

Supplier Quality Assurance Manual



General Aluminum Manufacturing Company

Rev. 4

02/02/18

QM0002

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1.0 Introduction

General Aluminum is a subsidiary of Park Ohio Holding Company. It is comprised of manufacturing plants in North America supplying small to large production part quantities to the automotive, truck and agricultural industries. General Aluminum has customers and customer relationships in North America, South America, Central America, and Europe. It is the intent of General Aluminum, known as GAMCO, to foster a good working partnership with its suppliers in all aspects of doing business.

The official business language for all documents referenced in this quality standard and for all communications shall be English.

Mandatory requirements are preceded by the words “shall”, “must”, or “will”. A preferred approach is indicated by the word “should”.

This document is in accordance with, and a supplement to, the requirements of the automotive industry standard **IATF 16949**, ISO 9001, & ISO 14001 (latest revision) and should be added to Customer-Specific Requirements in your formal quality system.

After initial mailing to Supplier, the supplier is responsible for accessing the General Aluminum website www.generalaluminum.com to check if this document is modified and to keep up to date with GAMCO quality requirements.

2.0 Purpose

The purpose of this document is to define General Aluminum supplier requirements in a clear and easily understood format. Our common goal is to meet or exceed the customer’s expectation in all aspects of doing business.

3.0 Scope

This document applies to suppliers of components, material or services that affect the quality of a part that GAMCO provides to its customers. It is in addition to drawings, specifications and purchase orders. In all cases, what is defined in drawings, specifications and purchase orders, supersedes this document.

If a supplier takes exception to any expectations covered in this manual or to those expectations specifically referenced on the request for quotation or purchasing documents, it will be the supplier’s responsibility to obtain written permission for deviation from General Aluminum otherwise it is expected that suppliers will comply fully and completely with the requirements set forth in this document.

4.0 Quality System Requirements

Minimum quality system requirements are:

1. Third party registration to ISO 9001 by an accredited third-party certification body, unless otherwise waived in writing by General Aluminum.
2. Conformance or registration (preferred) to **IATF 16949** latest revision.
3. Copies of ISO 9001 or **IATF 16949** certificates shall be submitted to GAMCO Purchasing. Should the status of any accepted accreditation change, (i.e. new certification, de-certification, reassessments, etc.) the supplier shall notify GAMCO Purchasing.
4. Calibration and testing suppliers must be ISO/IEC 17025 or national equivalent accredited.
5. Supplier must have record retention practices in accordance with **IATF 16949** requirements and those identified below.

Supplier Quality Management System Development:

Suppliers to General Aluminum are required to develop, implement, and improve a quality management system certified to ISO 9001, unless “exempt” status is granted by General Aluminum, with the ultimate goal of becoming certified to IATF 16949.

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

- **Certification to ISO 9001 through third-party audits**
 - **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**
- **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**
- **Certification to ISO 9001 with Compliance to IATF 16949 through second-party audits**
- **Certification to IATF 16949 through third-party audits (valid third-party certification of the supplier to IATF 16949 by an IATF-recognized certification body)**

Software:

Any supplier of automotive-related software, or automotive products with embedded software are required to implement and maintain a process for software quality assurance. A software development assessment methodology shall be utilized to assess the supplier’s software development process. Using prioritization based on risk and potential impact to the customer, the supplier shall retain documented information of a software development capability self-assessment

Quality Record	Retention Time
PFMEA, Control Plan, Process Flow Diagram	Life of program plus Service
Production Part Approval Process (PPAP) Documents	Life of program plus Service
Inspection & Test Records	3 years after Creation
Corrective Action Documentation	3 years after Creation
Internal Audits	3 years after Creation
Calibration Records	3 years after Creation
Purchase Orders (received from GAMCO)	7 Years
Tooling Records	Life of the Tool
PPAP Master Samples	Life of program plus Service or until replaced

1. Note: General Aluminum encourages all suppliers to be registered and / or compliant to ISO 14001, but at this time it is not a requirement.

