INTRODUCTION

Scope

Suppliers who intend to maintain a continuing business relationship with Lakeside Plastics Ltd. (LPL) need to maintain quality assurance systems which meet and/or exceed LPL requirements.

Purpose

This manual will outline and detail the program steps and procedures Lakeside's Suppliers are required to follow in developing and demonstrating the quality prevention systems to be used on LPL purchased production components and assemblies.

Lakeside's expectations, are continuously improved quality, increased productivity, lower costs, and most importantly "zero defect" shipping performance.

Keep in mind it is important to understand and realize a zero defect performance level is only achievable through the total combined efforts of this program.

All suppliers are to comply with all quality requirements & procedures as set forth in Quality System Requirements TS 16949: 2002.

All suppliers must be certified ISO/TS 16949 or ISO 9001:2008.

No individual aspect of it alone can 'deliver' a zero defect product.

CONTINUOUS IMPROVEMENT PROGRAMS

A program which stresses:

- Design of Experiments
- Statistical problem solving
- Goal setting
- Cost of quality analysis
- Employee participation programs
- Mistake proofing
- Campaign Prevention

SELF AUDITS

A program which calls for a complete in-house review / audit of all quality and manufacturing systems on a formal basis using a standard system and a standard form, which is completed by members of management no less than on a annual basis.

The supplier must develop a written correction action, and formal management follow up must be part of the self-audit process.

CUSTOMER NOTIFICATION AND CUSTOMER RESPONSE

A system which addresses formal controls and handling of customer identified or suspected non-conforming material shipped from the supplier's location from notification procedures to the corrective action and follow-up procedures.

QUALITY PLANNING REQUIREMENTS

Suppliers must use APQP planning to ensure production readiness, with parts that meet 100% of the products specifications.

A. Part Approval

A PPAP Sample Submission will be required for each new or changed part, and approval issued prior to production quantities being produced.

The P.O. is to specify the PPAP date on new products.

All parts to meet International Material Data System for July 1, 2003.

B. Packaging

Packaging is the responsibility of the supplier and is to be approved by Lakeside Supplier Quality.

The parts are to be packaged in such a way that they arrive in good condition.

C. Supplier Feedback

Lakeside Plastics will perform an evaluation of suppliers' performance (as indicated on the LPL Approved Suppliers List), and issue a Supplier Feedback Form.

SUPPLIER NON-CONFORMANCE

A. Definition

A Supplier Non-Conformance Report (SNCR) is a notice of non-conformance requiring immediate and permanent irreversible corrective action.

B. Introduction

Suppliers are issued SNCR's to describe and communicate a part problem and ensure that a permanent irreversible corrective action is undertaken. It identifies the affected lot number(s) and the quantity affected, and thus is one of the means used to measure the Parts Per Million (PPM) defective for a particular supplier.

Deficiencies in either characteristics, documentation, procedure, or processing of a suppliers' part causes LPL to issue a SNC to a supplier.

C. Procedure

The procedure for issuing the SNCR starts with either the incoming parts receiving inspectors or the in-plant line inspectors identifying a problem. The Supplier Quality Manager is responsible for conducting a problem review and, if necessary, initiating a SNCR.

Upon notification by Lakeside Plastics of a SNCR, the LPL Materials Department is responsible for determining the availability of replacement material and consulting with the Quality Department to determine the final disposition of the material. The disposition may be as follows:

1. The parts may be returned to the supplier and a debit number issued.

2. The parts may be sorted and/or reworked at LPL's Plant by the supplier within 24 hours.

3. The parts may be sorted and/or reworked at LPL's Plant by LPL and the labour debited against the supplier.

Every effort will be made to contact a supplier before a final disposition is determined. Under duress, LPL may determine disposition without a consultation with the supplier. If material is returned to the supplier, return transportation costs will always be the supplier's responsibility.

If material must be sorted or reworked, the supplier is expected to come to LPL's facilities and perform these operations. If, due to production requirements, LPL must sort or rework a supplier's parts, the labour costs incurred will be debited against the supplier for that portion of sorting which is necessary for production until the supplier's personnel or representative can get to the plant.

It is always the supplier's responsibility to ensure that in all material disposition instances, non-conforming parts are replaced immediately. This includes any parts in transit.

D. Response Process

The supplier must complete the initial response section of the SNCR and return it to the Quality Department within 24 hours of receipt.

LPL expects a formal CAR response to the SNCR within 5 working days that includes: senior management sign-off as well as the Quality Manager, revised documents (ex. Control Plan).

