



Mask Technology, Inc.

Quality Assurance Program

Quality Policy

Mask Technology's objective is to meet each customer's requirements, both stated and implied, every time. In order to ascertain the quality of the products processed by Mask Technology, the following criteria will be employed;

1. Discrepancies, both internal and external, will continuously be measured and improved upon.
2. Quality surveys to customers will monitor both delivery schedules and overall customer satisfaction.
3. Sales per customer will be monitored on a monthly basis to ensure retention.

Mask Technology shall follow these steps to ensure our commitment to continuous improvement. Quality safeguards our jobs.



December 8, 1999

To: All Employees of Mask Technology, Inc.

Management Representative Announced

We are pleased to announce that Andrew Holzmann will be Mask Technology's management representative. Andrew will be responsible for establishing, implementing, and maintaining our quality assurance system to the requirements of ISO 9002. In addition, Andrew will report on the suitability and effectiveness of our system to the Board on a regular basis.

Andrew will continue to function in his current capacities, however in all matters of establishing, implementing, and maintaining the quality system, Andrew shall be the primary contact.

We are confident that our efforts in implementing the new quality program will benefit not only the customers of Mask Technology, but it's employees as well.

The Board of Director's

Mask Technology, Inc.

4 Quality System Requirements

4.1 Management Responsibility

4.1.1 Quality Policy

Mask Technology has defined and documented its policy for quality, including objectives for quality and its commitment to quality. The quality policy is relevant to Mask Technology's organizational goals and the expectation and needs of our customers. This policy is understood, was implemented, and is maintained at all levels of the organization.

4.1.2 Organization

4.1.2.1 Responsibility and authority

The responsibility, authority, and interrelation of personnel who manage, perform, and verify work affecting quality is defined and documented, particularly for personnel who need the organizational freedom and authority to:

- a) Initiate action to prevent the occurrence of any non-conformities relating to product, process, and quality system;
- b) Identify and record any problems relating to the product, process, and quality system;
- c) Initiate, recommend, or supply solutions through designated channels;
- d) Verify the implementation of solutions;
- e) Control further processing, delivery, or installation of non-conforming product until the deficiency or unsatisfactory condition has been corrected.

4.1.2.2 Resources

Mask Technology has identified resource requirements and provides adequate resources, including the assignment of trained personnel (see 4.18), for management, performance of work, and verification activities including internal quality audits.

4.1.2.3 Management representatives

The Management Representative, irrespective of other responsibilities, has defined authority for

- a) Ensuring that a quality system is established, implemented, and maintained in accordance with ISO 9002:1994, and
- b) Reporting on the performance of the quality system to the suppliers management for review and as a basis for improvement of the quality system.
- c) Acting as a liaison with external parties on matters relating to Mask Technology's quality system.

4.1.3 Management review

Mask Technology's management with executive responsibility reviewed the quality system on an annual basis to ensure its continuing suitability and effectiveness in satisfying the requirements of this ISO 9002:1994 and Mask Technology's stated quality policy and objectives (see 4.1.1). Records of such reviews shall be maintained for no less than one year.

4.2 Quality System

4.2.1 General

Mask Technology has established, documented, and maintained a quality system as a means of ensuring that product conforms to specified requirements. Mask Technology's quality manual covers the requirements of ISO 9002:1994. The quality manual includes or makes reference to the quality system procedures and outlines the structure of the documentation used in the quality system.

4.2.2 Quality system procedures

Mask Technology has

- a) Prepared documented procedures consistent with the requirements of the ISO 9002:1994 and Mask Technology's stated quality policy and
- b) Effectively implemented the quality system and its documented procedures.

