GIL-MAR MANUFACTURING

Supplier Guidebook

Quality Manual

www.gil-mar.com

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1.0 INTRODUCTION

1.1 Purpose

The purpose of the supplier quality manual is to communicate quality, delivery and purchasing requirements. This manual outlines business rules and supplier requirements necessary to standardize supplier processes, rejections and supplier performance.

The purpose of this manual is to outline the expectations for all parts and services supplied to Gil-Mar Manufacturing, also referred to as GMM in this document. These requirements should be considered as minimum only.

Gil-Mar Manufacturing expects all its suppliers to engage in responsible supply chain practices, and to comply with our Supplier Code of Ethics.

It is the intent that all supplier parts and services will perform, as intended in the customer applications, with complete customer satisfaction for performance and durability.

1.2 Gil-Mar Manufacturing-Supplier Quality Management Scope

This manual applies to all approved suppliers and any pending suppliers of GMM.
Compliance to the requirements within this manual, as well as to the terms and conditions of our purchase order(s) is mandatory for all external suppliers. It is the supplier's responsibility to check for updates to the Supplier Guidebook - Quality Manual on the GMM website at www.gil-mar.com

This manual defines the basic quality systems and procedures required for suppliers of prototype, production, or services, supplied to GMM and is intended to orient suppliers to these requirements.
Suppliers are required to cascade these requirements to lower tiered suppliers throughout the supply chain, process referred to as flow-down.

Externally provided products include all casting types, forged materials, aluminum extrusions; bushings; screws; bolts; nuts and labels.

Externally provided services includes sorting / containment; machining, coating, painting, plating, sub-assembly; part washing, calibration; inspection and testing.

The supplier's quality management system is subject to review and evaluation by GMM personnel, approved second party auditors, third party auditors, and or the personnel of any OEM.

1.3 Gil-Mar Manufacturing Mission

The mission of Gil-Mar Manufacturing is to provide products and service of a quality that exceeds the expectations of our customers. We will strive to be a recognized innovative leader in the metal working industry. In this respect:

Our Customers

Customer satisfaction through continuous improvement is our primary goal.

Our Business

Continued business profitability and growth will provide the company, its employees, and other stakeholders a bright and secure future.

Our Employees

Employees, through teamwork, training, and development, are involved in the creation of a positive and safe working environment.

Our Community

The community will continue to be a beneficiary from the company's outstanding support and corporate citizenship.

1.4 Gil-Mar Manufacturing Environmental Policy

Gil-Mar Manufacturing is dedicated to conducting business in a manner that is sustainable and complies with all regulatory, customer and community environmental obligations.

We are committed to the prevention of pollution, and strive for continual improvement of our Environmental Management System (EMS) and our environmental performance. Our environmental objective(s) will be updated yearly, focusing on reducing our environmental impact to the best of our ability.

1.5 Our Suppliers

We are committed to coming along side our suppliers to ensure risk mitigation is executed through risk analysis, preventive meetings with suppliers, APQP and PPAP to detect and eliminate any potential issues to ensure supplier readiness prior to start of production.

Gil-Mar Manufacturing respects the law in its business operations and encourage our suppliers to do the same by complying with all laws that apply to their respective businesses and their work with our affiliates, our facilities, and us. In case of any conflict, between what the law requires and the standards of the Code of Ethics, each Supplier must meet the higher standard.

1.5.1 Code of Ethics

INTEGRITY

Everyone who works for and does business with GMM is expected to act with integrity, make the right decisions and take the right actions in compliance with statutory and regulatory laws in the countries and jurisdictions in which they operate.

Anti-Corruption and Anti-Bribery	Conflict Minerals
Suppliers are required to comply with all anti-corruption and anti-bribery laws, including the U.S. Foreign Corrupt Practices Act. Specifically, no supplier can offer or accept any bribe, kickback, favor or anything of value; engage in any extortion or embezzlement; or use any improper influence when dealing with government officials or in any business arrangements in order to obtain an improper advantage. In addition, Suppliers are prohibited from providing or offering gifts to Gil-Mar Manufacturing employees that could inappropriately influence Gil-Mar Manufacturing's business decisions or gain unfair advantage.	To facilitate an assessment of upstream supply chain compliance, Suppliers must be able to disclose supply chain mapping back to the primary origin associated with the products or services provided to GMM and its affiliates for products which contain tin, tungsten, tantalum, gold or any other material or derivative designated by the U.S. State Department as a "conflict mineral". More specifically, suppliers are required to undertake reasonable due diligence with their supply chains to assure that conflict minerals are being sourced from mines and smelters outside the Democratic Republic of the Congo ("DRC") or an adjoining country (collectively, the "Conflict Region") or, if sourced within the Conflict Region, from mines and smelters that have been certified (collectively, the "Conflict Region") or, if sourced within the Conflict Region, from mines and smelters that have been certified by an independent third party as DRC conflict free. To the extent, any supplier does not currently have this capability; such a supplier is required to disclose its future plans to do so. Suppliers shall make all disclosures to GMM upon request within a timely manner.

Books and Records	**Confidentiality and Cyber Security**
Suppliers shall maintain accurate and transparent financial books, business records and accounts.	Suppliers shall safeguard our information by keeping it secure (whether in paper, electronic or other media), limiting access and avoiding discussion or revealing such information in public places, even after our business relationship ends.

