Global Supplier Quality Manual

Avery Dennison Printer Solutions

October 20, 2017

Purpose of this Manual

This manual aims to serve as guidance for future and existing suppliers to deliver unsurpassed quality to our plants and customers. As we move forward to grow our business, we must meet and exceed our customer's expectations for quality products. We appreciate and look forward to your commitment in helping us execute our Quality Vision.

Avery Dennison Printer Solutions Vision

A leader in intelligent, sustainable and innovative labeling and printing solutions that accelerates supply chain performance, increases productivity and elevates the consumer experience.

The Avery Dennison Quality Policy

Avery Dennison is the world's leading coating and converting company and guarantees the quality of its products and services.

We work ceaselessly to ensure complete customer satisfaction at all times, and we continually strive to improve the quality of our products, services and processes for the benefit of our customers.

Director - Global Supply Chain & Ops	*Date* 12/7/2017
Vice President - Engineering	*Date* 12/6/2017
Manager - Supply Chain	*Date* 12/7/2017
Manager - Quality	*Date* 12/6/2017

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Avery Dennison Printer Solutions

Table of Contents

1.0 Introduction

1.1 Goal & Vision

It is the goal of Avery Dennison Corporation to develop relationships with our suppliers as part of the total supply chain that emphasize continual improvement in quality, service, delivery, cost and support by ensuring that Avery requirements are accurately specified, communicated and understood.

It is the vision of Avery that suppliers shall strive to:

- **Do it Right the First Time** by planning, preparing and being trained to supply quality products and services.
- **Do it Right Every Time** by ensuring consistent quality products and services through addressing all concerns.
- **Continually Improve** by proactively improving the quality and value of products and services.

1.2 Purpose

The purpose of the "Avery Dennison Printer Solutions Global Supplier Quality Manual" (ADGSQM) is to specify Avery's quality system requirements for our suppliers. These requirements extend from supplier qualification, to new product development, to production.

1.3 Scope

This manual applies to all Major material/service external suppliers. This manual applies to Secondary material/service suppliers only when it is required by an Avery Purchase Order. Contracts or Purchase Orders may specify additional quality and other requirements for Suppliers. The specific definition of Major and Secondary suppliers varies among the Avery Printer Solutions locations. The specific definitions are contained within the Purchasing Procedures and Work Instructions of the specific location. At a minimum, all outside processors, direct material suppliers and outside calibration services shall be considered Major suppliers.

Not all aspects of the ADGSQM apply to all AD Printer Solutions locations. The Supplier should consult with the AD PS location to determine the applicable sections.

1.4 Responsibility

- Suppliers are responsible for meeting the ADGSQM requirements. Failure to meet these requirements may result in the loss of existing and/or future Avery business, in addition to reimbursement of the cost to Avery resulting from those failures.
- Suppliers shall ensure that their Major material/service suppliers comply with the requirements of ISO 9001 current standard or other regulatory standards as required by Avery Dennison Printer Solutions.
- Suppliers shall adopt the goals of Zero Defects and 100% On-Time Delivery to Avery. Suppliers shall understand that any established PPM target is not an Accepted Quality Level, but represents an intermediate continual improvement step toward shipment of components/materials meeting the Zero Defects requirement.
- Supplier shall meet all aspects of this supplier quality requirements manual and any other agreements in place.
- Suppliers may be required to do onsite inspection of shipments at Avery facilities, of product, under Avery supervision, as part of their Lot Certification Process.

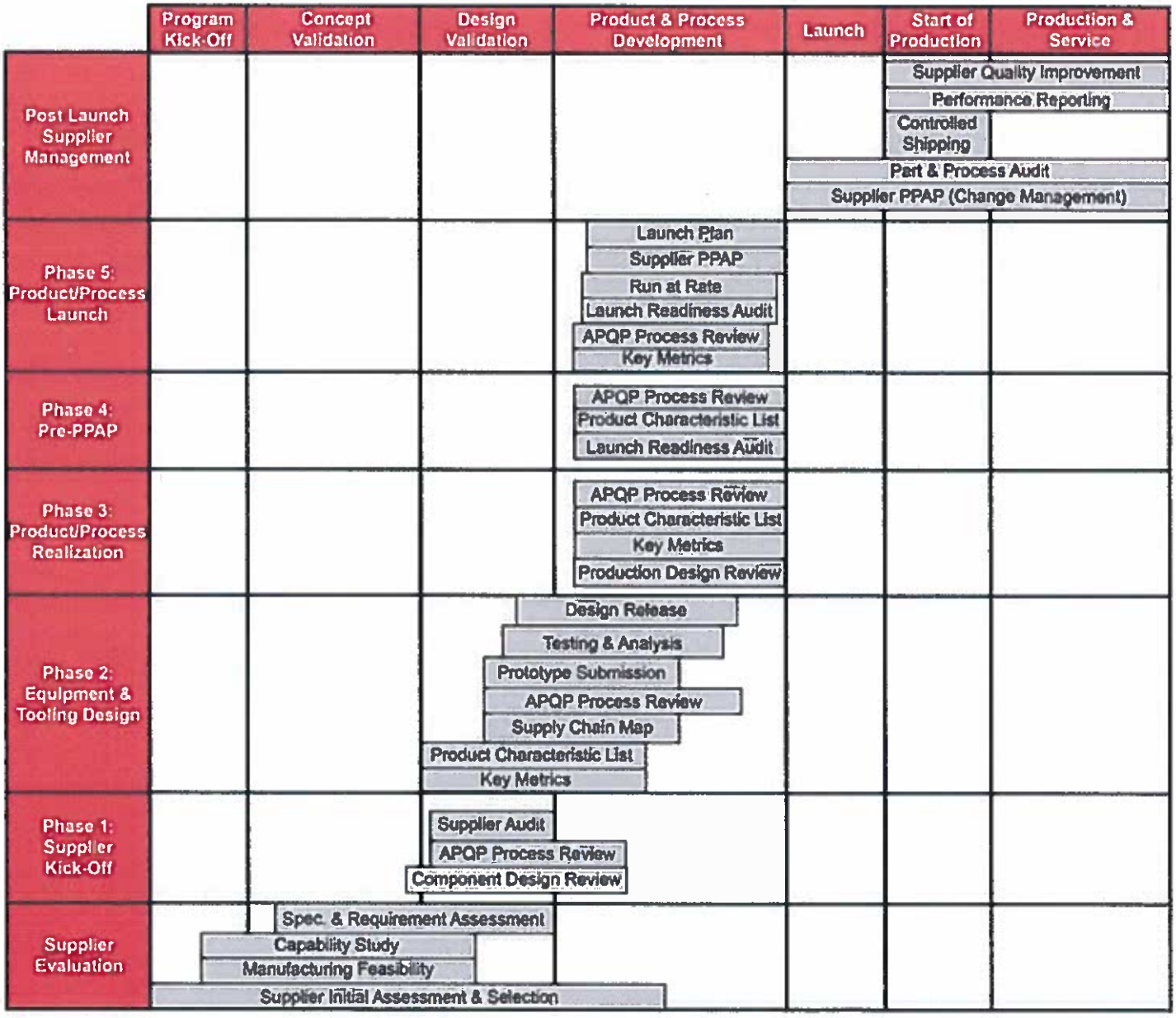
1.5 Language

Avery's official language is English. All official communication with Avery will be done in English. Documents may display the native language when integrated in parallel translation. In this instance, the English is the only valid version.

