



QCPO-001

SUPPLIER QUALITY REQUIREMENTS



9452 De Soto Ave. Chatsworth, CA 91311-4910

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SPECIAL PROCESS 19

All delivered product supplied that has been through any special processes listed in Table 1 against the Purchase Order, when specified, shall be accompanied with proof of compliance articles and/or test report(s) in accordance with the latest revision of the following: 19

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2/ Test sample of hardness test..... 19

3/ Only applicable to Crimp contacts..... 19



1. PURPOSE

- This document is managed by the Quality group and establishes requirements applicable to items ordered under the Purchase Order, of which this is a part, to assure contract flow down, quality, and reliability.
- The *General Requirements* for product assurance, including continuous improvement, are applicable *unless expressly excluded* in the Purchase Order.
- The *Assignable Clauses* (AEIAC) shall apply *when specified* on the Purchase Order.

2. DEFINITIONS

- A. **Purchase Order (P.O).** The Purchase Order, subcontract, Letter of Agreement, Letter of Intent or other written agreement with the Supplier
- B. **Air Electro, Inc.** The legal entity issuing the Purchase Order.
- C. **Supplier.** The legal entity which is the contracting party with the *Air Electro, Inc.* with respect to the Purchase Order.
- D. **Repair.** The subjection of nonconforming material to an approved process designed to reduce but not completely eliminate the nonconformance. The purpose of repair is to bring nonconforming material into an acceptable condition. Repair is distinguished from rework in that the item after repair still does not completely conform to the applicable drawings, specification, or contract requirements, but does meet intended function(s).
- E. **Rework.** The reprocessing of nonconforming material to make it conform completely to the drawing's specifications or contract requirements.
- F. **COTS.** Commercial off-the-shelf hardware which is ready-made and available for sale, lease, or license to the general public which includes MIL Spec components, parts, hardware, fittings, etc.
- G. **First Point of Contact.** The first point of contact for any questions or concerns the Supplier may have will be the **Buyer**.
- H. **Alpha Revision.** An alpha revision is a sequential capital letter, starting with the letter "NC", the "A", "B", etc., appearing in the revision block of a drawing indicating a change to a previously issued drawing.
- I. **Special Processes.** Those processes which cannot be verified by *Air Electro, Inc.* prior to installation or delivery. In these processes, defects become apparent after the product is in service. Typically, these processes can only be tested or inspected by destructive testing. Examples include: Welding, brazing, plating, heat treating, non-destructive testing, etc.



3. GENERAL REQUIREMENTS

Unless otherwise specified in the Purchase Order, the following general requirements shall apply:

A. Prohibited Practices

Unauthorized Repairs: Without prior written approval from *Air Electro, Inc.*, Supplier shall not repair by any method, parts damaged or found to be faulty during fabrication.

Change in Approved Processes, Materials or Procedures: Supplier shall not change any process, material or procedure without prior written approval by, *Air Electro, Inc. if such process, material or procedure was specified or originally subject to approval by Air Electro, Inc.* As to any product which has been subjected to *Air Electro, Inc.* or Government specified qualification procedures to qualify the product or to permit the Supplier to become a qualified source for the product, the Supplier shall not change any process, material or procedure from that used to qualify without prior notification to *Air Electro, Inc.* and approval by *Air Electro, Inc.*

Improper Resubmittal: Articles rejected by *Air Electro, Inc.* and subsequently resubmitted to *Air Electro, Inc.* shall be clearly and properly identified as resubmitted articles. Supplier's shipping document shall contain a statement that articles are replacement or reworked articles and shall also refer to *Air Electro, Inc.*'s rejection document.

Notification of Facility Change: Suppliers are prohibited from relocating any production, manufacturing, and/or processing facilities during performance of an *Air Electro, Inc.* Purchase Order without prior notification to the *Air Electro, Inc.* This is necessary to afford *Air Electro, Inc.* an opportunity to examine such facilities for compliance with Quality Assurance requirements, including any necessary approvals.

B. Order of Precedence for Technical Documents

In the event of a conflict in requirements between technical documents, the following order of precedence shall prevail:

- 1st Purchase Order/Contract
- 2nd Drawings
- 3rd Specifications cited on the drawings

Note: Contact the *Air Electro, Inc.* authorized buyer regarding any questions or concerns. The Configuration Requirements specified in the Purchase Order will contain applicable drawing, associated revision levels and supplemental drawing data.

C. Documentation

Air Electro, Inc. may refuse to accept items delivered under the Purchase Order if the Supplier fails to submit required documentation, e.g. test data or reports, as specified in the Purchase Order. A hard copy of all required documentation shall be sent with each shipment.



D. Responsibility for Conformance

Neither surveillance, inspection and/or tests made by *Air Electro, Inc.* or his representatives at either the Supplier's or Buyer's facility nor the Supplier's compliance with all applicable Product Assurance Requirements shall relieve the Supplier of the responsibility to furnish items which conform to the requirements of the Purchase Order. Air Electro expects that the Supplier will conduct their business with an emphasis on awareness of product safety.

