Supplier Quality System Requirements

Every supplier to Diemasters Manufacturing, Inc. is required to create and maintain a Quality System, at minimum, as defined by and in compliance to ISO9001:2015. Suppliers are encouraged to work toward receiving their 3rd party accreditation.

1.0 The Quality organization shall be clearly established and well-defined in structure and reporting systems. Responsibilities for planning, implementing and evaluation of the program are expected to be documented and clear.

2.0 The Quality commitment should be clearly defined by management and include the use of statistical techniques for control and problem solving.

3.0 Training programs should be incorporated throughout the organization, as deemed appropriate to train all employees in the quality aspects of their responsibilities. Training should include statistical techniques, suspect material containment and control, inspection and audit techniques, as well as individual primary employment training.

4.0 The Quality System should include the use of statistical techniques, audits by qualified/trained individuals, documentation system to provide for the routine inspection of materials, product and processes, documentation and control of suspect materials, product and audits. Acceptance criteria must be based on zero discrepancies. The system shall also provide for the identification, control. And calibration of all measurement devices.

5.0 Management shall provide for periodic review of system and procedures of the Quality System to assess the status and effectiveness of the system and effect continual improvement. The reviews shall be documented and reflect all corrective actions and improvements made.

6.0 Diemasters Manufacturing, Inc. is committed to the use of statistical controls in its own operations. Diemasters Manufacturing, Inc. may also specify certain aspects of the Suppliers program. However, it is the expectation that each Supplier have and utilize their own systems.

7.0 Suppliers shall maintain a system that provides for the control and use of documents to prevent the use of outdated or superseded information. System controls must be adequate to assure that the proper level of documentation is available to all individuals, as needed, whenever affected activities take place.

8.0 Suppliers shall have a system in place, which ensures all measurements devices are properly identified, controlled, and calibrated to establish traceable standards. System shall include the tagging of instruments to show the identification number, last calibration date, individual responsible for last calibration, and next calibration due date. Records will be kept reflecting:

1.0 ADVANCED PRODUCT QUALITY PLANNING (APQP)

Advanced product quality planning is a structured method of defining and establishing the steps necessary to assure that a product satisfies the customer. Suppliers are encouraged to become involved early in the product development process. Suppliers are responsible to understand the use of their material and its impact on the quality of the finished product. All aspects of material performance and expectation should be clearly understood by the supplier.

1.1 PRODUCTION PART APPROVAL PROCESS (PPAP)

Diemasters Manufacturing Inc. follows the AIAG Production Part Approval Process for validation of all purchased materials required for production applications. The PPAP manual is necessary to understand and comply with submission requirements. Suppliers shall obtain a list of specific PPAP requirements from Diemasters Manufacturing Inc. PPAP submissions are to be submitted to Diemasters Purchasing Department.

For quality planning suppliers shall reference the following ISO/TS 16949:2002 core tools: APQP, PPAP, FMEA, MSA and SPC.

1.2 SUBMISSION REQUIREMENTS

The default PPAP submission level will be to the Level 3 requirements in the AIAG PPAP manual. Diemasters has the option to change the submission level requirements if necessary. Production parts or product for PPAP submissions are to be produced with production materials, tooling, equipment and processes, gages, and operators.

Customer specific requirements are in addition to any PPAP requirements and take precedence. Suppliers are responsible to keep up to date with any and all end customer specific requirements.

Prototype or sample parts may be required for functional testing and plant trial run purposes. Diemasters Purchasing will coordinate requirements with suppliers.

Any non-conformance to the specifications requested by Diemasters must be corrected prior to PPAP submission unless prior approval to submit (part deviation) has been received from Diemasters Purchasing. Temporary approval for prototype tooling may be required until production tooling is available.

1.3 PROCESS FLOW DIAGRAM

The Process Flow Diagram is a tool to visually depict the sequential flow of material through the manufacturing and assembly process. The flow diagram starts with the raw materials entering the plant and ends with the finished product leaving the plant. The flow diagram should also include the inspection stations in the routing.