1.6 Avery Global Supplier Development Process

Avery Global Supplier Development follows a series of processes/procedures that have been defined as the Avery Supplier Development Process. This details the processes used by Avery from the initial assessment of a potential new supplier through launch and into intensive supplier improvement and tactical monitoring within operations.

Figure 1. Avery Global Supplier Development Process



Avery's Commercialization process initiates with customer inquiries and the feasibility process. Once a program is approved, Engineering works on concepts to meet the customer's' specifications and requirements. The process continues on to validation of the design. Design validation builds take place during this stage.

Next is the development of the product and the process. Avery facilities are installing the assembly equipment and engineering is working together with the customer to ensure the product meets all applicable performance and appearance requirements. During this stage, suppliers are developing their tooling and processes to provide material for future production. Also during this period, many suppliers will be required to supply components/materials for equipment tryouts and product validation builds and testing. Supplier should also be constructing ramp-up plans to meet initial production requirements and creating contingency plan to address catastrophic events that would prevent the supply of materials under normal production conditions.

After or concurrent with the approval of the Production Part Approval Process (PPAP) package, and with the start of production, suppliers may be required to participate in a Launch Planning program. For a predetermined period of time or number of components, the supplier and the Avery facilities will employ an expanded inspection process on key characteristics. The supplier shall continue to use the validated process once the program transitions from Launch into Production. Avery's approval is required before implementing any changes to that validated process. Suppliers' performance not meeting agreed upon goals and metrics, during this phase, will be required to participate in an intensive improvement team.

1.7 Government Regulatory Compliance

Suppliers shall comply with all applicable governmental regulations. These regulations relate to the health and safety of the workers, environmental protection, toxic and hazardous materials, and free trade. Suppliers should recognize that the applicable government regulations might include those in the country of manufacture, as well the country of sale. For products brought into the United States, all federal standards must be met. International suppliers should be Customs Trade – Partnership Against Terrorism (C-TPAT) or country equivalent certified.

1.7.1 Social Compliance

Result of conformance to the rules of social accountability by the extended organization including not only the organization's own policies and practices but also those of its supply and distribution chains. It is a continuing process in which the involved parties keep on looking for better ways to protect the health, safety, and fundamental rights of their employees, and to protect and enhance the community and environment in which they operate.

1.8 Environment Protection

1.8.1 Environmental Guidelines

Avery is convinced that the future and permanent protection of our environment, land, water, and air can only be achieved through the joint efforts of Industry, Government and Society. Avery will strive for continual improvement in our environmental performance through the development of new products, processes and working methods. In doing this, we strive for economical use of raw materials, energy, water, and other goods; and will fully consider the life cycle of our products through production, use and disposal. The environmental impact of our products during manufacturing covers both the manufacturing at Avery and those of our suppliers. This means that both we and our suppliers have to perform our activities such that the impact of those activities on the environment is reduced to a minimum. We therefore expect from our suppliers an active engagement in environmental concerns and the establishment, and adherence to, an environmental management system such as ISO 14001. This does not release the supplier from complying with all relevant national and international regulations.

Registration to ISO 14001 is strongly recommended.

The techniques and methods below are those that we believe to constitute the prerequisite to reach the above-mentioned environmental targets:

- Written guidelines regarding the environmental performance,
- Regular review of production, maintenance, supply, and disposal processes and products to determine their environmental impact,
- An emergency plan,
- Definition of targets to improve environmental protection and documentation of their fulfillment, which includes:
- Safeguarding of resources (raw materials, energy, water),
- Prevention and reduction of environmental pollution,
- Minimization of waste and rejects,
- Reduction of expendable packaging,
- Compliance with all government regulations regarding materials and substances,
- A recycling concept/program.
- Compliance with Restricted Materials and Reporting Requirements as defined by Avery policy.
- Compliance with the Dodd-Frank Act Section 1502 which requires companies to disclose whether any of the products manufactured or contracted to be manufactured by the company contains conflict minerals that originate in the Democratic Republic of Congo (DRC) or any of the adjoining parties. Under the Act, those minerals include tantalum, tin, gold or tungsten.

1.9 General

This manual is "distributed" by the posting on the Avery website at **http://printers.averydennison.com/en/home/suppliers.html**. Printed copies are uncontrolled documents. While Avery will communicate to the suppliers major revisions to this manual, the suppliers are expected to remain up to date on Avery requirements by frequently visiting the Avery website. Visiting this website should become a business routine as Avery shifts to web-based communications and applications.

1.10 Document Location

Forms and documents referenced throughout this document can be found at **http://printers.averydennison.com/en/home/suppliers.html**.

Note:
Exceptions to these forms are permitted if equivalent and approved by Avery Dennison prior to submittal.

2.0 Avery Requirements

Avery bases its supply management requirements on four key processes. These are: Supplier Selection, New Product Launch, Continual Improvement, and Supplier Improvement. These key processes are global in nature, as are any of their referenced procedures. In some instances, because of unique system configurations, product lines and regions may have specific processes, procedures, and/or forms that may only pertain to conducting business with them. These unique requirements will be found in a table at the end of each section.

2.1 Criteria for Selection as an Avery Major Supplier

2.1.1 ISO 9001 Registration

Avery's goal for all Major suppliers of materials and services affecting production material is to demonstrate compliance to ISO 9001 current standard. Suppliers shall also comply with Avery Dennison Printer Solutions-specific requirements defined in the Avery Dennison Printer Solutions Global Supplier Quality Manual (ADGSQM).

Major Suppliers to Avery shall conform to ISO 9001 current standard. Unless otherwise specified, conformity may be demonstrated by third party certification to ISO 9001 at a minimum. This is consistent with the expectations of Avery's customers and our business system that complies to ISO 9001 requirements. The scope of the requirement for Major suppliers affects outside processors including subassembly, sequencing, sorting rework, and calibration services in addition to direct material suppliers.

