Process capability must be available and maintained by the appropriate personnel to provide statistical control. Documentation may be required to be forwarded to Myco prior to shipment. A Cpk of 1.33 is the minimum acceptable value. An ongoing quality plan must be in place to reduce process variation and attain increasingly higher Cpk values.
- After process capability is established, evidence of long term statistical control of significant characteristics and any other vital characteristics must be documented. It is the supplier's responsibility to provide adequate gauging using accepted and specified techniques to gauge production parts.
- For Myco supplied material the supplier will be required to maintain inventory and yield reports.

10. Inventory Control

For Myco supplied material the supplier is responsible for conducting an actual physical inventory on a monthly basis. Month End Inventory reports are to be submitted to Myco Enterprises, Inc. no later than the third day of each month.

11. Error Proofing / Poke Yoke

All products and processes will be reviewed with Myco Enterprises for the use of Error Proofing / Poke Yoke. All attributes should be studied for implementation of Poke-yoke processes. Key attributes should be reviewed to determine whether poke-yoke is mandatory based on the detection and severity of the failure mode.

Hi-tech error proofing systems are not necessarily required. Simple attribute features and proximity indicators can verify processes in most instances.

**D. Contract Review**

1. Labeling, Lot Control and Packaging

Each container is to be tagged using A.I.A.G. format and must include, but is not limited to the following information:

- Part Number
- Engineering change level
- Quantity
- Part name/description
- Serial /lot number
- Ship date
- Customer's name and address to be provided at APQP
- Suppliers name to be omitted from all packaging and labeling
- Other items may include PO number, supplier code, and receiving plant name
- The serial/lot number must allow traceability from point of usage back through the manufacturing process to original material identification and quality status.
- It is the supplier's responsibility to provide adequate packaging to protect product during shipping and storage.
- Supplier will be required to establish inventory system and reports if returnable packaging is used.
- Labels will identify Myco as the supplier

2. Shipping Authorization

Releases will be issued by Myco Enterprises. Myco Enterprises will determine the supplier's shipping schedule and advise supplier. Supplier must confirm via e-mail dates and quantity of parts can be met. . All changes to scheduled releases will be passed on to the supplier as soon as possible and should be accommodated. If shipment can not be met, it is the supplier's responsibility to notify Myco Enterprises of shipping discrepancy as soon as possible prior to the scheduled shipping date. The supplier is then required to submit a written plan detailing what actions will be taken to meet the published schedule. Supplier is required to submit a completed *Shipping Advisement Form* to Myco by 12:00P.M. eastern the day prior to any scheduled shipment. Supplier may be required to ship material using shipping paperwork provided by Myco Enterprises. After the shipment, the supplier is required to pass on all documentation and shipper to Myco Enterprises production control.

3. PPAP /Contract Review

All product launches must have a level 3 PPAP performed unless otherwise specified in writing from Myco Enterprises. It is the supplier's responsibility to perform full part layout and capability studies for the PPAP. At the initiation of any project, when the PO is issued, a contract review is opened to guide the advance quality planning activities. The supplier is required to answer all questions and provide any input for process improvement and error proofing. Supplier is required to complete the Supplier Quality Plan and return to Myco

within specified time limit as well as maintaining an up to date Open Issues Log documenting all issues that must be addressed.. (*Supplier Quality Plan*)

4. Request for Quote Requirements

All quotes submitted to Myco Enterprises must include the “Request for Quote” number noted on inquiry. When specified, suppliers will be required to identify material content and labor components of quote. The supplier is responsible to notify Myco Enterprises if quote will not be submitted by specified due date. Team feasibility commitments are required with each quotation. If the supplier does not submit a Team Feasibility form, Myco will consider the supplier has agreed to all tolerances, specifications and requirements.

5. Strategic Alliance

All suppliers are required to enter into a Strategic Alliance with Myco Enterprises. This agreement establishes the foundation of the supplier-customer relationship and is intended to ensure Myco the exclusivity to sell the Products to Myco’s customers. The full agreement will be presented to the supplier at time of the Purchase Order issuance. The Purchase Order is contingent upon the signing of this agreement. (*Strategic Alliance*)

## Appendix A – Global 8 Disciplines

### **What are the 8 disciplines for effective problem solving?**

An effective and well-prepared 8D problem solving report will include:

- **D1- Establish the Team-** A small, well-trained group of people with the process and product knowledge will be organized to participate in the problem solving activity. The team will be afforded the time, the authority and the proper resources to investigate the problem, find the root cause(s) and implement permanent corrective action. The team members should have formal training in the 8D process and team-building disciplines.

#### Basic Questions and Suggestions for D1:

1. When and where will the team meet?
  2. Has each team member been properly trained?
  3. Does each team member have process/product knowledge for this concern?
  4. Are the people affected by the problem represented?
  5. What special skills or experience will the team require in order to function effectively
- **D2- Describe the Problem-** Perhaps the most important step in the 8D problem solving process is accurately describing the problem. The more accurate and precise the problem definition, the more accurate and precise the problem solving activity. **EXAMPLE:** If the problem is described as “a burr” on the stamped component, the problem solving team must investigate any/all potential causes for a burr. If the problem definition includes the location, the frequency of occurrence, the “is- is not” assessment etc., then the problem solving team can focus on the more specific causes for the problem. This can save both time and effort and will help ensure the correct root cause(s) are identified and addressed in the 8D.

