

# **Supplier Quality Standard**

Sherex Industries & Sherex Fastening Solutions



## **"First Time Quality at the Source"**

Through Teamwork

### **Supplier Quality Standard**

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This document is controlled by:

Sherex Industries Corporation  
400 Riverwalk Parkway, Suite 600  
Tonawanda, NY 14150

Edited by

Sherex Engineering, Quality and Purchasing Departments

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.sherex.com](http://www.sherex.com)

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**1.0 INTRODUCTION**

Our success is based upon the quality, performance, and value of our products and services. The quality of our products depends on **Zero Defect** product purchased from our suppliers. To assure the highest product quality possible, Sherex considers its suppliers as valuable team members.

**Quality Statement for Sherex Industries & Fastening Solutions LLC**

With a firm belief towards continuous improvement, Sherex will meet or exceed our customers' requirements for the quality of the products and services we provide. Sherex will provide our employees with all necessary information, training, tools and support so they can achieve our quality objectives. Sherex will treat customers, employees, suppliers and our community with honesty and integrity.

**Quality Requirements for Organizations / Suppliers**

**Quality System Requirements**

Minimum quality system requirements for Supplier Organizations to Sherex Industries and Sherex Fastening Solutions, divisions are:

- Third party registration to **ISO 900:2000** by an accredited third party certification body, unless otherwise specified by the customer.
- Conformance or registration (preferred) to **ISO/TS 16949** latest revision unless otherwise specified by the customer.

Copies of ISO9001:2000 / ISO/TS16949 certificates shall be submitted to the Sherex Quality Representative. Acceptance of accreditation(s) shall be communicated to the organization. Should the status of any accepted accreditation change, (i.e. new certification, de-certification, reassessments, etc.) the organization shall notify the Sherex Quality Representative and the Procurement/Logistics Representative.

**Purpose**

This Standard is a supplement providing additional Sherex specific requirements which organizations shall follow. This supplement, with the **ISO/TS1649 Technical Specification**, includes both supplier and Sherex responsibilities. Material supplied to Sherex shall be produced, controlled, inspected, and tested according to the requirements set forth in these documents and other applicable specifications.

## 2.0 DEFINITIONS

- The word "shall" indicates mandatory requirement.
- The word 'should' indicates a mandatory requirement with some flexibility allowed in compliance methodology. Organizations choosing other approaches to satisfy a 'should' must be able to show that their approach meets the intent of ISO/TS16949.
- 'Product' is defined as any part, product, service, etc. supplied to Sherex for which this standard is applicable.

When referring to this Standard and ISO/TS 16949 Technical Specification in the development and assessment of Organizations to Sherex Corp., the following applies:

- Customer = Sherex Industries & Sherex Fastening Solutions (SFS)
- Organization = Supplier to Sherex Industries & SFS
- Supplier = Supplier (Subcontractor) to Sherex's Supplier

## 3.0 DOCUMENTATION

### 3.1 GENERAL

**The organization shall maintain and conform to the latest revision level of the required or referenced Purchase Order documentation.**

### 3.2 SHEREX SPECIFIC DOCUMENTATION

Sherex specific documentation related to Product conformance may include, but is not limited to the following:

- Purchase Order
- Parts list, Product structure (bill of materials)
- Blueprints
- Order specifications
- Other supporting specifications/documentation (i.e. DINs, Sherex Norms, OEM customer, etc.)

### 3.3 REFERENCE DOCUMENTS

The following is a list of AIAG / ISO / ANSI documents referenced in this standard:

Refer to the latest version

Manual	Published by	Description
ISO/TS16949	IATF	Technical Specification
ISO 9001;2000	ISO	Quality System
APQP	AIAG	Advance Product Quality Planning and Control Plan
FMEA	AIAG	Potential Failure Mode and Effects Analysis
MSA	AIAG	Measurement System Analysis
SPC	AIAG	Fundamental SPC
PPAP	AIAG	Production Part Approval Process
ANSI Y 14.5	ANSI	GD&T

To obtain information of these documents, contact the following:

[www.AIAG.org](http://www.AIAG.org)

[www.iso.ch](http://www.iso.ch)

### 3.4 ORIGINAL EQUIPMENT MANUFACTURER (OEM) CUSTOMER REQUIREMENTS

The organization shall adhere to referenced OEM Customer requirements as communicated per Sherex documentation.

