



# **Supplier Quality Requirements Manual**

**Loxley Public Company Limited  
102 Na Ranong Road  
KlongToey, KlongToey  
Bangkok 10110  
Thailand**

Document Number: LLSP2/002/48 REV B  
Date Created: February 20, 2004  
Date Revised: March 20, 2005

Note: The holder of this document is cautioned that the information contained herein is uncontrolled and should be utilized only as authorized by Loxley Company Limited, hereafter called LOXLEY. Printed copies of this document are for reference only and may be updated periodically by LOXLEY. Please refer to LOXLEY's website at [www.loxley.co.th](http://www.loxley.co.th) for a downloadable copy of the most recent version of this document. Suppliers are responsible for obtaining and using the current revision of this document.

## **Table of Contents**

1.0 Purpose	
2.0 Scope	
3.0 Quality System Requirements	
4.0 Approved Supplier List	
5.0 Supplier Assessments	
6.0 Advance Product Quality Planning	
7.0 First Article Submission Process	
8.0 Temporary Deviation	
9.0 Process Change Request (PCR)	
10.0 Engineering Change Request (ECR)	
11.0 Problem Resolution	
11.1 CPAR Process	
11.2 Problem Solving Expectations	
11.3 Supplier Quality Meetings	
11.4 Business Hold	
11.5 Cost Recovery	
11.6 Supplier Development	
12.0 Delivery Requirements	
13.0 Packaging	
13.1 Product Identification	
13.2 Shipment Identification	
Appendix A	
Nonconforming Material Notification Forms	

# **Supplier Quality Manual**

## **1. Purpose**

The purpose of this manual is to communicate LOXLEY's quality requirements and expectations to suppliers. It is the intent of LOXLEY to do business with suppliers who are able to provide parts/materials/processes and services consistently to specifications, at a competitive price, and in accordance with the defined delivery schedule. The manual is intended to assist suppliers in their understanding of requirements regarding specific management, communication, and reporting processes.

## **2. Scope**

The contents of this manual apply to all LOXLEY suppliers of production material and services.

## **3.0 Quality System Requirements**

LOXLEY encourages suppliers to develop fundamental quality systems that provide for continuous improvement and emphasize defect prevention while reducing variation and waste.

At this time LOXLEY does not require suppliers to obtain certification to ISO 9000; however, suppliers are strongly encouraged to use section I of QS-9000 as the basis for their quality system development.

## **4.0 Approved Supplier List**

Production parts/materials/processes and services will only be purchased from suppliers on the LOXLEY "Approved Supplier" list. LOXLEY evaluates and selects suppliers based on their ability to supply product/services in accordance with specified requirements.

## **5.0 Supplier Assessments**

With prior notification LOXLEY will conduct Quality System audits at suppliers facilities. The goal of the audits is to understand suppliers' capabilities and quality systems and identify continuous improvement opportunities.

Potential suppliers will be audited as part of LOXLEY sourcing process. Current suppliers may be audited if there are ongoing quality problems.

Tool moves to a different supplier manufacturing facility may require a Quality System audit of the new facility. Suppliers are prohibited from moving tools without prior notification and approval from LOXLEY.

Suppliers will be sent a Pre-assessment survey before the audit date. This pre-assessment should be returned prior to LOXLEY conducting the audit. Following the audit LOXLEY will forward our findings and any needed corrective actions on part of the supplier. Results of the audit will be used in the sourcing decision of potential suppliers.

## **6.0 Advanced Product Quality Planning (APQP)**

When a supplier is selected to supply product LOXLEY may begin formal APQP activities with Suppliers. APQP is designed to communicate product quality expectations and verify that suppliers have adequate processes in place to assure smooth start-ups. LOXLEY will review APQP requirements with suppliers in advance.

Timing will be established and communicated during the source selection process. LOXLEY will determine which elements of APQP are required and determine timeline for completion. LOXLEY will work closely with suppliers in the development and implementation of all documents and processes for suppliers unfamiliar with APQP.

Suppliers must establish cross-functional teams to manage the requirements of APQP.

LOXLEY may conduct a Launch Readiness Review at the supplier's facility. This review will include inspections of the supplier's documents and processes associated with the production of parts for LOXLEY.