The 8-D approach to problem solving is an orderly method that prevents one from missing the critical steps in a team oriented problem solving process and is the format in which a formal CAR response must be submitted in. Identification of the root causes and implementation of the correction actions is the focus of this approach.

If no response is received in 72 hours, Lakeside will sort, scrap or return at the suppliers' expense.

Any time a Supplier Non-Conformance is issued, all shipments must be certified for 30 days (with appropriate certified stickers.)

MATERIAL IDENTIFICATION REQUIREMENTS

A Label Requirements For Samples

LAKESIDE PLASTICS LIMITED

Part No: _____

Rev: _____

Desc: _____

Qty: _____ Lot No: _____ Prod. Date _____

LS PROGRAM: _____

LS Purchase Order No: _____

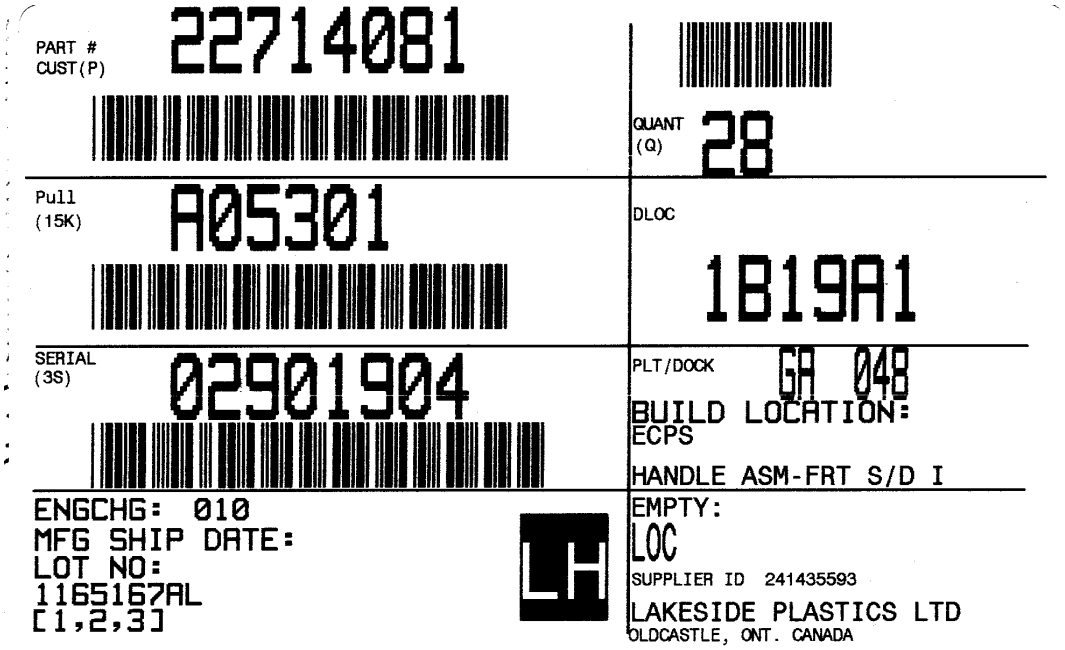
LS ATTENTION: _____

NOTE: THESE PARTS MUST NOT BE USED IN PRODUCTION

This label is completed by a supplier to identify all shipments of Engineering Samples to a LPL facility. It is essential that this label is affixed to parts' shipments - as samples must not be used in production (label is to be orange in colour.)

LABEL REQUIREMENTS

Bar Code Labels to be to AIAG standards.



SUPPLIER QUALITY SYSTEM STANDARD

Quality Management Systems

1. Is an approved ISO/TS manual available and effectively implemented?

    a. Written procedures which establish a quality system must be developed, implemented, and maintained.

    b. Quality related procedures must be incorporated into a formal quality manual. This manual must be dated and approved by management, contain a quality policy, and contain a manual revision and distribution procedure. It must also include an organization chart.

    c. The quality policy statement must reflect top management's philosophy / goals and commitment to quality, relative to the products supplied.

2. Are quality responsibilities clearly defined and supported?

   a. Management must be committed to, and involved in, the philosophy that manufacturing is primarily responsible for product quality.

   b. Manpower must be adequate to support responsibilities and established systems.

3. Is their demonstration of management commitment to continuous quality improvement?

   a. Management must be committed to a quality system that includes continuous quality improvement in all aspects of the organization.

   b. Documented goals for continuous improvement must be incorporated into the objectives for each area with evidence that performance to these goals is reviewed with management and reasonable success is being achieved

   c. Evidence of commitment could include new equipment, new processes, mistake-proofing, specified capability requirements in purchase orders for new equipment, correction of items from self audits, upgraded gauging, employee awareness, and team efforts.