## 4.0 PRODUCTION PART APPROVAL PROCESS (PPAP)

### 4.1 GENERAL

The organization shall submit an initial sample report in accordance with the AIAG PRODUCTION PART APPROVAL PROCESS PPAP manual unless otherwise specified by the Sherex Supplier Quality and Engineering Representatives.

### 4.2 SUBMISSION REQUIREMENTS

The organization shall submit specific PPAP requirements in accordance with the latest revision of the AIAG PPAP Manual.

### 4.3 SUBMISSION LEVEL REQUIREMENTS

The organization shall submit PPAP's to the level requirements as stated in the latest revision of the AIAG PPAP Manual. The submission level shall use level 3 as the default for all submissions unless specified otherwise by the Sherex Supplier Quality and Engineering Representatives.

Sherex specific requirements related to the PPAP include the following:

#### 4.3.1 MATERIAL SAMPLE QUANTITY

Standard sample quantity for dimensional evaluation shall be one (1) product (per cavity, die, progressive die, etc. if applicable), a minimum total of (6) unless otherwise specified.

#### 4.3.2 STATISTICAL DATA

Supporting statistical data (i.e. SPC, process capability studies, etc.) for a PPAP submission should be assimilated from a 'significant material production run'; defined as at least 300 completed products.

#### 4.3.3 MEASUREMENT RESULTS CORRELATION

All samples shall be sequentially numbered and correlated to the dimensional reports. Blueprints should be numbered in accordance with the latest revision of ANSI Y 14.5 standards. All results shall be taken from master samples and these samples shall be submitted with the PPAP. Measurement method agreement, if defined, shall be attached to the organization dimensional evaluation report.

**Note: Before any PPAP submission, deviations from these requirements shall be agreed upon between the**

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## **organization and the Sherex Engineering Representative.**

### 4.4 IDENTIFICATION

All samples accompanying PPAP submissions shall be identified with the appropriate label, (available through the Sherex Procurement/Logistics Department), on the carton or container. The label shall contain all required information and shipped separately from production material.

### 4.5 FIRST PRODUCTION SHIPMENT AUTHORIZATION

The organization shall ship production intent material to Sherex only if:

1. The PPAP submission has been approved in writing by the Sherex Supplier Quality Representative and written notification of the approval has been received by the organization.

**Note: The organization shall not ship production intent material without prior PPAP approval by the Sherex Supplier Quality Representative.**

### 4.6 ANNUAL PPAP RE-CERTIFICATION

An annual material re-certification (once per calendar year) of the supplied material shall be performed by the organization unless otherwise specified by the Sherex Quality Representative. Questions regarding the re-certification should be directed to the respective Sherex Supplier Quality Representative. The results of the re-certification shall be documented and maintained at the Organization's site. These shall be available upon request.

## **5.0 ASSESSMENT OF QUALITY SYSTEMS**

### 5.1 ISO/TS 16949 COMPLIANCE

Suppliers (Organizations) to Sherex need to refer to the latest edition of ISO/TS 16949 with the goal of supplier conformity with this technical specification.

### 5.2 QUALITY SYSTEM ASSESSMENT

Assessments shall be conducted at the organization or via a self-assessment. Eligibility for self-assessment shall be determined by both the Sherex Engineering and Quality Representatives. Results of the self-assessment (Supplier Quality Evaluation Questionnaire) shall be documented and communicated to the organization by either the Sherex Engineering or Quality Representative.

### 5.3 QUALITY SYSTEM RE-ASSESSMENTS

A re-assessment of the organization's quality system shall be conducted by the Sherex Quality Representative if deemed necessary (i.e. quality issues, engineering changes, certification, etc.).