Avery recommends that its suppliers use the latest industry versions of the Advanced Product Quality Planning and Control Plan (APQP), Potential Failure Mode and Effects Analysis (FMEA), Measurement System Analysis (MSA), Production Part Approval Process (PPAP), and Statistical Process Control (SPC) manuals as guidelines for their system development. Other manuals may be relevant and used as specified by Avery.

2.1.2 e-Business Capabilities

Suppliers shall have email, Internet access and Internet browser as a minimum for e-Business capability. Google Apps are the preferred technology of Avery Dennison and the supplier's ability to access Google Apps will better support the communication between Avery Dennison and the Supplier. This is required for communications such as:

- Performance information,
- Concern Tracking,
- Program Tracking,
- Supply Web, EDI & ASNs, and
- Avery Global Supplier Quality Manual.

2.1.3 Communication and Contact Information

Suppliers are responsible for maintaining contact information. These contacts include the top management representatives, and the required information includes phone numbers and email addresses. Additionally, suppliers shall, at minimum, maintain and update their certification status, once per year. Suppliers shall immediately communicate any change in certification/registration or status to your respective commodity or purchasing manager.

2.1.4 New Supplier/Location Qualification

New suppliers to Avery must follow the Avery New Supplier Qualification Process as illustrated in Figure 2 and shall:

- Demonstrate compliance at a minimum to ISO 9001. New suppliers who have not completed their registration process may be awarded business based on either of two conditions. (1) They are specified by a customer to Avery, or (2) They successfully pass the New Supplier Audit and have a reasonable plan to meet the ADGSQM and ISO 9001 or ISO/TS 16949 requirements within 12 months.
- Complete the Supplier Application and Survey document found at **http://printers.averydennison.com/en/home/suppliers.html**
- Complete Web based Supplier Setup/Approval Process.
- Meet all environmental, commercial and financial requirements of the relevant Avery product line.
- Successfully pass the Supplier Audit Guidelines, if required.

New locations for approved Major suppliers to Avery shall:

- Demonstrate compliance at a minimum to ISO 9001. Uncertified locations with more than 12 months of operation experience are eligible for certification to ISO/TS 16949. Those facilities with less than 12 months of operation will need to contact their registrar regarding qualification for a Letter of Conformance.
- Complete the Supplier Application and Survey document found at **http://printers.averydennison.com/en/home/suppliers.html**
- Complete Web based Supplier Setup/Approval Process.
- Successfully pass the Supplier Audit Guidelines, if required.
- Suppliers specified for use by Avery's customers will be reviewed per the criteria defined by the ADGSQM and encouraged to meet these criteria.

Figure 2. Avery Supplier Qualification Process

2.1.5 New Major Supplier Assessment Criteria

During supplier selection and assessment, Avery may perform various audits to confirm supplier capability, beyond the certification level. Suppliers that initially are not determined to be acceptable will be allowed to develop action plans and timelines to correct any deficiencies and then request a re-audit to verify implementation of these actions. Business cannot be awarded until an acceptable audit is achieved.

2.2 New Product Launch

2.2.1 Introduction

New Product Launch initiates at design concept and runs through a production launch of a new component. When specified by Avery, suppliers shall use the Avery Global Supplier Development Management Process (Figure 3) when launching new products for Avery. Avery New Product Introduction teams will work with the supplier as required during the product development cycle. All suppliers, regardless of component priority, shall use a disciplined launch and APQP process.

2.2.2 Advanced Product Quality Planning (APQP)

Suppliers should provide APQP status reports for a new product with regard to meeting the Program objectives of quality, cost, performance, and timing. Avery will provide the format, frequency, and required content of these reports. Suppliers should complete those forms in English.

Suppliers to Avery are responsible for managing their new product introduction process to the guidelines provided in this document. Avery's APQP process consists of five phases. Figure 3 shows the deliverables for the five phases.

APQP-Phase 1

This is the "Kick-off" phase. It begins once the supplier has been awarded new business. During this phase Avery and the supplier define the key milestones, review the supplier's timeline, conduct, when applicable, a detailed design review, and establish deliverables and expectations of the supplier for the given component or material. This activity creates the foundation for the phases that follow. See Figure 3 for phase details.

APQP-Phase 2

This phase represents the span of time during which the supplier completes designs for their tooling, assembly lines/cells, and/or gauging; and identifies additional capital equipment required to manufacture the component/material. This phase also includes quality planning, including the completion of FMEAs and Control Plans, and the establishing of key characteristics. Figure 3 details the deliverables in this phase.

APQP-Phase 3

This phase starts with the supplier's direction to their manufacturers of the tooling, capital equipment, assembly cells and/or gauging to proceed and ends with the approval to ship the completed items. The supplier shall collect data required to ensure that the manufactured items meet drawing, specification and capacity requirements before approval to ship is given. See Figure 3 for further detail.