4. Is there documented evidence of a formal quality training program for all employees?

   a. Training needs for all employees by job classification must be documented.

   b. The training program must provide, at a minimum, instruction in job function, quality and product awareness, inspection methods, and statistical process control.

   c. Documented evidence of the training program includes:

      - A schedule indicating employees to attend
      - Evidence of completion of the training
      - List of topics included in the training
      - Results of proficiency testing where appropriate
      - Measures of training effectiveness

   d. Cross training between and within departments must occur to improve depth of expertise and to assure adequate backup.

5. Is there documented evidence of a self-audit function performed on products, processes, and systems?

   a. Audits must be conducted using a written procedure and standardized survey forms with quantitative methods.

   b. Examples of product self audits include dock audits, final inspection sampling, Engineering Standards conformance audits, and material tests compared against material certifications.

   c. Examples of process audits include a review of methods used to perform the following:

      - Definition of process parameters
      - First piece inspection for equipment setup

- Operator checks of in-process inspections
- Conformance to control plans and flow charts
- Compliance to Statistical Process Controls
- Verification of mistake-proofing devices

d. System self audits check the existence and effectiveness of the systems described in the quality manual and must be conducted at least annually.

e. Results of self audits must be distributed to the plant management for information and action as required.

f. Deficiencies noted in self audits require written corrective action plans which identify action to be take, individual responsible, target completion dates and follow up.

Record, Print, and Specification Control

1. Does the supplier acknowledge receipt of prints?

a. Written confirmation must be provided to the customer on receipt of new or changed prints. A copy of the written confirmation must be retained in supplier files.

2. Is there a system to assure that the latest drawings and specifications are in use?

a. A log book or other means of documenting latest print revisions must be maintained.

b. A written procedure for drawing and specification control must address the following:

- A single location for a controlled master file for the latest release of print specs.
- Confirmed distribution with a distribution list and feedback on receipt of prints.
- Assigned responsibility for reviewing all changes affecting drawings, standards, instruction sheets, process routers, tooling, gauges, etc., and providing timely revision.
- Maintenance of a file with only the latest engineering drawings and specifications.
- Removal of obsolete drawings, standards and instruction sheets from all affected departments.
- Obsolete drawings, specifications and other historical records must be in a separate file if retained.

c. If LPL prints are re-drawn at the supplier, a checking procedure must be developed and implemented for verification of the transfer of characteristics to internal drawings. (Directly reference LPL Part Number and Revision, or a log book.)

3. Is there a procedure in use for record retention and retrieval practices?

a. A procedure must be developed and implemented which describes the documents to be maintained and the retention period. A retention chart is usually used.

b. Records must be stored such that the location is reasonably safe from water, heat damage, or other loss.

c. Records must be stored in an organized fashion to facilitate retrieval.

Advanced Quality Planning

1. Is there a stated commitment to the use of advanced quality planning techniques on new or changed products and processes?

   a. All departments in the organization must be involved in the planning process.

   b. Procedures must clearly define the persons and /or departments responsible for planning such as Quality Engineering, inspection, training, Manufacturing Engineering, etc., and the extent of the involvement of each department in the planning activity.

   c. Formal design review meetings with all involved departments must be conducted to review new or changed products and processes and resolve all items to the satisfaction of all parties.

      - Meeting must be documented.
      - Unresolved items assigned for corrective action with follow-up activity.

2. Are FMEA's used throughout the planning process as a tool to optimize designs, processes, and develop control plans?

   a. Quality planning procedures must contain provisions for conducting a Failure Mode and Effects Analysis (FMEA) on all new or changed products or processes.

   b. Detailed process flow charts, which define each step in the manufacturing and quality process, must be used in the development of the process FMEA.

   c. The process FMEA must include receiving inspection, each step of the manufacturing and assembly process, final inspection, packaging, and shipping.

   d. A system must be in place for revising the FMEA due to changes in designs or the discovery of a new failure.

   e. The FMEA must be submitted along with flow charts and control plans to LPL Supplier Quality Manager. All revisions to the FMEA must also be submitted to LPL Supplier Quality Manager.

