Supplier Quality Codes

For

AMETEK Power and Data Systems

4550 S.E. Boulevard

Wichita, KS 67210

Approved By: _____ Date: 7/19/2022

Kevin McLaughlin, Director of Quality

Revision Date	Summary of Changes
07/18/2022	Added Revision Table 2.1 – Added Manufacturing Location 3.1 – Changed Record Retention from Sixteen Years to Ten Years 8.3 – Added requirement for scrap parts to be rendered unusable prior to disposal. 10.2 – Added Additional Packaging Requirement Details 10.3 – Added Acceptable Packaging Material Requirements 10.3 – Added Prohibited Packaging Materials
08/29/2025	1.14 – Added 6.3 – Modified to add clarification for CMM Measurements 6.6 – Added 7.4 – Added 10.5 - Added

Changes are in Blue Text

1.0 General Requirements	
1.1	**Suppliers are required to comply with all the applicable Quality Codes contained in this document. Any exceptions must be submitted to and approved by AMETEK Advanced Industries (AAI) prior to manufacturing any products.** **Revisions to these Quality Codes go into effect on the next Purchase Order issued after the revision date on this document unless otherwise noted. Suppliers are expected to review and implement any applicable changes to these Quality Codes when they receive a Purchase Order from AMETEK.**
1.2	AMETEK's Suppliers and their sub-tier suppliers are required to have a Documented Quality Management System in place.
1.3	Any special processes must be accomplished by organizations holding a NADCAP Certification for the special process being performed. Special processes include, but are not limited to, Heat Treating, Welding, Nondestructive Testing, and Chemical Processing (e.g., Anodizing, Electroplating, Electroless Plating, Passivation, Dry Film Lube, Conversion Coatings, etc.).
1.4	Suppliers must flow down the following information to their suppliers: • All applicable AMETEK Quality Codes and PO Requirements to their sub- tier suppliers. • All applicable PO requirements including applicable drawing and specification numbers. • The requirement that special process suppliers be NADCAP Certified • Right of access must be granted to specific employees of AMETEK, our customers, and Regulatory Authorities for the purpose of reviewing records or for conducting an audit in the applicable areas of all facilities, at any level of the supply chain. • The requirement to plan, implement, and control processes appropriate to their organization and the product, for the prevention of counterfeit or suspect counterfeit part use and the inclusion of product(s) delivered to AMETEK. • The record retention requirements stated in Section 3.0 of the Quality Codes. • The Requirement to have a Documented Quality Management System in place.
1.5	Any supplier that is used by your organization must be formally approved per your established procedures and substantiating records made available to AMETEK upon request.
1.6	Access must be granted to Ametek Advanced Industries, Inc., our customers, and regulatory authorities, for the purpose of reviewing records or for conducting an audit in the applicable areas of all facilities, and at any level of the supply chain.
1.7	Suppliers must be sure that their employees are aware of the following: • Their contribution to product and/or service conformity. • Their contribution to product safety. • The importance of ethical behavior.
1.8	Suppliers must provide and maintain a suitable infrastructure necessary for the operation of your processes and to achieve conformity of products and services including: • Building and associated utilities. • Information and Communication Technology including the safeguards necessary to prevent the unauthorized changes and access, and the unintended loss of information and/or software used in the operation of your processes. AMETEK requires that supplier's utilize backup servers to backup this information. • Suitable tools and software programs for completing the necessary operations.

1.9	Suppliers must provide and maintain the environment necessary for the operation of its processes and to achieve conformity of products and services including human and physical factors, such as: • Social (e.g., non-discriminatory, calm, non-confrontational). • Psychological (e.g., stress reducing, burnout prevention, emotionally protective). • Physical (e.g., temperature, heat, humidity, lighting, airflow). • Maintaining a clean and safe work environment at all times.
1.10	Suppliers must respond to any Corrective Action Requests (CAR) issued by AMETEK on, or before, the Response Due Date specified on the CAR. Requests for an extension must be submitted to AMETEK prior to the Response Due Date.
1.11	All suppliers shall plan, implement, and control processes appropriate to your organization and the product, for the prevention of counterfeit or suspect counterfeit part use and the inclusion in product(s) deliverer to the AMETEK Advanced Industries.
1.12	Suppliers must have eye exams completed on all personnel performing inspection functions by qualified a healthcare organization and maintain the associated record. Examination for visual acuity must meet the following minimum requirements: • Near Vision: Must be at least 20/25 in one eye, corrected or uncorrected. • Far Vision: Should be at least 20/30 corrected or uncorrected in at least on eye. Color Vision: Must Pass under standard lighting conditions using Ishihara, Farnsworth Lantern, etc.
1.13	Supplier Personnel who perform work on Electronic Assemblies must be certified to IPC-A-610
1.14	Unless otherwise specified, Engineering drawings are to be interpreted in accordance with ASME Y14.100, with the revision of ASME Y14.100 in effect at the time of the initial release of the drawing applicable.