2. Reference Documents

The following is a list of documents referenced in this standard and / or used to comply with General Aluminum requirements (Refer to the latest version):

<u>Manual</u>	<u>Published by</u>	<u>Description</u>
IATF 16949	IATF	Technical Specification
ISO 9001	ISO	Quality System
ISO 14001	ISO	Environmental Management Systems
APQP	AIAG	Advance Product Quality Planning and Control Plan
FMEA	AIAG	Potential Failure Mode and Effects Analysis
MSA	AIAG	Measurement System Analysis
SPC	AIAG	Fundamental SPC
PPAP	AIAG	Production Part Approval Process
ASME Y 14.5	ASME	GD&T
CQI-9	AIAG	Heat Treat System Assessment
CQI-11	AIAG	Plating System Assessment
CQI-12	AIAG	Coating System Assessment
CQI-15	AIAG	Welding System Assessment
CQI-17	AIAG	Soldering System Assessment
CQI-23	AIAG	Molding System Assessment
CQI-27	AIAG	Casting System Assessment

To obtain information on these documents, contact the following:
www.AIAG.org; www.ISO.ch; www.ANSI.org

5.0 Supplier Expectations:

General Aluminum’s success is based upon the quality, performance, and economics of our products. The quality of our products depends upon not only our own workmanship, but also upon the quality of material, products and services purchased from suppliers. Our defined quality objectives for suppliers are:

1. Zero Defects
2. 100% On-time Delivery
3. Competitive Cost

Suppliers are monitored and evaluated in the following areas;

Quality Systems Certification, Premium / Excessive Freight (# of occurrences), On-Time Delivery, Product Quality, Receiving Paperwork, Customer Disruptions, Customer Complaints, Other, Special status customer notifications - quality or delivery issues, Dealer returns, warranty, field actions, and recalls.

Suppliers should have a continuous improvement strategy that includes a defined measurement system to monitor both internal and customer performance at a scheduled frequency that is able to detect trends and changes. Performance tracking for key metrics such as process parameters, product characteristics, operational metrics and customer satisfaction are important for mutual success.

Any changes to the supplier’s certification status, company acquisitions or mergers must be communicated to GAMCO within 5 business days.

General Aluminum and its customers shall be afforded the right to verify the supplier's products, processes and systems at supplier manufacturing location with advance notice.

Suppliers are generally not allowed to communicate directly with GAMCO customer without prior General Aluminum approval.

Supplier personnel may be asked to accompany General Aluminum personnel to the GAMCO customer.

Supplier visits to GAMCO are encouraged and aids in development of new products, response to corrective action as well as to foster continual improvement. Visit request should be made with advance notice.

Visitors may be asked to sign a confidentiality agreement.

6.0 Confidentiality

Supplier shall keep all information provided by General Aluminum in strictest confidence, and further agrees not to disclose or permit disclosure to others, or use for other than the purpose of the General Aluminum purchase order. Supplier shall protect GAMCO confidential and proprietary information using the same degree of care with which it protects its own confidential information, but in no event less than reasonable care. Supplier's obligation under this section shall survive the expiration or termination of the Agreement. GAMCO retains ownership of all proprietary rights in technical data disclosed to Supplier in connection with the goods or services covered by this order. Supplier shall not disclose such data to others, except where, prior to disclosure by GAMCO to Supplier (a) such data is already known to the general public or (b) Supplier had knowledge of such data. For the purpose of this paragraph, "data" shall mean all design, engineering, technical information (whether patentable or not) and the like concerning articles of manufacture, manufacturing methods, processes or treatments and chemical composition, software, plant layout and tooling. Supplier waives all claims regarding General Aluminum use of all data disclosed to GAMCO in connection with the goods or services covered by this order unless, prior to disclosure by Supplier to GAMCO.

7.0 Corporate Responsibility

General Aluminum, as a social member of the global economy, has responsibility for protecting the environment, respecting human rights, providing employees acceptable working conditions, and promoting anti-corruption with all relationships. **Suppliers are encouraged to complete AIAG Supply Chain Sustainability free online training <https://www.aiag.org/store/corporate-responsibility/training>, and any environmental, diversity, or corporate compliance training available on the internet.**

General Aluminum requests that suppliers comply with relevant environmental legislation, regulation, and other requirements as determined by local, state, or federal governments, in the country of receipt, country of shipment, and country of destination (as provided) in the shipment of your products and/or services We also strive to comply with applicable federal laws including legislation concerning "Conflict Minerals".

GAMCO expects its suppliers to incorporate these principles into their own companies. As an indication of commitment, GAMCO Purchasing will mail a letter to potential and new suppliers to the GAMCO Approved Supplier List requesting that suppliers review and agree to their own corporate responsibility with instructions to return a signed commitment page to GAMCO Purchasing.

