INTRALOX

SUPPLIER QUALITY MANUAL

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OUR SUPPLIERS

Intralox recognizes the important role our Suppliers have in contributing to the value we offer our customers. As an extension of our own operations, we rely on our Suppliers to provide material, products, and services which meet the requirements of Intralox contracts, applicable specifications, and the quality management requirements outlined herein.

PURPOSE

Intralox serves diverse market sectors, such as Food Processing, Industrial Manufacturing, and Logistics and Material Handling. The purpose of this manual is to inform Intralox Suppliers of the core expectations Intralox has regarding the quality management systems, design requirement, and manufacturing process controls of any Supplier that wants to do business with Intralox.

SCOPE

This manual applies to all Suppliers providing Intralox with materials, products, processing, and related services, including intra-company Suppliers, and when applicable, to Supplier sub-tier sources. The general requirements outlined herein are not intended to supersede and will defer to any conflicting requirements in the Intralox contract, or drawing, including applicable engineering specifications and process specifications, or applicable long-term agreement(s).

REQUIREMENTS

In this manual, the terms "shall" and "must" mean that the described action is mandatory; "should" means that the described action is necessary and expected with some flexibility allowed in the method of compliance; and “may” means that the described action is permissible or discretionary.

QUALITY VISION STATEMENT

Provide world-class customer experience and improve the lives of people globally by delivering excellence in products, processes, and services through building trust, partnerships, and a culture of quality.

FORMS

Many of the required forms are available in the respective AIAG core tools manuals and other reference documents. Certain unique Intralox forms are referenced herein. Electronic versions of these and other Intralox forms (including those considered equivalent to the AIAG forms) may be obtained from your Intralox Supplier Quality Representative.

Form Number	Form Title	Available From
127.8001033.1	Supplier Production Part Approval Process (PPAP)	Intralox Supplier Quality Representative
127.8001031.1	PPAP-Part Submission Warrant	Intralox Supplier Quality Representative
127.8001081.1	Corrective Action 8D	Intralox Supplier Quality Representative
127.8001082.1	Product/Process Change Request	Intralox Supplier Quality Representative
127.8001084.1	Supplier Deviation Request	Intralox Supplier Quality Representative
127.8001101.1	Supplier Assessment	Intralox Supplier Quality Representative
115.8001012.1	Unit Load, Pallet, and Palletization Requirements	Intralox Supplier Quality Representative

QUALITY SYSTEM REQUIREMENTS

The Supplier shall maintain a Quality Management System (QMS) suitable to the products and services provided to Intralox.

QUALITY MANUAL

Upon request, the Supplier shall furnish Intralox with a copy of the Supplier's Quality Management System Manual, which is to be current and approved by the Supplier's management, including, or referring to related documents. The quality management system documentation shall include Supplier's quality policy and quality objectives. Top management shall define quality objectives and measurements which should address customer expectations and be achievable within a defined period. The Supplier shall promptly notify the Intralox Supplier Quality Representative of any substantive changes to the Supplier's quality management system or personnel.

SUPPLIER APPROVAL PROCESS

SUPPLIER ASSESSMENT

The Supplier Approval Process may include the following:

- Supplier Initial Self-Assessment - Intralox may request the Supplier to perform a self-assessment of its business, quality management system, and capabilities using the Supplier Assessment Form 127.8001101.1.
- On-Site Assessment - Intralox may conduct an on-site assessment of the Supplier's Quality Management System.
- Business and Manufacturing Operations Assessment – to determine whether the Supplier has the financial resources, production capacity, and other business resources needed to fulfill Intralox volume production needs and continuity of supply.
- Assessment of Continuous Improvement Initiative – to determine if the Supplier's culture, methods, and skills are present to actively pursue continuous improvement.
- Technology Assessment – to determine whether the Supplier has the needed technical resources, including production and inspection equipment, facilities, engineering resources, Intralox-specified computer-aided design language/format, electronic commerce capability, etc.
- Sub-Tier Supplier Control Assessment – to evaluate the effectiveness of the Supplier's sub-tier management processes and ensure that products or services procured from sub-tier sources and delivered to Intralox conform to all applicable Intralox requirements.

GENERAL REQUIREMENTS

The following set of general quality requirements applies to all Suppliers.

COMPLIANCE WITH CONTRACTUAL REQUIREMENTS

Upon accepting an Intralox PO with its terms and conditions, the Supplier is responsible for compliance with all requirements (e.g., engineering drawing, specification, purchase order). All documents, drawings, and specifications, specified in the contract or documents referenced in the contract and are applicable to the Supplier and required to be followed at all levels of the supply chain. No audit, inspection, or testing performed by Intralox, representatives of Intralox, or its customers, whether at the Supplier's facilities, at any sub-tier facilities, or upon receipt at Intralox, either relieves the Supplier of the responsibility to furnish conforming products and services or precludes subsequent rejection by Intralox or its customers.

