

# Axiom Electronics LLC

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## 1.0 Purpose

Quality Codes are used to communicate specific quality and contract requirements to our suppliers. Below is a list of the current Quality Codes being used by Axiom Electronic LLC. If a code referenced on the Purchase Order cannot be located within this document, notify the appropriate Axiom Electronics Purchasing agent for clarification prior to shipment of product. Failure to comply with these requirements, when referenced on the Purchase Order, will be cause for rejection of material at Axiom Electronics Receiving Inspection. In the event of conflict between the requirements listed herein and Purchase Order text, the Purchase Order text shall prevail.

## 2.0 Applications

Axiom procurement and suppliers are affected by this procedure. The process owner of this document is the Supply Chain Manager.

<b>AUTHOR</b> Jeff Phillips	<b>APPROVAL</b> QMS Team	<b>EFFECTIVE DATE</b> 09/24/2020
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## Axiom Electronic LLC Supplier Quality Codes

<b>Q01</b>	<p>A legible Certificate of Conformance (C of C) is required with every shipment. Quality Assurance &amp; Control Records used to substantiate conformance must be retained for a minimum of 10 years. If paper, at a minimum, protect the record from becoming dirty or soiled and keep away from sources of contamination. If electronic, at a minimum, use virus protection practices and backup data on a regular basis. The supplier shall contact Axiom prior to destruction of any records. Axiom may request delivery of such records at no additional charge.</p> <p>Products and/or services provided may not be changed without written permission. Supplier must include Axiom part number, where applicable, and purchase order number on all documentation. If applicable, Electrostatic-sensitive devices shall be handled and packaged in accordance with industry standards per ANSI/ESD S20.20 as amended.</p> <p>Material is to be adequately packaged in order to prevent damage (scratches, scuffs, dings, etc.) from typical handling while in transit.</p> <p>The supplier must identify parts with Axiom part number and revision letter, supplier designated lot number/serial number, and/or any other unique identifier. Do not cover manufacturer's label.</p> <p>Date Code Restriction: Component date codes must be noted on deliverables. If parts are older than 5 years, supplier must obtain written approval prior to shipping.</p> <p>All components (or wires) shall meet the solderability requirements of J-STD-002, Solderability Tests for Component Leads, Terminations, Lugs, Terminals and Wires.</p> <p>Supplier shall behave ethically to all stakeholders. For guidance refer to the "Global Principles of Ethics in the Aerospace &amp; Defense Industry": <a href="http://www.asd-europe.org/about-us/ethics">http://www.asd-europe.org/about-us/ethics</a></p> <p>Supplier shall ensure that persons are aware of: Product of service conformity e.g. individual accountability, requirements, process controls, reporting nonconformance and product safety e.g. attention to detail, safety alerts, promoting a safe culture.</p>
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Q02	<p>Supplier must flow down all applicable requirements and key characteristics from the Axiom purchase Order to sub-tier suppliers.</p> <p>Supplier hereby acknowledges and agrees that Axiom, our customers and any regulatory authority representatives shall have right of at any level of the supply chain, to all applicable documented information and facilities involved in the execution of the Purchase Order.</p> <p>Supplier agrees to obtain approval from Axiom before shipping non-conforming material. Supplier acknowledges it shall apply suitable corrective action when presented with complaints or nonconformance reports.</p>
Q03	<p>Supplier agrees to notify Axiom of any and all process changes, either internal or external, that could or would affect the quality of products and/or services in the performance of this Purchase Order.</p> <p>Supplier agrees to notify Axiom of any changes to their certified status.</p>
Q04	<p>The supplier will provide, when required, test specimens (e.g. production method, number, storage conditions) for design approval, inspection, investigation or auditing.</p>
Q05	<p>Items returned to supplier for credit: Supplier must furnish credit memo to Axiom within 30 days of receipt of returned product. If credit memo is not received by the end of the 30 day grace period, Axiom will apply the credit to an open invoice.</p> <p>Seller warrants that all Goods furnished under the contract shall conform to all specifications and requirements of this contract and shall be free from defects in materials and workmanship for a period of 12 months from the date of acceptance of Buyer. To the extent Goods are not manufactured pursuant to detailed designs and specifications furnished by Buyer, the Goods shall be free from design and specification defects. This warrant shall survive inspection, test and acceptance of, and payment for the Goods. This warranty shall run to Buyer and its successors, assigns and customers. Such warranty shall begin after Buyer's final acceptance. Buyer may at its sole option, either (i) return for credit or refund, or (ii) require prompt correction or replacement of the defective or non-conforming Goods. Return to Seller of defective or non-conforming Goods and redelivery to Buyer of corrected or replaced Goods shall be at Seller's sole expense.</p>