Specific requirements for Conflict Minerals:

- On August 22, 2012 the U.S. Securities and Exchange Commission (“SEC”) adopted final rules to implement reporting and disclosure requirements related to “conflict minerals” as directed by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. The Rules require manufacturers who file certain reports with the SEC to disclose whether the products they manufacturer or contract to manufacture contain “conflict minerals necessary to the functionality or production” or those products, that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo or an adjoining country.
- The term “conflict minerals” is defined as columbite-tantalite (coltan), cassiterite, gold, wolframite, tantalum, tin, tungsten, and any other material or its derivatives determined by the U.S. Secretary of State to be financing conflict in the Democratic Republic of the Congo or an adjoining country.
- To ensure compliance with these requirements, General Aluminum must request information regarding the use of conflict minerals from its suppliers, who, in turn, must solicit that information from the next tier of suppliers, continuing down the supply chains.
- Therefore, in addition to signing and returning the Environmental Letter, we ask that you return a completed Conflict Minerals Reporting Template (latest version) to Kathryn McLaughlin kmclaughlin@generalaluminum.com
- You can download it at <http://www.conflictreesourcing.org/conflict-minerals-reporting-template/>

8.0 Supplier Selection

Suppliers on GAMCO Approved Supplier List will be given priority when awarding new business. These suppliers will already have a proven track record on quality, delivery, and performance.

General Aluminum from time to time will choose to perform on-site quality audits as part of the selection process. When warranted by poor supplier performance, GAMCO may choose to perform supplier on-site audits with advance notice. Suppliers are encouraged to actively participate with these audits.

Suppliers that are awarded business, but are not on the approved supplier list, will be added to the list prior to doing business. These suppliers that are awarded business, but do not meet General Aluminum requirements, must provide an action plan with estimated compliance timing for deficiency.

9.0 Non-Conforming Material / Corrective Action

Supplier products and services are expected to meet all drawing and other applicable specifications. Defective material, transportation and costs associated with defective material, is the responsibility of the supplier. These costs can include costs incurred by the end customer as well as costs incurred by GAMCO. **These costs will be communicated to the Supplier via the Supplier Chargeback Form # 13.01.00.04.**

Notification

General Aluminum Quality and / or Purchasing Departments will contact the supplier when non-conforming material is detected at receiving inspection, during processing of the material, and / or found at GAMCO customer. When possible, a digital picture of the issue or defect will be sent, or if requested, a sample returned, at the supplier’s expense.

Corrective Action may be requested by GAMCO for the following situations; Non-conforming material, late or missed deliveries, missing or incomplete receiving paperwork, improper product identification, GAMCO customer complaint or disruption, supplier caused excessive freight costs, **any Special status notification from our customer due to quality or delivery issues, and any dealer returns, warranty, field failure or recall.**

General Aluminum may request Supplier representation on-site to assist with problem solving, 8D

explanation, supervision of inspection, etc.

Containment

Upon receipt of a SCAR (supplier corrective action report), the supplier is expected to contain all suspect material within their facility, material in transit as well as material at GAMCO.

The supplier will be granted access to GAMCO facilities to inspect material at their cost or, if it is an urgent need, the supplier will be notified and GAMCO will contain and sort as needed at the supplier's cost. If the supplier chooses to utilize a 3rd party inspection company and / or external containment facility, they will be responsible for the transportation of parts and supervision of inspection activity.

In cases where supplier containment fails, or with critical, chronic and/or repetitive quality issues, based on Supplier Monitoring and/or customer complaints, General Aluminum or General Aluminum Customer may **require on-site 2nd Party Audits** and require suppliers to initiate Controlled Shipping (Level 1 or Level 2). Controlled shipping is a request for supplier to place a redundant inspection process, over and above normal controls, to sort for defective material or product. The supplier is responsible for all costs related to controlled shipping

- Controlled Shipping Level 1 is an additional off-line inspection using supplier personnel to specifically inspect for defective product. The CS1 is usually at supplier location, but could also be located at GAMCO location.
Controlled Shipping Level 2 is an additional off-line inspection using an agreed upon 3rd party inspection company to inspect for defective product. The CS2 is usually at supplier location, but could also be located at an off-site facility including GAMCO plant, GAMCO customer, or independent off-site location.

Inspected material or product should be identified (contact plant quality manager for approval) and in all cases labels must be used to identify shipping containers.