Human Rights

It is a goal of the Company to respect human rights in all of our activities. The Company will seek to neither cause nor contribute to adverse human rights impacts through our activities and will seek to timely address such impacts, if and when, they occur. Company personnel must follow the Company's policies and comply with national laws and regulations related to human rights. Company personnel should also work to reduce the risk of potential human rights violations by identifying risks, monitoring those risks, remediating any non-compliance, and reporting progress publicly.

Working Conditions

Child Labor

The Company will not use child labor. In no event will the Company employ any person below the age of 15, unless this is pursuant to a government-authorized job training or apprenticeship program that would be clearly beneficial to the persons participating.

Compensation

The Company will promote our employees' material well-being by providing compensation and benefits that are competitive and comply with applicable law.

Forced Labor – Human Trafficking

The Company will not use forced labor in any form, and will not tolerate physically abusive disciplinary practices. The Company will not use or support human trafficking in its labor force.

Freedom of Association

The Company will provide opportunities for employee concerns to be heard.

Harassment and Discrimination

Equal Opportunity and Affirmative Action -Zero Tolerance, the Company will not tolerate harassment or discrimination on the basis, of gender, race, color, religion, age, national origin, sexual orientation, gender identity, disability, or veteran status.

Health and Safety

Protecting Health and the Environment and related directives, the Company will provide and maintain for all personnel a safe and healthy work environment that meets or exceeds applicable legal standards for occupational safety and health.

Work Hours

The Company will comply with applicable laws regulating hours of work.

Community Engagement

The interests of interested parties in the local communities where we operate are important.

Bribery and Corruption

The Company will, under no circumstances tolerate the giving or receiving of money, gifts, or favors to influence improperly the behavior of another individual, organization, government employee, politician, or government body in furtherance of a commercial or personal advantage. Bribery is never permitted, even in countries or regions where it may appear to be tolerated or condoned.

Environment and Sustainability

Protecting Health and the Environment, the Company will conduct business in a manner that provides responsibly for the protection of health and the environment. The Company will, as practicable continue to reduce and minimize the environmental impact of its operations in the short term, and work toward the implementation of environmentally sustainable strategies in the long term.

2.0 Supplier Pre-Selection

2.1 Pre-Selection Phase

2.1.1 Define Part Requirements

The scope of this process begins with defining part requirements such as volume, timing, quality, logistics, technical/technology, processing requirements/special processes, material requirements, product traceability, government and regulatory requirements, environmental requirements,

2.1.2 Supplier Pre-qualification

Information such as, products offered, New supplier, new technology, experience with product, capability (e.g. technology, process, project management; Capacity (percent of company current business – shared capacity across business) is maintained on suppliers and potential suppliers; historical performance.

This pre-qualification list could be used to send a Request for Quote.

2.2 Bid List Development

2.2.1 Suppliers and potential suppliers are determined by considering

a) Current Supplier List
b) Performance of current supplier's
c) Supplier Audit Results (see Appendix A and Appendix B)
d) Sustainability (CSR see assessment effects Score Card Rating)
e) Labor Practices (e.g. forced labor, child labor)
f) Manufacturing Feasibility

A requirements review is conducted with the supplier to ensure the supplier understands the Customer's requirements and to understand the risk into the supply chain used by the supplier as well as an evaluation of the adequacy of their purchased product controls, throughout the supply chain.

2.3 Supplier Assessment

2.3.1 On-Site Assessment – Risk Analysis

New Supplier

Where applicable, for a Potential New Supplier, an on-site assessment is conducted and the results are recorded on the ***Supplier Audit form***. This assessment is to identify potential risk that could affect the ability to meet product conformity and customer requirements. An overall supplier rating is determined based on the scoring system identified in the Supplier Audit.
If risks are identified, the cross-functional team will decide the next steps for the potential supplier.

Existing Suppliers

To identify potential risk with existing suppliers, performance indicators, capacity analysis are reviewed and a Self-Assessment could be requested.

2.3.2 Supplier Self- Assessment

If it is determined, by the sourcing team, that an on-site assessment is not required, then a self-assessment could be requested. The supplier would be required to complete the ***Self-Assessment*** and return it to GMM within seven business days, or as agreed.

2.4 Supplier Selection Phase

Before a supplier is selected, a review of the information gathered on the potential supplier is conducted. The selection process includes at minimum items a-f. Items g-v are reviewed on an as needed basis and is not all-inclusive.

a) An assessment of the selected supplier's risk to product conformity
b) The supplier's history of uninterrupted supply of their product to their customer's
c) Quality and delivery performance
d) Evaluation of the supplier's quality management system
e) Multi-disciplinary decision making and

f) An assessment of software development capabilities, if applicable:
g) Volume of automotive business (absolute and as a percentage of total business.
h) Financial stability
i) Purchased product, material or service complexity
j) Required technology (product or process)
k) Adequacy of available resources
l) Design and Development Capability (Including Program Management)
m) Manufacturing Capability
n) Overall Capacity (special attention is given to this area)
o) Change Management Process
p) Quality Performance
q) Warranty experience
r) Delivery Performance
s) Business Continuity Planning
t) Logistics Process Including EDI
u) Customer Service
v) Service Provisions