1.4 PROCESS FAILURE MODES & EFFECTS ANALYSIS (PFMEA)

The Process Failure Mode and Effects Analysis is a structured approach used to deduce potential failure modes at each process step / function of a manufacturing process. The PMEA is performed by analyzing the process operation by operation as described on the process flow diagram to identify ways in which the process could fail. Allowing prevention and diction controls to be designed into the manufacturing process will avoid unnecessary defects and failure costs in production.

Failure mode causes should be prioritized and actioned for attributes with a high Risk Priority Number (RPN) and should be addressed with corrective actions and responsibilities assigned.

The PFMEA is a "living" document and should be analyzed and updated if there is a process or engineering change and if a failure is found with corrective actions being implemented.

1.5 CONTROL PLAN

Control plans are documented descriptions of the process steps defined in the process flow diagram aimed to control both products and processes. Control Plans from and integral part of the product quality planning and shall be used by the supplier to communicate special product and process characteristic controls, gage controls and reaction plans as a minimum.

The Control Plan is a "living" document and should kept current to reflect process or engineering changes. be analyzed and updated if there is a process or engineering change and if a failure is found with corrective actions being implemented.

1.6 DIMENSIONAL RESULTS

Dimensional results require the supplier to number every characteristic, note, and callout on the drawing/print provided by Diemasters and show evidence of conformance. A minimum of 5 samples from each cavity are required to be inspected. The numbered drawing and the dimensional results layout sheet must be included in the PPAP submission.

1.7 SPECIAL CHARACTERISTICS

Special Characteristics are product and/or process characteristics defined on the drawing/print. Variations to these characteristics could significantly affect customer satisfaction with a product, such as its fit, function, mounting, appearance, etc. and require evidence of stability and capability through statistical process control (SPC). The SPC study will be based on 25 or more subgroups of data containing at least a total of 100 individual readings.

Acceptance criteria for special characteristics shall be as follows:

- 1.67 Cpk or greater on PPAP submissions
- 1.33 Cpk or greater on future production runs.

1.8 MEASUREMENT SYSTEM ANALYSIS STUDIES (MSA)

A gage study must be submitted for every gage / measurement device identified on the control plan. A study less than 1 year old can be used for PPAP submissions, providing that the characteristic studied is similar to that on the current part. The gage name, number, date, and raw data must be included on the study.

Acceptance criteria for a gage R&R study shall be as follows:

- Under 10% Part Tolerance – Acceptable
- 10% to 30% Part Tolerance – May be acceptable based on the feature measured and application used. For acceptance, contact Diemasters.
- Over 30% Part Tolerance – Not Acceptable

1.9 MATERIAL / PERFORMANCE TEST RESULTS

The PPAP submission will require a material certification. In addition, a certification may also be required for additional processing such as heat treating or plating. The actual certification document must contain both quantitative and qualitative data. Blanket statements of compliance will not be accepted.

Suppliers are required to have and utilize a system to identify and record the full traceability of raw material used to produce PPAP parts and subsequent future production parts.

1.10 MSDS SHEET

A Material Safety Data Sheet (MSDS) or International Material Data System (IMDS) may be requested for PPAP submission to document all materials and chemicals used in producing parts. Diemasters Purchasing will coordinate requirements with suppliers.

1.11 PACKAGING, HANDLING & LABELING

PPAP may specify packaging, handling, and labeling requirements. In the majority of cases where this is not addressed, the supplier is required to provide packaging that will protect the product from damage in transit.

1.12 PPAP SUBMISSION DISPOSITON

Full or interim PPAP approval must be established prior to shipping parts to Diemasters. Production shipments are not to be made until Diemasters dispositions, signs, and returns the Part Submission Warrant (PSW) to the supplier, unless a deviation is issued prior to disposition. The signed PSW must be retained for the life of the part.

An interim approval or rejection will require a PSW resubmission with the proper corrections along with evidence of conformance.

REVISION RECORD

Rev.	Paragraph / Changes	Date	Issued by	Approved by
O	Initial Document (Original)	10/02/2009	Jit Mistry	Kaz Jaslikowski
P	Update to IATF-16949	09/15/2017	Jit Mistry	Scott Kauth
Q	Added Environmental Requirements	05/27/2021	Jit Mistry	Scott Kauth
R	Update 14.0 for Supplier Rating Criteria	10/26/23	Jit Mistry	Scott Kauth