All containment processes should follow:

- Detailed documented instructions including photos about how to inspect for the defect
- Adequate work area including lighting and space
- Proper tools and/or gages to do the job
- Data tracking to show quantities inspected and rejected

Permanent Corrective Action

Response to a SCAR issued by GAMCO is requested on GAMCO Corrective Action form # 14.01.01.01 (attachment) but will be accepted in the supplier format provided it addresses root cause, permanent corrective action and effectiveness or verification of permanent corrective action. The 8D format is preferred with a 5why or similar type of root cause analysis completed. Initial response should be submitted to GAMCO within 24 hours. Completion of the SCAR should be within 60 calendar days unless extension is agreed by GAMCO. All submissions are typically made to both GAMCO Purchasing and Quality Personnel.

Supplier Deviation

Suppliers are expected to meet all General Aluminum requirements at all times. In case of deviations from the requirement, use of "Deviation Request/Approval" form #13.01.00.01 (attachment) is used and must take place prior to delivery to General Aluminum. All deliveries based on deviation release must have additional identification labels on all containers. Deviations expire on the date provided or quantity of castings shipped as identified on Deviation Request. All product must meet original requirements once Deviation has expired.

10.0 Receiving of Materials

All purchased materials are subject to receiving inspection. When applicable, the supplier must provide SPC data, dimensional data, certification document, etc. with the shipment and / or directly to the GAMCO quality department dependent upon the arrangements made with General Aluminum Purchasing. Material found to be non-compliant will be dispositioned using the Nonconforming Material / Corrective Action specified in this document

Components

Parts must arrive without corrosion and free from damage or contaminants. Additional oils or coatings different from drawing or those agreed upon with GAMCO are not allowed. Additional requirements may be associated with components such as lot traceability, labeling, identification, or special inspection and testing.

Aluminum

All aluminum suppliers shall comply with “Material Specifications” COP 10.01.01 that is available from our Corporate Purchasing Department. There are specific HAP metals including Beryllium, Cadmium, Lead, Nickel, and Manganese that a supplier must take every precaution to eliminate to the extent practicable. Suppliers may be asked to provide testing results showing the material complies with Hazardous Air Pollutants (HAP) under 40 CFR Part 63.

Aluminum suppliers must provide certifications that radioactivity contamination meets “Unconditional Use Clearance Level” requirements consistent with International Atomic Energy Agency (IAEA) and the Commission of European Communities (CEC) standards for individual radionuclides IAEA-TECDOC-855 (1996) & Safety Series RS-G-1.7 (2004).

http://www-pub.iaea.org/MTCD/publications/PDF/te_855_web.pdf

http://www-pub.iaea.org/MTCD/publications/PDF/Pub1202_web.pdf

11.0 Process Control

The supplier is expected to have a controlled process in the manufacture products or services for General Aluminum. The parameters used to manufacture these materials must be documented in a control plan (quality plan) or in work instructions so that adherence to them can be verified.

General Aluminum may request suppliers to use specific GAMCO forms as part of their process control and certification provided with shipments.

Unless otherwise agreed upon, suppliers need to have a traceability system. Traceability is typically required for raw material or product (receiving), through the manufacturing or processing, inspection & testing and shipping to General Aluminum. As applicable, it will include rework and sub-contractor services or components. Traceability will include date, process & inspection records and sign-off acceptance.

Where normal to standard industry practice, suppliers are required to place product identification including manufacturing traceability as discussed at APQP on each piece without additional cost to General Aluminum.

Suppliers must have a first article inspection process that checks part setups prior to production runs. Product released for production using a new setup must conform to control plan (quality plan) requirements.

Key or special product characteristics agreed upon with GAMCO at APQP must be monitored through use of statistical methods (SPC).

Additional Controls are identified to suppliers during the APQP launch process.

Suppliers are required to immediately communicate to GAMCO any potential quality problems or issues that could impact production flow. A proposed written action plan may be required from supplier. Any costs associated with this issue, including GAMCO or GAMCO customer downtime, are the responsibility of the supplier.

CQI System Assessments are required, as applicable, to all suppliers of General Aluminum supplying products or service. The CQI self-assessments must be completed annually and forwarded to General Aluminum Purchasing and Quality departments. Any deficiencies found with the self-assessment must have an action log with assigned responsibility and timing with correction completed within 90 days.