2.4.1 Review Technical Capability

The minimum supplier quality requirements for use with suppliers and sub-tier suppliers are as follows:

a) ISO 9001 Compliance to the current edition (Certification Preferred)
b) AIAG Core Tools **(SPC, FMEA, MSA, APQP PPAP)** Implemented
c) Determination and documentation of Special Characteristics and PTC's
d) The quality function is an integral part of the supplier selection process
e) Supplier Financial stability is reviewed before we source

f) Accreditation is required for any commercial laboratories

g) Supplier capacity and operating plans are verified before full production approval.

h) Supplier metrics include delivery and PPM or an index that includes rejected and or returned material

i) AIAG Special Process CQI Assessments (e.g. heat treat CQI 9)

2.5 IATF 16949 / ISO 9001 / ISO14001 / Third Party Audit / Gil-Mar Manufacturing Audit / ISO 17025

Reference Supplier Quality Management System Development

Gil-Mar Manufacturing will recognize and accept only ISO 9001 Certificates issued by certification bodies which are accredited by members of the IAF (International Accreditation Forum) according the Multilateral Recognition Arrangement (MLA). All members are listed in www.iatf.org

Gil-Mar Manufacturing will recognize and accept only IATF16949 certificates issued by certification bodies, which are recognized by the IATF (International Automotive Task Force). All recognized certification bodies are listed at www.iatfglobaloversight.org/certBodies.aspx

Gil-Mar Manufacturing will recognize and accept only ISO/IEC 17025 Certificates issued by bodies which are accredited by members of the ILAC (International Laboratory Accreditation Cooperation) according the Multilateral Recognition Arrangement (MLA). All members are listed in www.ilac.org

2.5.1 Award Business

The supplier is deemed approved with issuance of a purchase order by the Materials Manager.

2.5.1.1 Customer Directed Sources ("Directed-Buy")

When specified by the customer, GMM purchase products, materials, or services from customer-directed sources.

All requirements of Section 8.4 (except the requirements in IATF 16949, Section 8.4.1.2) are applicable to our control of customer-directed sources unless specific agreements are defined by the contract between the organization and the customer.

3.0 Begin APQP / PPAP PHASE / Pre-Production

After awarding the business, GMM will begin the APQP / PPAP Phase with the sourced supplier(s).

At a minimum the AIAG Advanced Product Quality and Control Plan (APQP) process and manual is utilized. This includes use of the appropriate Control Plan template and the APQP checklists as applicable.

The following list is the minimum requirements to be met for this phase

8.3.4.4	Product approval process
7.5.3.2.2	Engineering specifications
8.4.2.2	Statutory and regulatory requirements
9.1.1.1	Monitoring and measurement of manufacturing processes
7.1.5.1.1	Measurement system analysis
7.1.5.1.2	Calibration/verification records
8.5.6.1	Control of changes - supplemental

3.1 Product Approval Process

The organization shall conform to a product and manufacturing process approval procedure recognized by the customer.

NOTE: Product approval should be subsequent to the verification of the manufacturing process. This product and manufacturing process approval procedure shall also be applied to sub-tier suppliers.

Suppliers shall ensure their sub-suppliers use the PPAP process and have the responsibility for managing PPAP for their sub-suppliers, including engineering deviation requests. Tier-3 PPAP submissions to GMM are not required, but shall be made available upon request.

The supplier shall require its sub-suppliers to ensure that:

- A highly-developed focus on quality exists throughout the company and supply chain
- The required product safety is guaranteed when components are developed
- Appropriate quality assurance measures are taken to minimize the probability of defective products occurring
- Defective products are identified and quarantined early on in the production workflow
- The quality capability of the production processes is stable and proven
- Quality data and the legally-required compliance tests are documented in sufficient detail in order to prove that the products have been manufactured in accordance with all relevant laws and safety standards
- Product traceability is assured along the entire supply chain

3.1.1 Product Approval Samples (Prototype and Sample Parts)

All prototypes and PPAP sample parts, must conform and be verified to the requirements established at that phase of the project.
Label the exterior of the package/container with a sheet of 8.5 X 11" placard, identifying PPAP SAMPLES 100% INSPECTED" ATTENTION: APQP COORDINATOR.

3.1.2 Checking Fixtures / Gages / Tooling

Suppliers must supply parts that meet engineering specifications and drawing requirements. The supplier has responsibility to measure the characteristics of the product to verify that the requirements have been met at appropriate stages of development.

If checking fixtures and or gages are required by GMM or the supplier to ensure conformance of parts, the supplier must submit quotes for checking fixtures during the initial quoting process.
GMM expects the supplier to work closely with the Engineering, Quality& Supplier Quality, as needed, during the development, to resolve tooling concerns affecting the quality of the part.

Production check-fixtures, CMM holding fixtures and other tooling aids must meet the specification identified on the engineering print.

Suppliers are expected to maintain tooling in good working condition and to contact the GMM Engineering Manager regarding Gil-Mar-owned tools requiring replacement or refurbishment.

3.1.3 Engineering specifications

The organization shall have a process to assure the timely review, distribution and implementation of all customer engineering standards/specifications and changes based on customer-required schedule. Timely review should be as soon as possible, and shall not exceed two working weeks.

The organization shall maintain a record of the date on which each change is implemented in production. Implementation shall include updated documents.

NOTE-A change in these standards/specifications requires an updated record of customer production part approval when these specifications are referenced on the design record or if they affect documents of production part approval process, such as control plan, FMEAs, etc.