4.2.3 Quality planning

Mask Technology has defined and documented how the requirements for quality are met. Quality planning is consistent with all other requirements of Mask Technology's quality system and is documented in a format to suit Mask Technology's method of operation. Mask Technology has given consideration to the following activities, as appropriate, in meeting the specified requirements for products, projects, or contracts:

- a) the preparation of quality plans;
- b) the identification and acquisition of any controls, processes, equipment (including inspection and test equipment), fixtures, resources, and skills that may be needed to achieve the required quality;
- c) ensuring the compatibility of the design, the production process, installation, servicing, inspection, and test procedures, and the applicable documentation;
- d) the updating, as necessary, of quality control, inspection, and testing techniques, including the development of new instrumentation;
- e) the identification of any measurement requirement involving capability that exceeds the known state of the art in sufficient time for the needed capability to be developed;
- f) the identification of suitable verification at appropriate stages in the realization of the product.

- g) the clarification of standards of acceptability for all features and requirements, including those which contain a subjective element;
- h) the identification and preparation of quality records (see 4.16)

4.3 Contract Review

4.3.1 General

Mask Technology has established and maintains documented procedures for contract review and for the coordination of these activities.

4.3.2 Review

Before submission of a quotation, or at the acceptance of a contract or order (statement of requirement), the quote, contract or order shall be reviewed by Mask Technology to ensure that:

- a) the requirements are adequately defined and documented; where no written statement of requirement is available for an order received by verbal means, the supplier shall ensure that the order requirements are agreed before their acceptance.
- b) Any differences between the contract or accepted order requirements and those in the quotation are resolved.
- c) Mask Technology has the capability to meet the contract or accepted order requirements.

4.3.3 Amendment to contract

Mask Technology identifies how amendments are made and correctly transfers them to the functions concerned within our organization.

4.3.4 Records

Records of contract reviews are maintained for a period of one year.

4.4 Design Control

This section does not apply.

4.5 Document and Data Control

4.5.1 General

Mask Technology has established and maintains documented procedures to control all documents and data that relate to the requirements of this International Standard

including, to the extent applicable documents of external origin such as standards and customer drawings.

4.5.2 Document and data approval and issue

Documents are reviewed and approved for adequacy by authorized personnel prior to issue. A master List of Documents that includes the current revision status of documents has been established and is readily available to preclude the use of invalid and/or obsolete documents.

This control ensures that:

- a) the pertinent issues of appropriate documents are available at all locations where operations essential to the effective functioning of the quality system are performed;
- b) invalid and/or obsolete documents are promptly removed from all points of issue or use, or otherwise assured against unintended use;
- c) obsolete documents are suitably identified and removed from areas of use.

4.5.3 Document and data changes

Changes to documents and data are reviewed and approved by the same functions/organizations that performed the original review and approval, unless specifically designated otherwise. The designated functions/organizations have access to pertinent background information upon which to base their review and approval.

The nature of the change is identified in the document or the appropriate attachments.

4.6 Purchasing

4.6.1 General

Mask Technology has established and maintains documented procedures to ensure that purchased product conforms to specified requirements. These procedures can be found in the MTI Quality Supplement Section 6.0.

4.6.2 Evaluation of subcontractors

Mask Technology has:

- a) evaluated and selected subcontractors on the basis of their ability to meet sub-contract requirements including the quality system and any specific quality-assurance requirements;
- b) defined the type and extent of control exercised by Mask Technology over subcontractors. This is dependant upon the type of product, and, where applicable, on the quality audit reports and/or quality records of the previously demonstrated capability and performance of subcontractors;
- c) established and maintains quality records of acceptable subcontractors (see 4.16).

4.6.3 Purchasing data

Purchasing documents contain data clearly describing the product ordered, including, where applicable:

- a) the type, class, style, grade, or other precise identification;
- b) the title or other positive identification, and applicable issues of specifications, drawings, process requirements, inspection instructions, and other relevant technical data, including requirements for approval or qualification of product, procedures, process equipment, and personnel;
- c) the title, number and issue of the quality system standard to be applied.

Mask Technology has reviewed and approved purchasing documents for adequacy of the specified requirements prior to release.

4.6.4 Verification of purchased product

4.6.4.1 Supplier verification at subcontractors premises

Where Mask Technology proposes to verify purchased product at the subcontractor's premises, Mask Technology shall specify verification arrangements and the method of product release in the purchasing documents.

