

3-D ENGINEERING CORP -QUALITY CLAUSES FOR PURCHASE ORDERS- Rev 4

The following quality clauses apply to all orders: Q1-Q5, Q7, Q11,Q16-19, Q21-Q24. Other quality clauses apply to the degree identified on the buyer's purchase order.

- Q-1** The clauses associated with this purchase order will flow down to all sub-tier suppliers. Vendor on-time delivery goal is 85% or greater. Vendor goal for supplier performance rating is 75% or greater.
- Q-2** **Notification of Nonconformance**
Seller must notify the buyer of any nonconforming products verbally and in writing as soon as nonconformance is detected.
- Q-3** **Product Disposition**
Seller must obtain buyers written approval for nonconforming product disposition.
- Q-4** **Notification of Process Changes**
Seller must notify buyer in writing of changes in product and/or process, changes of suppliers, changes of manufacturing facility location and, where required, obtain buyer written approval.
- Q-5.** **Seller Corrective Action**
In response to Buyer-initiated corrective action requests, Seller shall advise Buyer of root cause determination, corrective action taken to prevent recurrence of reported problems and/or discrepancies, and effectively dates of the planned corrective action(s). Seller shall maintain a corrective action system that determines the effectiveness of such corrective actions, and that prevents shipment of nonconforming articles without prior approval from Buyer.
- Q-6.** **Certificate of Conformance**
The Seller shall furnish a Certificate of Conformance with each delivery attesting that each item of hardware and/or software conforms to all requirements of the Buyer's specification and purchase order and that all required test and inspections have been performed.
- Q-7.** **Quality System**
The Seller shall have a Quality System acceptable to the Buyer. The Buyer reserves the right to verify said system.
- Q-8.** **Calibration**
The Seller's Calibration System shall conform to ANSI/NCSL Z540-1 or ISO 10012-1. Third party registration by an accredited registrar will be accepted as proof of compliance. The seller's signed certification of Calibration must state traceability to National Standards, tool, gage or equipment number and Order number.
- Q-9.** **First Article Inspection**
The Seller shall perform a First Article Inspection (FAI) of one item from the first production lot, or as required by the Buyer. The FAI shall consist of recorded actual drawing, specification values, and/or requirements (dimensional, test data, processes, drawing notes, etc.) and may be documented on the drawing or on a separate report form. The first article item shall be clearly identified by a tag attached to the item or a label applied to the bag, and a copy of the FAI shall accompany the First Article part. The Buyer reserves the right to verify any or all of the characteristics documented on the FAI report at the seller's facility.
- Q-10.** **Source Inspection**
Source Inspection shall be conducted by the Buyer at the Seller's facilities or where designated in this Order prior to shipment. Inspection/test and/or in-process inspection/test of the articles specified in this Order shall be performed by the Seller and shall be witnessed by the Buyer's Quality Representative. Prior to fabrication start, the Seller and the Buyer shall determine the process steps at which Source Inspection shall be conducted. The Seller shall notify the Buyer of the scheduled inspection/test five (5)

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days in advance. The method of product release shall be a stamp or signature by the Buyer's Quality Representative on the Seller's shipping or inspection documents.

Q-11. Buyer Review

During the performance of this Order, the Buyer reserves the right to review; verify and/or analyze the Supplier's Quality and/or Inspection System and Manufacturing processes at the Supplier's facilities. The Buyer's representative shall notify the Supplier forty-eight (48) hours in advance of the intended review start date and duration. Buyer's inspection/acceptance of product prior to shipment is not required unless otherwise specified in this Order.

Q-12. Special Processes

The Seller and any of its subcontractors performing special processes, such as welding, non-destructive testing, heat treating, plating, anodizing, soldering, etc. shall submit a certification listing the specification designation/number and that the special process was performed in accordance with such specification. Heat treating/oven cure charts will be provided as required.

Q-13. Traceability requirements

The Seller shall provide means of end item traceability. The Seller may use the original manufacture Lot/Date Code/Serial number or their own method for identifying the end item product as required for proper traceability. Multiple Lot/Dated coded material cannot be combined on a single shipper and must be packaged separately. Each Lot/Date coded batch must have a corresponding shipper. Serialized shipments must have the serial numbers listed on the shipper and on the corresponding intermediate packaging. Duplication of Lot/Date Code/Serial numbers is prohibited.

Q-14. Packaging & Shipping

The Seller shall clean, preserve and use special packaging as required on this order, or when not specified, seller may use specially designed shipping containers and/or good commercial practices as deemed necessary to prevent shipping damage. As a minimum, the label shall contain the following information: Part number and revision date of manufacture and Buyer's Order Number.

Q-15. Certification of Material(s) and Process(es)

The Seller shall submit certifications for raw material (chemical and physical characteristics) and/or processes (stating specification) used in the manufacturing of the item(s). If outside processing is performed; a certification from subcontractor is to be provided. Note: when specified on the Purchase Order, raw material such as titanium, aluminum, etc. must have the appropriate heat lot identified on each piece for heat lot traceability.

Q-16. Requirements for Conformance

Neither surveillance, inspection and/or tests made by the Buyer or his representatives at either the Seller's or Buyer's facility, nor the Seller's compliance with all applicable product assurance requirements shall relieve the Seller of the responsibility to furnish items which conform to the requirements of the purchase order.

Q-17. Qualification of Personnel

The Seller shall employ competent personnel to ensure Buyers requirements are met for approval of product, processes, procedures, and equipment.

Q-18. Identification and Revision Status

The Seller shall maintain the identification and revision status of the Buyer's specifications, drawings, process requirements, inspection/verification instructions and other relevant technical data.

Q-19. Product Acceptance

The Seller shall follow all requirements stated on the purchase order, drawing, data specifications and process instructions to ensure product conformity, documentation and records are obtained.

Q-20. Requirements for Test Specimens

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Where the Seller utilizes sample inspection plans or other statistical techniques, these shall be statistically valid and submitted to Buyer for approval prior to use. If the sample contains rejected items, the Seller must, for the rejected feature or parameter, use a documented method, such as 100% screening to assure the buyer that zero rejects are present.

Q-21. Record Retention

The Seller shall maintain records regarding Buyer's purchase order, specifications, drawings, process requirements, inspection/verification instructions and other relevant technical data. Records shall be maintained by the Seller for a minimum of seven years.

Q-22. Access to Facilities

The Seller shall permit access to the Sellers facility and any sub-tier sellers for surveying/auditing. The survey/audits may include personnel from the Buyers, Buyer's customer representative and/or regulatory authorities, and shall include access to all records applicable to Buyers product or orders.

Q-23. Counterfeit Electronic Parts Detection & Avoidance System Requirements

Seller shall implement a counterfeit electronic parts detection and avoidance system consistent with the requirements of the latest dated version of SAE standard AS5553.

Q-24. Ensuring that persons are aware of:

Their contribution to product or service conformity, their contribution to product safety, and the importance of ethical behavior.