3.1.4 Statutory and Regulatory Requirements

The supplier must have a documented process
To ensure that purchased products, processes and services conform to the current applicable statutory and regulatory requirements, in the

a) country of receipt
b) country of shipment; and
c) customer identified country of destination

To ensure that purchased products, processes, and services conform to current applicable statutory and regulatory requirements, in the country of receipt, the country of shipment, and the customer identified country of destination, if provided, the supplier is required to submit a letter of Conformance.

(Supplier must sign letter stating their processes, products and services conform to the latest applicable statutory, regulatory, and other requirements in the countries of manufacture and the customer-identified countries of destination, if provided) at PPAP Submission to the APQP Coordinator.

3.1.5 Monitoring and measurement of manufacturing processes

The organization shall perform process studies on all new manufacturing (including assembly or sequencing) processes to verify process capability and to provide additional input for process control.

The results of process studies shall be documented with specifications, where applicable, for means of production, measurement and test, and maintenance instructions. These documents shall include objectives for manufacturing process capability, reliability, maintainability and availability, as well as acceptance criteria.

The organization shall maintain manufacturing process capability or performance results as specified by the customer's part-approval process requirements.

Verify that the process flow diagram, PFMEA, and control plan are implemented, and adherence to

a) Measurement techniques
b) Sample plans
c) Acceptance criteria
d) Records of actual measurement values and/or test results for variable data
e) Reaction plans and escalation process when acceptance criteria are not met.
f) Tool changes or machine repair shall be recorded and retained as documented information.

Reaction Plan and Escalation Process

A reaction plan shall be initiated as indicated on the control plan and evaluated for impact on compliance to specifications for characteristics that are either not statistically capable or are unstable.

These reaction plans shall include

a) Containment of product and
b) 100% inspection

Corrective Action Plan

A corrective action plan shall be developed and implemented by the organization indicating specific actions, timing, and assigned responsibilities to ensure the process becomes stable and statistically capable. These plans shall be reviewed and approved by the customer, when required. Maintain records of effective dates for any process changes.

3.1.6 Measurement system analysis

Statistical studies shall be conducted

The organization shall determine and provide the resources needed to ensure valid and reliable results when monitoring or measuring is used to verify the conformity of products and services to requirements.

The organization shall ensure that the resources provided:

a) Suitable for the specific type of monitoring and measurement activities being undertaken;
b) Are maintained to ensure their continuing fitness for their purpose.

Statistical studies shall be conducted to analyze the variation present in the results of each type of inspection, measurement, and test equipment system identified in the control plan.

The analytical methods shall comply with those in the AIAG Manual Measurement Systems Analysis. Alternative methods of measurement systems can be utilized, when approved by the customer first. Follow the SERA process for customer approval before using an alternative method.

Documented information as evidence of fitness for purpose of the monitoring and measurement resources must be retained.

Records of customer acceptance of alternative methods shall be retained along with results from alternative measurement systems analysis.

3.1.7 Calibration and Verification Records

Records of the calibration/verification activity for all gauges, measuring and test equipment, needed to provide evidence of conformity of product to determined requirements, including employee- and customer-owned equipment, shall include

a) equipment identification, including the measurement standard against which the equipment is calibrated,
b) revisions following engineering changes,
c) any out-of-specification readings as received for calibration/verification,
d) an assessment of the impact of out-of-specification condition,
e) Statements of conformity to specification after calibration/verification, and notification to the customer if suspect product or material has been shipped.

3.1.8 Control of Changes

Note: Examples of changes include changes to process, design or site

The organization shall have a process to control and react to changes that affect product realization. The effects of any change, including those changes caused by any supplier, shall be assessed, and verification and validation activities shall be defined, to ensure compliance with customer requirements. Changes shall be validated before implementation.

The organization shall obtain a customer concession or deviation permit prior to further processing whenever the product or manufacturing process is different from that which is currently approved. Follow the Gil-Mar Manufacturing ***SREA Process Procedure.***

The organization shall obtain customer authorization prior to further processing for "use as is" and for repair (See IATF 8.7.1.5) of non-conforming product. If sub-components are reused in the manufacturing process, that sub-component re-use shall be clearly communicated to the customer in the concession or deviation permit/ SREA.

The organization shall maintain a record of the expiration date or quantity authorized under concession. The organization shall also ensure compliance with the original or superseding specifications and requirements when the authorization expires.

Material shipped under concession shall be properly identified on each shipping container (this applies to purchase product as well). The organization shall approve any requests from suppliers before submission to the customer.

Note: **Approval of an SREA is granted upon the understanding that it is advisory in nature. Full approval of an SREA is pending approval of Gil-Mar's SREA to relevant customer. The Supplier is still responsible to ensure that all characteristics (designated in the part print, engineering specification, and/or inherent in the samples as originally approved) are maintained. The Supplier accepts full responsibility for the changes or types of changes listed, should such changes result in less than satisfactory performance than the item originally approved, Supplier will fully reimburse Gil-Mar for all expenses incurred to correct the deficiency.**

Once SREA is approved, Supplier must submit full Level 3 PPAP per Gil-Mar's Supplier PPAP Requirements

When required by the customer, additional validation/verification/identification requirements, such as those required for new product introduction, shall be met.

3.1.9 APQP & Safe Launch

1. All suppliers shall utilize and maintain the AIAG Advanced Product Quality Planning (APQP) methods at all stages with the goal of problem free seamless launch.