APQP-Phase 4

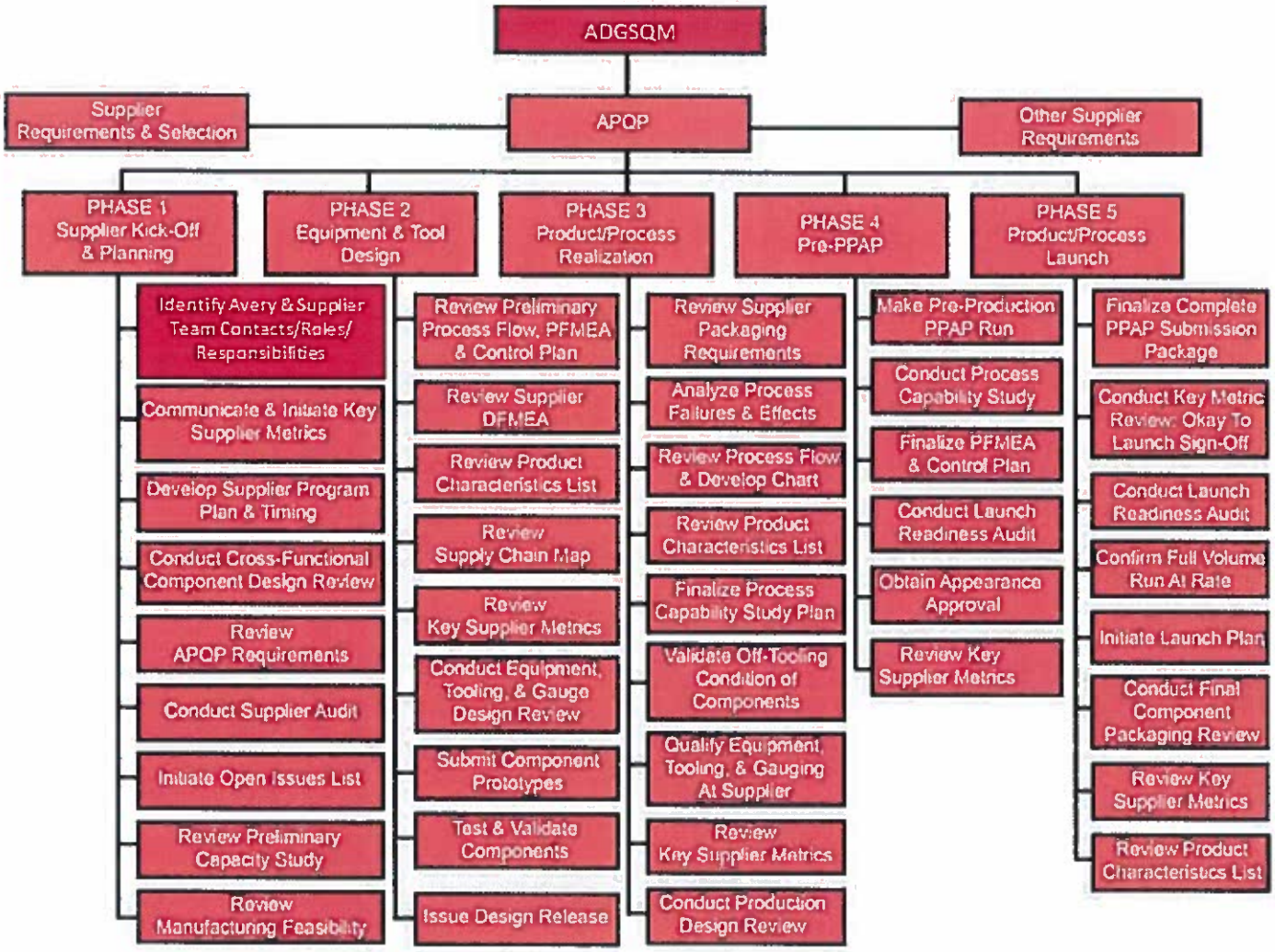
This is the Pre-PPAP or Pre-Validation phase. This phase starts with the delivery of the tooling, capital equipment, assembly equipment and/or gauging to the supplier's facility. It ends with the completion of the PPAP production run. The critical activity in this phase is the first parts review, by the supplier, and subsequent tuning of the process to produce components/material that conforms to the drawings and specification. See Figure 3 for further detail.

APQP-Phase 5

This phase is the Product and Process Validation and Launch stage of the process. During this period the supplier completes and submits a Production Product Approval Process (PPAP) package. A final review, for Major components, requires the successful completion and sign-off of

the Key Metrics Report found in the APQP Requirement package for approval to ship. See Figure 3 for further detail.

Figure 3. APQP: 5 Phases



As stated previously, regardless of component/material complexity, every supplier is expected to conduct and execute an APQP process. Suppliers that wish to use other reporting formats than defined in this document shall have written approval from the specific Avery Purchasing Manager. Determination of manufacturing feasibility and/or supplier capacity may be required for every new or modified product design or manufacturing process based on engineering changes. These analyses are done just after the Request for Quotation (RFQ) has been accepted and prior to any commitment for facilities or tool development.

Key Avery global APQP reports/forms included in the requirement package are:

- Key Metrics List - made up of the elements, at a minimum PPM and Delivery, that provides a consistent progress report over the entire APQP process.

- The list of Special Product Characteristics is generated by the Engineering Group at the Design Review (if required) and is completed as the validation process progresses. These critical characteristics are used for submitting process capability reports. (NOTE: *For those components and materials that do not require a Design Review, the supplier shall use this document to submit process capability results in a summarized format as part of their PPAP package.*) This document links designated and high Risk Priority Number (RPN) ranked features with the identified controls. It also identifies sub-tier suppliers that have an impact on these features, documenting what controls they have established. Suppliers may use this document in support of the Pre-production Control Plan; ensuring product is manufactured under controlled conditions and meets the drawing and specifications requirements. The Launch Plan uses this document when required.
- The Supplier Timeline - used to document planned completion dates for significant deliverables throughout the APQP process.
- Supplier APQP Open Issues – The 8D/CAPA or equivalent problem solving technique is used to document all open issues, and their respective corrective actions that arise during the APQP process.

Key Avery processes external to the APQP Requirement Package

In addition to the forms/reports included in the requirement package are three processes: the Supplier Component Design Review, the Launch and Production Readiness Audit, and the Run at Rate, as well as other reports.

- Supplier Component/Process Design Review - a formal drawing and validation plan review involving an Avery cross-functional team and the supplier. This is a key event in the APQP process. Suppliers shall conduct an internal design review before attending any held by Avery. It is also beneficial for suppliers to invite representatives from their sub-tier suppliers to join their team for this meeting. The Purchasing manager shall generate an action plan based on the open issues discussed during the review and will follow up with all responsible parties to ensure timely closure of those issues.
- Launch and Production Readiness Review - a formal review of the production process status and the supplier's plan to meet new production ramp-up. This assesses the state of readiness, of the supplier's process. An audit may be required to verify the Supplier's readiness.
- Supplier Run at Rate - a formalized production capacity study that verifies proper cycle times, quality expectations and yields.
- APQP Tracking Report – a supplier-maintained document that summarizes the progress of key APQP deliverables for key events and multiple components. Avery's Purchasing manager will notify suppliers when this form is required.
- Launch Plan - a joint effort between the supplier and Avery to have similar Pre-Launch Control Plans at both the shipping and receiving facilities. Launch Plan requires the creation of a Pre-Launch Control Plan, an enhancement to the supplier's Production Control Plan. The implementation of an elevated, short-term Quality Inspection process is required. Launch Plan plans will be documented using the Product Critical Characteristics List and shall be signed off by the Supplier, Avery's Purchasing Manager and the plant Quality representative. Suppliers will be required to submit data to the using plant(s) as part of this process. Suppliers shipping parts under Launch Plan shall mark each container with "Launch Plan Parts," indicating the nature of the parts.
- Exit criteria for the Launch Plan is shipment of zero defect parts that meet either the defined period of time or number of pieces. Any defect discovered during the Launch period restarts the event at "0" pieces shipped.

Three key documents that are also associated with advanced quality planning are the Process Flow Diagram, PFMEA and Control Plan. Avery has definitive expectations for these documents that suppliers shall comply with.

Process Flow Diagram

- Shall define the entire process flow starting with Receiving Inspection and finishing with Packaging and Shipping.
- Shall include any sub-tier, or outside, suppliers, along with the names of those suppliers.
- Shall include unique identifiers that reflect what has been approved as part of the process. Suppliers shall identify those operations linked to the manufacturing of features identified by special characteristics.