### 5.4 AUDITS & SURVEYS

Audits and surveys will be conducted on an as needed basis as determined by Sherex for the purpose of verifying product, processes, or quality systems. Supplier shall provide reasonable facilities and

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assistance, including all quality records and related documents for the purpose of conducting such audits and surveys.

## 5.5 LOT TRACEABILITY

Lot traceability is required on all purchased components. Lot traceability is intended to assure good inventory control, proper implementation of part or process changes, and limited exposure in the event of discrepant product. Each shipment will be clearly marked with Lot Numbers. Mixed Lots should be avoided. Mixed lots will have to be identified.

- 5.5.1 Lots cannot contain more than one material batch or heat number.
- 5.5.2 A new lot number should be assigned for all significant process variations. Examples include, but are not limited to, material batches, tooling and equipment setups, and operator changes (if the process is highly dependent on operator skill).
- 5.5.3 The subcontractor must have a documented system(s) to trace product to a raw material heat lot and date of manufacture or processing.
- 5.5.4 The supplier must ensure that documented systems are in place at all sub-suppliers to trace product to the raw material lot and date of manufacture or processing.
- 5.5.5 Suppliers shall establish and maintain documented procedures for unique identification of product batches or lots.
- 5.5.6 Lot numbers must be traceable from raw material receipt through all stages of production by the supplier, including shipments to Sherex.
- 5.5.7 All product should be shipped on a "first in/ first out" (FIFO) method.

## 5.6 SUPPLIER TIERS

### 5.6.1 Introduction

The purpose of this section is to organize our suppliers and vendors by capability. In pursuant to our goal of providing world class solutions to our customers, Sherex considers our suppliers as partners.

### 5.6.2 Definitions

Tier I – Any supplier that has achieved TS 16949 certification, or has ISO 9001:2000 certification and demonstrated world class quality.

Tier II – Any supplier that has ISO 9001:2000 certification, or is lacking ISO registration but has demonstrated to have an effective quality management system in place.

Tier III – Any supplier that does not have a quality system certification and is not used for high volume production is therefore exempt.

## 6.0 QUALITY DATA SUBMISSIONS

The organization may be required to submit Quality Data (i.e. SPC charts, process monitoring results, preventative & predictive maintenance data, etc.) upon request to the Sherex Engineering and Quality Team. Original documentation shall be retained at the organization.

**NOTE: The organization 'shall' provide 1) Material Certifications 2) Plating Certifications 3) Certificates-of-**

**Conformance for each part and lot of product shipped to Sherex.**

**6.1 SPECIAL CHARACTERISTICS/ KEY PRODUCT CHARACTERISTICS (KPC)**

Special characteristics are any product or process characteristics that affect fit, function, performance or subsequent processing of product. Special Characteristics will be identified and specifically addressed in the Design-FMEA, Process-FMEA, Control Plans, Process Flows, Work Instructions and other associated documents. Sherex designated special characteristics will be identified on drawings and specifications.

Suppliers must evaluate process capability on an ongoing basis. A process to review and ensure continuing capability shall be established by the supplier for designated KPC's. Capability indices are a supporting element of continuous improvement.

Capability analysis establishing Standard Deviation based on individual data points.		Capability analysis establishing estimated Standard Deviation based on data groups.	
Ppk > 1.67	Process Acceptable	Cpk > 1.67	Preferred Process Capability
Ppk > 1.33 - Ppk < 1.67	Implement corrective actions to improve process.	Cpk > 1.33	Process Acceptable
Ppk < 1.33	Unacceptable. Implement corrective action & 100% inspection and verification method.	Cpk < 1.33	Unacceptable. Implement corrective action & 100% inspection and verification method.

**7.0 SPECIFICATION / REQUIREMENT CHANGE / CONCESSION REQUESTS**

**7.1 GENERAL**

Requests for changes or concessions (temporary or permanent) to specifications or requirements shall be documented. Approval shall be made through the Sherex Engineering Representative.