Reference Manuals (Latest Revision or Edition can be found www.aiag.org)

a. AIAG Production Part Approval Process (PPAP)

b. AIAG Statistical Process Control (SPC)

c. AIAG Measurement Systems Analysis (MSA)

d. AIAG Advanced Product Quality Planning and Control Plan manual (APQP)

e. AIAG Potential Failure Mode and Effects (FMEA)

f. International Automotive Task Force IATF 16949

g. International Standard Quality Management Systems Requirements (ISO 9001)

Suppliers are required to conduct the following:

- Establish and implement an APQP process.
- APQP Status must be periodically updated by the supplier and forwarded to GMM, Inc. The frequency of updates depends on the complexity of the product and/or the timing associated with it.
- All product features identified on the part print as Special Product Characteristics need to have a capability index of 1.67 and conform to the specific clauses in the purchase orders or have an approved plan to improve the capability of the feature.
- Special attention must be given to items designated as Special Product Characteristics
- Detailed APQP documentation needs to be maintained at the supplier's location. GMM or any of our customer's may request to review evidence of completed APQP documentation and this evidence must be readily available.
- Whenever possible, error-proofing techniques should be used to prevent potential nonconformance.

3.1.10 IMDS International Material Data Standard

As a supplier to the automotive industry, GMM is required to enter the chemical composition of our parts into the International Material Data System (IMDS). The information entered into this system will be used to ensure the compliance of the restricted substance requirements of the automotive companies.

Suppliers are required to enter into IMDS including all metals, polymers, lubricants, adhesives, coatings, etc. As directed by our customers, we are requesting that all of this material information be entered directly into IMDS by our suppliers so that we can access this information. This is to ensure that the most knowledgeable party is the one entering the information for each material.

The IMDS website is www.mdsystem.com. Suppliers must register to the use IMDS. Once you have done so, you will be given a USER ID and PASSWORD. IMDS training is recommended. Information on IMDS Classroom or Online training can be found in the IMDS public pages, click "Training", click "IMDS service website", and click either "Classroom" or "Online". IMDS technical support is available through EDS at 717-506-1461 or imds-eds-helpdesk-nao@eds.com. General information on IMDS as it applies to Gil-Mar Manufacturing can be obtained through Steve Webb at 734-459-4803 or swebb@gil-mar.com.

3.1.11 Run @ Rate

Run @ Rate should be performed by the supplier prior to production. This activity should be performed prior to launch and as early in the process as possible, provided the design is frozen or stable. On certain critical products, GMM personnel may witness the Run @ Rate performed at the supplier plant.

End customer run at rate documentation will be required unless otherwise notified.

3.2 PPAP Phase – Complete PPAP / Verify Capacity

The organization shall conform to a product and manufacturing process approval procedure as outlined in the AIAG Production Part Approval Process Manual

NOTE: Product approval should be subsequent to the verification of the manufacturing process. This product and manufacturing process approval procedure shall also be applied to sub-tier suppliers.

3.2.1 PPAP Phase – Supplier responsibilities for PPAP

- Complete PPAP Level as identified in the Supplier PPAP Requirements Document. All applicable elements on every part, whether or not evidence is requested, in accordance with latest AIAG requirements.
- Send all requested PPAP submissions as instructed by the specified due date
- If a part does not meet all specifications, do not submit PPAP until an approved deviation is received from GMM Engineering. Include deviation with PPAP submission.
- PPAP format should be on Excel spreadsheet, as available through AIAG
- Allow a minimum 10 business days for disposition of PPAP
- Note any discrepancies from DTNA specifications, any problems discovered during PPAP, and/or incomplete documentation on the Part Submission Warrant (PSW).
- PPAP sample parts must be labeled correctly and accompanied by Dimensional Results and marked-up GMM print.
- Notify APQP Coordinator of any changes (e.g. process, plant location, and sub-supplier) via the SREA Process.
- Retain documentation for the life of product plus one year

GMM responsibilities for PPAP

- APQP Coordinator determines if PPAP submission is required, and if so, what submission level
- PPAP sample parts may be requested at APQP Coordinator's discretion
- APQP Coordinator reviews PPAP submissions
- Notify suppliers of PPAP status
- Review and/or audit supplier PPAPs at any time
- Provide support to supplier for questions/issues

3.2.2 PPAP Phase – Rejection of PPAP Samples

Parts submitted for PPAP that do not meet GMM Engineering specifications or were not packaged/labeled properly, will be rejected. (See Nonconforming Material)
Parts are placed on Receiving Inspection Hold until resolution is obtained.

Consequences for late or incomplete PPAP submission will be determined by the impact to the end customer. GMM reserves the right to charge a processing fee for this type on rejection.

4 SPECIAL PRODUCT CHARACTERISTICS and PASS-THROUGH CHARACTERISTICS

4.1 Special Product Characteristics are identified on drawings to identify features that have a significant impact to customer satisfaction.

The organization shall use a multidisciplinary approach to establish, document, and implement its process(es) to identify special characteristics, including those determined by the customer and the risk analysis performed by the organization, and shall include the following:

a) documentation of special characteristics in the product and/or manufacturing documents (as required), relevant risk analysis (such as Process FMEA), control plans, and standard work/operator instructions; special characteristics are identified with specific markings and are documented in the manufacturing documents which show the creation of, or the controls required, for these special characteristics.