Process Potential Failure Modes & Effects Analysis (PFMEA)

- Unless otherwise specified, suppliers shall use the Process Failure Mode & Effects Analysis (PFMEA) manual as the basis for creating this document.
- The PFMEA shall follow flow established in Process Flow Diagram.
- Failure modes shall include Special Characteristics from the Avery drawing in addition to the process- and tooling-based items.
- Items with Severity 9 or greater are generally considered special characteristics.
- Suppliers shall have a process in place to report on their highest RPN numbers. This report may be in the form of a Pareto chart, displaying the RPNs from highest to lowest. This system shall include documentation of recommended actions and verification of their implementation.
- The PFMEA shall be used as a continual improvement tool. Suppliers shall be able to document continual improvement efforts derived from RPN rankings below their target value for improvement actions. Suppliers should prioritize their activities based on Number of RPNs vs. current performance.
- Where Avery has the design responsibility, a copy of the Design FMEA may be requested to assist in preparing the PFMEA.

Control Plan

- The Control Plan shall appropriately reflect the same steps and flow established by the Process Flow diagram and PFMEA.
- The Control Plan shall include all features denoted in the Product Special Characteristic List, characteristics and notes that are designated as special characteristics. Each product line uses a unique set of special characteristics.
- The Control Plan shall include those features, characteristics and notes that are used to create the annual revalidation package.
- The Control Plan shall include the Launch Plan controls, when used based on the Product Critical Characteristic List.

2.2.3 Packaging and Labeling

Avery and suppliers shall agree upon the packaging plan during APQP, including the requirements specified in the Packaging and Labeling Guide found at **http://printers.averydennison.com/en/home/suppliers.html**

- Suppliers, regardless of the manufacturing location, shipping to Avery Facilities shall meet the requirements found in the Packaging and Labeling Guide.

- Suppliers providing product to multiple operating units, on a global scale, shall work with each of the locations to ensure that the packaging is sufficiently robust to withstand shipment by sea and arrive on time, without damage.

- Avery expects their suppliers to conduct, periodically, dock audits on packaged materials. Evidence of these audits shall be retained with other lot inspection documentation.

- All wood packaging material must comply with the International Plant Protection Convention (IPPC).

2.2.4 Production Part Approval Process (PPAP)

Suppliers shall ensure that the PPAP document and sample submissions are in accordance with the requirements of the industry PPAP Manual. Suppliers shall only submit PPAP packages for production-released drawings, and a copy of this drawing shall be included in the submission package. Each supplier is responsible for meeting all these requirements before submission to Avery, including obtaining Avery approvals for any change requests.

Suppliers may be requested to submit the PPAP package in an electronic format by one or more of the product lines and regions. In these instances, suppliers must be prepared to comply with these requests.

Avery shall specify the PPAP submission level (Levels 1 – 5) as part of the Launch Plan. Forms relating to the PPAP process can be found at **http://printers.averydennison.com/en/home/suppliers.html.** Suppliers may use their forms only if they are equivalent to the forms and if they have the written approval from Avery. Avery may require their suppliers to submit a validation package that contains additional documents and forms beyond those required. In addition, the supplier is responsible for all sub-tier PPAP submissions and approvals, including those suppliers Avery has directed for use.

Suppliers of plastic components to Avery are required to comply with regrind levels specified on the component's drawing. Components produced throughout the APQP process, including Design Validation (DV), Production Validation (PV) and PPAP, shall be representative of the maximum allowable regrind,and is confirmed by certified laboratory analysis. Additionally, suppliers are responsible to ensure that the component's PFMEA and Control Plan specifically address, and control, this requirement.

Supplier submission of a nonconforming PPAP package may be recorded as a supplier performance failure and could affect the supplier's performance rating. Avery will determine the Level of PPAP submission, and any special requirements if applicable.

When applicable, suppliers shall include in the PPAP submission the Engineering Specification (ES) test plan and the ES test results. An approved/accredited laboratory shall conduct the ES tests.

2.2.5 Traceability

The supplier must plan for traceability of components. The supplier will provide a written plan specifying how components will be marked with serial or lot numbers and date codes if required, or how containers will be identified with lot numbers or date codes if component marking is not required. The plan will also include sizes of lots or batches. Where possible, batch sizes should be minimized to aid in containment should quality problems be found.

All suppliers to Avery shall have an effective lot definition and traceability procedure. The shipper number will be linked to the lot traceability procedure in such a way that the delivered product can be traced back to the raw material. Unless otherwise approved in writing by the Avery Purchasing Manager, a lot shall consist of one shift or eight hours of production, whichever is smaller. For Bulk Processes, lot size may be defined by quantity and vary based on process/production equipment.

Avery reserves the right to specify a maximum batch size. Each lot shall be traceable back to the raw material used. The lot definition shall reflect all significant processes influencing the component/material, with the shipping lot number reflecting the last value added operation. Suppliers shall ensure that their lot traceability system maintains its integrity throughout entire extended supply chain, including not only raw material, but also purchased components/products.

Many components' lifeline begins and ends within the facility of the supplier. There are those components, however, that do require processing by outside companies to finish the process stream. These may include heat treat, coining, grinding, coating, and other various processes.

If the original lot were batch processed through the different secondary processes, then there would be no need to change the original lot number. However, if the batches are split at a secondary processor, then the lot number for each of the batches should be unique.

Once manufacturing/assembly begins, a lot number is changed if:

- One shift of production or eight hours is reached.
- The lot number changes on the raw material being used.
- When the components undergo another value added process and the original lot is divided during processing.
- The lot number changes on any one of the components being used.

When required the supplier may need:

- To implement *Serialized* (maintains a one-to-one relationship between the finished good serial number and the components' serial number) lot traceability, or
- *Specific* Lot (maintains a one-to-one relationship between the finished good serial number and the components' lot numbers) traceability for certain programs.
- To clarify the difference between this and general traceability, consider a supplier that stamps a given component. After stamping, two fasteners are pressed into the stamping. General traceability is where there is no lot traceability between the stamped component and the assembled parts. Specific traceability would be where the lot numbers of the assembled components are traceable through the lot number of the stamped component.

For safety/critical parts, the required retention time for Lot Traceability records shall be found in Section 2.3.9.

Country of Origin may be required for products manufactured outside of the United States with intended sale in the United States.

2.2.6 Special Characteristics

At a minimum, suppliers shall implement process controls for Special Characteristics as designated (Critical or Major) on Avery drawings or specifications. Additional characteristics deemed germane to be "predictors of process stability and feedback" should also be identified in the supplier's Control Plan. These relate to product safety, government regulation, product performance, and the ability to assemble product or customer satisfaction features. These are identified by various symbols, requiring specific levels of special controls and process capability.