Suppliers may be required to run Production Trials (Run at Rate) prior to mass production in order to determine the capability of their processes to meet required production rate and quality levels. Should supplier trials prove unsuccessful corrective actions must be completed prior to start of mass production.

## **7.0 First Article Submission Process**

Suppliers are required to obtain approval for mass production parts prior to shipment through the First Article Approval process. The purpose of the First Article Approval process is verify that a suppliers production process is capable of producing parts to meet LOXLEY specifications.

Suppliers shall conduct a First Article production run and produce parts utilizing normal production equipment, tooling and processes that would be used as in mass production. The Supplier will then submit sample parts from this First Article Production run for approval by LOXLEY.

First Article due dates will be determined and communicated to suppliers as part of the LOXLEY Stage Gate Process. First Article submissions shall be sent to the LOXLEY Buyer unless otherwise instructed.

Suppliers shall submit First Article samples for new parts or changes to existing parts, processes, drawings, manufacturing locations, sub-contractors, or materials.

The Following is required to be submitted as part of First Article submissions.

### ***Drawings***

- Each part drawing along with referenced specifications and drawings must be submitted with each First Article.
- Each dimension and note must be ballooned (numbered)

### ***Dimensional Results***

- Suppliers must use the First Article Inspection dimensional results form provided by LOXLEY.
- A one piece dimensional layout is required for each mold, cavity, die and production line that produces a part.
- Dimensional results must be provided for all dimensions, notes and other specifications on the part drawing.
- The dimensional layout must correspond to the ballooned drawing.

### ***Material Certifications***

- Suppliers must provide evidence of compliance to material specifications through material and performance test results.
- Each First Article submission must be accompanied by a Material Certification report.

### ***Process Capability Studies***

- Process Capability Studies should be completed for all special characteristic dimensions as determined by LOXLEY
- All special characteristics must be detailed according to Quality Assurance Procedures and agreed international standards.

### ***Samples***

- Suppliers may be required to submit up to 5 sample parts with each First Article Submission.
- Samples from tooling should be submitted for each mold or cavity
- Each sample part must have a tag indicating it is a First Article sample. The tag should include part number, revision level, date parts were produced, supplier name, and cavity number.

Suppliers may be able to submit one First Article submission for a family of parts. LOXLEY will notify the supplier when this type of submission is necessary.

No First Articles should be submitted to LOXLEY if any dimensions or test results do not meet part drawing requirements. Supplier shall make every attempt to implement corrective action for any out of spec condition. Suppliers shall contact LOXLEY if they are unable to meet part drawing. LOXLEY will then inform suppliers on required course of action.

## **8.0 Temporary Deviation**

If a supplier manufactures product that does not conform to LOXLEY specifications and lead-time does not allow permanent corrective action due to LOXLEY's production requirements a temporary deviation request must be submitted to LOXLEY and approved prior to shipping non-conforming material.

LOXLEY approval will be based on how deviations might impact the form, fit and function of the parts.

Deviation requests must include details of the non-conformance and the number of parts affected. LOXLEY's Temporary Deviation Request form may be used.

## **9.0 Process Change Request (PCR)**

A Process Change Request form must be submitted and approved if any of the following occur.

- Change in the manufacturing process and or tooling
- Additional tooling or added cavities to tooling currently approved for mass production
- Manufacturing location changes
- Sub-supplier changes

**NONE OF THE ABOVE CHANGES CAN OCCUR PRIOR TO APPROVAL**

## **10.0 Engineering Change Request (ECR)**

Should a supplier wish to make a permanent change to a part or drawing an Engineering Change Request (ECR) form must be submitted to LOXLEY and approved prior to any change.

## **11.0 Problem Resolution**

### 11.1 CPAR Process:

Upon receipt of nonconforming material LOXLEY may issue a Corrective and Preventative Action Request (CPAR) report. Nonconforming material can be found during incoming inspection, audit, assembly or warranty returns.

If problems are found during pre-production fitting trials or are considered minor issues LOXLEY will issue Quality Alerts to the supplier describing the problem.

Return Material Authorization (RMA) must be provided for material that is defective or considered suspect and needs to be returned to the supplier.

LOXLEY reserves the right to sort suspect material to avoid shutdown of its production lines.

