

SUPPLIER QUALITY MANUAL

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1.0 PURPOSE

The purpose of this manual is to communicate to our suppliers the processes and systems that are to be used in the manufacture, design and development, and distribution of parts and products supplied to Geospace Technologies Corporation (GTC). These requirements are in addition to any communicated via the Purchase Order, Purchase Order Terms and Conditions, Technical (Engineering) Drawings/Prints, those flowed through customer specific requirements or any other form of written communication. It is the intent of Geospace Technologies Corporation to build partnerships with suppliers who can provide parts, materials, and services that are consistent to specifications and delivered on time.

2.0 SCOPE

The scope of the Supplier Quality Manual applies to all suppliers that provides materials and services to Geospace Technologies Corporation.

3.0 LANGUAGE REQUIREMENTS

All supplier documentation submitted to Geospace Technologies Corporation must be issued in English.

4.0 RESPONSIBILITY

It is the responsibility of the supplier and service provider to maintain a comprehensive quality system to ensure compliance with this Quality Manual and any other requirements set by Geospace Technologies Corporation.

5.0 REFERENCED DOCUMENTS

- 5.1 Geospace Purchase Order Terms and Conditions (592-17790-01)**
- 5.2 Supplier Selection & Monitoring Process (590-02660-01)**
- 5.3 Supplier Self-Assessment Survey (590-01710-01)**
- 5.4 ISO Registered Supplier Questionnaire (592-03740-01)**
- 5.5 Supplier Corrective Action Form (592-16610-01)**
- 5.6 IPC/JEDEC J-STD-033 Standard for Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices**
- 5.7 IPC/JEDEC J-STD-020 Standard for Moisture/Reflow Sensitivity Classification for Non-Hermetic Surface-Mount Devices**

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5.8 ANSI/ESD 20/20 Protection of Electrical and Electronic parts, Assemblies, and Equipment

5.9 IEC 61340-5-1 Electrostatics Part 5-1: Protection of Electronic Devices from Electrostatic Phenomena General Requirements.

5.10 590-00496-05 PPAP Elements Requirements List

6.0 SUPPLIER QUALITY MANAGEMENT SYSTEM REQUIREMENTS

Geospace Technologies requires all our suppliers and service providers to develop and implement a quality management system that demonstrates continual improvement. Suppliers and service providers are encouraged to pursue certification or compliance with ISO9001. Some suppliers may be required to have ISO9001, ISO13485, or AS9100 certification or demonstrate that their QMS is compliant to those standards.

7.0 SUPPLIER EXPECTATIONS

Geospace Technologies Corporation is certified to the latest revisions of the ISO9001, AS9100, and ISO14001 Standards and is committed to continuous improvement; therefore, all our suppliers are expected to:

- Have a documented Quality Management System that conforms to Geospace Technologies Corporation's requirements.
 - The quality system must address design, document control, process control, qualification, and non-conformance handling.
 - Please note that depending on the product or service they provide, some suppliers may not be subject to have a documented QMS.
- Have safe and environmentally sound working conditions in their facilities.
- Review and know all requirements related to the product or service.
- Contact GTC for cases in which the requirements are unclear or misunderstood.
- Notify and get approval from GTC for any changes that may impact form, fit, function, cost, or reliability.
- Provide conforming products and services.

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- Meet On-Time Delivery Goal.
- Assist in problem resolution regarding the supplier's products and services.
- Be accountable for the impact of poor quality on GTC and its customers.
- Have the expertise and resources to perform effective root cause analysis and corrective and preventive action.
- Comply to all other items stated in the GTC Purchase Order Terms and Conditions (592-17790-01).

8.0 SUPPLIER SELECTION, APPROVAL, AND EVALUATION

Geospace Technologies Corporation evaluates and selects suppliers and service providers based on their ability to supply goods and services that comply to GTC's specified requirements in terms of quality of product, delivery lead time, and competitive pricing. All suppliers and service providers must be approved by GTC regardless of approvals by customers or other entities.