3. Is there a written procedure that addresses the development and use of control plans throughout the process?

   a. Quality planning procedures must contain provision for developing control plans on all new or changed products or processes.

   b. Control plans must include the following information:
      - Part number and revision level
      - Control plan revision level and date
      - Control point
      - Characteristic description
      - Method of control
      - Sample size and frequency
      - Method of inspection
      - Reaction plans for non-conforming and out-of-control conditions
      - Responsibility for control

- 'Submitted by' and 'Approved by' dates

Refer to the AIAG Development Manual for development of control plans.

c. A system must be in place for revision of the control plan due to changes in designs or processes.

4. Does the supplier have a formal system to identify and monitor quality costs?

a. Procedures must exist that describe, in detail, the techniques used to track quality costs.

b. Quality cost reporting must encompass prevention, appraisal, internal failure and external failure costs.

c. Documented evidence of analysis must be available. This evidence should include comparison against recognized standards (percent of sales, profit, etc.) as well as trend charts and Pareto analysis.

d. Quality costs must be reported to management on a routine basis.

e. Plans must exist to improve quality costs. These plans to improve must be documented and monitored on a regular basis to determine the effectiveness of the plan.

Process Control Methods

1. Are statistical or mistake-proofing techniques being used to control processes?

a. Requirements to use statistical or mistake-proofing methods must be stated in operator job instructions.

b. Production operators must be responsible for the collection and charting of data wherever possible.

c. Process control must be a real-time activity on the production floor, with the operators responding to information being provided.

d. Part characteristics as well as process parameters should be chosen for control using statistical or mistake-proofing methods.

2. Do personnel possess adequate ability and understanding to adhere to the requirements of the control plan?

a. A procedure on the use of statistical methods and charting techniques must be available and implemented. Included in this procedure must be the plan for reaction to out-of-control conditions.

b. A procedure on the use of mistake-proofing methods must be available and implemented.

c. Control charts must include an interpretation of results and actions taken when an out-of-control condition occurs.

d. Personnel must have the ability to identify improper applications for statistical methods.

3. Are short-term capacity studies conducted on new or changed processes and equipment prior to submitting initial samples?

   a. A procedure must be developed and implemented indicating when short-term capability studies will be conducted. Short-term capability studies must be conducted on new or changed processes and equipment.

   b. Results of short-term capability studies must be used to determine control characteristics for control plans and ongoing statistical controls.

4. Does the supplier calculate long-term capability?

   a. A procedure must be developed and implemented to indicate the frequency of conducting long-term capability studies.

   b. Long-term capability indices must be documented and compared to historical data to identify large changes in capability, either positive or negative.

5. Are written corrective action plans available for processes or equipment with a capability of less than 1.33?

   a. Procedures must be developed and implemented that detail techniques used to improve processes or equipment with Cpk's less than 1.67.

   b. Written corrective action plans must include actions, responsibilities and timing, and follow-up.

   c. Non-capable processes must be adequately contained by mistake proofing, inspection or other methods.

   d. There must be documented evidence of the implementation of plans to continuously improve products or processes.

6. Is statistical data summarized and reported on a regular basis?

   a. Statistical data must be summarized on a regular basis and include capabilities (Cp and CpK)

   b. Reports of summarized statistical data must be provided to management on a regular basis and to customers on request.

   c. Summarized statistical data must be compared to historical data and used to develop plans for continuous improvement.

7. Are advanced techniques used in the continuous improvement process?

   The use of techniques such as Mistake-Proofing, Statistical Problem Solving, Quality Function Deployment, Ishikawa Diagrams, Pareto Analysis, Design of Experiments, Regression Analysis, Value Engineering or other innovative techniques must occur regularly with the activities and results documented.

8. Are production personnel involved in the investigative, problem solving decision-making activities to reduce process variability or implement mistake proofing?

a. Production personnel must be involved in regularly scheduled, documented employee involvement meetings.

b. Meetings must address improving product quality through investigation, problem solving, and decision-making activities, which involve production personnel.

c. Documentation kept must include meeting attendance and minutes, as well as project action items and status.

Incoming Material and Supplier Control

1. Are documented, on-site supplier surveys conducted on a regular scheduled basis?

   a. Major suppliers requiring surveys must be identified and a formal schedule of survey target and completion dates maintained.

   b. Supplier surveys must be conducted at the supplier location.

   c. A standardized survey form quantitative methods must be developed and used for all surveys.

   d. Documented evidence of supplier surveys and visits must be maintained.

   e. Deficiencies noted in supplier audits must have documented timely follow-up and corrective actions on file.

