SUPPLIER QUALITY MANUAL

PROCUREMENT STANDARD

Notice: This standard is subject to periodic review and may be revised at any time; users are cautioned to obtain the latest revision.

1.0 Purpose:

Establish clear expectations of the quality standards for any Supplier that provides products to Sparton DLS.

2.0 Scope:

This Standard defines Sparton's Supplier qualification requirements for any Supplier that provides material which are used in a Sparton manufactured product.

3.0 Supplier Responsibility:

3.1 Suppliers are responsible for conforming to the latest version of the appropriate industry specifications identified on the Sparton P.O. or associated documents or agreements.

4.0 Definitions:

4.1 Purchase Order: Document used to order material or services under specific delivery conditions, specifications, and quantities.

4.2 Drawings and Specifications: Detailed document that provides description or assessment of requirements, dimensions, materials, etc...

4.3 Certificate of Compliance: Document used to state that all applicable Purchase Order, Drawings, and specification requirements have been met.

4.4 Non-Conformance: A failure / defect between supplied products and/or services verses drawings and specifications.

4.5 Deviation / Waiver: Document used to request acceptance to a non-conformance.

4.6 Disposition: Final settlement of a non-conformance, (i.e., Rework, Use As Is, Repair, etc.).

4.7 Rework: A disposition in which it is feasible to correct the non-conformance to meet the original quality or contractual requirements. Where a repetitive problem is identified, a documented instruction shall be created to perform the rework.

4.8 Use As Is: A disposition that does not affect safety, performance, interchangeability, or reliability. Such material is good material.

4.9 Repair: A planned process that returns the material to a predetermined condition but does not fully meet the original quality or contractual requirements.

4.10 First Article Inspection (FAI): A design verification and design history file and a formal method of providing a reported measurement for a given manufacturing process.

5.0 Requirements:

5.1 Quality Management System (QMS):
Sparton's expectation is that its Suppliers publish, implement, and maintain a QMS that is consistent or equivalent to ISO 9001 latest version. In addition, the Supplier's QMS should incorporate any Quality requirements by Sparton. In the case where a formal QMS is not in place, due to the size or lack of complexity of the ordered activities, a survey or audit may be performed to evaluate the operations of the supplier.

5.1.1 Quality Management System:

When requested by Sparton, the Supplier shall submit the documents they feel are needed for the QMS – their inputs, outputs, sequence, and interaction – then maintain documented information to the extent necessary to support the understanding and operation of those processes. The documents should also address any details of, and justification for, any exceptions.

5.1.2 Procedures and Records:

The Supplier shall upon reasonable request make available all procedures and records, related to their QMS, for review. Such documents shall be established and maintained to provide evidence of conformance to Sparton's requirements.

5.1.3 Control:

The Supplier shall ensure that adequate controls are established and maintained throughout the life cycle of Sparton's requirements, and that principles of continuous quality improvements are applied to all processes.

5.1.3.1 Sparton's expectation of Suppliers is that all material received contain zero non-conforming product. The use of a statistically sound sampling plan is required; C=0 is the preferred sampling plan, but other plans may be used with approval from the Sparton Quality Assurance manager (i.e., ANSI/ ASQ Z1.4, MIL STD 105, ISO-2859-1).
5.1.3.2 Sparton shall measure the effectiveness of the Supplier's quality program by the product receipt history of conformance to requirements within its incoming inspection and manufacturing processes.
5.1.3.3 Suppliers who consistently meet acceptable performance standards may have the opportunity to participate in the Sparton DLS Skip-Lot program.

5.1.4 On Site Audits and Inspections:

Sparton upon reasonable request, via on-site facility audits, or teleconference review the effectiveness of the Supplier has defined QMS working practices, procedures and associated quality records. Sparton may perform on-site source inspection for any of its products supplied as a condition of purchase if stated in the purchase order terms and conditions. Sparton reserves the right to allow Sparton's customers and regulatory authorities the right to access the supplier's facility and applicable supplier's documentation with reasonable prior notification.

5.1.5 Planning (Custom Parts only):

The supplier shall analyze Sparton technical documents (drawings, specifications, purchase orders, commodity, and customer specific requirements as well as terms and conditions) to determine and confirm supplier capability for supplier manufacturing.

