



Supplier Quality Manual
Document Number: QSP6-9
Revision: C
Approval: Ref. DCN D20-3

Extruded Aluminum Corp.

SUPPLIER QUALITY MANUAL

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Receipt and Acknowledgement:

Dear Supplier:

Please sign below (from authorized personnel Quality or Plant Manager) to demonstrate that you have received this Supplier Quality Manual and submit a copy of this page to Justin Beery EAC Purchasing Manager.

Sign-off

Date

Introduction

Extruded Aluminum Corp. (EAC) recognizes that communication and understanding of goals and expectations are key elements to a successful operation. This Supplier Quality Manual (SQM) has been developed to help Suppliers understand the requirements of EAC and its customers. SQM applies to all intercompany and external Suppliers of production material as well as direct subcontract Suppliers and other related manufacturing technologies. The basis for SQM is the Quality System requirement of ISO 9000:2015.

It is the goal of Extruded Aluminum Corp. to ship to our customers zero defect shipments on time at the lowest total cost. EAC set the Zero defect policy which will be achieved through relentless process improvements and Supplier development initiatives.

Suppliers must warrant that product supplied will conform to all specifications. Strategic delivery and effective inventory levels will be applied. The supply chain must make every reasonable effort to support this methodology.

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Supplier Approval

To ensure consistency and effectiveness, it is necessary for EAC to employ a structured process of selecting and monitoring Suppliers. This process involves:

- Completion of EAC Supplier Quality System Survey' by the Supplier.
- Evaluation of relevant experience and price.
- Capability to provide required product efficiently and within schedule. Conformance to a registered quality system like ISO 9000:2015, ISO IATF 16949 or any other quality system is preferred. .
- When requested, the Supplier must also be able to demonstrate compliance to national and / or international standards and regulations for health, safety and environmental impact relative to its business.
- Since product specifications and quality assurance requirements are not completely defined while the product is being developed, there are unique assessment requirements for potential suppliers of prototype and test parts. The Purchasing Manager shall give temporary approval status to any Supplier to produce parts for research and development work. When the Supplier is asked to produce production parts, then the entire supplier approval process shall be applied.

Advanced Product Quality Planning (APQP)

When applicable, Suppliers will be required to follow the APQP process for new program / development. When required, the supplier must provide APQP status reports for a new product in order to ensure quality, cost, design and delivery are met. Extruded Aluminum Corp. will provide format, frequency and required content of these reports. Reference AIAG Advance Product Quality Planning.

Production Part Approval Process (PPAP)

Every Supplier of production material is potentially required to submit a level 2 or level 3 PPAP for each part number prior to initial shipment of product unless otherwise instructed by EAC. All changes in process will require a resubmission of PPAP as specified by the Quality Manager. All design changes shall be approved by EAC Quality Manager and Operations Manager. All process changes must be approved by the Quality Manger in writing. All key characteristics as defined by EAC must be accompanied by process capability studies conducted on a minimum of 30 pieces unless otherwise specified. If there are no key

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characteristics on the print, the Quality Manager can determine the key characteristics depending on fit/form/function requirements. The documents will be reviewed and approved by EAC Quality Assurance Department.

Following are typical requirements of EAC Level 3 PPAP:

- Part Submission Warrant
- 6 pcs dimensional / functional inspection report per drawing
- Copy of approved EAC drawing / part request form
- 6 sample pieces or less as defined by the Quality manager
- Process flow diagram
- Control plan
- Material test reports
- Capability study report (Cpk> 1.33 and Ppk > 1.67)
- Gauge R&R Study report (≤ 10% OR as approved)
- Functional test reports like leak tests / vibration tests / continuity tests etc.
- Any other requirements as specified by EAC Quality Manager.

Documented results of the review by EAC shall be provided to the Supplier indicating approval of the submitted sample. Such approval does not release the Supplier from liability for failure to adhere to the applicable specifications and/or drawing requirements referenced on the purchase order. Nor does it imply or ensure the **NO** future rejections may be made against their shipments, even though these shipments may be consistent with the initial sample submitted.

In the event of a rejected PPAP submission, all pertinent material shipped to EAC will be rejected and returned at the Supplier's expense. Samples which are not approved will require resubmission by the Supplier to EAC. Written approval by EAC is required prior to authorization for manufacture and use.