Selected suppliers to General Aluminum may be asked to submit a physical inventory of the components and / or parts located at their facility. For those selected suppliers, there will be a “count list” provided to the supplier and the supplier is requested to confirm in writing using the provided “count list” the physical quantity on-hand. Included with the inventory is a request to assess the physical condition of product with a simple yes / no statement. As much advance notice as possible will be provided to the supplier.

12.0 Manage the Change

Significant change to supplier process (defined in AIAG PPAP manual), raw material or sub-supplier must be communicated to GAMCO via a “Supplier Request for Engineering Approval SREA” form # 9.01.05.06 (attachment). The SREA is submitted to GAMCO plant purchasing and quality personnel. It will be at the discretion of GAMCO as to whether a PPAP will need to be submitted for the change. The cost related to a supplier requested change will be managed by General Aluminum to avoid excessive charges, however any cost from GA customer related to the change is responsibility of Supplier.

In all cases, significant changes are not allowed prior to written approval by General Aluminum. Not communicating changes to GAMCO is a very serious omission. Any financial cost derived from an adverse affect due to a non-communicated change at GAMCO location, GAMCO’s customer through to the end user will be the sole responsibility of the supplier.

There may be a need for samples with the requested change. Samples made under this change shall be tagged as samples and contained at the supplier’s facility and submitted to GAMCO when authorized by General Aluminum. When samples are shipped to GAMCO, they must be labeled accordingly to requirements defined by GAMCO Quality and / or Purchasing.

13.0 Custom Built Tooling, Gages, & Fixtures

All production and prototype tooling designs are subject to approval by GAMCO Engineering.

A copy of all tooling drawings and / or Models will be made available and submitted to GAMCO Engineering when requested. Tooling dimensional inspections shall accompany tooling submissions, as requested by GAMCO, and are subject to approval by GAMCO team.

Tools, gages, and fixtures that are customer-owned shall be permanently identified as communicated by GAMCO team (i.e. “Property of Customer” and Asset Numbers). Photos of tools, gages, and fixtures; including identification must be provided at or prior to PPAP.

Suppliers are required to track tool usage (shots, cycles, turns, etc) for purposes of monitoring life expectancy for repair and replacement.

Suppliers are required to have a preventive maintenance program developed for tools, gages & fixtures.

A supplier must produce all tooling as documented on the purchase order. Any deviation must be noted and approved by General Aluminum.

A supplier is expected to quote estimated tool life, provide estimated remaining tool life upon request, and maintain all tooling for the life of the program plus service. Unless otherwise agreed upon, all repairs and maintenance are the responsibility of the supplier. Failure to maintain tooling in a proper manner may result in the supplier being charged for any required tooling repairs or replacement.

Suppliers should not ship any parts without PPAP approval or written authorization from GAMCO. This requirement excludes samples submitted as prototypes, line trials and with the PPAP package.

Gages must pass Gage Measurement System Analysis (Gage R&R Study). Typically, gages must have R&R less than 10% to be acceptable, but may be allowed additional variation depending upon gage type, specification and gage use. Final acceptance for gages with greater than 10% R&R is at discretion of the General Aluminum Quality Manager.

All tooling and gages are accepted and approved with the PPAP process. Final supplier payments will be made once General Aluminum's customer approves the General Aluminum PPAP submission and General Aluminum receives customer payment.

14.0 Support

The supplier shall support GAMCO throughout the life of the program, including mass production and service production, which may be up to or more than 10 years. This support includes but is not limited to the following:

1. Design and process development, including measurement systems.
2. Product launch in identifying any special handling, application, storage, or other considerations that will improve the product launch and achieve zero defects.
3. Production and service issues associated with the supplier's product.
4. Warranty investigation and reporting. It may require the supplier to support the redesign or change to the supplier's process if the subject parts are the root cause of a warranty issue. The supplier shall be responsible for any cost associated with an out-of-specification condition from their product, which results in warranty claims.

The supplier shall make available trained and knowledgeable personnel for the above-mentioned issues. These activities may require on-site presence at GAMCO or GAMCO's customer(s).

15.0 Delivery

GAMCO will provide production release information to the supplier that contains the required quantity and any special instructions. The supplier should deliver the exact quantity ordered unless other arrangements are made in writing between GAMCO and the supplier. All suppliers are expected to achieve and maintain 100% on time delivery.