The Supplier shall establish an ongoing control plan that identifies the product realization methods.

5.1.5.1 The control plan may be in the form of a narrative or flow chart with the minimum requirements as follows:

- Sparton part number, description, and revision
- Operation / process name or description
- Key characteristic to be controlled
- Inspection stages and evaluation method, i.e., micrometer, caliper, reference to a procedure
- The frequency, sample size and analysis methods
- Reaction plan required if an out-of control condition occurs

5.2 Design and Document Control:

All documentation or property that has been supplied by the Supplier to support the delivery of material or services is deemed the property of Sparton and will be considered proprietary and confidential between Sparton and the Supplier. This may include but not limited to, Engineering Drawings, Bills of Material, Electronic Files, Software, Assembly / Testing Procedures, Test Fixtures and Specifications.

5.2.1 Any proposed changes by the Supplier pertaining to the above documents, must be submitted in writing to Sparton for review and written approval prior to implementation of the change.

5.3 Conflicting Documents:

If any conflict exists between Sparton's requirements, purchase order, documentation, drawings, etc. the following order of precedence shall apply:

- Purchase Order.
- Documents referenced on the Purchase Order.
- Sparton's end user (customer) specification/drawings.
- Sparton's specifications/drawings.
- The end item specification such as IPC specifications, when invoked by the customer.

5.3.1 If the conflict persists, Supplier shall submit in writing to Sparton, before processing the purchase order, for resolution and approvals.

5.4 Process Changes:

The Supplier shall notify Sparton in writing for approvals prior to implementation of any changes that directly affect the supplied material. This includes but not limited to, QMS, processing, materials, fixtures/tooling, measurement /test equipment, calibration, services, and relocation of Supplier facility.

5.5 First Article:

5.5.1 Approvals:

When indicated on the PO, Supplier shall submit a minimum of three (03) first piece samples per cavity for review, verification, and approval by Sparton. To be valid FAI pieces the Supplier must produce the samples from production tooling in a production environment. Under special circumstances, prototype samples are permissible when authorized in writing by the Sparton Quality Manager or designee. Sample selection and size are identified in Appendix A.

The Supplier must thoroughly review Sparton's drawing specifications before accepting and submitting their FAIR. Questions or concerns of the specifications or FAI requirements in general must be communicated to the Sparton buyer and/or FAI team. Submitting a known failed FAIR and/or failed FAI samples without an approved engineering deviation shall result in an automatic FAI rejection by Sparton team.

FAI samples are representative of the Supplier's mass production, approved tooling, and controlled processes. The Supplier must make their best effort to produce parts to the center of our engineering specifications. For example:

- Ø1.000 ± .005: parts shall be consistently targeted at or near Ø1.000
- Ø2.000 +0.008 / -0.000: parts shall be consistently targeted at or near Ø2.004.
- Ø3.000 +0.000 / -0.008: parts shall be consistently targeted at or near Ø2.996.

  Exception: For certain manufacturing process such as die castings and injection molding, the tool can be made to the high side of the tolerance that will wear down to give it a maximum tool life. If this is the case, a detection method and a robust sampling plan must be developed to prevent an out of spec condition escaping to Sparton.

***NOTE:** samples shall not waive Supplier's obligation to make deliveries in conformance with the requirements, applicable drawings, and specifications.*

5.5.1.1 Any changes to process tooling or equipment alteration beyond normal maintenance will require Supplier to resubmit of another first piece sample.

5.5.1.2 All products submitted as first piece samples shall be noted as such on either the shipping document, container, or bag.

5.5.2 Reports:

First Article Inspection Report (FAIR) shall be provided to Sparton demonstrating compliance with the requirements of the PO and referenced documents along with a description of measuring equipment used for each measurement taken. FAIR data shall be submitted on the appropriate forms per AS 9102.

5.5.2.1 The FAIR shall be submitted to Sparton for verification and disposition (approval or disapproval). The FAIR must have inspection results for all FAI samples. FAIR fields that are not applicable shall be reported as N/A. Upon first article approval, subsequent shipments will be authorized.