E. Lot Sampling

Air Electro, Inc. reserves the right to use the latest ANSI/ASQ Z1.4 or other appropriate sampling plan based on c=0 for the acceptance or rejection of product. If the Supplier uses the latest ANSI/ASQ Z1.4 or other appropriate sampling plan and the sample contains rejected items, the Supplier must perform 100% inspection for the rejected feature or parameter to ensure that zero defects are present. All sampling plans must be based on c=0. Rejection of a lot shall constitute 100% inspection of product for any non-conformances.

F. Certificate of Conformance

The Supplier shall provide a Certificate of Conformance that certifies all materials and processes (plating, heat treatment, etc.) supplied are in accordance with *Air Electro, Inc.* Purchase Order requirements. The Certificate shall indicate, at a minimum, the following: part number, revision, lot code, serial number (if *applicable*), Purchase Order number, Quantity, and relevant specifications. If the shipment contains multiple processed lots/batches/date codes, then each processed lot/batch/date code must be represented on the Certificate of Conformance, along with their respective quantities. This document shall be signed and dated by the Supplier's Quality Assurance or Management Representative. Certification packages shall be included in the box with their respective parts.

G. Revision Control

Industry standard specifications noted on the purchase order or drawing shall be per the latest revision unless otherwise specified.

H. Access to Supplier and Sub-Tier Facilities

The Supplier shall grant *Air Electro, Inc.*, its customers, and/or any regulatory authorities' right of access to the applicable areas of all facilities at any level of the supply chain involved in the Purchase Order and to all applicable records & processes used to manufacture parts for the PO. This shall also include the right to conduct a survey, audit, and/or assessment of the Supplier's facility and the Supplier's sub-tier Suppliers to determine their capability to comply with requirements.



I. Identification / Marking

The Supplier shall identify all (non-COTS) items, parts, components, subassemblies and/or assemblies with the appropriate part number and revision as noted on the part drawing or as otherwise specified by the *Air Electro, Inc.* Purchase Order. Unless otherwise specified by drawing or purchase order, parts and/or materials that are not suitable for marking due to size and/or configuration may be identified using the bag and tag methods outlined in SAE AS478.

J. Corrective Action Requests

When a Quality or Delivery problem exists, *Air Electro, Inc.* may request corrective action from the Supplier. Such request shall be responded to in the specified time and shall include the following information:

- Detailed Description of Nonconformity
- Actions taken to assure 100% containment of suspect parts/products/raw materials at all locations & in-transit
- Immediate Recovery Plan
- Root Cause Analysis of Non-Conformities/Determination of Failure Modes
- Corrective Action Measures
- Preventive Action Plans to prevent reoccurrence
- Objective Evidence of Actions Taken
- Verification Method(s)/Technique(s) to Confirm Effectiveness of Corrective & Preventive Action(s)

When a formal Supplier Corrective Action Request (SCAR) is flowed down to the Supplier, the preferred method is Air Electro, Inc.'s form as provided. Supporting documentation is to be part of the SCAR's response.

Failure to submit an acceptable SCAR response in the expected timeframe may result in Disapproval from Air Electro, Inc.'s Approved Supplier List.

K. ESD Control Program

If the items to be delivered under the Purchase Order are electrostatic discharge Sensitive (ESDS), the Supplier shall have an ESD control program which precludes ESD damage during all phases of fabrication, testing, handling, storage, and packaging for delivery. Nonmanufacturing Distributors shall handle, store, package and identify such items under an ESD control program which ensures continuation of the manufacturer's ESD control program. Shipping containers and packing slips shall have prominent marking/identification which identifies contents as ESD sensitive.

L. Quality System

The Supplier must be able to maintain a Quality System that meets or exceeds industry standards and ensures adequate product conformance and appropriate objective evidence to meet usual business responsibilities. It is preferable that Suppliers are able to maintain a Quality System that meets or exceeds ISO 9001(current revision) or AS9100 (current revision). The Supplier shall notify Buyer within two working days if any ISO, AS, or NADCAP certifications are revoked or suspended. Notification of certification upgrade is mandatory. New or updated certifications are to be sent to quality@airelectro.com.



M. Delivery Schedules / Delay of Delivery

Supplier shall meet all scheduled delivery dates as specified on *Air Electro, Inc.* Purchase Order. If Supplier becomes aware of any circumstances that are likely to give rise to a delay in promised delivery date, the Supplier shall ***immediately*** notify Buyer, in writing, stating the reason for the delay and the new time for delivery. The Supplier shall seek authorization from *Air Electro, Inc.* if they wish to deliver any parts more than five days earlier than the promised delivery date. Shipments received earlier than five days before (unless authorized on the Purchase Order) or more than three days after the promised delivery date will have a negative effect on the Supplier's performance rating, which will be reflected on their Supplier Rating. In case of delay in delivery without proper notification, *Air Electro, Inc.* reserves the right to cancel the Purchase Order without liability to *Air Electro, Inc.* or any other third party. Unauthorized over shipments and early shipments may be returned at Supplier's expense. Supplier shall be liable for all storage/handling charges incurred as a result of over shipments and early shipments.

