



Supplier Quality Assurance Manual

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1 Introduction

1.1 Scope

This Supplier Quality Assurance Manual has been developed to communicate the general expectations, requirements, and procedures of Technologic Systems to our suppliers. Acceptance of any and/or all purchase orders constitutes acceptance and commitment on behalf of the recipient to comply with this manual's content. This manual does not alter or reduce any other contractual requirements covered by purchasing documents or requirements of engineering drawings or specifications.

1.2 Purpose

The Technologic Systems Quality Policy states, "Technologic Systems is committed to achieving total customer satisfaction by driving continuous improvement of processes and delivering innovative products with world-class quality, honoring our passion for original, open, rugged, and long-living embedded systems" We are continually improving our processes towards the goal of complete customer satisfaction, and by having high quality supplier performance we will be better situated to achieve this goal.

In order for this policy to be achieved, it is imperative that all functions within Technologic Systems and our business associates operate with a goal for zero defects and 100% on-time delivery. We must strive for continual improvement in the quality of product, delivery, and services. In working with our suppliers our emphasis is on defect prevention and the minimization of variation and waste in the supply chain. The ultimate aim of all activities is to continually comply with our customers' increasing expectations.

1.3 Application

The expectations and requirements described in this manual apply to all suppliers of products and/or services. Suppliers must meet all applicable requirements specified herein. (Depending on the specific supplier, not all sections or subsections may apply. If in doubt, contact your Technologic Systems Purchasing or Quality representative.)

1.4 Implementation

Suppliers are responsible for the development, documentation, implementation, and maintenance of a quality system. Technologic Systems has a preference for suppliers with a quality system that is in compliance with the ISO 9001:2008 Quality Systems Requirements.



1.5 Attachments

The following attachments are available upon request:

[Corrective Action Form](#)
[Purchase Quality Attachment \(PQA\)](#)

2 Technologic Systems Expectations

2.1 Consistent Quality

Technologic Systems requires defect-free product from suppliers. Any deviation from the accepted technical documents defining a product may result in rejection and return of defective product to the supplier.

2.2 On-Time Delivery

Technologic Systems requires all suppliers to provide on-time delivery with the exact product and/or services promised and correct quantity and pricing as stipulated in the purchase order and/or contract.

2.3 Cooperative Partnerships

Technologic Systems treats our suppliers as our partners in our commitment to meet customers' quality expectations through continuous improvements. As such we expect that our suppliers will support our efforts to provide quality products with timely delivery by providing us with the same. We anticipate that the relationship between our companies will be treated with value and respect and that our suppliers will demonstrate flexibility in assisting Technologic Systems in meeting all of our customer's requirements.

2.4 Technical Documents

The supplier shall have available all design records (drawings, specifications) for the parts manufactured or otherwise supplied, including components or details of assemblies and technical standards noted on the drawings. For parts identified as catalog parts, this may consist of functional specification or a reference to a recognized industry standard. Documents are to indicate the date of the design record, change level, and include any authorized engineering change documents used in conjunction with the part drawings. If a supplier is not the original manufacturer of a product they will be able to provide the required technical documents from the original manufacturer within a reasonable amount of time.



2.5 Rights of Verification of Products/Services

Technologic Systems reserves the right to audit Supplier's facilities and/or Supplier Quality Control Inspection system and manufacturing processes to verify compliance with requirements. Technologic Systems may also make requests for audits or additional information on behalf of our end customer. In such cases a Technologic Systems representative will be on hand to support the supplier at all times.

3 Supplier Selection and Performance

3.1 Supplier Evaluations and Selection

Technologic Systems supply base will consist of organizations supportive of our business needs. Technologic Systems utilizes controlled methods through which suppliers are evaluated, selected, developed and monitored. Criteria for placement and remaining on the Technologic Systems Authorized Supplier List (ASL) is based on the suppliers' abilities to consistently deliver quality products and/or services, meet our delivery requirements, be cost competitive and be responsive to Technologic Systems needs.

3.2 Supplier Monitoring

A supplier's performance will be monitored. Supplier performance will be measured on the ability to meet Technologic Systems' minimum requirements defined for product quality, on time delivery, product price, and overall responsiveness to requests, including prompt addressing of any quality issues. Suppliers performing well on these metrics will remain on the Technologic Systems Authorized Supplier List.