Suppliers may be required to be EDI capable including ability to electronically receive releases, create bar codes, bar code scan and provide ASN. It is supplier responsibility to obtain requirements as part of their quote / contract review.

Suppliers are required to immediately communicate to GAMCO any potential delivery problems or issues that could impact production flow. A proposed written action plan may be required from supplier. Any costs associated with this issue, including GAMCO or GAMCO customer downtime, are the responsibility of the supplier.

The supplier is required to obtain necessary packaging approvals prior to initial shipment of material to GAMCO. Standard pack quantities are to be established and the use of returnable containers, where applicable and/or justified are highly encouraged. Alternate pack or expendable pack will have standard pack quantities as well.

All supplier owned returnable containers to be identified with a “return to” placard that contains: supplier name, city, and state.

Shipping labels are required on the container and must include part number, quantity, tare weight, and supplier name and/or supplier code. Additional information may also be required.

Suppliers are required to provide a packing slip which must include: part number, quantity, purchase order number, and bill of lading number. If shipping direct to General Aluminum, the packing slip must be enclosed in a packing list envelope and adhered to the shipping container. If shipping direct to a General Aluminum sub-supplier, a copy of the packing slip must be e-mailed direct to General Aluminum.

16.0 Product Launch - APQP

Suppliers are required to participate with APQP meetings, discussions and workshops as needed by General Aluminum to support new programs.

Suppliers should utilize the planning procedures from the AIAG Advanced Product Quality Planning and Control Plan (APQP) manual. All elements (of the APQP manual) should be incorporated into the planning process. Required documentation will be identified by the GAMCO team during product launch.

The supplier shall develop a Project Management Timeline which contains program events, target dates and assigned responsibilities. The Timeline should be maintained at the supplier at all times and an updated copy shall be submitted to GAMCO when requested.

Key or special product characteristics are chosen at APQP and are mutually agreed upon between Supplier and GAMCO. These characteristics must be identified on the supplier control plan (quality plan). The identified characteristics require statistical process control (SPC) and both short term & long-term capability (Cpk) is required. Cpk requirement will follow along with GAMCO customer requirement. In absence of customer requirement, 1.33 Cpk is required for short term capability and 1.00 Cpk for long term capability.

General Aluminum and supplier will determine during APQP and characteristics or components that “pass through” general aluminum’s system without validation or controls. Determination is made on what controls the supplier shall put in place for these characteristics.

Where normal to standard industry practice, suppliers are required to place product identification including manufacturing traceability as discussed at APQP on each piece without additional cost to General Aluminum.

17.0 Product Approval Process – PPAP

As part of the APQP planning, the GAMCO quality department will use the General Aluminum “PPAP Checklist” form # 2.01.01.04 (attachment) to communicate with supplier on the PPAP submission

requirements.

IMDS submission by supplier is required unless written approval is obtained from General Aluminum quality department. If a supplier does not have capability to submit IMDS, all chemical elements must be reported to General Aluminum quality department for GAMCO to submit on behalf of the supplier.

Raw Material (aluminum):

Warrant, Material Test Report (chemistry certification), MSDS, Inspection plan, and identification of product are required for PPAP submission.

Bulk Material (core sand, alloying material):

Warrant, Material Test Report, MSDS are required for PPAP submission.

Castings, Cores, Components, and Services:

Suppliers are to comply with the latest edition of AIAG Production Part Approval Process reference manual. This manual is also to be used as a guide to PPAP submission for “Manage the Change”. Unless otherwise specified by GAMCO quality, a level 3 PPAP submission is required. PPAP submissions will be accompanied with Purchase Order specified samples.

Submission

Unless specified by GAMCO quality, the PPAP package will be submitted electronically to GAMCO Quality. Sample parts are to be shipped in accordance with instructions.

PPAP will be provided at production cost pricing to General Aluminum.

Feedback

Disposition of the submitted PPAP will be one of three possibilities;

Full Approval – GAMCO quality has approved all of documentation, supporting samples and product is approved for production purposes. An approved / signed warrant will be provided to the supplier once General Aluminum Customer approves the complete PPAP submission. This approval is the supplier notification that it is time to invoice for any tooling payment.

Interim Approval – Parts are approved for either a specific time range or quantity of parts. Parts are not to be shipped after the interim has lapsed. A signed “interim approval” warrant will be submitted to supplier and will have the requirements to obtain full approval. The supplier must resubmit for full PPAP approval to GAMCO quality that allows for appropriate time for GAMCO to review the submission prior to the expiration of the interim approval. Once approved, a new signed warrant will be provided to the supplier. This approval is the supplier notification that it is time to invoice for any tooling payment.

