



LAUREN
MANUFACTURING

problem solvers, solution providers

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Supplier Quality Manual for Purchased Parts and Raw Materials

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Section 1: Purpose and Scope

The Supplier Quality Manual applies to all internal and external suppliers of products and materials for Lauren Manufacturing. The intent of this manual is to explain fundamental quality requirements, control practices and procedures between Lauren Manufacturing (hereinafter referred to as LMC) and the Supplier.

Section 2: Supplier Qualification

2.1 Supplier Approval and Evaluation

LMC has a list of suppliers that proved their ability to meet or exceed our expectations in the past. All product and materials for production parts are only purchased from the suppliers on the Approved Supplier List. Suppliers on the list are audited when circumstances make it necessary. A typical cause for a supplier audit may be insufficient performance. The kind of audit depends upon the deficiencies observed.

New suppliers certified according to TS 16949:2002 and ISO 9001:2000 can enter the approved supplier's list if:

- the evaluation carried out by a representative(s) from LMC is positive
- a LMC supplier audit is successfully passed
- (ISO 9001 only) an implementation plan is in place to achieve TS 16949 certification

LMC representatives, including employees of customers, may conduct, with prior notification; a production process survey of the supplier. The supplier must cooperate with LMC so that the process survey can be conducted smoothly. The supplier must comply with all action items pointed out in the survey.

2.2 Supplier Development

LMC develops its supply base towards ISO/TS 16949 requirements. LMC is willing to support its suppliers by giving the necessary information, expressing clearly its expectations and arranging meetings for exchange of knowledge and experience.

To meet the requirements of LMC, the suppliers' quality management system must be based on prevention rather than detection of failures. For this reason, the use of process or design features to prevent manufacturing of non conforming products is necessary. When potential sources of non conformances are identified by FMEA's, capability studies and process analysis, these sources shall be addressed using mistake proofing methodology during the planning of processes and problem resolution.

The employees are considered as the most important resources of the supplier. LMC therefore requires its suppliers to develop their personnel and encourage continuous improvement.

2.3 Supplier Representative

The supplier shall designate the person in charge of the management of quality control functions for all supplied product and materials and also designate a representative who will communicate with LMC Quality. The supplier shall inform LMC Quality of any changes within 15 days after a change in representative(s).

Section 3: Parts Approval and Initial Samples

3.1 Initial Samples

Initial sample parts are manufactured by the production staff at the final production site using production tools, production processes, materials, feeds, speeds and cycle times. Initial sample inspection is decisive for the acceptance of production methods and facilities, dimensional testing, materials testing and statistical analysis. With initial sample inspection, the supplier confirms with signature that the initial samples are in accordance with all requirements determined in drawings and specifications.

3.2 Procedure

Unapproved products that are received at LMC shall be handled as rejected material and will be returned to the supplier at the supplier's cost or scraped on site if agreed on by the supplier.

3.2.1 Production Trial Run

The validation of the effectiveness of the manufacturing process begins with the Production Trial Run. It must be conducted using the same production conditions as defined under "Initial Samples". This trial run can be used to produce the initial samples. The minimum quantity is 300; however this can be agreed upon. The output of the Production Trial Run is used for:

- Preliminary process capability study
- Measurement systems evaluation
- Final feasibility
- Production validation testing
- Production part approval (PSW)
- Packaging evaluation

3.2.2 Requirements

The Production Part Approval Process (reference PPAP Manual 4th Edition) requires at least the following to be submitted by the supplier:

- Quantity of parts required by the purchase order delivered on time.
- A Part Submission Warrant (PSW) and a dimensional report showing complete (100%) measuring of six samples per cavity/tool of each part number to all dimensions and specifications on the drawing.
- The drawing showing all measured dimensions marked up and numbered according to the dimensional report.

- Preliminary process capabilities study showing Cpk of ≥ 1.67 for all significant and critical characteristics based on at least 25 sub groups of 5 pieces in order to obtain sufficient data for decision making.
- The gauge study for all used gauges.
- The material data sheet established in the “International Material Data System” (IMDS).
- The material analysis/certifications
- Engineering test data to all specifications (performance testing) which are noted on the drawing.
- The Process Flow Chart, Control Plan, and FMEA.

Section 4: Product and Process Quality Requirements

4.1 Suppliers Responsibility

To minimize inspection efforts and to maximize the security that all specified requirements are met, all supplier activities should be directed towards defect prevention methods such as statistical process control (SPC) and error proofing rather than defect detection. Process performance and product characteristics are to be monitored and process capability shall be calculated on a regular basis. In cases where variable data can not be obtained, the acceptance criteria for attribute data sampling plans shall be 0 defects.

4.2 Process Capability Requirements

The control of processes by SPC requires that these processes are being carried out under controlled conditions. This means that they are not influenced by any systematic fluctuations. Process stability must be studied before production begins and checks must be made to ensure that the results of these studies are continuously utilized during the production stages.