4.6.4.2 Customer verification of subcontracted product

Where specified in the contract, Mask Technology's customer or the customer's representative shall be afforded the right to verify at the subcontractors premises and Mask Technology's premises that subcontracted product conforms to specified requirements. Such verification shall not be used by Mask Technology as evidence of effective control of quality by the subcontractor.

Verification by the customer shall not absolve Mask Technology of the responsibility to provide acceptable product, nor shall it preclude subsequent rejection by the customer.

4.7 Control of Customer Supplied Product

Mask Technology has established and maintains documented procedures for the control of verification, storage, and maintenance of customer supplied product provided for incorporation into the supplies or for related activities. Any such product that is lost, damaged, or is otherwise unsuitable for use shall be recorded and reported to the customer (see 4.16).

Verification by Mask Technology does not absolve the customer of the responsibility to provide acceptable product.

4.8 Product Identification and Traceability

Mask Technology has established and maintains documented procedures for identifying the product by suitable means from receipt and during all stages of production, delivery and installation.

Where, to the extent that traceability is a specified requirement, Mask Technology has established and maintains documented procedures for unique identification of individual product or batches. This identification shall be recorded (see 4.16).

4.9 Process Control

Mask Technology plans the production, installation and servicing processes which directly affect quality and ensures that these processes are carried out under controlled conditions. Controlled conditions include the following:

- a) documented procedures defining the manner of production, installation, and servicing, where the absence of such procedures could adversely affect quality;
- b) use of suitable production, installation, and servicing equipment and a suitable working environment;
- c) compliance with reference standards/codes, quality plans, and/or documented procedures;
- d) monitoring and control of suitable process parameters and product characteristics;
- e) the approval of processes and equipment as appropriate;
- f) criteria for workmanship, which shall be stipulated, in the clearest practicable manner (e.g., written standards, representative samples, or illustrations);
- g) suitable maintenance of equipment to ensure continuing process capability.

Where the results of processes cannot be fully verified by subsequent inspection and testing of the product and where, for example processing deficiencies may become apparent only after the product is in use, the process shall be carried out by qualified operators and/or shall require continuous monitoring and control of process parameters to ensure that the specified requirements are met.

The requirements for any qualification of process operations, including associated equipment and personnel (see 4.18) are to be specified

Records shall be maintained for qualified processes, equipment, and personnel, as appropriate (see 4.16).

4.10 Inspection and Testing

4.10.1 General

Mask Technology has established and maintains documented procedures for inspection and testing activities in order to verify that the specified requirements of the product are met. The required inspection and testing, and the records to be established, are detailed in the quality plan or documented procedures.

4.10.2 Receiving Inspection and Testing

4.10.2.1 Mask Technology ensures that incoming product is not used or processed (except in the circumstances described in 4.10.2.3) until it is inspected or otherwise verified as conforming to specified requirements. Verification of the specified requirements shall be in accordance with the quality plan and/or documented procedures.

4.10.2.2 In determining the amount and nature of receiving inspection, consideration should be given to the amount of control exercised at the subcontractor's premises and the recorded evidence of conformance provided.

4.10.2.3 Where incoming product is released for urgent production purposes prior to verification, it shall be positively identified and recorded (see 4.16) in order to permit immediate recall and replacement in the event of nonconformity to specified requirements.

4.10.3 In Process Inspection and Testing

Mask Technology:

- a) inspects and tests the product as required by the quality plan and or documented procedures;
- b) holds product until the required inspection and tests have been completed or necessary reports have been received and verified, except when product is released under positive recall procedures (see 4.10.2.3). Releases under positive recall procedures shall not preclude the activities outlined in 4.10.3a;

4.10.4 Final Inspection and Testing

Mask Technology carries out all final inspection and testing in accordance with the quality plan and/or documented procedures which completes the evidence of conformance of the finished product to the specified requirements.

The quality plan and/or documented procedures for final inspection and testing requires that all specified inspection and tests, including those specified either on receipt of product or in-process, have been carried out and that the results meet specified requirements.

No product shall be shipped until all the activities specified in the quality plan and/or documented procedures have been satisfactorily completed and the associated data and documentation are available and authorized.