Unless otherwise specified, for characteristics/features designated as significant or critical, during launch, the supplier must calculate and report the process capability as Cpk. For those characteristics/features showing a Cpk of less than 1.67, the supplier must create an action plan that defines both containment and process improvements. Process capability can be conducted with both variable and attribute data. The target acceptable sample size for variable and attribute data is 30 pieces.Containment must effectively separate non-conforming material from the population. Containment, generally either 100% sort and some form of error proofing, must continue until such time that the process Cpk demonstrates capability greater than or equal to 1.67, unless approval to ship is obtained by Avery. For those characteristics/features showing a Cpk less than 1.67 but greater than 1.33, the supplier may ship the product but must create and obtain Avery approval of an action plan to achieve a Cpk of 1.67.

After three months of production, Ppk will be used to measure the process. The Ppk for long-term *capability study must maintain a minimum of 1.67 for significant/critical characteristics.*

2.2.7 Prototype Fabrication, Quality Evaluation, Pre-Production Process Changes

For the fabrication of prototype or pre-production parts, suppliers shall follow the planned production process as closely as feasible. For these prototypes, Avery may require that the suppliers provide a prototype control plan along with material, dimensional, performance, and/or process data. If the prototype and production suppliers are different, the prototype supplier shall share with the production supplier the process knowledge gathered in prototype fabrication. Proprietary information may be withheld by prior agreement with Avery.

Once a supplier starts providing parts as part of the process development and validation stage, any changes to the process requires notification to Avery of those changes. These changes may include:

- Outside or sub-tier suppliers,
- Addition/deletion of capital equipment,
- Tooling and/or gages,
- Manufacturing methodology, and
- Internal secondary processing.

Suppliers of prototype parts, when required, shall respond to material concerns.

2.3 Production Processes

2.3.1 Introduction

Once the manufacturing process for producing a component is successfully validated, the next phase encountered is that of production. During this stage there are a number of requirements each supplier should be fully aware of and follow. Key areas include change management, concern management, sub-tier supplier management, and annual revalidation. Additional expectations are also detailed in the following sections.

2.3.2 Supplier Request for Change

Suppliers shall submit a written request for product or process change and obtain Avery approval prior to implementing the change. This includes changes at Sub-suppliers throughout the supply chain. Suppliers are also required to submit all supporting validation data including necessary dimensional reports, performance testing, before/after process parameters, updated APQP documentation (PFMEA/Control Plan), and a detailed timeline demonstrating proper change control that identifies necessary safety stock/bank requirements including timing for Avery/Customer validation timing and designated resources to manage the change.

Product or Process Change Request Form can be found at **http://printers.averydennison.com/en/home/suppliers.html**. Submit the completed form to the Buyer and Quality Engineer or Quality Manager, who will review and provide feedback to the request.

Avery must act in accordance with ALL customer requirements for change notification and as such, Avery expects the supply base to comply. Change approval may take an extended period when Avery customer approval is required. Changes shall not be implemented prior to the receipt of written approval from Avery. VERBAL REQUESTS FOR APPROVAL ARE NOT VALID OR EFFECTIVE. Below are the defined notification requirements.

Avery Notification and Submission Requirements

1) Use of other construction or material than was used in the previously-approved part or product.
2) Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling.
3) Production following upgrade or rearrangement of existing tooling or equipment.
4) Production from tooling and equipment transferred to a different plant site or from an additional plant site.
5) Change of supplier for parts, non-equivalent materials, or services (e.g. Heat Treating, Plating, protective or functional coatings) that affect Avery or OEM fit, form, function, durability, or performance requirements.
6) Product produced after the tooling has been inactive for volume production for twelve months or more.
7) Product and process changes related to components of the production product manufactured internally or manufactured by subcontractors that impact fit, form, function, performance, and/or durability of the salable product. Additionally, the supplier shall concur with any requests by a subcontractor before submission to Avery and its respective customer base.
8) For bulk materials:
    a. New source of raw material from new or existing supplier.
    b. Change in product appearance attributes where there is no appearance specification.

c. Revised parameters in the same process (outside PFMEA parameters of the approved product, includes packaging).
d. Change outside of DFMEA (product composition, ingredient levels) of the approved product.
e. Change in test/inspection method-new technique (no effect on acceptance criteria).

Consequences of non-communicated or unauthorized process changes at the supplier manufacturing facility or any sub-supplier facility could result in any or all of following actions.

1) Written notification from Avery to supplier requesting the supplier to contact their registrar of the non-conformance.
2) Supplier commercial status change to Hold status or Bid Suspension for a period of 3 - 6 months, depending on root cause of non-conformance.
3) Issuance of a concern and immediate third party containment of affected component/product.
4) Potential request for independent, third party audit of affected supply chain, including ALL affected sub-tier suppliers involved.

Reinstatement of supplier to "Good Standing" will depend on supplier's ability to develop effective preventative actions and verification by Avery accordingly.

A signed authorization to ship production material after the change is required and must be communicated to Avery.

Off-Line rework, not included in the original Control Plan, is considered a process change and suppliers shall obtain Avery approval for it as specified above. Rework shall be supported by operating and inspection instructions. The inspection instructions shall be consistent with an updated production process control plan. Avery will require special identification and segregation of the reworked product.

Suppliers shall request, in writing, a deviation before shipping non-conforming material to Avery using the Avery Deviation Request Form. This form can be found at **http://printers.averydennison.com/en/home/suppliers.html**. A plan to return to normal production and the time required to do so shall be submitted at the same time as the written request.

2.3.3 Concern Management

Upon receiving an Avery concern for quality or delivery, suppliers shall endeavor to implement a containment action within 24 hours as appropriate with the severity of the defect. Within 10 working days, unless otherwise specified, the suppliers shall submit a corrective action plan or a reasonable approach to developing one in case of complex issues. These targets are standard, but the concern creator can establish other target dates, if needed. Suppliers shall use a systematic problem solving method such as 8D/CAPA or equivalent problem solving technique. Avery requests all efforts be made to close open issues within 30 days.

Suppliers shall immediately notify Avery upon discovery that they might have shipped nonconforming or suspect product to Avery. Notification shall go to the Quality Manager and the Purchasing Manager, or in their absence, the Operations Manager of the Avery SBU facility. The suppliers shall notify all Avery SBU facilities receiving the same or similar affected product.