2. Are inspection instructions available and in use in the receiving inspection area?

   a. Procedures governing the creation and maintenance of R/I instructions must include:

      - Part number, revision level and date
      - Characteristics to be inspected - LS designated characteristics must be accommodated.
      - Method of inspection and equipment required
      - Frequency and sample size
      - Data or certification requirements from supplier
      - Reference to prints or specifications as required
      - Documentation or records to be maintained
      - Identification of material status
      - Approval signatures and dates

3. Do receiving inspection records indicate material receipt, status and disposition?

   a. A procedure must be in place governing the use of receiving/inspection instructions.

   b. Receiving inspections record must contain:
      - Actual inspection results including variable data
      - Disposition or status of materials
      - Supplier identification
      - Lot numbers and quantities

   c. Records and observations must indicate that inspections and tests are being consistently performed in accordance with the written procedures and instruction sheets. Records must be accurate, dated and signed or initialed by the inspector or operator.

4. Are material certifications received with each shipment when required?

   a. Material certifications or approvals, including statistical or actual data must be received for each shipment.

   b. Certifications or approvals received for each shipment must be compared to the actual specification.

   c. Material certifications must include:

      - Part or material number, revision level, and date
      - Lot number of material
      - Specification for material
      - Actual data, preferably statistical or variable
      - Approval signature and date

   d. Material certifications must be verified as a minimum on an annual basis unless otherwise specified.

5. Are raw materials traceable to material certifications and used on a first-in, first-out (FIFO) basis?

   a. A FIFO procedure for the storage and handling of incoming material must be available and implemented.

   b. Raw materials must be identified by a raw material lot number and traceable to the material certification.

   c. With either testing or certification, the incoming material identification is to be retained throughout the supplier's system and into LS by means of a routing tag or a suitable equivalent.

6. Are there documented instructions to control non-conforming material at receiving inspection?

   a. A written procedure must be developed and implemented for a control on non-conforming material in the receiving inspection area. As a minimum the procedure should include:

      - Responsibility for making material disposition
      - A description of the problem and corrective action documentation
      - Responsibility for problem investigation
      - Problem communication back to supplier with a request of written correction action and follow-up

Manufacturing Process Controls

1. Is there a process routing/traveler that defines and describes each step of the manufacturing process in use on the production floor?

   a. Routing sheets, process sheets or routing cards are necessary to assure that proper tools, fixtures, materials, manpower and processing methods are used.

   b. Routing sheets must be up-to-date to reflect the actual process.

c. Routing sheets must follow the product through each step of the process, including any subcontracted processes.

d. Information on the process router must include:

- Part number, revision level, and date
- Specific machines or tools to be used by identifying number
- Operator sign-off

e. Reference to use of traveler/router must be incorporated into all appropriate operator and inspection instructions.

2. Is there a documented system for machine setup, and first piece inspection and approval?

a. Procedures governing the creation and maintenance of up-to-date and document setup instructions must include:

- Part number, revision level and date
- Machine identification
- Machine process parameters (temp., speed, etc.)
- Verification of function of mistake-proofing devices
- Material verification
- Target or nominal specification with tolerance for part characteristics which will assure statistical conformance
- Control of setup parts and material
- Approval signatures and dates

b. Setup parts and material must be identified and segregated from production material to prevent mixing with acceptable products or material.

c. First piece inspection is required prior to production runs and after each machine setup, die change, or process change to assure compliance to specifications prior to a production run.

d. Procedures governing the creation and maintenance of up-to-date and documented first piece inspection instructions must include:

- Part number, revision level and date
- Characteristics to inspect – as a minimum LS designated characteristics
- Method of inspection
- Sample size of inspection
- Responsibility for approval
- Documentation or record to be maintained
- Decision criteria to assure statistical conformance
- Approval signatures and dates

e. Results of first/last piece inspections must be provided to tool maintenance personnel in a feedback loop for tooling corrective actions.

f. Wherever visual judgements as to quality levels are being made, visual aids or standards must be used?

g. A procedure must be in place governing the use of setup and first piece instructions. Are operator instruction sheets posted and in use at each operation?

h. Procedures governing the creations and maintenance of up-to-date and documented operator instructions must include:

- Part number, revision level and date
- Operation to be performed
- Description of operator responsibilities
- Reference to inspection instructions if not part of operator instructions
- Approval signatures and dates

i. A procedure must be in place governing the use of operator instructions.

j. The company is responsible to ensure that operators are fully qualified to perform assigned job functions.