8.1 New Suppliers

Potential suppliers may be requested to complete the following items:

- Supplier Self-Assessment Survey (590-01710-01).
- ISO Registered Supplier Questionnaire (592-03740-01).
- First Article Submission

In addition to the completion and submission of those items, the Supplier may be subject to a physical/virtual Supplier Quality Audit.

8.2 Existing Suppliers

All suppliers and service providers that are currently supplying materials and/or services are approved suppliers. All approved suppliers and service providers are monitored according to the Supplier Selection & Monitoring Process (590-02660-01).

8.3 Evaluation, Monitoring, and Supplier Quality Audit

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Suppliers will be monitored via Supplier Quality Audits and Vendor Score Cards. The Vendor Score Cards will be sent on an ongoing basis for the quality of parts received, on-time delivery, and responsiveness as stated in the Supplier Selection & Monitoring Process (590-02660-01).

The Supplier Quality System Audits will be done either via site visits or virtually. The overall goal of these audits is to understand the Supplier's Manufacturing and Process capabilities as well as to ensure that they have a QMS in place that promotes continuous improvement. Suppliers may be subject to Supplier Quality Audits as part of routine monitoring, new supplier qualification, and for repeat quality and delivery issues. Please note that GTC will conduct Supplier Quality System audits with prior notification.

8.4 Supplier Disqualification

Suppliers may be disqualified and removed from the Approved Vendor List (AVL) for any of the following reasons:

- Repeat Quality and Delivery Issues.
- Poor Responsiveness/Communication
- Poor Responsiveness to Corrective Action Requests
- Failing the Supplier Quality Audit
- Failure to provide records and/or documentation

9.0 SUPPLIER DOCUMENTATION REQUIREMENTS

The Supplier's Quality Management System documentation should include the following:

- Documented Quality Policy
- Documented Quality Objectives/Key Performance Indicators (KPIs)
- Documented Procedure for Non-Conformance and Corrective Action Handling
- Documented Procedures for processes, calibration, document control, and contract review.

9.1 Supplier Certificate Documentation

A supplier may have to provide a Certificate of Conformance (CoC), Certificate of Analysis (CoA), Certificate of Origin (COO), etc. for all the materials and processes specified on the Purchase

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Order or Contract. The Purchase Order will state when a product requires a certification document. For instances where a certificate or statement of compliance is required, the following items may be required to be included in the compliance document:

- Supplier Name
- Compliance Statement
- Part Number and Part Description
- PO Number
- Compliance to RoHS/Reach
- Signature and Date
- Lot number/ batch number
- Country of Origin

10.0 SUPPLIER RECORD RETENTION

The supplier should have a record retention procedure and/or policy in place that is in accordance with any applicable standard, regulation, and contract/agreement. The supplier shall be able to provide Geospace Technologies Corporation with these records upon request.

11.0 SUPPLIER FIRST ARTICLE SUBMISSION PROCESS

New suppliers for manufactured parts require submittal and approval of First Articles. These parts will be inspected in accordance with Engineering drawings or other specifications, along with additional testing as required by the Engineering and/or Quality departments. Inspection and test results shall be documented. The purpose of the First Article Approval is to validate that the supplier's production/manufacturing processes have the capability to meet Geospace's requirements and criteria. Please note that the following items may be required as part of the First Article Submission Process:

- Drawings
- Process Capability Studies
- Dimensional Reports

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- Samples
- Material Certifications
- Test Reports

12.0 SUPPLIER PRESERVATION OF PRODUCTS & MATERIALS REQUIREMENTS

The supplier is responsible for proper handling and storage of materials and components supplied to Geospace Technologies Corporation. Any additional requirements requested by GTC regarding special handling, packaging, and storage will be documented in the Purchase Order or Product specifications.

12.1 MSL Rated Materials and Devices

Where applicable, if the supplier is supplying GTC materials or devices that are MSL Rated, they shall be packaged and handled according to IPC/JEDEC J-STD-033 and IPC/JEDEC J-STD-020. Geospace Technologies requires all MSL Rated materials and devices to have the MSL Rating included on the package label.

12.2 ESD Sensitive Materials and Devices

Where applicable, the supplier shall have an ESD control program to prevent the damage of electronic components from electrostatic discharge. GTC requires all suppliers supplying ESD sensitive materials and devices to be packaged with the appropriate ESD packaging per ANSI/ESD 20/20 and/or IEC61340.