Rejected – Parts cannot be used for production and all tooling purchase orders will not be paid.

Labeling

When PPAP samples are shipped to GAMCO, they must be labeled accordingly to requirements defined by GAMCO Quality and / or Purchasing.

Annual Validation

An annual revalidation is required unless waived by General Aluminum. Requirement typically includes a warrant, dimensional report, material test report, specialized testing reports as required by drawing, control plan (quality plan) and PFMEA (Submission will be at direction of General Aluminum Purchasing & Quality Departments and documents provided as applicable). Annual validation will be provided without expense to

General Aluminum.

18.0 Request for Quotation

Quotations should be returned to the cost estimating and/or purchasing group using e-mail within the specified time on the RFQ. Unless otherwise requested, all information must be completed in full.

The supplier shall provide a priced based on the Estimated Annual Usage (EAU) plus 15% above capacity shown on the RFQ, unless otherwise communicated. GAMCO will accept quotations referencing minimum lot requirements. Invoice payment terms should be included with the quotation.

The supplier must provide a quotation per drawing and specifications. Any exceptions to the part drawing or RFQ requirements must be noted in the exception area of the supplier's bid response. All applicable industry standards that apply to the quoted part must be disclosed regardless of inclusion on previous quotes.

Suppliers may be asked to provide a feasibility commitment as part of the quotation process.

Suppliers are encouraged to provide suggestions with regard to part design that would aid in the manufacturability of the part and thereby reduce costs, but should also provide a price based on the part as designed with no changes.

The supplier should consider and include in the quotation the cost and description of special packaging or handling for a part.

Where normal to standard industry practice, suppliers are required to place product identification including manufacturing traceability as discussed at APQP on each piece without additional cost to GAMCO.

A supplier is expected to quote estimated tool life, provide tool life upon request, and maintain all tooling for the life of the program. All repairs and maintenance are the responsibility of the supplier. Failure to maintain tooling in a proper manner may result in the supplier being charged for any required tooling repairs or replacement. Other situations must be agreed upon with General Aluminum at time of quote.

The supplier shall quote tooling and capacity based on manufacturing per a standard week defined as no more than 100 manufacturing hours per week. Any capacity based on more than the standard work week must be noted by the supplier as part of the RFQ.

During the quotation phase of any project, the supplier is expected to hold the same price quoted on the initial quotation. Any price increase must be justified (e.g. engineering change).

19.0 Invoice Requirements

A supplier's invoice should contain the following information: Invoice # and Date, Part Number, Description, Quantity, Unit Price and Extension, Shipper # and Purchase Order Number.

The invoice must be submitted per purchase order requirements. Suppliers will only be paid per the approved price on the purchase order and the agreed upon payment terms. Absolutely no verbal authorization to differ from that price will be allowed.

Invoices for tooling must include a copy of the approved warrant for timely processing of payment. A supplier's tooling invoice for final payment will not be paid until supplier's PPAP submission is approved.

20.0 Purchase Orders

A supplier must abide by the terms and conditions referenced on all purchase orders. A purchase order will be issued for a supplier's quoted price. Any requested pricing changes must be submitted to General Aluminum for approval.

21.0 Contract Review

Acceptance of a purchase order and / or contract to supply product to General Aluminum constitutes acceptance of the requirements of this supplier manual as well as the terms and conditions shown on the purchase order unless otherwise agreed in writing by the supplier and GAMCO.

22.0 Updates

Manual and Attachments can be found on our Website www.generalaluminum.com
It is supplier responsibility to access above website for latest revision of forms prior to submitting to GAMCO and to check for supplier quality manual revision at least once a year.

23.0 Attachments

Production Part Approval Process Checklist – Form # 2.01.01.04
Supplier Request for Engineering Approval SREA – Form # 9.01.05.06
Corrective / Preventive Action – Form # 14.01.01.01
Deviation Request / Approval - Form # 13.01.00.01

Attachments to this manual are located on the general aluminum web site and can also be obtained from Corporate Quality Systems Manager.

Attachments can be updated separately without a full revision to this supplier Quality Assurance Manual.

Changes: Changes are in Bold

Added updates to include requirements of for ISO 9001 & IATF 16949 new standards