The Supplier may request a deviation of PPAP by Certification of Continuity of Production as long as it is previously accepted by EAC Quality Assurance (QA). Request for Waiver must be forwarded to The Quality Manager at EAC for evaluation. The Supplier will be notified of the acceptance or rejection of their Request for Waiver by the issuance of a letter from EAC, If the Supplier has not received a written response from EAC QA Department within ten (10) days from the submission date of the Request for Waiver or First Piece Report, the Supplier should contact the Quality Manager at EAC.

Items affected by implementation of approved Material Change Notice must be **segregated, identified and packed separately** from other production material, parts and assembly. FAILURE TO COMPLY WILL RESULT IN REJECTION OF MATERIAL, PARTS AND ASSEMBLIES RECEIVED.

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Purchase Order Requirements

All Purchase Orders for production materials will have specific requirements that are referenced on the body of the Purchase Order.

The applicable requirements are to be adhered to for the length of the Program.

- Lot Control
- Raw material may vary in its composition from lot to lot or from production to production.

Tooling and Fixtures

There shall be no additional tooling charges above those at the beginning of the program as applicable. The Supplier is responsible for tooling replacement costs and day to day routine maintenance.

Tooling, drawings and documentation owned by EAC shall remain the property of EAC, and shall be clearly marked "Property Extruded Aluminum Corp." The aforementioned must be used solely for EAC production, unless otherwise authorized. The Supplier shall maintain all tooling and fixtures to the latest engineering revision at all times. EAC reserves all rights of inspection or removal of all tooling and fixtures at any time, at no cost to EAC (The one exception being freight charges).

Packing Slip Requirements

The packing slip must contain the purchase order number, supplier name, address, lot #, lot date, heat #, gross weight, net weight, quantity, # of bins, shipping date EAC name, address, part #, revision # and part name.

If there are more than 1 (one) heat/lot numbers in the Supplier's shipment, the Supplier's packing slip must also indicate the different heat or lot numbers and its respective quantities.

Supplier Development

EAC reserves the right to conduct, by its staff or third party agents, system surveys and follow up audits, at the Supplier's facility at no increase in cost or delays to EAC. Access to the Supplier's facility or facilities shall be granted to EAC representatives to investigate production facilities and any information pertinent to the Supplier's end product sold to EAC. Reasonable notification shall be given prior to a survey being conducted.

Supplier must adhere to the Supplier Quality Manual and maintain acceptable status.



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Chemical and Mechanical Test Reports

The Supplier furnishing components or assemblies to EAC shall maintain a complete file of results of all chemical and/or mechanical test reports (i.e. chemical analysis, tensile tests, impact tests, bend tests, fillets, etc.), metallurgical analysis, or any other reports necessary to substantiate that all material used in the manufacture of components or assemblies, whether purchased or manufactured by the Supplier, meet the drawing(s) or specifications. The Supplier must furnish copies of these reports with each shipment as applicable.

Painting and Finishing Requirements

The Supplier furnishing materials, component parts, or assemblies that require protective coatings such as primers and enamels, must accomplish all cleaning and surface preparations as outlined on the drawing or the purchase order prior to the application of the finish coatings. The primer and/or enamel/polyurethane/epoxy applications must be accomplished using products that are procured in accordance with the applicable purchase order.

In certain instances, the purchase order may contain specific instructions regarding paint applications to facilitate subsequent operations.

Certification

The Purchase Order will specify the following requirements, if applicable:

- Certification of Conformance of Test results, as required by the purchase order or the Quality Assurance Requirements, **MUST ACCOMPANY A SHIPMENT** of material to Extruded Aluminum Corp. on a quarterly basis.
- Certificates must include the following identifying data:
 - Part Name
 - Part Number
 - Revision Level
 - Purchase Order Number
 - Lot Number
 - Heat Number
 - Drawing Number(s)*
 - Specification(s)*
 - Supplementary Quality Assurance Provisions / QA Provisions / QA Requirements*
 - Shipment Number
 - Test Results (as required)
 - Supplier Name(* if applicable, revision and date of revision is required to be listed on the certification.)

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EAC Quality Assurance reserves the right to request test data supporting the Certificate of Conformance. When requested, test data shall be received by EAC within five (5) working days.