3. Are inspection instructions available and in use at all required control points?

a. Procedures governing the creation and maintenance of up-to-date and documented inspection instructions must include:

- Part number, revision level and date
- Characteristic to be inspected – LS designated characteristics must be accommodated
- Characteristic classification
- Method of inspection and equipment required
- Frequency and sample size
- Reference to prints or specifications as required
- Documentation or records to be maintained
- Approval signatures and dates

b. Wherever visual judgements as to quality levels are being made, visual aids or standards must be used.

c. Records and observation must indicate that inspections and tests are being performed in accordance with the written procedures and instruction sheets. Records must be accurate, dated, and signed or initialed by the inspector or operator.

d. Procedure must include mechanism for updating and maintenance.

4. Is lot identity and disposition maintained throughout the manufacturing process to assure lot integrity and traceability to materials used and processes performed?

a. A written procedure must establish a formal system for lot definition, identification, and control methods.

b. Material status (accept or reject) and lot identity must be indicated throughout the system.

c. The lot number assigned to a lot must be unique and traceable to materials used and processes performed, including subcontracted processes.

d. Records indicating inspection or test results must contain lot codes.

e. Materials must be used throughout the process on a FIFO basis.

5. Are approved reworked/repaired materials and parts re-inspected and documented prior to re-entering the process system?

a. Written procedures must be developed and implemented to assure that all reworked/sorted material is re-inspected, and records of the inspection are maintained.

b. Sorted/reworked material must be re-audited and documented.

6. Are there documented instructions to control non-conforming materials and product throughout the manufacturing process?

a. A written procedure must be developed and implemented for the control of non-conforming material. As a minimum the procedure must include:

- **Responsibility for making material disposition**
- **A description of problem and correction action documentation**
- **Responsibility for problem investigation**
- **Problem communication to management**
- **Description of the correction action system and follow-up**

b. Containment areas and systems must be established.

Outgoing Production Control

1. Are inspection instructions available for final audit?

a. Procedures governing the creation and maintenance of up-to-date and documented final inspection instructions must include:

- Part number, revision level and date
- Characteristics to be inspected – LPL designated characteristics must be accommodated
- Characteristic classification
- Method of inspection and equipment required
- Frequency and sample size
- Reference to prints or specifications as required
- Documentation for records to be maintained
- Identification of material status
- Approval signatures and date

b. Acceptance criteria must be based on zero defects.

c. Wherever visual judgements as to quality levels are being made, visual aids or standards must be used.

2. Do final inspection records indicate actual data and final disposition?

a. Procedures governing the use of final inspection records must contain:

- Actual inspection results including variable data

- Disposition or status of project
- Lot numbers and quantities
- Approval signature and date

b. Records and observation must indicate that inspections and tests are being performed in accordance with the written procedures and instruction sheets. Records must be accurate, dated and signed or initialed by the inspector or operator.

3. Are material certifications, performance data and dimensional data (as required by the customer) sent concurrent with shipments?

a. Certifications must arrive at the customer concurrent with each shipment. Records and certifications must be available from supplier internal annual revalidation where required.

4. Is manufacturing lot traceability maintained through the packaging and shipping process?

a. Manufacturing lot numbers must be traceable to bar coded lot numbers if customer required bar coded labels and the lot number should appear on the shipping label.

b. Shipping records must indicate where lots were shipped.

c. A FIFO procedure of product inventory and shipment must be developed and implemented.

5. Are there documented instructions to control non-conforming material found at final inspection?

a. A written procedure must be developed and implemented for the control of non-conforming material found in the final inspection area. As a minimum the procedure must include:

- Responsibility for making material disposition
- A description of the problem and corrective action documentation.
- Responsibility for problem solving
- Corrective action system and follow-up

b. A written procedure must be developed and implemented for the control of non-conforming material returned from the customer. Include documentation of the failure and a written corrective action response to the customer.

c. A written procedure must be developed and implemented for the notification of customers it is suspected that non-conforming material has been shipped. Include documentation of the failure and a written corrective action response to the customer.

d. Containment areas and systems must be established.

e. Sorted/reworked material lost must be identified as such on shipments and packaging lists as statistical analysis may be used to approve lots.

f. Sorted/reworked material must be re-audited and documented.

6. Are adequate safeguards in effect to prevent product from being shipped without Q.C. concurrent?

   a. A written procedure must be developed and implemented giving the Quality department authority to stop the shipment of product which is non-conforming or is suspected of being defective.

   b. Product boxes or pallets must contain identification of the Quality department's approval to ship.

   c. Products must not be shipped without Quality department approval.