2.0 Required Interactions with AMETEK Advanced Industries (AAI)

2.1	The following items must be communicated with AAI: • Any nonconformances for products prior to shipment. • If a tool that has been used to verify conformity on an AAI Product is found to be out of calibration. • Any quality escapes related to AAI products. • Suppliers must obtain approval for any changes to their processes, products, or services utilized in the manufacturing of AAI Products. • Any suspected or confirmed data breaches in which any of AMETEK's information may have been unlawfully accessed or downloaded.
2.2	Suppliers are required to submit changes to their manufacturing facility location or suppliers for approval.
2.3	Any changes in their Quality System that may affect the inspection, conformity, or the airworthiness of the article must be communicated to AAI for approval prior to incorporating the changes.
2.4	Suppliers are required to report failures, malfunctions, and defects to AAI in accordance with 14 CFR Part 21.3 if a part, product, or service has been released to AAI and is subsequently found not to conform to the Purchase Order or design data requirements.

3.0 Control and Retention of Records	
3.1	Suppliers are required to maintain all records that provide objective evidence of compliance to the contract and purchase order requirements for a minimum of Ten (10) years for New Production or Repair Station activities unless otherwise noted on the purchase order. Such records include drawings, specifications, work instructions, certifications, test reports, and any other records generated in the course of procurement, manufacturing, testing, processing, inspecting, shipping, and when applicable, records generated by all levels of the supply chain.
3.2	All physical records must be stored in an environment that protects them from loss, unauthorized changes, unintended alteration, and physical damage. Records must be stored on an elevated surface and not directly on the floor.
3.3	When documented information is managed / retained electronically, data protection processes shall include protection from loss, unauthorized changes, unintended alteration, corruption, and physical damage.

4.0 Documentation	

4.1	The following documentation must be included with the shipment for all parts and materials when applicable (This applies to all Ametek products / part numbers except for catalog type parts):
	• Material analysis / Certification Documentation for all Raw Materials.
	• A Certificate of Conformance (C of C), signed by a member of your quality department, for all material, processes, and part numbers manufactured by the supplier or sub-tier suppliers. The C of C must include the following:
	  ○ A statement that the work accomplished conforms to all PO and Drawing requirements.
	  ○ The Drawing Revision Level that the part(s) were manufactured to. If supplying an assembly containing multiple Part Numbers, the C of C shall include each part number and associated revision as well as the Assembly Part Number and Revision.

4.2	The use of staples to bind the documentation together is discouraged as it hinders the document scanning process at AMETEK, it is preferred that the documentation be contained in an envelope and placed inside of the shipping container.
4.3	The cure date and/or the expiration date must be included on the C of C for any product or material that has a shelf-life limit established by the manufacturer. All products and materials supplied must have at least 80% of the useable shelf life remaining upon receipt at AMETEK.

5.0 First Article Inspections	
5.1	Suppliers shall perform a first article inspection on a representative item from the first production run of a new part or assembly to verify that the production processes, production documentation, and tooling are able to produce parts and assemblies that meet all applicable requirements. This activity shall be repeated when changes occur that invalidate the original results (e.g., engineering changes, production process changes, tooling changes, manufacture location changes).
5.2	Results of the First Article Inspection will be documented on a First Article Inspection Report (FAIR) in AS9102 Format and submitted to AAI for approval using NetInspect.

6.0 Monitoring and Measuring Resources and Inspection Methods	
6.1	All suppliers must ensure that all of the necessary monitoring and measuring resources necessary to verify product conformity are available, calibrated, and in good working order.
6.2	Suppliers shall ensure that monitoring and measuring resources are; • Suitable for the specific type of monitoring and measurement activities being performed. • Maintained to ensure their continuing fitness for their purpose. • Calibrated or verified or both at specified intervals. • Properly identified to determine their status. • Safeguarded from adjustments, damage, or deterioration that would invalidate the calibration status and subsequent measurement results
6.3	AMETEK's preferred methods of inspection include the following; • **Threaded Holes:** Go/No-Go Thread Gage, the Go gage should be able to be screwed into the entire length of the Threads without interference after plating/chemfilm unless otherwise specified on the PO or Drawings. • **Close Tolerance Bores and Bearing Liners**: Air Gage, Preferred. • **Scanning CMM Measurements**: If a CMM is used in lieu of an air gage, then reporting both the maximum inscribed cylinder and minimum circumscribed cylinder sizes of the resulting point cloud are required. Both must be within the hole limits of size. See ASME Y14.5-2009, para. 2.7.1 • **ACME Threads**: Go/No-Go Gage, the entire length of the threads should accept the "Go" gage without binding, after all special processes have been completed unless otherwise noted on the Drawing. • **Splines:** Go/No-Go Spline Gage, the "Go" Gage should pass over/through the entire length of the spline without binding. The "No-Go" Gage should not engage or pass over/through any portion of the splines. Any parts not meeting the above criteria are cause for rejection and suppliers must comply with Section 8.0 of these quality codes prior to shipment.
6.4	Monitoring and Measurement equipment shall be calibrated and/or verified at specified intervals, against measurement standards traceable to international or national measurement standards. When no such standards exist, the basis used for calibration or certification shall be retained as documented information. The Calibration Certificate or Report for suppliers calibrated equipment must include a statement that measurements standards used have records of accuracy directly traceable to N.I.S.T.
6.5	Calibration Labs performing calibrations on tools and equipment for AMETEK shall use measurement standards traceable to international or national measurement standards; when no such standards exist, the basis used for calibration or certification shall be retained as documented information. The Calibration Certificate or Report shall be provided to AMETEK Advanced Industries and (when applicable) include a statement that measurements standards used have records of accuracy directly traceable to N.I.S.T.
6.6	For close tolerance measurements, applicable to all 4-digit decimal places (.xxxx) or more, Supplier shall provide the measurement plan to AMETEK for approval.