#### Problem Statements/ Criteria for definition:

1. Has a specific problem statement been defined? (object and defect)
  2. Have repeated Why’s been used? (Ask “Why” a minimum of 5 times)
  3. Do we know for certain why this is occurring?
  4. Has Is/Is-Not Analysis been performed?
  5. Is this a repeat problem?
  6. Are similar products/processes showing the same problem?
  7. Has all required data been collected and analyzed?
  8. Do we have physical evidence of the problem?
  9. Has something changed?
  10. Has a Cause & Effect Diagram been completed?
- **D3- Develop Interim Containment Action-** The supplier must define, verify, and implement formal containment actions to isolate the effects of the problem from any internal or external customer until permanent corrective actions have been implemented and verified. All containment actions must also be verified. Suppliers

that cannot properly contain a problem may be required to implement “Controlled Shipping” measures. The containment actions must include all possible locations in the supply chain where the problem could be evident. (All internal locations, in-transit, sub-contractor locations, customer locations, etc.)

Assessing Questions:

1. Are Interim Corrective Actions (ICA’s) required?
  2. Is service action required?
  3. Have we validated and verified our ICA’s at all potential supply chain locations?
  4. Have appropriate APQP tools been considered when planning these actions?
  5. Has the customer approved our ICA plan?
  6. Do we have a contingency plan for ICA?
  7. Can the ICA effectiveness be improved? Should it be?
  8. Have we considered the cost and resources required for these plans?
- **D4- Define and Verify Root Cause(s) and Escape Point- Isolate** and verify the root cause by testing each possible cause against the problem description and test data. If the root cause cannot be proven, then all applicable possible causes must be identified in the 8D and addressed. Suppliers must also isolate and verify the place in the process where the effect of the root cause(s) should have been detected and contained (Escape Point). All containment actions and corrective actions will be validated against each root cause(s).

Questions/Suggestions for defining root cause(s):

1. Has the factual information in the problem description been updated?
  2. Is there a root cause? (a single verified reason that accounts for the problem)
  3. What factor(s) changed to create the problem?
  4. How did we verify the root cause(s)?
  5. Has the root cause analysis gone far enough? (Do we know why this happened?)
  6. Is there more than one potential root cause? (If so, do the items combined account for 100 percent of the problem?)
  7. Have we defined the Escape Point(s)?
  8. Has the current control system been identified? Does the control system represent a change from the original design? (before the 8D)
  9. Is there a need to improve the control system further?
  10. Have all control documents been updated as required.
- **D5- Choose and Verify Permanent Corrective Actions for Root Cause(s) and Escape Point(s).**- The problem solving team must select the best permanent corrective action(s) to remove the root cause(s). They must also select the best permanent corrective action(s) to eliminate escape. Must verify that both decisions will be successful when implementing and will not cause any undesirable effects.

This procedure applies to all suppliers of production material, parts, subassemblies or services. This is the procedure suppliers will utilize for resolving any/all issues

including quality related problems, delivery related problems, late submissions and other issues identified in this manual and on the Myco Enterprises purchase order.

- **D6- Implement and validate Permanent Corrective Actions-** The supplier will plan and implement the selected permanent corrective actions, and where applicable, remove the interim corrective actions. The supplier will monitor the long-term results of these actions. All permanent corrective actions will be reflected in work instructions, visual aides, control plans and set-up documents as applicable.

Questions/Suggestions for Implementing and validating PCA's:

1. Have we defined the roles and responsibilities for those responsible for implementing the PCA's? Are they represented on the 8D? Team?
2. What customer/Supplier support is needed?
3. Who will do the planning/ implementing at the supplier? The customer? Internally?
4. Do we have the required resources for the plan?
5. What are appropriate contingent actions?
6. Do we understand the possible "things gone wrong" with our actions?
7. When/how will ICA's be removed? How will we verify this step?
8. What measurable will we use long-term to verify the effectiveness of our actions?
9. Did we accomplish our goal of permanent corrective action?
10. Have all systems, practices, procedures, documents, etc. been updated to reflect the PCA's?

- **D7- Prevent Recurrence-** Suppliers must revisit the PFMEA and Control Plans and modify the policies, practices and procedures to prevent recurrence of the problem or similar problem. The PFMEA must be updated to include the specific root causes identified in the 8D as "potential failure modes". The RPN calculations for these failure modes will reflect the actual values resulting from the occurrence defined on the 8D. The severity will reflect the level of customer concern. The occurrence will reflect the number of parts that escaped. The detection will reflect the number of suspect parts reported by the customer and referenced on the 8D. Suppliers will then update the PFMEA and Control Plan with the "new" permanent corrective actions reflecting any improvement in the ability to limit occurrence or improvement in the ability to detect the problem. The new RPN number will be used as part of the validation and verification of the implemented permanent corrective actions. **The supplier will also ensure the PFMEA and Control Plans for any/all other product that could contain similar root causes are also updated to reflect the improvement actions.**

Problem History/ Questions for prevention:

1. How and where did this problem enter our process?
2. Why did the problem occur there and how did it escape?
3. What policies, methods, procedures and/or systems allowed this problem to occur and escape?
4. What needs to be done differently to prevent recurrence of the root cause(s)?



5. What practices need standardization?
  6. How have we communicated these actions to all relevant parties?
  7. Does our follow-up APQP confirm improvement?
  8. Have we investigated any/all other programs or parts where this root cause(s) and problem may also occur?
  9. Have all changes been properly documented?
  10. Have we modified our internal and external measures to ensure we have effective actions in all areas where this problem could occur?
- **D8- Recognize Team and Individual Contributions-** Problem solving is not a fun activity and often is the source of much stress and hard work. Upon successful completion of the 8D process, it is important to recognize the efforts of the team and all that supported the activities.