4.10.5 Inspection and Test Records

Mask Technology has established and maintains records which provide evidence that the product has been inspected and/or tested. These records show clearly whether the

product has passed or failed the inspections and/or tests according to defined acceptance criteria. Where the product fails to pass any inspection and/or test, the procedure for control of non conforming product shall apply (see 4.16).

Records identify the inspection authority responsible for the release of product (see 4.16).

4.11 Control of Inspection, Measurement and Test Equipment

4.11.1 General

Mask Technology has established and maintains documented procedures to control, calibrate and maintain inspection, measuring, and test equipment (including software) used by Mask Technology to demonstrate the conformance of product to specified requirements. Inspection, measuring, and test equipment is used in a manner which ensures that measurement uncertainty is known and is consistent with the required measurement capability.

Where test software or comparative references such as test hardware are used as suitable forms of inspection, they are checked to prove that they are capable of verifying the acceptability of product, prior to release for use during production, installation, or servicing, and will be rechecked at prescribed intervals. Mask Technology has established the extent and frequency of such checks and maintains records as evidence of control (see 4.16).

Where the availability of technical data pertaining to the measurement equipment is a specified requirement, such data is made available, when required by the customer or the customer's representative, for verification that the measuring equipment is functionally adequate.

4.11.2 Control Procedure

Mask Technology:

- a) determines the measurements to be made and the accuracy required, and selects the appropriate inspection, measuring and test equipment that is capable of the necessary accuracy and precision;
- b) identifies all inspection, measuring and test equipment that can affect product quality, and calibrates and adjusts them at prescribed intervals, or prior to use, against certified equipment having a known valid relationship to internationally or nationally recognized standards. Where no such standards exist, the basis used for calibration shall be documented;
- c) defines the process employed for the calibration of inspection, measuring, and test equipment, including details of equipment type, unique identification, location, frequency of checks, check method, acceptance criteria, and the action to be taken when results are unsatisfactory;
- d) identifies inspection, measuring, and test equipment with a suitable indicator or approved identification record to show the calibration status;
- e) maintains calibration records for inspection, measuring, and test equipment (see 4.16)

- f) assesses and documents the validity of previous inspection and test results when inspection, measuring, and test equipment is found to be out of calibration;
- g) ensures that the environmental conditions are suitable for the calibrations, inspections, measurements, and tests being carried out;
- h) ensures that the handling, preservation, and storage of inspection, measuring, and test equipment is such that the accuracy and fitness for use are maintained;
- i) safeguards inspection, measuring and test facilities, including both test hardware and test software, from adjustments which would invalidate the calibration setting.

4.12 Inspection and Test Status

The inspection and test status of product is identified by suitable means, which indicates the conformance or non conformance of product with regard to inspection and tests performed. The identification of inspection and test status is maintained, as defined in the quality plan and/or documented procedures, throughout production, installation, and servicing of the product to ensure that only product that has passed the required inspections and tests [or released under an authorized concession (see 4.13.2)] is dispatched, used, or installed.

4.13 Control of Non Conforming Product

4.13.1 General

Mask Technology has established and maintains documented procedures that ensure that product that does not conform to specified requirements is prevented from unintended use or installation. This control provides for identification, documentation, evaluation, segregation (when practical), disposition of non conforming product, and for notification to the functions concerned.

4.13.2 Review and Disposition of Non Conforming Product

The responsibility for review and authority for the disposition of non conforming product has been defined. Non conforming product is reviewed in accordance with documented procedures. It may be:

- a) reworked to meet the specified requirements,
- b) accepted with or without repair concession,
- c) re-graded for alternative applications, or
- d) rejected or scrapped

Where required by the contract, the proposed use or repair of product (see 4.13.2b) which does not conform to specified requirements shall be reported for concession to the customer or customer's representative. The description of the non conformity that has been accepted, and of repairs, shall be recorded to denote the actual condition (see 4.16).

Repaired and/or reworked product shall be re-inspected in accordance with the quality plan and/or documented procedures.