5.5.2.2 Signed material certs, and functional test reports (if applicable), to be submitted with the FAIR.

5.5.2.3 FAIR documentation to be submitted to faiteam@sparton.com with copy to responsible buyer. Once the FAIR is approved, the Supplier can ship the FAI samples to Sparton for our final FAI approval.

5.5.2.4 Unless otherwise concurred, the Supplier shall keep a good part made from the same FAI production run as a "master sample". This master sample will serve as a benchmark for comparison if any quality issue arises. This good part will be labeled as Master Sample with the part number and revision level.

5.6 Material Deliveries:

5.6.1 Identification and Packaging:

Supplier shall deliver all material in accordance with the Sparton Freight Guide.

5.6.2 Traceability:

Supplier shall be able to provide full traceability on all material delivered and shall be able to trace all raw materials back to the original manufacturer, as well through the Supplier's inspection and production records.

5.6.3 Certificates of Compliance (C of C):

Every shipment of product shall be accompanied by a C of C, which includes but is not limited to the following:

- Date of Issue
- Part Number, Description and Revision
- Traceability Number, Serial Number, Batch or Lot Number, Date Code, etc.
- PO Number and Quantity
- Approved Deviations / Waivers

NOTE: *The authorized Supplier Quality Representative shall sign the C of C.*

5.7 Non-Conformance:

5.7.1 General:

Sparton may reject any product, individual item, or complete lot shipment, delivered that does not conform to established requirements and specifications. Notification will be sent to the Supplier of the rejection, rejected items may be returned to the Supplier and/or 100% inspected or reworked at Supplier's expense.

5.7.2 Control:

The supplier is required to have a comprehensive system for controlling nonconforming material, taking the appropriate action to contain, analyze, resolve, and report on all actions taken to prevent the reoccurrence of the non-conformance. This non-conformance system should be documented so the process is easily understood.

All suppliers shall incorporate the use the following quality tools to establish and maintain control over their processes, examples are:

- Process Flow (PF)
- Control Plan (CP)
- Process Failure Mode Effect Analysis (PFMEA)
- Statistical Process controls (run charts, X-R Bar Charts, etc.)
- Gage Repeatability studies (Gage R&R)

5.7.3 Notification:

Supplier shall notify Sparton, via the commodities Buyer, immediately of any potential non-conformances, or latent defects that may be present in the material prior to Sparton receiving delivery.

5.7.4 Segregation:

Supplier shall define and implement procedures for segregation, control, and disposition of non-conforming material, including all associated status identification and quarantine arrangements.

5.7.5 Disposition:

The Supplier has only the authority to rework, replace or scrap any non-conformances product.

5.7.5.1 Sparton reserves the right to approve any disposition that is determined to be "Use As Is" or "Repair". The Supplier shall submit a deviation / waiver for any such product for approvals by Sparton prior to delivery.

6.0 Corrective Action Request:

6.1 In the event Sparton repeatedly identifies non-conforming product or significant non conformance, which may be detected during the incoming inspection, manufacturing, final inspection processes and/or within the field or laboratory, a formal supplier corrective action request (SCAR) may be requested from the supplier.

6.2 Response:

The supplier must submit the analysis report in 8D format, and allow response timeline below:

Within 48 hours

Provide details of containment actions. This includes the verification of the supplier's stock and work-in-progress (WIP) for similar defect, product in transit / shipped and completed product pending final release.

Within 5 working days

Provide root cause analysis on the defect found

Within 15 working days

Implement corrective and preventive actions and validate their effectiveness. Make sure they are implemented throughout production to Sparton and applied to other similar part number that might be affected.

The supplier may ask for an extension if the original date cannot me met.

6.3 The response shall include:

- Type of containment action taken by the supplier, including certification / identification method
- Results of supplier's initial investigation including results of any in-house sorting, fallout including the identification of any in transit inventory.
- Identification of root cause considering the occurrence and lack of detection of non-conformance or defect.
- Corrective action steps taken to correct any nonconforming material identified.
- Action taken to resolve the occurrence and detection root cause of non-conformance and prevent the reoccurrence of the non-conformance.
- Date corrective actions steps became effective

6.4 Approvals:
All submitted corrective action responses are subject to verification and approval by Sparton. This shall include monitoring of all future shipments of product to ensure that corrective action taken has produced the intended results. At least three shipments after SCAR must be marked or labelled for prompt identification at Sparton warehouse.