Within 24 hours of notification of defective parts through CPAR report, suppliers must:

- Implement requirements of Normal Containment
- Inform LOXLEY the plan to replace suspect material
- Identify short term corrective actions
- Send initial CPAR responses

Within 10 business days of notification of defects suppliers must:

- Define and verify Root Causes of defect and Escape
- Determine and Implement permanent corrective actions for Root Cause and Escape
- Verify and Validate permanent corrective actions

LOXLEY will analyze the final CPAR response and provide the supplier with a decision on closure of the CPAR. CPAR responses will be Accepted, Conditionally Accepted or Rejected. Resubmission of the CPAR response with discrepancies corrected is required within 5 days.

#### 11.1 Problem Solving Expectations

When LOXLEY issues Corrective and Preventative Action Requests (CPAR's) suppliers are required to submit a formal response. CPAR responses must be in the format supplied by LOXLEY. Below is list of information that is required to be included in the CPAR response.

##### ***Problem Statement***

- Define problems in detail
- Identify “what is wrong with what”
- List LOXLEY requirements concerning defect
- Identify when the problem started
- List manufacturing dates of defective material

##### ***Interim Containment Action***

- Define and verify Interim Containment Actions
- Provide daily sort results
- All stock locations should be purged of suspect stock
- Describe method of sorting
- Validate effectiveness of ICA

### ***Root Cause Analysis***

- Define in detail the “true” root cause
- Verify the “true” root cause
- Address the Escape Point (Place in the process where the effect of the root cause should have been detected and contained)
- Use the 5 Why approach

### ***Permanent Corrective Actions***

- Must address the root cause and the Escape Point
- Must be very detailed. Describe who will do what and how it will be implemented and when.
- Verify and validate the corrective actions. Describe in detail method of verification.
- Corrective actions must not cause any other problems

### ***Prevent Recurrence***

- Modify necessary policies and procedures to prevent reoccurring problem
- Evaluate whether corrective actions can be implemented on similar products or processes.

Approval and closure of CPAR Responses will be at the discretion of LOXLEY QC. All CPARs will remain open until problem-solving requirements are met.

## **11.2 Containment**

Suppliers are responsible for developing a process to protect LOXLEY from receiving material that does not meet the quality requirements and specifications set by LOXLEY. Suppliers must include at minimum elements of the following process of containment.

### **11.2.1 Controlled Containment:**

Suppliers will be placed into Controlled Containment as a result of LOXLEY or LOXLEY's customer receipt of defective material. Suppliers will be required to take immediate actions to cease shipping defective material. These actions include:

- Sending 100% certified parts for all shipments to LOXLEY.
- Marking certified parts as agreed to by LOXLEY.
- Sending certified replacement parts to replace suspect parts in-transit and in LOXLEY inventory.
- Utilizing a Certified Part identification label to identify certified shipments.
- Collecting daily sort data and reporting findings to LOXLEY.

Suppliers will be released from Controlled Containment once the CPAR response has been approved.

### 11.3 Supplier Development

LOXLEY will provide assistance to suppliers having trouble meeting performance levels and specifications set by LOXLEY. LOXLEY will assist in:

- Resolution of critical issues
- Assist suppliers with improvement activities
- Work with potential suppliers to improve capabilities to be added to the Approved Supplier List
- Conduct specific training when a need has been identified.

### 11.4 Supplier Quality Meetings

Poor performing suppliers will be required to attend Incoming Quality (IQ) Meetings when their performance drops below acceptable levels. Meetings are mandatory and will be held at LOXLEY.

The purpose of IQ meetings is for Suppliers to present containment and corrective actions to improve their performance in the deficient areas identified by LOXLEY. Suppliers can be called to attend IQ meetings for

- Poor Quality
- Repetitive Issues
- Responsiveness to concerns raised by LOXLEY
- Severe quality rejections
- Delivery problems

Suppliers will be notified of meetings in advance and will be required to have attendees from Plant Management and Quality Management. Other personnel may also be required to attend.

### 11.5 Business Hold

Suppliers may be placed on LOXLEY business hold list if the supplier is financially unstable, has severe quality or delivery problems that are unresolved. The supplier will be notified upon being placed on the Business Hold List

The following may occur if a supplier is placed on Business Hold

- Formal meeting with LOXLEY
- Removal from Approved Supplier List
- No longer allowed to quote on any future business
- Supplier Development efforts by LOXLEY

To be removed from the Business Hold list the supplier must implement corrective actions for the cause of their deficiencies and address preventative actions to prevent recurrence. A plan for implementation must be provided to LOXLEY for approval. Once a supplier has satisfied the requirements of LOXLEY they will return to the Approved Supplier List.