4.14 Corrective Action

4.14.1 General

Mask Technology has established and maintains documented procedures for implementing corrective and preventive action.

Any corrective or preventive action taken to eliminate the causes of actual or potential non conformance shall be to a degree appropriate to the magnitude of problems and commensurate with risks encountered.

Mask Technology shall implement and record any changes to the documented procedures resulting from corrective and preventative action.

4.14.2 Corrective Action

The procedures for corrective action include:

- a) The effective handling of customer complaints and reports of product non conformance;
- b) Investigation of the cause of non conformities relating to product, process, and quality system, and recording the results of the investigation (see 4.16);
- c) Determination of the corrective action needed to eliminate the cause of non conformities;
- d) Application of controls to ensure that corrective action is taken and that it is effective.

4.14.3 Preventive action

The procedures for preventive action include:

- a) the use of appropriate sources of information such as processes and work operations which affect product quality, concessions, audit results, quality records, service reports, and customer complaints to detect, analyze, and eliminate potential causes of non conformities;
- b) determination of the steps needed to deal with any problems requiring preventative action;
- c) initiation of preventive action and application of controls to ensure that it is effective;
- d) confirmation that relevant information of actions taken is submitted for management review (see 4.1.3).

4.15 Handling , Storage, Packaging, Preservation, and Delivery

4.15.1 General

Mask Technology has established and maintains documented procedures for handling, storage, packaging, preservation and delivery of product. These procedures are enumerated in the Mask Technology Quality Plan and Supplement.

4.15.2 Handling

Mask Technology provides methods and means of handling product that prevent damage or deterioration.

4.15.3 Storage

Mask Technology uses designated storage areas or stock rooms to prevent damage or deterioration of product, pending use or delivery. Appropriate methods for authorizing receipt to and shipment from such areas are stipulated.

In order to detect deterioration, the condition of product in stock is assessed at appropriate intervals.

4.15.4 Packaging

Mask Technology controls packing, packaging, and marking processes (including materials used) to the extent necessary to ensure conformance to specified requirements.

4.15.5 Preservation

Mask Technology applies appropriate methods for preservation and segregation of product when the product is under Mask Technology's control.

4.15.6 Delivery

Mask Technology arranges for the protection of the quality of the product after final inspection and test. Where contractually specified, this protection shall be extended to include delivery to destination.

4.16 Control of Quality Records

Mask Technology has established and maintains documented procedures for identification, collection, indexing, access, storage, maintenance, and disposition of quality records.

Quality records are maintained to demonstrate conformance to specified requirements and the effective operation of the quality system. Pertinent quality records from the subcontractor are an element of these data.

All quality records are legible and are stored and maintained in such a way that they are readily retrievable in facilities that provide a suitable environment to prevent damage or deterioration and to prevent loss. Quality records are maintained for a minimum of one year. Where agreed contractually, quality records shall be made available for evaluation by the customer or the customer's representative for an agreed period.

4.17 Internal Quality Audits

Mask Technology has established and maintains documented procedures for planning and implementing internal quality audits to verify whether activities and related results comply with planned arrangements and to determine the effectiveness of the quality system.

Internal quality audits are scheduled on the basis of the status and importance of the activity to be audited and shall be carried out by personnel independent of those having direct responsibility for the activity being audited.

The results of the audits shall be recorded (see 4.16) and brought to the attention of the personnel having responsibility in the area audited. The management personnel responsible for the area shall take timely corrective action on deficiencies found during the audit.

Follow-up audit activities shall verify and record the implementation and effectiveness of the corrective action taken.

4.18 Training

Mask Technology has established and maintains documented procedures for identifying training needs and provides for the training of all personnel performing activities affecting quality. Personnel performing specific assigned tasks shall be qualified on the basis of appropriate education, training and/or experience, as required. Appropriate records of training are maintained (see 4.16).

4.19 Servicing

This section does not apply

4.20 Statistical Techniques

For purposes of determining final inspection lot sizes, Mask Technology uses the IPC Sampling Plan that was formally contained in IPC-SM840B dated May 1988.