Failure to perform on these metrics will place the supplier into the risk supplier category. Failing suppliers will be notified by their Purchasing or Quality Representative and may then be required to submit a corrective action plan for improvement of their performance. The Technologic Systems Purchasing, Quality representative or other authorized personnel will review the submitted action plan. Acceptable plans will be acknowledged and the supplier will be required to submit progress reports. Suppliers who show minimal improvement or deterioration in product quality may be subject, but not limited, to:

- Limited access to new business
- Removal from Authorized Vendor List

Unacceptable corrective action plans shall be critiqued and reviewed with the supplier until a satisfactory action plan can be developed. If an action plan is not successfully implemented Technologic Systems may remove supplier from the Authorized Supplier List.



4 Supplier Quality Requirements

4.1 Quality System

Supplier quality systems shall be documented, implemented and maintained to ensure the supplier's products/services comply with the identified purchase specifications, engineering and/or material specifications and contract requirements. The system shall be defined and documented in the supplier's own Quality Manual or a demonstrated set of procedures. Technologic Systems has a preference for suppliers with a quality system that is compliant to or closely mirrors ISO 9001:2008. This manual or procedures shall be made available to Technologic Systems for review upon request.

For ISO 9001:2008 certified suppliers: If a supplier loses its certification or if it is put on suspension by a Registrar, the supplier is to notify their Technologic Systems Purchasing or Quality Representative within 10 working days. Additionally, if a supplier's certificate expires, a copy of the new certificate shall be forwarded to Technologic Systems.

For non-ISO 9001:2008 certified suppliers: If a supplier is making significant changes (including changes the supplier considers to be improvements) to their quality procedures, the supplier is required to notify their Technologic Systems Purchasing or Quality Representative in advance of implementing the changes.

4.2 Product/Service Quality

Suppliers are fully responsible for the quality of their products/services, including their sub-tier suppliers. The primary supplier is responsible for ensuring that the provided products/services that meet all Technologic Systems requirements, specifications, and drawings as identified on the purchase order. Essentially, all quality and contractual/PO requirements must be flowed down to sub-tier suppliers. The primary supplier will be responsible for inspecting all materials and services to ensure they are in compliance prior to sending them on to Technologic Systems. If this is not possible due to delivery mechanisms the primary supplier will assist Technologic Systems with remedying any issues found and will absorb the cost impact of doing so.

Documentation demonstrating compliance shall be maintained on file for a minimum of seven (7) years after all contract/purchase order requirements have been met. Technologic Systems retains the right to request any supporting documentation.

4.3 First Article Requirements

If requested supplier is required to furnish a "First Article" part for testing. Production will not commence until "First Article" paperwork is signed by a Technologic Systems



Engineering and Quality representative. Payment for First Article specimens can be negotiated with Technologic Systems at the time of request.

First Article Re-Testing: a subsequent First Article may be required, based on the following conditions:

- The production process or material has undergone a significant change.
- Component production had been discontinued for a period of more than 12 months.
- The production facility has been moved to a new location.
- A new sub-tier supplier has been selected as a source of manufacturing.
- Technologic Systems request re-test of component to address quality concerns.

4.4 Continual Improvements

Continual improvement in the quality of products and/or services is encouraged in Technologic Systems suppliers. Suppliers are encouraged to share their improvement plans. If the improvements make any significant changes to the materials being used or the resulting form, fit, or function of the product the supplier is required to notify Technologic Systems of the changes.

4.5 Non-Conforming Product Control (DMR)

Suppliers to Technologic Systems shall have necessary processes and inspections in place to ensure that conforming product is being received at Technologic Systems. If an instance occurs where non-conforming material is identified at Technologic Systems, a Non-Conformance report (DMR) will be generated and the supplier will be notified of the nonconformance.

4.6 Containment of Nonconforming Product

If a supplier's parts are found to be defective (do not meet one or more specified requirements) in the inspection process, during assembly at Technologic Systems, or if a Technologic Systems customer complaint is confirmed to be a supplier quality problem, the supplier will be notified by Technologic Systems personnel (Quality and/or Purchasing). The supplier will provide immediate containment of the materials involved and will support a resolution to the problem. The supplier will be responsible for the cost associated with shipping, handling, processing, reworking, inspecting, and replacing defective material including the cost of value-added operations prior to its discovery.

If a supplier detects a nonconforming product prior to shipment to Technologic Systems, the supplier must immediately determine the extent of the nonconformance and take action to correct the issue. If suspect material has been shipped, the supplier must notify Technologic Systems Quality and/or Purchasing and identify the material and the suspect condition.



A most serious concern is when a supplier product/service shuts down a Technologic Systems production line thus making delivery to a Technologic Systems customer late. Any condition causing line shutdown and late shipment warrants the supplier's immediate action to eliminate the condition. The supplier must use all reasonable resources and efforts to restore Technologic Systems' production lines. Additionally the supplier is responsible to address containment of the problem at their facility, parts in transit, and parts at Technologic Systems. Further actions required of the supplier will be dependent on the outcome of the nonconforming material review.