### 11.6 Cost Recovery

Suppliers will be responsible for all costs associated with LOXLEY or LOXLEY's customers receiving defective material. Costs may include, but are not limited to:

- Administrative
- Sorting of suspect material
- Rework
- Customer Charges
- Premium Freight
- Production Downtime
- Third party containment
- Scrap
- First Article rejection
- Overtime
- Laboratory Testing
- Travel

All costs will be debited from the suppliers account. Upon notification of the intent to debit, suppliers will have 10 days to appeal the charges. If there is no response from the supplier LOXLEY will consider this lack of response as acceptance of the charges.

### 12.0 Delivery Requirements

Suppliers are required to achieve 100% on time delivery. If a supplier will be unable to deliver product by the required due date it is the supplier responsibility to notify LOXLEY as soon as possible.

Notification to LOXLEY must occur anytime suspect material has been shipped. Suppliers are to notify the LOXLEY Purchasing or Supplier Quality department.

# **APPENDIX A**

## **Nonconforming Material Notification Forms**



LOXLEY Public Company Limited 102 Na Ranong Road, Klong Toey, Bangkok 10110  
Tel: (+66) (0) 2-3488657 • Fax: (+66) (0) 2-3488675

March 11, 2005

ATTN: Quality Manager  
**Supplier Name**  
**Supplier Address 1**  
**CITY, State, Post Code**  
**Country**

**Subject:** Entry into Controlled Containment

Dear Quaility Manager

**LOXLEY has determined that current controls by your organization are not sufficient to insulate LOXLEY from the receipt of nonconforming material produced by your facility. This letter is formal notification that your facility has been placed on Controlled Containment for the following part(s).**

Part Description: Part Number and Description  
Non-conformance(s): **CPAR Number**  
Nonconformance noted

The procedures you have enacted to date have been insufficient in stopping the flow of non-conforming material to our plants. **Therefore, you must immediately:**

- 1. Develop, define, and implement an agreed-upon containment activity over and above your current process controls and containment activity.**
- 2. Clearly identify the certified shipments.**
- 3. Return the attached "Controlled Containment Confirmation Reply" within 24 hours of the receipt of this letter.**
- 4. Meet the defined exit criteria.**

If you have any questions, contact me directly on Phone (0)-2-3488657 or by email

Sincerely,  
LOXLEY, Supplier Quality Assurance Manager  
**CONTROLLED CONTAINMENT CONFIRMATION REPLY**



To: Chaiyan Pongcharoen  
LOXLEY Public Company Limited  
102 Na Ranong Road  
Klong Toey, Bangkok 10110  
Thailand

Email: [chaiyanp@loxley.co.th](mailto:chaiyanp@loxley.co.th)

From: Supplier to complete

We acknowledge receipt of your Controlled Containment letter, advising us that our facility has been placed on Controlled Containment.

**SELECT ONE BOX**

- We understand the Controlled Containment requirements
  
- We do not fully understand the Controlled Containment requirements.  
Please contact: LOXLEY Supplier Quality Assurance Manager

Following is a description of how conforming parts and shipments will be identified to indicate that they have been qualified as conforming to requirements. Include LOXLEY Job # and specific non-compliance(s).

SUPPLIER TO FILLIN THE DETAILS

The containment activity will be performed at the following location:

SUPPLIER TO FILL IN THE DETAIL - Please type in.

The person responsible for the containment activity by Supplier

Name: SUPPLIER TO COMPLETE      email address: SUPPLIER TO COMPLETE

Telephone: SUPPLIER TO COMPLETE      Date: SUPPLIER TO COMPLETE

# Supplier Quality Standard

This document is controlled by:

Special Project 2 Department  
Loxley Public Company Limited  
102 Na Ranong Road  
KlongToey, KlongToey  
Bangkok 10110  
Thailand

Edited by  
Loxley Supplier Quality Section  
Special Project 2 Department

All prior editions are obsolete and should not be used

**It is the user's responsibility to assure that only the latest revision of this standard is used.**

The latest revision can be obtained from our website: [www.loxley.co.th](http://www.loxley.co.th)