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Q06	<p>Supplier shall have a counterfeit parts avoidance, detection, mitigation, and disposition program meeting the requirements of Aerospace Recommended Practice AS5553. Seller shall only deliver authentic components, devices, goods, etc. that are manufactured by or obtained from original equipment manufacturers (OEM's), original component manufacturers (OCM's) or authorized distributors. Upon request, seller shall make available documentation that authenticates and provides traceability of the parts to the applicable OEM or OCM.</p> <p>Supplier shall not provide refurbished or re-used EEE (Electrical, Electronic, Electromechanical) parts, components, hardware, or materials.</p> <p>Supplier shall notify Axiom with the pertinent facts if supplier becomes aware or suspects that it has furnished Counterfeit components.</p> <p>Supplier shall be liable for all costs associated with removing and replacing counterfeit components.</p>
Q07	<p>Moisture sensitive components shall be shipped and stored in moisture barrier bags (MBB) with desiccant and humidity indicator card. The MBB, desiccant and humidity indicator card shall comply the J-STD-033 Handling, Packing, Shipping and use of Moisture/Reflow Sensitive Surface Mount Devices.</p> <p>ESD Class 0 components shall be identified as ESD Class 0 on outside packaging.</p> <p>Desiccant shall be sulfur-free.</p>
Q08	<p>Components must be packaged in either continuous tape/reel, trays, or full size tubes with continuous tape/reel preferable. All other packaging options must be approved in writing prior to shipping.</p> <p>Polarized components must be oriented in one consistent direction.</p>
Q09	<p>Wire and cable spools shall not exceed 2 splices per 1000 FT without written approval prior to shipment.</p> <p>Tin plated copper wire shall not be more than 5 years old based on the date of manufacture.</p> <p>All wires shall meet the solderability requirements of J-STD-002, Solderability Tests for Component Leads, Terminations, Lugs, Terminals and Wires.</p>
Q10	<p>Age-sensitive material shall be marked with the expiration date or other information sufficient to easily determine the expiration date. Material must have a minimum of 75% shelf life remaining at time of receipt at Axiom. Written approval is required for deviation. Safety Data Sheets (SDS) must be included with shipment.</p>
Q11	<p>PCB's must be manufactured in accordance with IPC Class 2 or Class 3 Standards per provided drawing/data requirements. Repairs to PCB's require written authorization from Axiom.</p>
Q12	Removed.
Q13	First article Inspection Report, Material Certs, and Solder Sample required with first time build deliveries.

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**Q14** When an AS9102 First Article is requested on the PO or a revised/updated first article is required by circumstances specified in AS9102 (current revision), an AS9102 compliant first article report shall be included with the delivery. First Article piece to be tagged as such.

**Q15** **X-Outs:** X-Out is defined as a defective PCB that is part of an array of PCBs. Inspection and/or test has determined the X-Out PCB is defective.

Each X-Out PCB shall be marked in a manner that makes the X-Out obvious. Marking shall be indelible and on both sides the PCB.

Arrays that contain X-Out PCBs shall be packaged separately and grouped by X-Out location in the array. They shall not be mixed intermittently with arrays that have no X-Outs.

X-Outs per Array: the maximum number of x-outs allowed on each array. See table below for specific quantities.

X-Out Arrays per Purchase Order (PO): the maximum percent of arrays allowed with at least 1 x-out. See table below for specific percent's.

PCBs per Array	Number of X-Outs Allowed Per Array	X-out Arrays per PO (Maximum % of arrays allowed with at least one X-out.
2 to 3	1	20%
4 to 5	2	20%
6 to 10	3	20%
11 to 15	4	20%
16 to 20	5	20%
> 20	6	25%

Axioms X-outs requirements are located on our website, see Printed Circuit Board Requirements (AOP000027) section 6.10 Array X-outs under our "Suppliers" tab <http://www.axiomsmt.com/index.php/suppliers/>

**Q16** Prior to PCB manufacturing starting, the supplier shall deliver a dimensional PCB array drawing to Axiom and receive approval of the array drawing.

**Q17** Removed.

**Q18** 100% outer layer Automated Optical Inspection (OL AOI), 100% continuity testing, and 100% electrical testing per IPC standards required (Class 2 minimum, Class 3 where specified).

**Q19** Deleted

**Q20** PCBs shall be shipped and stored in moisture barrier bags (MBB) with desiccant and humidity indicator card. The MBB, desiccant and humidity indicator card shall comply the J-STD-033 Handling, Packing, Shipping and use of Moisture/Reflow Sensitive Surface Mount Devices.