The Supplier will be issued a Concerns Notification in the form of an (8D/CAPA or equivalent problem solving technique). The process involves five components:

A. Avery - Identification and definition of problem
B. Avery - Reporting and notification process
C. Supplier - Response and corrective action
D. Avery - PPM defects and rate of occurrence
E. Avery - Supplier charge backs for quality-related expenses (refer to Figure 4)

Each step lists the required and recommended elements for each component. Unless otherwise noted, the process that follows will be used by Avery. Suppliers are required to use or develop their own systems that comply with Avery's materials rejection reports and corrective actions procedures.

A. Avery - Identification and Definition of Problem

Required Elements

√ Will contain sufficient information to ensure understanding of the problem by the supplier.
√ Will contain sufficient information to ensure proper and quick containment by supplier and user plant. (Information may include lot number, traceability or quantity.)
√ Will have representative samples available for review and supplier evaluation.
√ Will have defined severity and/or classification of problems.
√ Will contain quantitative information to define the extent of the problem.
√ Will have a method to distinguish "fit and function" (critical) issues from "nonfunctional" (nuisance) issues.

B. Avery - Reporting and Notification Process

Required Elements

√ Will include proper identification and definition of problem.
√ Will have an established time frame for reporting and notification.
√ Will include initiator or contact person at the issuing plant.
√ Will ensure supplier acknowledgment of receipt of notice or report.
√ Will identify status of material and current disposition.
√ Will request a return material authorization (RMA).

C. Supplier - Response and Corrective Action

Required Elements

√ Will have a well-defined procedure for corrective action and response.
√ Will have a well-defined time frame for corrective action and response.
√ Will have a formal approval, closure and tracking process.
√ Will require an 8D Process or a similar problem-resolution process for documenting and verifying corrective action.

√ Will define specific steps for disposition of material.
√ Will have a process for rescinding invalid corrective action requests, which are not needed or were generated in error by Avery.

D. Avery - PPM Defective and Rate of Occurrence

Required Elements

√ Avery will have a procedure to adjust PPM based on verified parts defective.
√ The supplier must acknowledging receipt of returned parts within the time frame dictated by the user plant.
√ The Supplier, within a the time frame dictated by the user plant, as part of the 8D (or a similar problem-resolution process) must supply to user plant a minimum of the following information:
➢ Segregation/containment actions,
➢ Sort results,
➢ Rework plan,
➢ Interim actions, and
➢ Root causes

PPM will include the following

➢ Quantity of VERIFIED nonconforming production parts,
➢ Quantity of customer-approved rework (on-site or off-site) and used,
➢ Initial PPM will include total quantity of suspect parts returned to supplier. This amount will be adjusted later to reflect actual defect quantity if all adjustment policy criteria are met.
➢ Confirmed defective warranty returns

PPM will not include the following

➢ Parts that have not been PPAP approved and prototypes,
➢ Parts used under authorized deviation, or
➢ Parts "used as is."

Bulk Rejections - For example: labeling, plastic resin, steel, etc.

Bulk items should be treated the same as other defective parts. The entire quantity will originally be counted as defective. The supplier can provide discrimination of the defective quantity after sorting and the original count will be rescinded.

➢ The rate of occurrence offense will be tracked. All occurrences are counted regardless of severity with the exception of those that are rescinded.

2.3.4 Supplier Audits

Avery employs a number of audit tools in its Supplier Development Process such as assessment of a potential new supplier that desires to enter a business relationship with Avery, Supplier Application and Survey, Launch Readiness audits, Supplier Audit Guidelines, New Supplier Operations audit, and final production validation audits.

Any supplier of production material to Avery may be requested to participate in one or more of the audit types. Audit frequency will be determined by Avery's internal supplier performance metrics. When notified of a planned audit, it is recommended the supplier conduct an internal audit before the Avery audit team arrives.

Avery may, at its discretion, utilize independent auditors. These individuals represent Avery and will audit the supplier's processes to establish conformance to validated quality systems.

2.3.5 Sub-Supplier Management

Suppliers of Avery shall have capabilities to manage their respective suppliers, including suppliers' APQP disciplines and periodic auditing. Avery, when it deems necessary, will audit the critical processes of the sub-tier suppliers to ensure that proper controls are in place throughout the entire supply stream. Suppliers of Avery shall ensure they audit and manage critical processes such as heat-treating and plating.

Sub-tier suppliers have a tremendous impact on the quality of the final component. Whether they provide raw materials, services or sub-components, their influence is so profound that it is critical for each of Avery's suppliers to have a supplier management system in place. This system shall include a function that tracks and reports on their supply base quality and delivery performance. Supplier shall be able to demonstrate that they manage their suppliers' issues through documented corrective actions and verification activities.

2.3.6 Annual Revalidation

Unless otherwise specified, a complete annual layout inspection, material certs and PSW including all sub-components, is required for all parts.

All suppliers shall annually revalidate their respective active production components, and be able to provide the results to Avery within 48 hours of the request. Revalidation submission requirements are a product line-specific criteria based on supplier performance and PPAP process flow. Suppliers shall compile revalidations and document this requirement in the Production Control Plan for all parts supplied regardless of the product line/region. Those features/characteristics/notes that will be part of the revalidation package need to be designated such at the time of initial PPAP. Avery shall review changes to the revalidation package content before any changes are made. If production components have not been supplied to Avery for two years, the parts must be recertified by the PPAP process. Safety-related components may require PPAP after one year of idle production.

2.3.7 Supplier Facility Access

By prior notice, suppliers shall allow Avery and Avery customers access to both their facilities and those of their suppliers, for the purpose of evaluating parts, processes, documents (i.e., FMEA, Control Plan, Instructions, records, etc.), methodologies, and systems used in manufacturing of Avery products.

Avery may, at its discretion, use third party independent auditors. These individuals represent Avery and will audit the supplier's processes to establish conformance to validated quality systems.

2.3.8 Contingency Plan

Suppliers shall develop a contingency plan for potential catastrophes disrupting product flow to Avery, and advise Avery at the earliest in the event of an actual disaster. In an actual catastrophe, suppliers shall provide Avery access to Avery's tools and/or their replacements.

2.3.9 Document and Product Sample Retention

Suppliers shall retain documents and product samples for the time the part is active (a part is active as long as it is being supplied to the customer for original or service applications) in production plus a minimum period of five years. Parts used on multiple programs may require an exceptionally-long retention period.

The supplier shall retain a master sample from each cavity, die, and pattern for the length of time that the component/material is active plus one year unless otherwise specified by Avery. The master sample shall be identified as such and shall show PPAP submission reference and Avery approval date.

2.3.10 Avery Property – Tools

All tools, manufacturing, test or inspection equipment belonging to Avery, or its customers, will be permanently marked to clearly show that they are property of Avery or the customer. These tools will only be used for Avery products unless an authorization in writing exists. Asset tags may be distributed at the discretion of the AD Strategic Business Unit (SBU).