7. Are instructions available and in use for packaging and labeling?

   a. Approved and dated packaging and labelling instructions must be available. As a minimum these instructions should include:

      - Bar coding as required
      - Standard packs
      - Container use
      - Label type
      - Label placement

Test and Inspection Equipment Control

1. Are written procedures used for the calibration of all gauges and test equipment, which control production processes and/or verify quality performance?

   a. Written procedures must be developed and implemented that verify gauges and other measuring and test equipment at sufficiently frequent intervals to ensure continued accuracy.

   b. Written procedures must include actions to take when an out-of-calibration gauge has been in use on the production floor for approval of product.

   c. All gauges must be uniquely identified with their own serial number.

   d. A documented schedule of gauge calibration frequencies with target and completion dates must be maintained.

   e. Calibration status and date of next required calibration must be indicated on the gauge or equipment, for example calibration stickers.

   f. If employee owned measuring equipment is used for product gauging or inspection, that equipment must be subjected to the same controls as company-owned measuring equipment.

g. Specific calibration instructions for each type of gauge must be available and in use. Instructions should include:

- Type of gauge
- Calibration standard to use
- Method to zero gauge
- Approval signature and date.

h. Prior to release for use, all gauges and test equipment must be inspected to design specifications, calibrated and approved.

2. Do calibration records indicate actual data and disposition of gauge or equipment?

a. Records maintained for gauge calibration must include:

- Gauge Serial number
- Location of the gauge
- Type of gauge
- Date of calibration
- Results of the inspection – actual variable data
- Disposition of the gauge
- Standard to be used for calibration if not listed on instruction sheets

b. Records and observation must indicate that inspections and tests are being performed in accordance with the written procedures and instruction sheets. Records must be accurate, dated and signed or initialed by the inspector or operator.

c. Readings from calibration histories must be compared to look for instrument drift and records must indicate the status of gauges following evaluation.

3. Are all master Reference Standards certified traceable to the National Institute of Standards and Technology?

a. Master reference standards used for calibration purposes must have current certification traceable to the:

- National Institute of Standards and Technology (United States)
- Ministry of Consumer Affairs, Weights and Measures Division (Canada)
- Appropriate Internal Standards Organization (ISO)

b. Included on the certification should be:

- Date of certification
- Serial numbers of the standards being certified
- Traceability number to the ISO

4. Are written test and inspection procedures available and in use?

a. Written instructions for the use of gauging, inspection equipment, and test equipment must be provided where appropriate.

b. Instructions must be dated, signed and provide information on how to conduct tests and use equipment.

5. Are statistical methods used to determine the stability and capability of gauges?

a. A written procedure on how to conduct gauge R & R studies must be developed, and implemented. Included in this procedure must be the frequency of conducting gauge R & R studies and the range of R & R acceptable for use in the plant.

b. Written action plans must be developed for gauges that do not meet the established acceptable limits.

c. History files of gauge R & R studies must be maintained for each gauge to show the reduction in variability being achieved.

6. Is there sufficient test and inspection equipment on-site to assure compliance to the blueprint and specifications?

a. Test and inspection facilities must be in place, on site to meet ES and process control gauging, inspection and test requirements.

b. Gauges and other test and measuring equipment must be readily available and provided in quantities sufficient to perform adequate process control.

c. Alternate methods of inspection must be available if gauges are lost or damaged.

Equipment and Physical Plant

1. Is production equipment adequately maintained through a systematic Preventative Maintenance (PM) program?

a. A general procedure for a PM program must be developed and implemented.

b. Documented schedules for the frequency of PM to be performed on equipment must be available.

c. Maintenance checklists and instructions must be available by equipment type.

d. History logs, by machine, and including the cost of replacement parts must be maintained and reviewed for system improvements.

e. The PM program must include machine parameter gauges and in line monitoring equipment.

2. Is production tooling adequately maintained through a systematic Preventative Maintenance (PM) program?

a. A general procedure on tooling PM must be developed and implemented.

b. Documented schedules for the frequency of PM to be performed on tooling must be available.

c. Tooling PM program must include a last piece inspection system of parts and tooling, with feedback to the tooling department to identify needed work.

d. General inspections of the entire tool must be completed after each use.

e. Maintenance checklists and instructions must be available by tool.

f. History logs, by tool, and including the cost of replacement parts, must be maintained.

3. Has the supplier implemented a system which demonstrates effective tool and gauge storage?

a. Tooling and gauges must be uniquely identified.

b. Disposition of the tool must be identified.

c. Storage area must be clean.

d. Storage area must provide protection from elements, theft, damage and traffic patterns. Active tooling must be stored inside.

e. Storage of tooling and gauges must be in racks, out of the normal lift truck traffic flow.

