

Supplier Quality Assurance Requirements

The following is the minimum quality requirements for Astro Mfg & Design Suppliers. These requirements are applicable to all suppliers providing production material or services to Astro Mfg & Design.

A. GENERAL

1. Astro Mfg & Design requires that suppliers can assure us of consistent quality of product and/or services. This requires that a supplier must agree to, and be able to meet all of the specified or implied requirements of our purchase orders. Although we recommend third party certification such as ISO9000, it is not required at this time. But we do expect that a quality system be in place that is appropriate for the type of goods and services provided. In most cases the system should be documented and, in all cases, the system must provide evidence of adequate control.

B. RIGHT OF ENTRY

1. The Supplier's quality system shall be subject to initial and periodic review and acceptance by Astro Mfg & Design and its Customers or Regulatory Agencies to the extent required (including all applicable records) to determine the Supplier's continued conformance to this specification's requirements. The purpose of this review is to evaluate the Supplier's quality system and the continued capability to provide material and/or services to Astro Mfg & Design

2. Astro Mfg & Design reserves the right to conduct or witness manufacturing operations, inspections and tests as necessary to verify conformance of material or services to purchase order requirements. The Supplier shall provide Astro Mfg & Design personnel with reasonable facilities, equipment, records, and assistance as required in the course of verifying conformance.

C. QUALITY SYSTEM

1. The Supplier shall establish, implement, and monitor an effective and economical quality system, which shall provide for control and identification of material throughout the processing cycle; prevention and detection of non-conformances; timely corrective action; disciplines required to produce material that is representative of good workmanship; and analysis of information to evaluate quality effectiveness.

2. The Quality System shall be documented, generally taking the form of a manual. The documentation shall describe the sub-systems utilized to fulfill these system requirements, including exhibits of the various forms, tags and other control documents. Instructions and procedures shall be under revision control and maintained current by authorized Supplier personnel with a revision history maintained. The system and revisions are subject to Astro Mfg & Design's disapproval. Astro Mfg & Design may identify certain elements of the system which, when changed, will require our Customer's prior approval. The system documentation shall be available for review and, when requested, shall be forwarded to Astro Mfg & Design.

3. The requirements of this document shall be satisfied, in addition to all detailed requirements specified or referenced in the purchase order, drawings, and specifications. Any deviations from these product/process requirements must be approved by Astro Mfg & Design. Acceptance of the Supplier's quality system and any other plans or procedures shall not be construed as cause for acceptance of material or service. Our Customer's surveillance shall not be used to fulfill any of this specification's requirements without Astro Mfg & Design's prior concurrence.

D. QUALITY PLANNING

The Supplier shall review the requirements prior to acceptance of the purchase order to assure the requirements can be satisfactorily met. Prior to initiation of work, provisions shall be made for all necessary processes, fixtures, equipment, facilities, skills, and controls required for assuring compliance.

E. FLOW-DOWN TO SUB-TIER SUPPLIERS

The subcontracting of work to other suppliers that are not specified on the PO can only be performed with Astro Mfg & Design approval. If approved, all of the requirements outlined in this document and the PO applies and must be flowed-down to the sub-tier supplier.

F. DOCUMENTATION / TRAINING

Documentation shall be in place in a form appropriate to the circumstances, for work that affects quality (including such things as purchasing, handling, inspection/test, machining, fabricating, assembly, etc.). It shall describe the activities and responsibilities of the work functions that affect quality, and shall be provided for use by personnel responsible for performing the work. The extent of documentation required shall be dependent on the type and complexity of the material or services provided and the skills and training required by personnel carrying out the activity.

G. CONTROL OF PURCHASES

Suppliers are responsible for the quality of purchased materials and services, and

shall develop plans to assure they are appraised to the extent required for adequate assurance of quality. The nature and extent of control shall be dependent upon the type of material or services, demonstrated capability, and the quality evidence furnished.

H. INSPECTION / TESTING

Inspection and testing activity should be established to adequately verify the conformances of the product or material at incoming, in-process, and final production activities. This should include a uniform method for performing inspection and test, and reporting results.

I. MEASUREMENT AND TEST EQUIPMENT

1. Appropriate measuring and testing equipment (including instrumentation) shall be employed, subject to a calibration control system. Equipment removed from the calibration control system shall be appropriately identified and not used in determining acceptability of material, product, or process for Purchaser use.

2. The Supplier shall control, calibrate and maintain inspection, measuring and test equipment, whether owned by the Supplier, on loan, personally owned or provided by Astro Mfg & Design, to demonstrate the conformance of product to the specified requirements.

3. Measurement standards used for calibration shall be traceable and have the accuracy, stability, range and resolution required for the intended use.

J. NON CONFORMING MATERIAL / CORRECTIVE ACTION

1. The Supplier shall have a documented system that addresses the control of non conforming material, including provisions for:

a. Prompt identification, segregation, documentation and disposition of non conforming material. Identification shall be in a manner to prevent unauthorized use, shipment, or combination with conforming material.

b. Identification of cause and consideration of corrective action on non conforming material.

2. In those instances where it is indicated that non conforming material may have been shipped, the system shall provide Astro Mfg & Design with prompt notification.

K. RECORDS AND RETENTION

Data shall be generated and used to provide objective evidence of conformance to established product and process requirements, and to assure the quality systems employed are effective and economical. All manufacturing and inspection data, collected as documentation for part acceptance, is to be retained by Astro Mfg & Design's suppliers for a minimum of ten (10) years. Records are to be documented in a manner in ink or other permanent marking that if altered, would be obvious that changes were made. Corrections to work instructions or documents shall be recorded, dated and signed in ink or other permanent marking method with the original data being legible and retrievable after the change. No erasures or "white-out" is allowed. All electronic records must be controlled, retained and retrievable per the same requirements identified for hard copy records. The storage media must be capable of maintaining the data integrity for the full retention period.

L. HANDLING AND STORAGE

The system shall provide for handling and storage of material and parts in a manner to protect product quality by preventing damage, loss, commingling deterioration, contamination, corrosion, degradation or substitution Storage control shall be such that prevents unauthorized withdrawal of materials or parts.

M. PRODUCT / MATERIAL CERTIFICATION

Astro Mfg & Design may require the submission of material or product certifications to ensure compliance with applicable standards and/or specification. In many cases these certifications are required by our customers and could be passed along with the final product.

The requirements for these certificates will be identified on the Astro Mfg & Design Purchase Order.

N. PREPARATION FOR SHIPMENT

The Supplier shall assure that parts are completed to P.O. requirements and that all manufacturing and product acceptance requirements have been satisfied prior to shipment. The system shall ensure the material is packaged adequately to prevent damage to material or product shipped to Astro Mfg & Design.