Handling, Labeling, Preservation, Packaging and Packing

The Supplier shall accomplish identification, cleaning, preservation, and packaging and packing in accordance with the applicable drawings, specifications and instructions.

All materials, parts or assemblies shipped direct to EAC shall be packaged according to the specific instructions issued by EAC.

Inspection of Supplies

Quality records shall be available upon request by EAC and shall be retained by the Supplier for (4) years after the last part pursuant to the purchase order is delivered to EAC.

Inspections under this paragraph is for audit purposes only and shall not release the Supplier from its obligations to conform to any drawing or quality requirements.

Supplier Inventory

An inventory management system shall be established and documented to continuously optimize inventory turns, stock rotation (FIFO) and minimize inventory levels.

The Supplier will maintain such inventory levels as are required to buffer any quality, capacity or delivery concerns that may arise.

Quality System Requirements

The Supplier is preferred to be ISO 9001:2015 or equivalent quality standard registered.

Commercial independent laboratories are required to be ISO / IEC Guide 25 or national equivalent registered.

Product Quality Assurance

EAC expects its Suppliers to be aggressive with continuous improvement efforts to their process in order to achieve zero defects. (billet suppliers please see the billet specification form)

Process capabilities and special characteristics must be demonstrated to ensure that the initial process capability is $CpK \geq 1.33$ unless otherwise specified on the Purchase Order. The

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Supplier shall prepare documented process monitoring and operator instructions for all employees having responsibilities for operation of process in order to maintain production capability of ≥ 1.33 Cpk. For any characteristic that does not meet the above criteria, a corrective action plan must be submitted for approval.

Dimensional Functionally Based Parts:

- 30 piece capability study on all dimensions per drawing. Required capability – Cpk > 1.33
- 1 piece dimensional layout.
- 6 piece functional test report wherever applicable.

Mechanical (Hydraulic, Electrical and others) Functional Based Parts:

- Dimensional requirements per drawing, as required, unless otherwise agreed upon by the quality assurance group.
- 6 piece functional test report as required based on supplier current quality practices

The Supplier shall comply with all specifications required by the drawing and engineering specification. These requirements cover the **MINIMUM** inspection necessary to assure compliance with established requirements. All functional characteristics shall be inspected by the Supplier using one (1) or more of the following:

- Sampling plan based on performance.
- One hundred percent (100%) inspection, for all features with unstable process $CpK < 1.33$.
- Implementation of a Statistical Process Control program.

Sampling procedures, inspection records, examinations, and/or test reports must be complete and available to EAC inspection department as required.

The Supplier is responsible to conduct inspections and tests at a frequency in accordance to applicable test methods or procedures, drawing requirements and engineering specifications. Unless otherwise specified, the Supplier may utilize its facilities, or those of any certified laboratory to conduct such tests.

The Supplier shall provide and maintain gauges and other measuring and testing equipment considered necessary for conformance to the applicable tolerances. The inspection gauges, devices, etc. shall be calibrated periodically with suitable calibrating equipment that must be traceable to National Standards.

Revision or drawing changes pertinent to materials, parts and assemblies currently in production must reflect the change at the established effective date of incorporation.

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Non-Conforming Material

Upon detection of a Non-Conformance, an NCR (Non-Conforming Report) will be issued by EAC Quality Assurance representative, and the Supplier will be contacted.

The Supplier will be informed of:

- Part number, part name, revision level, description of defects, and stage at which defect was found.
- Information will be given on whether a sort is required and a corrective action needs to be implemented.

Once informed of the problem, the Supplier has four options:

- Authorize parts to be scrapped at EAC within 72 hours else parts will be scrapped at the Supplier's expense.
- Issue a RGA to EAC for return of parts.
- Authorize EAC /representative or third party sorting company to sort parts to feed production and to detect defects prior to line use.
- Authorize EAC to rework, assuming responsibility for all rework costs.

After informing the Supplier of the rejection, EAC requires from the Supplier disposition of the lot within 24 hours. If disposition is not given, the Supplier is responsible for sorting / rework charges. Whether the material is returned to the Supplier or not, the Supplier shall conduct an immediate failure analysis and process investigation to take corrective action to preclude reoccurrence of the disclosed defect(s). Returned materials are to be reworked or replaced by the Supplier in accordance with the applicable technical requirements and re-inspected per the Product Quality Assurance section of this manual.