4. Are all areas of the supplier's plant sufficiently clean and organized to facilitate well managed, consistent, and reliable production?

a. Production materials and parts properly contained to prevent contamination, spillage or mixing.

b. Production materials must be stored in proper areas and not scattered about the plant.

c. Work centers must be clean and of sufficient size to allow efficient and effective implementation of process control.

d. Lighting around the work centers must be sufficient to perform visual work and recording at or near the point of the process activity.

e. Trash must be properly disposed of in provided containers.

f. Procedures should include the methods for housekeeping maintenance.

SUPPLIER PERFORMANCE EVALUATION GUIDELINES

A Introduction

The purpose of the LPL Supplier System Survey is to evaluate the elements of a supplier's quality system against the LPL supplier quality system standard relative to planning, execution, and documentation. These evaluations will be used to assist in the selection of new suppliers, and to identify and track the continuous improvement efforts of current suppliers.

B Preparation for the System Survey

LPL will request that the supplier conduct a self-audit using the LPL Supplier Quality System Survey, system standards and individual question scoring criteria. The supplier should also have the current PFMEA's, control plans and process flow diagrams for each LPL part produced, ready for review.

C The System Survey Form

The LPL supplier system survey consists of:

A. General survey information such as supplier location and personnel contacted, product type, LPL part numbers, date, and signature(s)

B. The survey questions, divided into 9 categories. There are also spaces with each question for ratings on each element, and a space for a total score for each category.

C. A section for supplier acknowledgment and comments.

D. A comments section for LPL to complete by category and question number, identifying both outstanding features found in the supplier's system and those deficiencies that require corrective action. Comments will be included if any score on a factor is other than a '3'.

D The Rating Scale

Each question on the survey may be awarded a maximum of 10 points.

Scoring is accomplished by rating each question for three factors.

- Written Procedures
- Procedure Implementation/Compliance
- Written documentation

Each factor may receive a rating 0-3 according to the guidelines established below. The points accorded to each factor are summed to give the overall point total for each question. The 'tenth point' may be added to the question total where a supplier demonstrates outstanding abilities and continuous improvement in that element.

SCORING GUIDELINES

A. Written Procedures

The QS9000 Manual, being the basis for the system, should include or reference procedures which provide:

* WHAT is the procedure for?
* WHEN is it used?
* WHO is responsible for its use?
* WHERE is it used?
* HOW is it used?

(Will need to consider implications of TS 16949.)

SCORE

0 NO - Written procedure does not exist

1 POOR - Superficial policy is missing more than one key element (1-5 above). Not an actual procedure for use. Gives little or no direction.

2 AVERAGE - Basic procedure describing key elements. May be missing one element. Some improvement suggested / beneficial.

3. GOOD - Easily followed procedure. Contains all key elements.

B. Procedure Implementation

Review on what is documented and not what may be missing from a procedure. Is it utilized to its' full extent in the work place?

SCORE

0 NO - Written procedure does not exist

1 POOR - Some implementation. Superficial, no solid evidence of long-term use past or future. No plans for completion / follow-through. Not implemented correctly.

2 AVERAGE - Implementation on-going. System moving to future completion / continued use. Documented plans for completion / continued use (<3 month, SPC < 6 months).

3. GOOD - Full implementation. Meets all procedure requirements

C. Written Records

Review of actual records of what is required and not what may be missing from a procedure.

SCORE

0 NO - Records not kept per procedure.

1 POOR - Incomplete records. Not organized / maintained on a real-time basis.

2 AVERAGE - Most information on records is complete. Records are well organized and maintained. Some improvements required.

3. GOOD - Records complete per procedure.

D Minimum Scoring Targets

<70%NOT RECOMMENDED - The Supplier has deficiencies in control system documentation, has major defects in the control system, or cannot demonstrate an acceptable process. The corrections to the control system and/or process may require in excess of 60 days. A supplier corrective action plan is required which details the action plan, the timing, and specifically who within the supplier organization is responsible for completion of each item. After sufficient implementation of the plan, the supplier may submit a self-audit and request a re-survey by LPL.

70% APPROVED - The supplier has adequately documented evidence of compliance to the system standard and the manufacturing process
appears to be working satisfactory. A plan is required within 30 days from receipt of the completed survey that details corrective action and timing for each deficient element in the survey.

80% CERTIFIABLE - Systems are in place for adequate on-going control and for continuous improvement. A correction action plan must be used for those questions rated less than a 9.

85% Eligible to be a preferred Supplier to Lakeside Plastics Ltd.