Example of certification labels:

Certified Material	Certified Material
QIR – XXXXXX	Damaged Parts
02/22/2022	02/22/2022

7.0 Records:

7.1 Inspection:

Supplier shall identify and undertake inspection of deliverables during product processing, for conformance to Sparton's requirements such as the PO, Drawings, Test Specifications Workmanship Standards, etc.

7.1.1 Raw material certification and verification:

Supplier shall maintain documentation records that certify the raw material used and testing performed on products.

7.2 Retention:

Unless otherwise specified on the PO by the customer contract, all quality records for Sparton material ordered shall be retained for a minimum of four years after final delivery to Sparton. This includes but is not limited to, inspection records and traceability records.

NOTE: *Records shall be provided upon request whenever requested by Sparton.*

7.2.1 In the event Supplier does not have the means to maintain and/or store records for an extended period then the supplier will communicate their limitation to Sparton and such records per mutual agreement may be shipped to Sparton for retention.

8.0 Supplier Evaluation:

8.1 Scorecard

Suppliers selected by Sparton are subject to ongoing performance monitoring, which are based in scorecard system as well as Supplier Business Reviews.

Supplier scorecards measure elements of Quality and Delivery, which includes the following:

- PPM
- On Time Delivery
- SCAR
- FPY (Paperwork Accuracy)

8.2 Supplier Performance

If supplier received an unacceptable rating for three (3) consecutive months, a Supplier Development Action Plan may be initiated to drive improvement.

8.2.1 If corrective action is ineffective by following Supplier Business Review, supplier visits/ process audits may be initiated and added to Supplier Development Action Plan to assist the supplier in improving the performance.

8.2.2 If supplier continues to fail to improve performance a determination will be made by Sparton to:

- Continue the Supplier Development Action Plan
- Place the Supplier on New Business Hold
- Develop exit strategy with the supplier

Supplier that satisfactory complete their Supplier Development Action Plan and return to consistently meeting acceptable performance standard for three (3) consecutive months may be taken off the Supplier Development Action Plan, contingent on the determination made during the next scheduled Supplier Business Review.

9.0 Counterfeit Mitigation

Suppliers are required to have documented processes outlining measures and protect Sparton from receiving counterfeit material throughout the supply chain, which includes, but is not limited to avoidance, detection, mitigation, and disposition. Any questions, concerns, or suspicions of counterfeit components can be communicated to Sparton Supply Chain and Procurement team for further guidance.

9.1 Brokered parts:

9.1.1 All brokered parts shall be **pre-approved** by Sparton.

9.1.2 All brokered parts shall be successfully tested by accredited laboratories.

9.1.3 The successful test results from accredited laboratories shall be **pre-approved** by Sparton's Director of Quality Assurance **prior** to delivery of the parts.

9.1.4 Accredited laboratories shall be certified to ISO/IEC 17025:2017 and for integrated circuits, testing shall be in accordance with the AS6081 standard.

10. Technical Quality Dispute

In event where reported defect cannot be mutually agreed Sparton will propose third party analysis performed by certified laboratory. Sparton shall have the right to recover / share incurred charges in event where root cause is deemed supplier's responsibility.

APPENDIX A (FAI Requirements)

First Article Requirements

Sample quantity unless directed otherwise by Sparton

OPERATION	FAI QTY	DIMENSIONAL INFORMATION
Manual Assembly / Operation (crimping, soldering, sewing)	3	On 3 pieces
Single Cavity Tool (Injection mold, casting)	3	On 3 pieces
Multi Cavity Tool (Injection mold, casting)	3	On 3 pieces per cavity
Circuit Cards / Electronic Assembly (Non-COTS)	3	On 1 piece
Machining, Stamping, Extrusion, Forming (Plastic, Metal)	3	On 3 pieces
Die Cut, Labels, Packaging, Pallets & Crates	3	On 3 pieces
Adhesive, Chemicals, Liquids	1	Not Applicable
Other (not identified above)	Order	Per Order Directions

The intent of the FAI is to qualify parts per the supplier's production process therefore the samples **Must be representative from an actual production run** unless authorized in writing from the Sparton Quality Manager.