INTRALOX DESIGNATED SOURCES

Where specified by contract, the Supplier shall purchase products, materials, or services from Intralox designated sources. The Supplier is responsible to ensure that items procured from such sources meet all applicable technical and quality requirements.

CONTROL OF SUB-TIER SUPPLIERS

The Supplier, as the recipient of the contract, is responsible for meeting all requirements, including work performed by the Supplier's sub-tier Suppliers. When the Supplier uses sub-tier sources to perform work on products and/or services scheduled for delivery to Intralox, the Supplier shall include (flow-down) in its contracts with, its sub-tier sources, all of the applicable technical and quality requirements contained in the Intralox contract, including quality system requirements, regulatory requirements, the use of Intralox designated sources, and the requirement to document and control 'key characteristics' and/or 'key processes,' and to furnish certifications and test reports as required. Intralox and its customers may audit sub-tier facilities, subject to proprietary considerations.

CONTROL AND RELEASE OF INTRALOX® FURNISHED DOCUMENTS

- Documents furnished by Intralox to the Supplier are furnished solely for the purpose of doing business with Intralox. Proprietary documents may be furnished to the Supplier in hard copy, electronic or other media. The Supplier is responsible for controlling and maintaining such documents to preclude improper use, loss, damage, or alteration.
- Unless authorized by the Intralox Buyer or the Intralox Supplier Quality Representative in writing, the Supplier must not transmit or furnish any Intralox furnished documents, or copies of such documents, to anyone outside the Supplier's business organization except to a sub-tier source used by the Supplier for performance of work on the Intralox contract.

ELECTRONIC DOCUMENTS

The accuracy and authenticity of electronic documents and forms submitted to Intralox is of highest importance. The following rules apply and may be subject to audit by Intralox at Supplier’s facilities:

- Electronic documents and application of electronic signatures must be under the direct control of the individual whose name appears on the electronic document.
- The electronic signatures may only be applied at the place where the individual is located, and the individual must have direct access and responsibility for the products or services described in the electronic document.
- The application of the electronic signature certifies that the individual signing is authorized to sign on behalf of Intralox.

BUSINESS CONTINUITY

The Supplier must have a business continuity plan which would allow for the safeguarding, storage and recovery of engineering drawings, electronic media, and production tooling in the event of damage or loss.

PRODUCT QUALIFICATION

This section defines the requirements for production part qualification and approval. The purpose is to make sure that all Intralox design and specification requirements are properly understood by the Supplier and that the Supplier’s manufacturing processes have the capability to consistently meet these requirements.

In all instances where a product is manufactured to a new design, for a new system, or for a new application, it is important that the Supplier and Intralox allocate responsibility for assuring that all performance, endurance, maintenance, safety, and warning requirements are met. It is preferred that this allocation of responsibility be in writing.

FIRST ARTICLE INSPECTION

- At a minimum, a First Article Inspection (FAI) is required to initially qualify a part/process, unless the PPAP process (below) is used instead. Furthermore, a new FAI may be requested if there is an extended gap of time since last production. The FAI requires that all features and characteristics on the design specification and the Intralox Quality Department Standard Specification for Vendor Supplied Parts, if applicable, be inspected and verified prior to production. Actual measured values shall be recorded as opposed to general statements of conformance or other notations simply indicating acceptance.

- For Intralox, a new FAI is required if there is a twenty-four (24) month gap of time since last production and excess stock from last production cannot be used to satisfy the FAI requirement. A Delta FAI is required when new revision of the part number is released.

- Inspections of features for final approval shall be conducted at a temperature of 71°F±2°F

PRODUCTION PART APPROVAL PROCESS

When PPAP is specified on the Intralox Purchase Order, the Supplier shall submit a PPAP package to the Intralox Supplier Quality Engineer per PPAP Procedure 127.8001033.1.

FIRST / IN-PROCESS / LAST PIECE INSPECTION

The supplier is required to conduct a documented first/last piece inspection at the beginning and end of each operation as well as control the conformity of the product by using In-Process inspection sampling. The expectation is that shipments to Intralox contain zero-defects. Nonconformances will likely occur in processes, but the Supplier is expected to have robust and controlled manufacturing and inspection processes in place to find and contain any defects that may occur.

PROCESS CONTROL

This section defines the requirements for the Supplier to control their manufacturing processes.

ERROR-PROOFING

The Supplier should use error-proofing devices and techniques as a form of process control; especially for repetitive functions, difficult tasks prone to mistakes, or where the cost of error is high.