**Q21** Original Manufacturer's Certificate of Compliance is required with shipment.

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Q22	Special process suppliers (e.g., shot peen, plating, heat treatment, bonding, nondestructive testing, welding, coating, chemical processing, electro-mechanical machining, etc.) shall require accreditation through the National Aerospace and Defense Contractors Accreditation Program (NADCAP) as a pre-requisite for Axiom approval.
Q23	Seller must comply and flow down DFARS clause 252.225-7009: Restriction on Acquisition of Certain Articles Containing Specialty Metals (latest revision).
Q24	A supplier of components must be Authorized/Approved by the Manufacturer. Evidence of this shall be stated on the packing list and/or at time of purchase a copy of Authorized/Approved letter must be sent to the buyer. Distributor must provide documentation from OEM/OCM validating they are an Authorized/Franchised Distributor. Distributor is required to immediately notify Axiom if their Authorization from OEM/OCM is changed, expires, or is revoked.
Q25	Birth Records (full supply chain material traceability): Original Manufacturer's Certificate of Compliance, plus a Certificate of Compliance from each supplier/distributor involved in buying or selling of this item on the PO.
Q26	Silver-plated copper wire shall comply with Axiom's Red Plague Control Plan (RPCP) or IPC-620 Space requirements. Insulated wire ends shall be capped with insulating varnish. RPCP wire shipped to Axiom shall be sealed in moisture barrier bags (MBB) with humidity indicator card and desiccant. RPCP wire has a maximum ten year shelf life from date of manufacture.
Q27	Source inspection required prior to shipment of article to verify compliance with requirements. Goods and Services under this Contract are subject to Buyer's source inspection at points identified by Buyer throughout the manufacturing process including testing operations, including those at Supplier's subcontractor locations, and at no less than prior to packaging for shipment. Supplier shall furnish reasonable facilities and assistance, including Contract documentation, quality records, and related data for the safe and efficient performance of Buyer's source inspections.
Q28	Suppliers are required to have a Foreign Object Debris (FOD) Control Program Plan.

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Q29	<p>For bare PCBs, the order of precedence in “Printed Circuit Board Requirements” [AOP000027], available in the supplier section of <a href="http://www.axiomsmt.com/">http://www.axiomsmt.com/</a> applies.</p> <p>For all other parts, the order of precedence is</p> <ol style="list-style-type: none"> <li>1. Axiom Electronics purchase order and PO quality codes. Quality codes of Axiom’s customer supersede Axiom codes.</li> <li>2. Part print and part digital data. If there is a conflict, Axiom Electronics must be contacted for resolution of the conflict. Print notes take precedence over all other requirements on the drawing. Title block tolerances apply only if an applicable tolerance is not specified elsewhere on the print.</li> <li>3. Customer specification and supporting documents referenced on the print</li> <li>4. Industry standards and similar documents <b>referenced on the print.</b></li> <li>5. As applicable, standards such as IPC, ASME, MIL-Spec, etc. <b>not called out on the print</b> or other documentation from Axiom’s customer. When using standards not specified by 1-4 above, use the order of precedence contained in those standards.</li> </ol> <p><b>If there is a conflict between documents/data at the same precedence level, or the precedence level of a document/data source is not clear, Axiom Electronics must be contacted for resolution.</b></p>
Q30	<p>If the supplier charges for paperwork and it is missing or incorrect a \$50 penalty will be imposed for each occurrence.</p>
Q31	<p>Seller must comply and flow down DFARS clause 252.246-7007: Contractor Counterfeit Electronic Part Detection and Avoidance System (latest revision).</p>
Q32	<p>Brokers are required to include data sheet and inspection report with the parts.</p>
Q33	<p>Seller must comply and flow down DFARS Clause 252.204-7012, Safeguarding Covered Defense Information and Cyber Incident Reporting, requires contractors to provide “adequate security” for covered defense information that is processed, stored, or transmitted on the contractor’s internal information system or network. The Department must mark, or otherwise identify in the contract, any covered defense information that is provided to the contractor, and must ensure that the contract includes the requirement for the contractor to mark covered defense information developed in performance of the contract. To provide adequate security, the contractor must, at a minimum, implement National Institute of Standards and Technology (NIST) Special Publication (SP) 800171, “Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations,” not later than December 31, 2017.</p>
Q34	<p>Seller must comply and flow down DFARS Clause 252.246-7008: Sources of Electronic Parts (latest revision)</p>

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<b>Q35</b>	Seller shall comply with all applicable U.S. export control laws and economic sanctions laws and regulations, specifically including but not limited to the International Traffic in Arms Regulations (ITAR), 22 C.F.R. 500-598 (collectively, “Trade Control Laws”). Without limiting the foregoing, seller shall not transfer any export controlled item, technical data, technology, or service, including transfers to foreign persons employed by or associated with, or under contract to seller or seller’s lower tier suppliers, unless authorized in advance by an export license (such as Technical Assistance Agreement (TAA) or Manufacturing License Agreement (MLA), license exception or license exemption, collectively, “Export Authorization”), as required.
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Each revision of this document shall be subject to a direct peer review to ensure compliance to all AS9100 flowdown requirements, section 8.4.3.

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