**7.2 CONCESSIONS**

Concessions are time or quantity limited deviations from specifications. These concessions shall be temporary and are not considered permanent. All concessioned parts are to be labeled with a description of the concession. Prior to shipment, supplier must notify the responsible Sherex Engineering and Quality representatives of concessioned shipment.

**7.3 PERMANENT CHANGES**

Permanent changes, either Organization or Sherex initiated, shall be appropriately documented. These changes shall require a new PPAP submission as specified by the Sherex Engineering Representative (if not specified, submissions shall default to the Level 3).

**7.3.1 SUPPLIER (ORGANIZATION) REQUEST FOR ENGINEERING APPROVAL**

Organization initiated change requests shall be submitted, in writing, to the Sherex Engineering Representative. This written request along with all supporting documentation shall be submitted to both the Sherex Engineering and Quality Departments. The

organization shall make no changes until Sherex, written-approval, has been granted.

### 7.3.2 SHEREX INITIATED ENGINEERING CHANGES

Sherex initiated engineering changes, including all PPAP requirements, shall be communicated to the organization by the Sherex Engineering Representative.

### 7.3.3 GENERAL CHANGE REQUIREMENTS

General changes (i.e. flow charts, control charts, etc.) shall be requested through the applicable Sherex Engineering Representative.

Note: No change to material shall be implemented until all proper authorization has been obtained. This includes PPAP submission requirements as specified by the appropriate Sherex Engineering Representative.

## 8.0 NONCONFORMANCE, CORRECTIVE AND PREVENTIVE ACTIONS

### 8.1 REQUIREMENTS

When Sherex has notified the organization of a 'Nonconformance' issue with material, the organization is responsible for:

#### 8.1.1 Initial Containment

This containment action shall:

- be implemented within 24 hours (1 calendar day including weekends and holidays) of notification by Sherex personnel. (All verbal notifications by Sherex shall be followed up with written documentation).
- Containment actions shall include all affected material in the organization's control, in transit to Sherex, in the possession of Sherex, or finished product shipped to Sherex customers.
- The organization shall notify the Sherex Procurement/Logistics Department of material availability.
- The organization shall notify the Supplier Quality Representative of their containment actions and to discuss coordination of containment of material at Sherex and Sherex's customers.

#### 8.1.2 Certified Shipments

All shipments of affected material shall be 'certified' (i.e. in compliance with the containment actions) until corrective action issues are formally closed by a Sherex Supplier Quality Representative.

All material shall be shipped per approved methods and identified with the appropriate labels. Individual component identification may be required by Sherex.

#### 8.1.3 Initial Response

A written initial response shall be submitted to the Sherex Supplier Quality Department within 48 hours (or otherwise specified time frame) of formal notification of the concern. This initial response shall, at minimum, contain:

- Sherex Non-Conformance Number and Date of Nonconformance
- Name of the Sherex Supplier Quality Representative
- Problem Description
- Containment action description
- Containment action verification (quantitative results)
- Certified material shipment dates and identification
- Root Cause analysis status

**Note: Each of the above stated criteria shall contain an implementation date and assigned responsibility.**

8.1.4 Formal Corrective Action Report

A Formal Corrective Action Report shall be submitted to the Sherex Supplier Quality Department within 10 working days (or otherwise specified time frame) of formal notification of the concern.

8.1.5 Documentation

FMEAs, Control Plans and other appropriate documentation shall be revised to reflect changes resulting from the concern. These documents shall be maintained on file and provided to Sherex Supplier Quality Representative for review as required.

8.1.6 Action/Timing Plans

Sherex expects that process and system corrective actions to be implemented within 30 days of notification. Sherex will expect that the corrective actions will be validated (90 days) and closed within 120 days. If additional time is required for resolution of corrective actions, a written action/timing plan shall be submitted to the Sherex Supplier Quality Representative for approval.

8.1.7 Organization Containment Level Procedures

If organization containment actions are not effective, progressive Sherex initiated procedures shall be implemented for the organization. Exit criteria will be defined by the Sherex Supplier Quality Representative. Any reoccurrence will result in the 30 day inspection period to start over. The inspection period begins once root cause has been identified and corrective actions are in place.