WORK INSTRUCTIONS

The Supplier shall prepare documented work instructions for all employees having responsibilities for the operation of processes that impact product quality. These instructions shall be maintained current and accessible for use at the workstation.

CONTROL OF MONITORING AND MEASURING DEVICES

The Supplier shall determine the monitoring and measuring to be undertaken and the monitoring and measuring equipment needed to provide evidence of product conformity to the required specifications. At a minimum, where necessary to ensure valid results, measuring equipment shall:

- Be calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded; and

- Be identified to enable the calibration status to be determined.

For Intralox, unless otherwise specified by contract, the Supplier shall establish procedures to control Measuring and Test Equipment (M&TE) comply with the requirements of ANSI/NCSL Z540-1 or ISO 10012.

STATISTICAL PROCESS CONTROL

Where specified in the Control Plan, the Supplier is required to apply effective statistical process controls. The Supplier should consult the Statistical Process Control (SPC) manual published by AIAG for guidance, methods, examples, and related reference information.

PREVENTIVE MAINTENANCE

The Supplier should:

1. Identify key process equipment
2. Provide resources for machine/equipment maintenance activities
3. Develop an effective, planned preventive maintenance system

RAW MATERIAL LOT CONTROL

The Supplier must have a raw material lot control process. When requested, the Supplier must provide raw material lot traceability contained in the finished product.

CHANGE CONTROL

The Supplier is responsible for controlling changes and notifying the Intralox Supplier Quality Representative of all changes to the approved part design, manufacturing process, or manufacturing site.

CHANGE CONTROL PROCESS

The Supplier shall have a process to ensure that relevant versions of applicable documents furnished by Intralox (as well as those specified of external origin) are available at points of use.

The Supplier is responsible for the timely review, distribution, and implementation of all Intralox engineering standards/specifications and changes in accordance with the schedule required by Intralox. Timely review should be as soon as possible and shall not exceed two working weeks. The Supplier shall maintain a record of the date on which each change is implemented in production. Implementation shall include updated documents.

SUPPLIER CHANGE REQUESTS

The Supplier shall not make changes which may affect product design or function without written approval from the Intralox Supplier Quality Representative. This may include changes to the supplier's processes, location, facilities, equipment, material, or product design.

To request a permanent engineering change, the Supplier shall use the Supplier Change Request Form 127.8001082.1.

CONTROL OF NONCONFORMING PRODUCT

For nonconforming products supplied to Intralox, including those that reach an Intralox customer, the Supplier will be required to cover some if not all costs to correct the nonconformance.

SUPPLIER REQUEST FOR A NONCONFORMANCE DEVIATION

A Supplier shall not knowingly ship product that deviates from the drawing, specification limits, or design intent without

prior written authorization from the Intralox Supplier Quality Representative. If such a condition exists, the Supplier may petition the Intralox Supplier Quality Representative, in writing, to allow shipment of the product under a written nonconformance deviation. The Supplier shall use the Intralox Supplier Deviation Request (Form 127.8001084.1).

If requested by the Intralox Supplier Quality Representative, the Supplier must send samples of such nonconforming items to Intralox for evaluation. The cost of shipping, inspection, and testing to determine the potential acceptability of such product will be charged to the Supplier.

A request for deviation will automatically generate an Intralox 8D Nonconformance Report. Supplier Requests for Use As Is, Rework, or Specification Change will require a review by the Intralox Material Review Board or the Intralox Quality Specification Review Board or both. These reviews can take additional time requiring the Supplier to produce more conforming product while the nonconforming product is being reviewed.

Intralox approval of a deviation is specific to the products for which it has been submitted and approved and shall not be construed as a permanent engineering change, except in cases where the specifications are changed by the QSRB. The Supplier must begin work immediately on corrective action. In all cases, the Supplier shall fully contain all product suspected of being nonconforming. In addition, nonconforming product may be returned to the Supplier at Supplier expense, or the Supplier may be required to sort any suspect product already shipped to Intralox sites or be charged back for the cost of sorting by Intralox. Any parts shipped to Intralox that have been approved for deviation shall be clearly identified.

CONTROL OF REWORKED PRODUCT

Rework is defined as additional operations that are not part of the basic production process flow, are needed to bring product to full compliance with applicable drawings and specifications. Instructions for rework, including re-inspection requirements, shall be accessible to and utilized by the Supplier’s appropriate personnel. All rework shall be documented and accepted by Quality.

SUPPLIER CONTAINMENT

For nonconforming product reported by Intralox to the Supplier, until formal corrective action has been taken and approved, the Supplier shall provide documented evidence with subsequent shipments that such product has been inspected for the identified nonconformances and meets all applicable requirements.