The Supplier must immediately notify EAC upon discovery that they may have shipped nonconforming or suspect product to EAC. Notification in writing must go to the Quality Manager and Purchasing Manager.

EAC will not absorb the cost of any machining or value added services unless otherwise specified on the Purchase Order. All parts rejected by EAC must be replaced immediately by the Supplier. When machine / assembly reveals causes for rejection, (i.e. porosity, shrinkage, gas holes, blow holes, sand inclusions, lamination cracks, tears, hard spots carbides, etc.) the parts will be returned and value added services performed by EAC will be debited to the Supplier's account.

A written Corrective Action response May be required from the Supplier detailing the root cause of the nonconformance, and the actions implemented to prevent future occurrence. A formal written corrective action plan is required within 2 working days of notification. The initial

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submission must identify the problem and what immediate containment actions have been taken. A completed corrective action plan listing root cause, corrective actions, verification of action taken (if completed) and preventive actions is required within 20 working days of the identification date. Corrective action meetings with Supplier and EAC may be requested by any party to help resolve difficult problems in an atmosphere of teamwork and partnership.

Levels of Containment:

Level 1 Containment:

When a nonconforming part is discovered and disposition as supplier error, the part will be rejected and may be placed on Level1 containment. The vendor will then be required to 100% certify the parts to be free of the identified defect(s) for a period of 30 days. Any reoccurrence of the issue or any other issue on the same part during the 30 day containment period, will extend the Level 1 containment period to 60 days. Any reoccurrence / new issues on the same part during the 60 day containment period will automatically increase duration of Level 1 containment to 90 days. The method of certification will be determined in conjunction with EAC QE. All parts must be clearly identified on all four sides of the container, skid or dunnage as 100% certified for the applicable defect.

Level 2 Containment:

If, during the 90 day Level 1 containment period, any additional non-conformances are identified on the same part, the part will automatically be placed on Level 2 Containment. During Level 2 containment, parts will be 100% inspected and certified by a third party inspection agency. The inspection will be conducted at the supplier’s premises or at EAC depending on the requirement. The cost of third party inspection will be the responsibility of the supplier. Initially Level 2 containment duration will be 30 days, which may be extended depending on effective resolution of the issue. Exit of Level 2 containment will be considered completed upon resolution of issues with validated corrective and preventive measures put in place to prevent recurrence.

It is not the policy of EAC to accept product that does not meet the requirements of our drawings and specifications. Shipment of nonconforming parts and/or assemblies by the Supplier is limited to only those items having approved deviations for the applicable shipments. The request for approval and acceptance shall be initiated by the Supplier through the buyer at EAC. The shipment shall be deferred until the request is approved. Any **unauthorized** shipment of material prior to EAC approval will result in rejection of that material. Shipment of unauthorized lots will be returned to the Supplier at their expense.

All material shipped to EAC with an approved Request for Deviation shall be inspected as required by EAC. The items must be segregated, identified and packaged separately from other

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production material. **FAILURE TO COMPLY WILL RESULT IN REJECTION OF LOT PARTS RECEIVED.**

Quality Spills:

Spills are defined as occurrences of repeat issues on the same part or family of parts supplied by the Vendor, generally attributable to similar root cause. Spills can also occur from various functional root causes which may affect the same part or multiple parts, but can be traced to a systemic root cause.

EAC identifies the ‘Spills’ from the trend of non-conformances in a month or quarter and notifies the supplier.

All Spill notifications will follow with an Incoming Quality (IQ) meeting with the Vendor. The EAC Quality manager is responsible for setting up the meeting and provide the initial data of non-conformances and corrective actions generated during the period under review.

The review of the issues will take place in the form of a presentation by the vendor which may include following topics.

- Pareto chart of issues
- Containment review
- Review of previous strategy
- Corrective action summary

All issues identified as part of the IQ meeting shall have containment actions in place as per the levels of containment mentioned in this manual.

Shipping Requirements

***** Extruded Aluminum Corp. expects 100% on-time delivery from all of its Suppliers*****

All orders should be shipped complete unless otherwise specified by EAC Material / Purchasing Department personnel.

All scheduled due dates are subject to change.

If the Supplier is unable to adhere to scheduled due dates, they must advise the EAC Purchasing Manager and Production Scheduling Manager.