- Controlled Shipping Level 1 (CS1) - The organization shall implement 100% inspection for a period not less that 30 days with no re-occurrence of the issue.
- Controlled Shipping Level 2 (CS2) - A containment process under customer control. Containment conducted at customer site, organization, or third party location at the **organization's expense**. This process may be used if Level 1 containment is ineffective at containing a nonconformance. The organization shall implement 200% inspection for a period not less that 30 days with no re-occurrence of the issue.

**8.2 CORRECTIVE ACTION REPORT (C.A.R.) 8D Report** - A written corrective action 8D report (see 8D form in www.sherex.com) with implementation/effective dates and assigned responsibilities shall contain, at a minimum, the items listed below:

- Description of the concern and Sherex Non-Conformance Number
- Containment action
- Root Cause of the concern with verification
- Corrective action
- Verification of containment and corrective action. This is

- a measure of the action's effectiveness utilizing appropriate statistical or process performance analysis methods.
- Preventive measures for 'Lessons Learned' and applicable to similar products and processes.
- Preventive actions assess the applicability of the action taken to similar processes. These are actions with a proactive and predictive intention with the focus on avoiding occurrences.
- Verify Process Flow Diagrams, PFMEAs and Process Control Plans have been updated

**Note: Changes to the product and/or the product documentation (i.e. drawings, specifications, Control Plans, PFMEAs, Flow charts, Bill of Material's, etc) due to corrective action implementation shall be documented through revision levels/dates. Change in revision levels/dates may require PPAP submission. Contact the Sherex Supplier Quality Representative for required PPAP submission levels/dates. Supportive documentation (i.e. laboratory analysis, statistical results, etc.) may be requested by the Sherex Supplier Quality Representative.**

## **9.0 STATISTICAL TECHNIQUES**

The organization shall monitor process performance utilizing the appropriate statistical techniques (i.e. First time yield, SPC, etc.) in accordance with the AIAG Statistical Process Control manual.

Additional areas in which statistical techniques may be applied are as follows:

- Predictive maintenance programs
- Gage R&R studies
- Defect analysis
- Continual Improvement Processes

The results of the statistical techniques shall be documented and retained at the organization's location. This information shall be made available upon request by the Sherex Engineering Representative.

## **10.0 MEASUREMENT SYSTEM ANALYSIS (MSA)**

The organization shall perform measurement system analysis (frequency to be determined by the organization) in accordance with the AIAG Measurement System (MSA) manual. Other analytical methods and acceptance criteria may be implemented with approval by either the Sherex Quality and/or Engineering Representatives. Results of MSA analysis shall be documented and retained at the organization's location. This information shall be available upon request by either of the aforementioned Sherex representatives.

## **11.0 ERROR PROOFING**

The organization shall utilize error proofing in accordance with the ISO/TS 16949 Quality Systems Requirements manual. Results of error proofing shall be documented and retained at the organization's location. This information shall be made available upon request to the Sherex Engineering Representative.

## **12.0 PREVENTIVE / PREDICTIVE MAINTENANCE**

The organization shall implement a preventive / predictive maintenance program for process Machine/equipment as outlined (as a minimum) in the ISO/ TS16949 manual. Statistical data should be assimilated and systems developed for the implementation of predictive maintenance programs. The organization shall document and maintain this program and it shall be available upon request to the Sherex Engineering Representative.

## **13.0 CONTINUAL IMPROVEMENT PROCESS (CIP)**

The organization shall implement continual improvement efforts throughout their entire organization as stated

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in the ISO/TS 16949 standard. Results of the Continual Improvement Process shall be documented and retained at the organization's location. This information shall be made available upon request by the Sherex Quality Representative.

Appendix

- [Supplier Quality Evaluation Questionnaire](#)
- [Sherex Part Submission Warrant \(PSW\)](#)
- [NCR form](#)
- Request For Deviation

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