PACKAGING, LABELING, DELIVERY, & RECORD RETENTION

Preservation, packaging, labeling, and shipping methods must comply with common industry practices and specified Intralox requirements.

PRESERVATION

In order to detect deterioration, the condition of product in stock should be assessed at appropriate planned intervals. The Supplier should use an inventory management system to optimize inventory turns over time and should assure stock rotation, such as “first-in-first-out” (FIFO).

PACKAGING

The Supplier must adequately plan for packaging designed to prevent product contamination, deterioration, or loss and to eliminate shipping damage. The Supplier should provide expendable packaging or returnable containers, where appropriate, that provide for sufficient density and protection from any likely damage that may occur. Expendable materials and packaging must meet local and national standards for safe disposal and/or recycling.

LABELING

The Supplier should clearly identify each box by adhering a label with the minimum scannable information by barcode or QR code:

- Intralox Part #
- Box Quantity
- Supplier Lot Number
- Supplier Job Number
- Box Number (3 of 55)

DELIVERY AND CERTIFICATE OF ANALYSIS

The Supplier should systematically inform Intralox of any delay in delivering product and provide a new promise date. The Supplier could be responsible for additional transport costs due to delays.

For Suppliers of Steel, Stainless Steel, Aluminum, other Metals, Resins, Colorants, Compounds, and other injection molding raw materials, a signed Certificate of Analysis (COA) by the Supplier's head of quality or a company officer (or their authorized delegate) attesting that all products delivered are in compliance with all contract requirements shall be furnished with each shipment to Intralox. Suppliers of other products to Intralox will provide COAs when requested by Intralox. All COAs must be in the English language and may be in electronic format with electronic signatures. All signatures or signature blocks must clearly show title of the signatory. The COA shall include:

- Supplier Name
- Intralox Part #
- Drawing/specification revision
- Intralox purchase order number
- Lot number (when applicable)
- Quantity delivered
- Resin Results – such as MFI, Viscosity, Tensile Stress, Density, etc.
- Color Chip Analysis (when applicable)

PALLETS

The Supplier shall comply with the Intralox Unit, Pallet, and Palletization Requirements Form 115.8001012.1.

DIRECT SHIP

The Supplier must have Intralox Supplier Quality Representative approval prior to direct shipping products to global Intralox sites.

RECORD RETENTION

The Supplier shall retain quality records for a period of five (5) years. Upon request, the Supplier shall be capable of retrieving and delivering required records to Intralox within forty-eight hours from time of request by Intralox.

CONTINUOUS IMPROVEMENT

The Supplier should define a process for continuous improvement and furnish it to Intralox upon request.

PROBLEM-SOLVING PROCESS

The Supplier should use a closed-loop corrective action process whenever a problem is encountered internally or upon notification from Intralox.

CORRECTIVE ACTION REPORT

Intralox may issue a request for an 8D NCR Corrective Action Report to the Supplier when nonconforming product is detected. When a formal reply is requested (whether hard copy or electronic media), the Supplier should use the Intralox 8D Form 127.8001081.1, or other convenient media of equivalent content that contains, at a minimum, what is in the Intralox 8D Form.

When documenting the root cause, the Supplier shall include the underlying reasons:

1) Why the specific nonconforming condition or incident occurred
2) Why the Supplier's quality controls did not detect it
3) Why the related process, from a systemic viewpoint, allowed the nonconformance (and potentially others like it) to occur. The Supplier should apply the following criteria to determine the underlying root cause has been identified:
    a) It initiates and causes the event you are seeking to explain.
    b) It is directly controllable.
    c) The elimination of that root cause will result in the elimination or reduction of the problem.

Statements from the Supplier indicating that the corrective action is to alert or retrain the operator, and/or increase inspection, alone, are NOT acceptable corrective actions. These kinds of actions would be considered insufficient and not address one or more real underlying root causes of why the Supplier's policy, instructions, process, procedure, and/or system allowed the problem to develop and occur and avoid detection by quality controls.

The Supplier shall respond to the Intralox 8D Form within 21 calendar days.

SUPPLIER PERFORMANCE

The Intralox evaluation system uses several metrics, such as Quality, Delivery, Service, Value-Add and Engagement to develop an overall Supplier performance rating. This rating serves as an objective measure to determine whether Intralox expectations are being met.

VERSION HISTORY

Doc ID	Date	Name	Description	Approval
127.8001174.1	9/21/2022	M. Urlacher	Created V1. SME: M. Urlacher	M. Urlacher
127.8001174.2	10/26/2022	N. Rosato	Remove "Requirements" from doc title, removed unnecessary spaces	M. Urlacher