All material shipped to EAC must bear full identification as specified by EAC. Labels must permit traceability to specific Supplier manufacturing and inspection records. .

MSDS sheets and WHMIS labels must accompany every shipment that contains hazardous materials.

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All material used in past manufacture shall satisfy current government and safety constraints on restricted toxic and hazardous material, as well as environmental, electrical and electromagnetic considerations applicable to the county of manufacture and sale.

All packing slips and invoices must reference the following: part number, revision level, purchase order number, quantity shipped and the quantity on back order.

Sub Supplier Control

EAC Suppliers are required to control and develop their supply base. Sub Suppliers that provide products with key characteristics must implement appropriate control methods for their process. The Supplier must review Sub Supplier controls and continuous improvement efforts on a periodic basis to ensure conformance to drawing specifications and Quality System..

Contingency Plan

Suppliers must develop a contingency plan for potential catastrophes disrupting material flow to EAC and inform EAC immediately in the event of an actual catastrophe. In an actual catastrophe, Suppliers will provide EAC access to EAC owned tooling. The Supplier is responsible for EAC tooling.

Supplier Scorecard

EAC has developed this rating system as an objective, data based measurement system in order to monitor and develop Supplier performance in the areas of **Quality, Delivery, Order Accuracy, and Customer Service** which are **key performance indicators (KPI)**.

The Supplier Scorecard is intended to be a measurement tool to provide EAC, and its supply partners with the information required to continually improve their internal processes in order to provide the highest quality products and services. Effective communication of expectations and measurable targets within the supply chain will fortify our processes and ultimately, together we will build a better product.

A copy of the “Supplier Scorecard” will be e-mailed to critical Suppliers informing them of their current overall rating. The goal of this program is to have all of our Suppliers achieve “Passing” status.

Rating Criteria:

A. Quality Leg Indicators:

This is determined by the number of corrective actions (CARs) issued. The criteria for issuing a CAR are:

- Unacceptable score in any leg (quality, delivery and operations)

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- Customer spill resulting from a supplier non-conformance
 - Any supplier non-conformance deemed by the plant operating committee to require a corrective action.
- 0 CARs =5; 1 – 2 CARs =3; ≥ 3 CARs =1**

B. Delivery:

This is determined by the number of on time shipments

100%-90%=5;89%-80%=4;79%-70%=3; = 69%-60%=2;59%-50%=1

C. Order Accuracy:

This is determined by complete shipments

100%-90%=5;89%-80%=4;79%-70%=3; = 69%-60%=2;59%-50%=1

D. Customer Service:

This is determined by the vendor’s communication and willingness to problem solve:

100%-90%=5; 89%-80%=4; 79%-70%=3; 69%-60%=2; 59%-50%=1

E. Contingency Plan Submitted

Yes=5, No=0

F. Quality System in place

Yes=5, No=0

G. Semi Annual Billet Slice Analysis Submitted

Yes=5, No=0

The cumulative leg groups of quality, delivery, order accuracy, and customer service. It’s score is the sum of the scores for the four legs.

- 35 Maximum Score billet supplier**
- 30 Maximum Score Standard Supplier**
- ≥ 90% Acceptable - GREEN**
- 89%-75% Fair - YELLOW**
- ≤ 74% Unacceptable - RED**

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Continued poor performance in this score range for 2 consecutive Months will require a written corrective action plan, if the score is poor for 4 months straight there will be a face to face meeting.

The provisions of this Supplier Scorecard are for the exclusive benefit of EAC, and may be varied or modified by EAC in its absolute discretion, without prior notice to any third party.

This Supplier Scorecard is a controlled document and the property of EAC. It is intended exclusively for use by EAC. Suppliers and shall be used for no other purpose or by any other party. It shall not be reproduced, electronically or otherwise, without EAC express prior written authority. All rights are expressly reserved by Extruded Aluminum Corp.

Revision and Approval Status

Rev	Changes	Changed By	Approved By	Issue Date
1	Original Issue		B.Alvesteffer	1/12/2018
2	Title changes, score card changes	Justin Beery		03/22/2018
3	Added Score Card Categories to include contingency plan and quality system.	Justin Beery		1/31/2019
4.	Removed redundancy between this document and self assessment	Justin Beery		7/24/2019