Special Product Characteristics:

- ***Critical Characteristics*** - Special characteristics that are related to parameters that affect customer satisfaction and for which quality planning actions must be addressed on a Control plan. They are also integrated into the control plan, FMEA and work instructions.

- ***High Impact Characteristics or Key Characteristics*** – Special characteristics that are related to parameters that severely affect the operation of the process or subsequent operations if they are outside of the specification tolerance. They are also integrated into the control plan, FMEA, and work instructions

- ***Other*** – Customer specific characteristics as defined by the customer.

Some key aspects of Special Product Characteristics are summarized as follows:

- All Special Product Characteristics need to demonstrate a short-term capability (Ppk) of 1.67 and long-term (Cpk) of 1.33 or as outlined in the AIAG SPC Manuals, whichever is more stringent.
- Supplier needs to maintain SPC data on all Special Product Characteristics. This data shall be readily available upon GMM's request.
- Suppliers are expected to meet all component print characteristics irrespective of their designation. Evidence to support this may be requested at any time.

4.2 Pass-Through Characteristics (PTC's)

Note: PPAP requires that all characteristics to be controlled be documented on the FMEAs and Control Plan.

- Any characteristics that are important for fit, form, or function for all processes and products and need to be controlled are possible Pass-through Characteristics (PTCs).
- Special Characteristics used in a process or product may affect safety and/or regulatory requirements, degradation, customer satisfaction, annoyance, and/or other criteria.
- Special Characteristics and/or PTCs should be managed with extra care over and above that used with standard characteristics. Reference AIAG *Advanced Product Quality Planning and Control Plan* reference manual explains in detail the Control Plan Methodology. See Chapter 6, Supplements J and K.
- Special Characteristics and PTCs are to be included on the AIAG *Potential Failure Mode and Effects Analysis* (PFMEA) documents to determine relative risk.
- PTCs do not necessarily meet the PFMEA requirements to be Special Characteristics but require special risk mitigation so as not to impact the Customer (OEM).
- The PTC's should be identified on the Engineering Drawing and or Design Record and the process or product characteristics are classified on the PFMEA as follows

Classification Column on the PFMEA

PTC - See AIAG *Production Part Approval Process* manual, Section 2.2.11.1.

SPC- See AIAG *Statistical Process Control* and *Potential Failure Mode and Effects Analysis*

SC/Key/CC, Significant/Key/Critical Characteristic – See AIAG *Statistical Process Control* and *Potential Failure Mode and Effects Analysis* reference manuals

4.3 Non-Conforming Material

Where a quality problem has affected GMM or its customer, a formal problem solving process with root cause analysis and corrective action must be completed by the supplier. Any nonconformance related to a safety issue requires the highest level of attention and prompt containment.

Supplier shall Notify Supplier Quality immediately regarding all quality spills, support tracking of affected population and drive containment actions. Actively participate to ensure timely resolution of quality issues

- Promptly direct root cause investigation and corrective action implementation

To prevent nonconforming parts from being shipped to GMM, suppliers are expected to deploy necessary controls in their manufacturing process to identify and address known and potential non-conformances.

4.3.1 Non-Conforming Material discovered at Gil-Mar Manufacturing

Inspection / Reject Process

Materials or products received from suppliers to be used at GMM plants are verified against the receiving inspection instructions. In addition to part features, rejection reasons may include part cleanliness, paint readiness, packaging, and part identification.

1) Suspect material- concern is communicated to the supplier on a DMN – Defective Material Notification / Supplier Return Material Authorization Form.
2) DMN is emailed to the contact identified by the supplier. Acknowledge receipt of DMN within 24 hours. By fax or notification to the SQE.
3) An Initial response is required within 2 business days (48 hours) of the reject incident.

4) Certified stock required for 30 days without incident. Mark Containers of certified stock, with certified stock placards and list the certification criteria.
5) If a recurrence happens while under containment, additional time is added to the sort.
6) If suspect material is to be returned to the supplier, A Return Materials Authorization Number is required in a timely manner.

4.4 Product Identification and Traceability Requirements

Gil-Mar Manufacturing requires the supplier to establish and maintain procedures for identifying the production lots from receipt of raw material through shipment of final product. This system should permit the segregation of suspect material, and the reporting of quality and production data, based upon the unique bar code label on each container supplied to Gil-Mar Manufacturing.

All required paperwork such as material certifications, inspection reports, shall be retained by the supplier, and be available to GMM upon request.

4.5 Implement Production Control Plan

As defined in AIAG APQP/ Production Control Plan manual- latest edition can be found at www.aiag.org.

4.6 Performance Monitoring

4.6.1 Performance Monitoring

GMM monitors supplier performance, and meets with suppliers on a regular basis, as needed, to review supplier performance and help develop continual improvement plans. Supplier performance is monitored through the following indicators

a) Delivered product conformity to requirements,
b) Customer disruptions at the receiving plant (customer complaints)
c) Delivery schedule performance (including incidents of premium freight), and
d) Number of occurrences of premium freight.

Options under performance monitoring are

a) Performance is acceptable, no further action needed;
b) Performance is not acceptable and requires supplier development, escalation, and or de-sourcing.

Gil-Mar Manufacturing will work with the supplier to develop and implement a collaborative improvement plan that addresses "systemic" root cause(s) of problems.

The organization shall promote supplier monitoring of the performance of their manufacturing processes including supplier self-assessment of its processes.