12.3 Age Sensitive Materials and Devices

For materials with a limited shelf life, the supplier shall provide GTC with materials with a reasonable shelf life. Suppliers should have a shelf-life control process for materials that are age sensitive or have a limited shelf life. The supplier shall have data for the age sensitive materials that show the manufacture date, expiration date, lot number, and where applicable any special handling or storage requirements.

12.4 Temperature Sensitive Materials and Devices

Where applicable, temperature sensitive materials and devices should be preserved and shipped in a way that the integrity of the product won't become compromised.

13.0 SUPPLIER COUNTERFEIT PRODUCT PREVENTION

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The supplier shall have and maintain a Counterfeit Materials Prevention and Control Program to ensure that counterfeit materials are not delivered to Geospace Technologies Corporation nor any other customer.

14.0 SUPPLIER CONTROL OF NON-CONFORMING PRODUCT

It is the responsibility of the supplier to supply Geospace Technologies Corporation with conforming product. The supplier shall have a documented procedure in place for handling and controlling non-conforming product. The documented procedure shall address the following:

- Containment Actions
- Dispositions
- Identification
- Corrective/Preventive Actions

15.0 SUPPLIER CORRECTIVE ACTION REQUESTS

Geospace Technologies Corporation may issue a Supplier Corrective Action Request (SCAR) upon receipt of a non-conforming material or discovery of a supplier non-conforming process during an incoming inspection, assembly, audit, and other instances as applicable. Suppliers shall complete the Geospace Supplier Corrective Action Request Form (592-16610-01). Please note that the supplier can use their own form as long as their SCAR form addresses the Immediate Containment, the Root Cause, the permanent Corrective Action, and Corrective Action implementation date. The SCAR shall be completed and sent back to Geospace within a reasonable time (10 Business Days Preferred).

16.0 SUPPLIER CHANGE MANAGEMENT/CONTROL

The Supplier shall notify the organization of any changes in the purchased product and receive written approval prior to implementation of any changes that may affect the ability of the purchased product to meet specified purchase requirements. Geospace Technologies requires its suppliers to have a Change Management System in place that documents and ensures that changes to products and processes are properly reviewed and approved both internally and by customer prior to implementation. In the case that a supplier implements an unauthorized change that results in Geospace or its customer to become negatively impacted, then the supplier may be responsible for compensating Geospace or its customer for all associated cost.

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17.0 PERSONNEL QUALIFICATION

The supplier shall have a process in place to ensure that all personnel involved in the production, inspection, and testing of products supplied to Geospace Technologies have the necessary qualifications, skills, and training to perform their assigned tasks. The supplier shall maintain records of personnel qualifications and ensure that their contributions to the product meet the specified requirements.

18.0 PRODUCTION PART APPROVAL PROCESS (PPAP)

Production Part Approval Process (PPAP) focuses heavily on the supplier's processes. It is a rigorous process intended to ensure the supplier's production process consistently produces parts meeting all design and quality requirements. Also, it is intended to ensure the supplier understands all customer requirements and the supplier's process is capable, stable, repeatable, yields conforming material, and be able to manufacture sustainable high-quality parts at a proven volume. Upon Geospace's request, the supplier must receive PPAP approval from Geospace Management prior to the first shipment of serial/regular production parts.

18.1 PPAP Elements Requirements and PPAP Risk Levels (AIAG Standard)

Geospace Quality Engineering Management starts with all PPAP elements as per 590-00496-05. The product, functions, and supplier risk are evaluated. Those PPAP elements that yield no risk are eliminated. The remaining elements, those that contain risk, become in-scope PPAP elements for a program. Geospace will use Level 4/customized and select the individual PPAP Elements, but also depending on the product risk, one of the PPAP requirements will be required:

- Level 1: Part Submission Warrant (PSW) only
- Level 2: PSW + limited supporting data
- Level 3: PSW + complete supporting data (most common)
- Level 4: PSW + customized customer-defined requirements
- Level 5: PSW + review of all data