2.4 Continual Improvement

2.4.1 Introduction

Avery defines supplier continual improvement as a holistic approach to overall quality management system improvement. Suppliers should, at a minimum, develop and present plans that improve internal systems that support flawless launching of new products/components/subsystems, value enhancements and cost competitiveness, and achievement of agreed upon quality targets, with a plan to achieve zero defects in support of ongoing operational excellence. This plan should include lessons learned from previous launch, cost and quality issues, and how these lessons have been incorporated into respective continuous improvement proposals.

2.4.2 Supplier Scorecard

On a Quarterly basis or as required, major suppliers will be advised of their performance by the Purchasing Department. Zero Defects and 100% On-Time Delivery are the Avery expectations for purchased material. Avery will update supplier performance quarterly, and provide suppliers their performance reports. The Score is based on a top score of 20 and will include the following components:

A. Delivery to Promise-25%
B. Delivery to Request-25%
C. Quality-25%
D. Cost-25%

A poor performance score is used both as part of future sourcing decisions and also to focus continuous improvement efforts. Suppliers with a score less than the minimally acceptable score for two consecutive quarters must submit a corrective action plan with timelines and responsibilities defined.

16+	Preferred Supplier	Growth Opportunities
12-15	Pending Supplier	Supplier is to present continuous improvement plans with a timeline.
9-11	Probation Supplier	New Business Hold Supplier is to present continuous improvement plans with a timeline.
<9	Problematic Supplier	New Business Hold Alternate sourcing is being pursued.

2.4.3 Supplier Improvement Process

The Supplier Improvement process involves four steps. It starts with one of the Avery facilities writing a complaint against a supplier for a quality performance issue. A Corrective Action is submitted by the Supplier. The Corrective Action is reviewed and approved by Avery. The corrective action process can escalate from a written corrective action to certified stock, or controlled shipping, to one of the intensive improvement disciplines. The implemented action is monitored to ensure that the complaint has been resolved.

2.4.4 Controlled Shipping

Controlled Shipping (CS) Level I and II will be levied against the supplier when the Avery plant has determined that the supplier does not have the necessary safeguards preventing non-conforming products from reaching Avery manufacturing location or its customers.

Controlled Shipping, Level I is initiated by Avery and performed at the supplier location by supplier employees. Controlled Shipping Inspection process must be performed in a controlled area of the plant. Secondary Inspection data must be collected, and inspected product must be certified and data provided to Avery receiving plant.

Controlled Shipping, Level II includes all of Level I, with an added inspection by an Avery approved third party. Third party is selected by the supplier and approved by Avery, and paid by the supplier. In some instances Avery may require that the third party inspection to be performed outside the supplier facility.

Based on the severity of the incident, Avery may elect to go directly to CSII. Avery Quality will review irreversible corrective action and authorize removal or renewal of Controlled Shipping when appropriate. NOTE: Minimum of 30 days Corrective Actions verification period with no recurrences is mandatory.

2.4.5 Cost of Poor Quality (COPQ)

Suppliers have financial responsibility for non-conforming parts and their effects and for non-compliance with Avery quality standards.

All costs that are incurred by Avery due to failure of supplied products and services to meet quality and delivery requirements are documented and charged back to the supplier who is responsible for the failure. This process is outlined in five steps.

A. Confirm supplier is responsible for the rejection - Avery
B. Notify supplier of rejection - Avery
C. Document costs related to the rejection
D. Advise supplier of the rejection for a 10 calendar-day review
E. Debit the supplier for costs after 10-day review

Figure 4 outlines a non-exhaustive list of examples of occurrences when cost recovery will be generated.

Figure 4. Examples of Cost Recovery Occurrences

New Product Launch	Manufacturing process	Delivery	Warranty	Customer Issue
+ Any costs incurred as a result of a supplier failing at PPAP Submission, Run@Rate, Process Readiness, etc	+ Lots rejected at Receiving Inspection + Downtime + Sorting/Rework + Overtime + Line speed Reduction + Additional manpower + Line changes due to material availability + Equipment breakage + Additional outside processing or inspection + Tooling and fixturing for rework + Premium costs paid to support production + Material and Process Value Added losses + Avery personnel traveling to support problem	+ Any costs incurred as a result of supplier late delivery (i e. + premium freight inbound or outbound or any customer penalties) + Part identification and labeling + Shipping document errors	+ Warranty claims + Green Run failures + Recalls	+ Rework at customer premises + Replacement of material at customer + Charges from customer + Internal containment to prevent quality issues at customer, such as quarantine, added inspection, certification of product, etc. + 3rd Party Inspection + Expedited freight + Recall activities

2.4.6 Warranty

Supplier has 10 days to complete a warranty complaint and/or part evaluation. After 21 days, the claim will be processed and the supplier will be responsible for internal and external charges to manage the closure of the customer claim. The evaluation period begins with receipt of the product for evaluation.

3.0 Glossary

Term	Definition
APQP	Advanced Product Quality Planning. A structure activity that plans tracks and reports the development of a process to manufacture a component/material/assembly to meet customer requirements.
COPQ	Cost of Poor Quality.
ASN	Advance Shipping Notice.
Ppk	Long-term process capability generally conducted over several months.
Cpk	The capability index for a stable process. Also referred to as short-term capability.
CR	Capability Ratio.
CS	Controlled Shipping.
DFMEA	Design Failure Modes Effect Analysis. A document generated during the design phase that identifies and establishes controls for potential failures in a component/material/assembly.
DV	Design Validation. Testing that ensures that a component/ material assembly meets the user's' requirements.
EDI	Electronic Data Interchange.
LRA	Launch Readiness Audit. An audit conducted one or more times throughout the APQP process to determine a supplier's state of readiness to start serial production.
OEM	Original Equipment Manufacturer.
PFMEA	Process Failure Modes Effects Analysis. A team process that identifies and controls potential failures before the product goes into production.
PPAP	Production Part Approval Process. A defined process for the validation of new materials and subsequent process changes.
PV	Production Validation. Testing that ensures that the manufacturing process produces product that meets the customer's requirements.
Shall	Use of the word "shall" indicates mandatory requirements.
Should	Use of the word "should" indicates recommended requirements.
LP	Launch Plan. A supplier's plan to provide increased assurance that the products will meet the introduction schedule.
SQA	Supplier Quality Assurance. A quality engineer who is primarily responsible for suppliers' quality after the start of production.

4.0 Revision History

Revision Date	Revision Level	Changes	Responsible Person
October 20, 2017	A	Initial version	Jeff Freeders