7.0 Product Acceptance Requirements	
7.1	All Parts, Materials, and Services shall be complete per the applicable revision of the referenced drawing, process, procedure, specification or special instructions included on the Purchase Order and/or Drawing.
7.2	The appearance of all parts must meet the following criteria: • Defects such as scratches, dings, nicks, pits, machining marks, or tool chatter that expose bare metal, or that are detectable with a fingernail when moved across the defect are cause for rejection. • The surface finish specified on the drawing (Chem Film, Anodize, Cad Plating, etc.) is to be considered a cosmetic finish and must meet all applicable requirements in the applicable specification or standard, must have a uniform finish (in color and coverage), and be free from scratches and dings. • All parts must be deburred, and sharp edges broken to .010 Max, unless otherwise specified on the drawing or P.O.
7.3	If 100% inspection is not used, suppliers shall use statistical techniques (i.e. MIL-STD 105D, ASTM E2555, or equivalent) to verify requirements for design, test, inspection, product acceptance (including production process verification), and related instructions for acceptance by the organization, and as applicable critical items including key characteristics.
7.4	Unless otherwise specified on the drawing all dimensions apply after plating.

8.0 Control of Nonconforming Products	
8.1	Any deviations from the current drawing, or any referenced material or process specifications given must be submitted to and approved by Ametek Advanced Industries using AAII Form 417 or equivalent prior to shipment.
8.2	Any parts that are found to be nonconforming are to be identified and segregated from conforming products to prevent their unintended use or delivery until a disposition has been provided by AMETEK.
8.3	Parts that are dispositioned by AAI as “Scrap” must be rendered unusable by cutting, bending, and/or mutilated using a hammer, or other means, prior to being disposed of.

9.0 Calibration Labs	
9.1	Calibration Labs performing calibrations on tools and equipment for AMETEK shall use measurement standards traceable to international or national measurement standards; when no such standards exist, the basis used for calibration or certification shall be retained by the lab as documented information. The Calibration Certificate or Report shall be provided to AMETEK Advanced Industries and (when applicable) include a statement that measurements standards used have records of accuracy directly traceable to N.I.S.T
9.2	The Calibration Lab must provide AMETEK with a Calibration Certificate or Report that includes a statement that measurements standards used have records of accuracy directly traceable to N.I.S.T.
9.3	If the tool or equipment is found to be outside of the allowable limits, the supplier must include the allowable limits and what the actual readings were on the Calibration Certificate and/or Report.

10.0 Packaging Requirements	
10.1	All parts must be individually packaged/wrapped within the primary shipping container. This does not apply to bulk hardware (small bolts, washers, nuts, shims, etc.) unless otherwise noted on the Purchase Order.
10.2	Parts/Materials must be sufficiently packaged to protect them from damage until the point of use. This includes, but is not limited to, protecting adjacent parts in the same package from metal-to-metal damage as well as protection of any coatings on the parts.
10.3	The use of expanded and compressed polystyrene (foam peanuts), starch-based packaging materials that are dissolvable in water, and shredded paper are prohibited.
10.4	Acceptable packaging materials may include, but is not limited to expandable foam, bubble wrap, bubble bags, slotted boxes, and foam inserts.
10.5	Un-plated or otherwise uncoated surfaces on ferrous metal parts shall be protected from corrosion sufficient for climate controlled indoor storage, at a minimum.

11.0 In addition to the above, the following apply to parts / services for the Repair Station	
11.1	For Certified Repair Stations who perform a maintenance function on any of our products, such as an overhaul, or a repair, a release to service form, FAA Form 8130-3, must be completed by an FAA Certified Repairman and supplied with the applicable component.
11.2	Suppliers who are NOT an FAA Certified Repair Station that perform a maintenance function on any of our products such as an overhaul or a repair, must provide us with the following documentation: • Certificate of Conformity stating that all work was performed to the applicable technical data, and include the number and revision level of the technical data that was used to perform the maintenance. • Statement of all work performed.
11.3	Equipment, tools, and materials for the performance of maintenance functions on any of our products must be equivalent to those recommended by the manufacturer and acceptable to AMETEK Advanced Industries or the Regulatory Authority.