Supplier Performance Monitoring is monitored and evaluated monthly by the Quality Manager, and documented in the Supplier Performance Monitoring Matrix. This performance indicator is an input to Management Review.

Supplier performance records are intended to monitor individual supplier metrics including quality, customer disruptions, and delivery. They will be maintained on an ongoing basis and reported to the supplier on a periodically. These records will act as the trigger mechanism and input for Quality Development work with suppliers.

Suppliers will be responsible to update and submit their valid copies of registration certificate to the Quality Engineer.

Suppliers that are certified to ISO 9001 IATF 16949, ISO 14001 or ISO 17025, who fail a surveillance audit must notify the Quality Manager immediately. Failure to maintain your ISO9001 minimum certification will result in a risk analysis and review by the sourcing team.

All external labs used for gage calibration and validation testing must be certified to ISO/IEC17025 or national equivalent

4.6.2 Conditions that could drive a Supplier Visit

Conditions that could drive a supplier visit are

- non-conforming material received at Gil-Mar on a chronic basis
- Non-conforming material found at the end customer facility that causes a disruption.

For suppliers accredited to ISO 9001, we have the option to notify and engage any third-party certification bodies for the purpose of properly identifying and reporting systemic issues causing potential or actual chronic performance problems arising from the certified facilities and systems.

This means, if a certified company ships non-conforming material to a customer on a chronic basis or causes a disruption at the end customer facility, GMM, Inc. has the option of notifying the certification body, which should then ensure that the supplier properly determines the root cause(s) and effects appropriate corrective action.

4.6.3 Second Party Audits

Actions Taken in Response to a Supplier Problem

A Second-party audit may be used for the following:

a) Supplier risk assessment;
b) Supplier monitoring;
c) Supplier QMS development
d) Product audits
e) Process Audits

Based on a risk analysis, including product safety/regulatory requirements, performance of the supplier, and QMS certification level, at a minimum, we will document the criteria for determining the need, type, frequency, and scope of second-party audits.

If the scope of the second-party audit is to assess the supplier's quality management system, then the approach will be consistent with the automotive process approach.

Records of a second-party audit report and findings, corrective actions and re-evaluations are retained for three years.

4.6.4 On-going Audits

Considering applicable supplier risk factors such as past performance and part complexity, an annual audit plan for conducting ongoing supplier audits at an appropriate frequency is developed.

4.7 Supplier Development

GMM Team will provide development assistance to suppliers in the following areas:

a) Resolution of critical issues between the supplier and GMM

b.) Provide direction on GMM policies pertaining to suppliers

c) Assist high impact suppliers with improvement activities

d.) Work with potential new suppliers to bring them to an acceptable level

e.) Provide resources for, and where appropriate, conduct specific training when a supplier has a need for additional knowledge.

The Supplier is responsible to establish a system to secure that all Gil-Mar and OEM Customer specific requirements are considered and implemented into the supply chain. It is the responsibility of the supplier to get access to all relevant specifications and agreements.
It is also in the responsibility of the supplier to forward this requirement to his sub suppliers

Gil-Mar requires their suppliers of automotive products and services to develop, implement, and improve a quality management system **(QMS)** with the ultimate objective of eligible organizations becoming certified to ISO 9001 & IATF 16949 Automotive QMS Standard

ISO 9001 is the initial minimum acceptable level of QMS development. If authorized by the end customer, compliance to ISO 9001 through second-party audits is an option and will be determined on a case-by-case basis.

The target QMS development level for each automotive supplier is certification to ISO 9001 and ITAF 16949.

4.7.1 Quality Management System Development Progression

Based on current performance and the potential risk to the customer, the objective is to move suppliers through the following QMS development progression

a) certification to ISO 9001 through third-party audits; unless otherwise specified by the customer, suppliers to the organization shall demonstrate conformity to ISO 9001 by maintaining a third-party certification issued by a certification body bearing the accreditation mark of a recognized IAF MLA (International Accreditation Forum Multilateral Recognition Arrangement) member and where the accreditation body's main scope includes management system certification to ISO/IEC 17021;

b) certification to ISO 9001 with compliance to other customer-defined QMS requirements (such as Minimum Automotive Quality Management System Requirements for Sub-Tier Suppliers [MAQMSR] or equivalent) through second-party audits;

c) certification to ISO 9001 with compliance to IATF 16949 through second-party audits

d) Certification to IATF 16949 through third party audits (valid third-party certification of the supplier to IATF 16949 by an IATF-recognized certification body).

Suppliers are likewise expected to be conforming to an environmental management system consistent with ISO 14001.

4.8 Supplier Quality Management System Development

SUPPLIER QUALITY MANAGEMENT SYSTEM GUIDELINES

4.8.1 CONTROL PLANS

Automotive QMS Requirement Applicable Criteria

1.1 8.5.1.1 Control plan
1.2 8.5.1.2 Standardized work – operator instructions and visual standards
1.3 8.5.1.3 Verification of job set-ups
1.4 8.5.1.5 Total productive maintenance
1.5 8.5.2 Identification and traceability
8.5.2.1 Identification and traceability - supplemental
1.6 8.5.1.4 Verification after shutdown*
1.7 8.5.6.1.1 Temporary change of process controls*

NOTE Customer approval may be required after review or update of the control plan

4.8.2 PROCESS APPROACH

Automotive QMS Requirement Applicable Criteria

Process approach to the organization shall define its product realization system. Each process and sub-process shall be defined. Each defined process shall be implemented and controlled including the interactions and linkages between processes.
The processes shall be monitored for effectiveness.