4.3 Process Control

The Supplier shall identify and plan the production processes which directly affect quality and shall ensure that these processes are carried out under controlled conditions. Controlled conditions shall include the following:

- Procedures defining the manner of production where the absence of such procedures could affect quality;
- Use of suitable production equipment and a suitable working environment (e.g., temperature, humidity and cleanliness etc.);
- Compliance with reference standards, codes, quality plans and/or documented procedures;
- Monitoring and control of suitable process parameters and product characteristics;
- Suitable maintenance of equipment to ensure continuing process capability;
- Accountability of all product during manufacture (e.g., quantities, non conformities);
- Evidence that all manufacturing and inspection operations have been completed as planned, or as other wise documented and authorized;

- Utilities such as water, chemical products to the extent they affect product quality.

4.4 Process Change

When the Supplier finds a change in process necessary, written notice must be provided to the Quality Department of LMC. The Supplier must not change processes without LMC approval. In case of an emergency process change being required and/or needed, the Supplier must immediately inform the LMC Quality Department by telephone, and then written notice must be issued. At that time, LMC Quality will determine if resubmitting an updated PPAP will be required. The process change may need to be approved by a LMC customer. The change notice, at a minimum, must include the following items:

- Part Name
- Part Number
- Contents of the process change (both Previous and New)
- Quality characteristics affected by the change
- Schedule for the change
- Quality implementation schedule for the change (performance/reliability tests, process capability)

Section 5: Incoming Material Inspection Procedure

When product is received at LMC, it will be verified against the stated specifications. Upon acceptance the product will be received into the LMC system.

If the product is nonconforming to the material specification(s), the Supplier will be notified, and replacement material will be required to be sent immediately.

It is at LMC's discretion to accept material under deviation.

Section 6: Treatment of Defective Parts at LMC

If defective parts are found at LMC, the Quality Department will issue a Supplier Corrective Action Request (SCAR) to the Supplier for the defect found.

As soon as the Supplier receives information from LMC, the Supplier is responsible for the sorting of the following parts.

- Parts in Supplier's production process and inventory
- Parts in transit to LMC
- Parts at LMC

LMC Quality and the Supplier will discuss and decide on the method of corrective actions in regards to the returning, sorting, repairing, replacing of defective parts. A Certified Quality label stating Inspector(s) name, date and lot # shall be placed on all shipments until evidence that the

problem has been corrected through a minimum of 3 consecutive shipments or as agreed upon between LMC Quality and the Supplier.

The Supplier will also be responsible for all costs charged to LMC for the sorting of their parts at the customer location.

The Supplier must reply by the specified date on the SCAR, stating root cause of the defect and giving details of all corrective actions taken to prevent a recurrence in any future deliveries.

All sort costs are the responsibility of the Supplier. The Supplier shall contact LMC Quality for assistance on what is required in an event a third party sort is necessary.

Charge back cost will be issued to the supplier when LMC have to conduct any inspections, sorting, containing or reworking of any Supplier products. A standard Administrative cost will be a part of the charge back.

A Return Material Authorization (RMA) is requested for all nonconforming product found at LMC for disposition (return or scrap). LMC does not have the capacity to store, indefinitely, nonconforming material that has been rejected and is awaiting issuance of an RMA. Nonconforming product without an RMA will be held for a maximum of 30 days. After 30 days the product will be scrapped and charged back to the Supplier. Our expectation is that the Supplier will respond promptly in issuing Return Material Authorizations to return nonconforming product to the Supplier facility.

Section 7: Supplier Performance

Suppliers will receive a formal evaluation at least once annually. LMC will determine if it is necessary to do more than one evaluation per year.

7.1 Quality Performance

Quality performance of the Supplier is measured in PPM (defective parts per million). This calculation takes into account the quantity of defective parts related to the quantity of delivered parts per evaluation period. LMC quality expectations are zero defects.

7.2 Delivery Performance

LMC delivery expectations are one (1) day early and zero (0) days late.

Section 8: Continuous Improvement

Continuous Improvement is one of the basic principles of Lauren's quality policy. It is essential to keep and improve our position in the market. The high impact that our suppliers have on Lauren's performance as to products and services require the deployment of the continuous improvement philosophy throughout our suppliers' organization. Continuous improvement of our suppliers must include: quality of parts, service (timing, delivery, engineering capabilities and cooperation) and price.

Therefore, the Supplier should develop specific action plans for continuous improvement in processes that are most important to the customer once those processes have demonstrated stability and acceptable capability. The Supplier shall identify opportunities for quality and productivity improvements and implement appropriate improvement projects.

SUPPLIER ACKNOWLEDGEMENT

At Lauren Manufacturing, we strive to be the best supplier at meeting our customer's expectations. As a supplier to Lauren Manufacturing, your company will play a key role in our ability to achieve this goal.

Lauren is providing your company with a copy of Lauren Manufacturing's Supplier Quality Manual. Please review this manual for a complete understanding of Lauren's quality requirements.

Please complete this Supplier Acknowledgement and return it within 14 days of receipt of the Supplier Quality Manual.

By signing this document, the supplier is acknowledging they have read, fully understand, and will comply with all the requirements of Lauren Manufacturing's Supplier Quality Manual.

COMPANY: _____
SIGNED: _____
TITLE: _____
DATE: _____

By accepting a controlled copy of this manual, the holder agrees to retain only the current revision.

Holders of this manual further agree not to reproduce or use the information contained in the manual for any purpose other than for the direct business of Lauren Manufacturing.

Return signed acknowledgement:

E-mail: quality@lauren.com
Fax: 330.339.1515 Attn. Quality Department