First Article Inspection Content:

1) When specified in the Purchase Order First Article submission must be submitted by the supplier. The samples must be representative of the production process using production tooling.

2) Individually number all first article samples to correlate with the FAI report submitted. The FAI report must indicate all requirements (dimensions) identified on the print including verification of all notes. Dimensional verification must include the specification upper and lower limits for each dimension as well as the actual measured dimension. The FAI Submission must define the type and nature of the equipment being used by the supplier to provide the actual dimensional measurements; calipers, CMM, Micrometer, etc.

3) Supporting documentation that must be included includes submitting certificates of material(s) used, certificate of compliance to the drawing requirements, etc. Notes that are clearly identified as "Reference Only" do not require supporting documentation.

4) If the part specification identifies specific packaging/labeling requirements the supplier needs to provide their FAI samples using representative examples of the packaging/labeling that will be used or provide photographs and/or description of how production material will be received by Sparton.

5) The FAI should identify a point of contact and contact information so that any questions or deficiencies can be addressed quickly. Please provide name, title, phone, and email information.

6) Sparton may request additional information or samples complete an FAI. The supplier may request the original samples be returned if they determine that an issue with the samples can be corrected to comply with Sparton's findings. Communicate the return of samples through the Buyer identified on the purchase order.

7) If the supplier has any question or concerns with the tooling, dimensions, tolerances, testing, or material as part of the FAI submission they may contact Sparton's Supplier Quality Engineer for resolution. Any identified issue needs to be addressed with specific data or language generalized statements should not be used. If the drawing or specification defines testing and/or certification beyond the supplier's capability, the supplier must immediately inform Sparton of the situation prior to submission of the FAI. If an issue or concern arises, the buyer may arrange a conference call with the supplier to resolve any concerns before starting any FAI activity. Conference call(s) should be arraigned between parties to discuss any question or details of the FAI requirements.

8) Failure to provide the items identified above may delay additional purchase order engagement between Sparton and the supplier.

9) Supplier must be aware that any release of a production order is contingent on Sparton's acceptance of the FAI. The production of parts in advance of FAI approval is solely at the supplier's risk.

APPENDIX B (Conformation of Receipt)

The Senior Quality Representative of the receiving supplier must complete this conformation page. This document must be returned to Sparton Deleon Springs via either of the following methods:

Via Email: supplierqp@sparton.com

Via USPS:
Sparton
5612 Johnson Lake Road
Deleon Springs, FL 32130

sparton

Conformation of Receipt and Understanding

By returning this Receipt Acknowledgement, we the supplier hereby understand the requirements set forth by Sparton in this Supplier Quality Manual. We will abide by the requirements and responsibilities defined within this document.

Company Name: _____ **Date:** _____

Company Representative: _____

Title: _____

Comments:

Revision History

Rev LEVEL	Change Description	Effective Date
H	**Removed "Items ordered per AS 9102 forms 1 - 3 3 On 1 piece" from Sample quantity page 8.**	6/20/19
J	**5.1.4 ADD:** Sparton reserves the right to allow Sparton's customers and regulatory authorities the right to access the supplier's facility and applicable suppliers' documentation with reasonable prior notification. (QA8599)	7/15/19
K	**5.1.3.3 - Added Paragraph** **5.1.5 - Added paragraph - supplier technical review requirement** **5.5.2.1 - Added FAI email for FAIR submission** **5.7.2 - Correct Typo Process instead of Potential** **6.1 – Added clarification on criteria for SCAR** **6.2 - Change on Supplier response timeline expectation** **6.3 - Added details on supplier response requirements** **6.4 – Correct Typo 6.4 instead of 6.3. Added certification requirement along with example of certification labels** **7.2 - Changed record retention from two to four years** **8.0 - Added Supplier evaluation method as well as course of action resultant from supplier evaluation** **9.0 - Added counterfeit mitigation requirement** **10 – Added Paragraph Technical Quality Dispute** **Appendix B - Updated email address for supplier to submit signed manual (QA13458)**	6/17/22
L	**Updated section 5.5 First Article with additional FAI requirements and clarifications. Updated section 9.0 Counterfeit Mitigation to include the requirements for brokered parts. (**QA14193)	8/11/2022