4.7 Corrective Action Request

A nonconformance report requesting root cause and corrective action will be issued for nonconforming products. The supplier is responsible for identifying the root cause of the problem(s) and to implement corrective action(s) to prevent recurrence of the problem.

Timely response to a request for root cause and corrective action is essential. Initial acknowledgement of a corrective action request is expected within 24 hours of notification. Suppliers are expected to provide prompt provision of initial problem diagnoses, containment actions, and if applicable a return goods authorization number (RMA#), failure to do so will result in the supplier being placed in the risk category. A full root cause and corrective action must be submitted, and follow up reports on the completion of corrective activities.

A supplier's corrective action format will be acceptable as long as all of the information requested by Technologic Systems contained therein. A supplier corrective action request will stay open until a Technologic Systems Quality Representative has verified the corrective actions and the supplier provides sufficient documented evidence that these actions are effective.

Failure to respond to a request for corrective action in a timely manner may place the supplier into the risk supplier category.

4.8 Supplier Request for Engineering Change (Deviation)

If there will be a change to the product supplied the supplier should send a formal request or notice to the appropriate Technologic Systems Purchasing or Engineering Representative for review and approval. The supplier is required to notify Technologic Systems 9 months in advance of any pending significant changes, especially End Of Life plans for any products Technologic Systems has been purchasing. Technologic Systems will communicate in writing the approval or rejection of the request or else ask for supplementary data or parts.



For products designed by the supplier or a manufacture the supplier represents, if the supplier does not receive a rejection or follow up request from Technologic Systems they can assume the changes are acceptable and proceed with the change.

For products designed by Technologic Systems, the supplier shall not be permitted to make changes to product and/or processes that deviates from the approved drawing or changes that may affect the fit, form or function without prior written approval from Technologic Systems. If the change is to be accepted an engineering change (ECO) procedure will be followed and the supplier will be issued a new drawing showing the approved change. No changes will be allowed without receipt of updated drawings, Bills of Materials, or other appropriate technical documentation.

4.9 Packaging and Shipping Requirements

The supplier shall package and ship product in a manner that provides protection against damage, rust, corrosion, contamination, and anything that would render the product unfit for its intended use. The use of commercial carriers does not relieve the supplier of the responsibility for properly packaging products to ensure acceptance at the point of delivery. Product shall be packaged so that the product weight or size does not adversely impact the type of transportation chosen. The agreed upon shipping specifications must be adhered to in all instances.

4.10 Invoices, Packing Lists, Identification

Suppliers must submit all appropriate documentation as directed in the general purchase order provisions. Invoices must state shipping point, route, and whether freight is prepaid or collect. Separate invoices are to be issued for each shipment. Itemized packing lists must accompany all shipments and the packing list container must be clearly marked to indicate its shipping and receiving locations.

4.11 Other Technical Requirements

4.11.1 Identification of Shelf Life Material

The supplier shall identify each item, package, or container of shelf life material with its cure or manufacture date, expiration date, shelf life remaining (as of due date per P.O.) and special storage and handling conditions in addition to the standard identification requirements (see ISO or AS 7.5.5 Preservation of Product) Technologic Systems requires a minimum of 75% of shelf life remain on products when received at Technologic Systems.

4.11.2 Certificate of Compliance / Conformance / Analysis (C of C)

The supplier shall furnish, with each shipment, a Certificate of Compliance / Conformance / Analysis (C of C). The supplier is required to furnish C of C indicating compliance of all devices provided to RoHS2 and REACH standards. If the supplier is



manufacturing product for Technologic Systems they are also required to furnish information that verifies that purchased raw materials or raw materials used during product fabrication meet the stated Purchase Order specifications. The C of C shall be signed by a responsible representative and must show the part number, revision level, Purchase Order number, date of manufacture, and title of the responsible person.

4.11.3 Identification Marking

The supplier shall assure that supplied products are permanently and legibly marked in accordance with the drawing specified method. The identification marking shall be as permanent as the normal life expectancy of the item and be capable of withstanding the intended operating environment and cleaning procedures. Legibility shall be required for ready readability and be applicable after the specified protective coatings are applied.

4.11.4 Workmanship Standards

Technologic Systems has developed and maintained a reputation for producing quality products with high reliability. Our suppliers are an integral part of this achievement. As such, Technologic Systems expects superior workmanship in all supplied products.