NOTE – Suppliers may refer to ISO 9001:2015 Section 0.3 for further guidance on the process approach.

4.8.3 PERFORMANCE

Automotive QMS Requirement Applicable IATF 16949:2016 Section(s)

3.1 9.1.2.1 Customer satisfaction – supplemental
3.2 8.6.4 Verification and acceptance of conformity of externally provided products and services (Incoming product conformity to requirements)
3.3 8.4.2.4 Supplier monitoring
3.4 10.2.3 Problem solving (root cause analysis)
3.5 10.2.4 Error-proofing*
3.6 10.2.5 Warranty management systems*
3.7 10.2.6 Customer complaints and field failure test

4.8.4 INTERNAL AUDITING
Automotive QMS Requirement Applicable IATF 16949:2016 Section(s)

4.1 9.2.2.2 Quality management system audit –except organization shall audit to verify compliance with MAQMSR, 2nd Ed.
4.2 9.2.2.3 Manufacturing process audit
4.3 9.2.2.4 Product audit
4.4 9.2.2.1 Internal audit program
4.5 7.2.3 Internal auditor competency, except:

- requirement for documented process may be waived if audits are conducted under the guidance of a qualified customer second party Auditor
- scope of auditor competency limited to ISO 9001:2015 and MAQMSR

4.8.5 CONTROL OF NON-CONFORMING PRODUCT
Automotive QMS Requirement Applicable IATF 16949:2016 Section(s)

5.1 8.7.1.2 Control of nonconforming product –customer specified process*
5.2 8.7.1.3 Control of suspect product
5.3 8.7.1.4 Control of reworked product
5.4 8.7.1.5 Control of repaired product*
5.5 8.7.1.6 Customer notification
5.6 8.7.1.1 Customer authorization for concession

4.8.6 PART APPROVAL
Automotive QMS Requirement Applicable IATF 16949:2016 Section(s)

6.1 8.3.4.4 Product approval process
6.2 7.5.3.2.2 Engineering specifications
8.4.2.2 Statutory and regulatory requirements
6.3 9.1.1.1 Monitoring and measurement of manufacturing processes
6.4 7.1.5.1.1 Measurement system analysis
6.5 7.1.5.2.1 Calibration/verification records
6.6 8.5.6.1 Control of changes - supplemental

4.8.7 MANAGEMENT RESPONSIBILITY
Automotive QMS Requirement Applicable IATF 16949:2016 Section(s)

7.1 5.1.1.2 Process effectiveness and efficiency
7.2 6.2.1 and 6.2.2 (ISO 9001:2015) Quality objectives
6.2.2.1 Quality objectives and planning to achieve them – supplemental
7.3 5.3.2 Responsibility and authority for product requirements and corrective actions
7.4 5.3.1 Organizational roles, responsibilities, and authorities – supplemental
7.5 9.3.1.1 Management review – supplemental
7.6 *9.3.2.1 Management review inputs –supplemental
7.7 *9.3.3.1 Management review outputs –supplemental
7.8 *5.1.1.1 Corporate responsibility*

4.8.8 RISK MANAGEMENT
Automotive QMS Requirement Applicable IATF 16949:2016 Section(s)

8.1 *6.1.2.1 Risk analysis*
6.1.2.2 Preventative action
8.2 6.1.2.3 Contingency plans

4.8.9 SAFETY
Automotive QMS Requirement Applicable IATF 16949:2016 Section(s)

9.1 * 4.4.1.2 Product safety*

4.9 AIAG Special Processes

Gil-Mar Manufacturing requires annual assessments. Each assessment shall include a review of the organization's systems using the latest version of the System Assessment. Completed System Assessments should be sent electronically to the APQP Coordinator annually. Compliance to the CQI- requirements are considered when evaluating supplier performance.

Heat Treating – CQI 9 Special Process: Heat Treat System Assessment
Plating – CQI-11 Special Process: Plating System Assessment
Coating - CQI-12 Special Process: Coating System Assessment
Consumer Centric Warranty Management – CQI 14
Welding –CQI 15 Special Process: Welding System Assessment
Sub-Tier Supplier Management Process Guidelines – CQI 19
Molding - CQI 23 Special Process: Molding
Casting - CQI-27 Special Process: Casting System Assessment –

4.10 Record Retention

Records will be retained at the supplier as followed

PPAP records: 15 years past life of program
Material certification: 3 years
Inspection reports: 3 years

All other part quality documents not specified: 3 years

Retention periods are minimum unless superseded by customer or other legal authority.

Revision History

Revision #	Date	Section	Details	Signature
001	04.01.17	New Document	NA Initial Release	Sydney Lee
002	11.17.17	3.1.4 Statutory and Regulatory Requirements	Certificate of Conformance	Sydney Lee
003	12.18.18	Section 4.7.1 Quality Management System Development Progression	Added SI #8 (revised) clarification of IATF 8.4.2.3	Sydney Lee
		Table Of Contents	Added Table of Contents -Fixed spacing issues - alignment for easier printing removed page numbers – formatting concern	Sydney Lee
		Revised Document	Official Release – Upload to website	Sydney Lee