N. Packaging / Handling / Preservation / Shipment

All items delivered on this order must be adequately preserved, packaged, handled, and contained to prevent deterioration and damage during shipment. The shipping method should ensure safe arrival at destination in accordance with best commercial practices unless special packaging and shipping instructions are specified by Purchase Order, drawing, or specification. Special packaging/handling instructions may include, but are not limited to, unique marking requirements, special material traceability, or use of custom or reusable containers. If the shipment contains multiple processed lots/batches/date codes, then each processed lot/batch/date code must be segregated and clearly identified to maintain complete traceability in each shipment.

O. Control of Nonconforming Product

The Supplier shall provide prompt written notification to *Air Electro, Inc.* within 24 hours (or 1 business day) when nonconforming material or products affecting a drawing, Purchase Order or specification requirement issues are discovered and when applicable also to include those previously delivered products that may have been affected. The email address for submittal is quality@airelectro.com. The Supplier shall not ship such nonconforming material or product until authorization to ship in the form of a written response from *Air Electro, Inc.* Upon authorization to ship, the non-conforming product must be labeled as non-conforming by the Supplier before shipment and all documentation related to the nonconforming product shall accompany the product at time of shipment.

P. Subcontracting

The Supplier shall flow down all relevant quality requirements imposed by *Air Electro, Inc.* to any sub-tier Suppliers processing *Air Electro, Inc.* product.

For *Air Electro, Inc.* unique part numbers, the Supplier shall not subcontract work on any article to be supplied under the *Air Electro, Inc.* Purchase Order without prior written approval of Buyer.

For all *Air Electro, Inc.* designed product, special processes – as well as certain additional processes not typically categorized as “special” – are source controlled, and must be performed



by an *Air Electro, Inc.* approved vendor. All source-controlled processes and approved Suppliers can be found on the *Air Electro, Inc.*'s drawing. Approval to perform one process does NOT imply approval for any additional processes – a vendor must be approved for each special and/or controlled process it performs. If a preferred source has not been approved by *Air Electro, Inc.*, Supplier can request approval prior to beginning work by contacting the *Air Electro, Inc.* Buyer.

The requirement to use *Air Electro, Inc.* approved and/or mandated Suppliers must be flowed down to any sub-tier providers. When a special process is subcontracted, the requirements stated in Section 3R of this document must be also flowed down to the sub-tier special process provider.

Q. Commercial-Off-The-Shelf (COTS) Items

The Supplier shall notify *Air Electro, Inc.* of any parts acquired through the use of 3rd party distributors or any other non-OEM sources when such sources are not certified to AS9120 or better. In these cases, the Supplier shall provide full traceability of parts detailing the characteristics, original manufacturer name, original manufacturer part number, serial/lot number, and shelf life (if applicable).

R. Special Processes

For all special processes, the Supplier shall maintain adequate controls to ensure processes are performed in accordance with applicable specifications and will achieve the planned results. Controls shall include training of personnel in the applicable procedures and requirements for validation and revalidation of processes. Records of training and validation activities shall be maintained and made available to *Air Electro, Inc.* upon request.

The requirement to use an *Air Electro, Inc.* approved and/or mandated sub tier does not alleviate the Supplier of the responsibility of monitoring that Supplier and providing conforming product to *Air Electro, Inc.* When specified in *Air Electro, Inc.* Purchase Order, special procurement quality clause (PQ) shall apply. See section 4 Assignable Clauses for detailed requirements for each specific special process PQ. For each special and/or controlled processes performed, the Supplier shall furnish Certificates of Conformance in accordance with applicable specifications and/or engineering drawings. The Certificates must reference the vendor performing the process. Certificates for serialized parts and/or assemblies must reference the applicable s serial number(s) for traceability.

S. Foreign Object Debris/Damage (FOD) Prevention Program

Suppliers must have a FOD program for the purpose of prevention, detection, and removal of foreign objects. The program should meet the following requirements as applicable:

- FOD prevention must be implemented in all areas as applicable and FOD awareness training must be given.
- Parts must be protected from handling damage in all areas. Material handling awareness training must be provided to all employees and material handling standards documented.



T. Qualified Personnel

The Supplier's personnel performing work on contracted products and services should be adequately trained to assure that their skills and competency levels will result in products that meet all contract requirements.

U. First Article Inspection Report

The first time a Supplier delivers a part/assembly to an *Air Electro, Inc.*-designed part number, the Supplier shall furnish a complete First Article Inspection Report listing actual inspection results for all drawing dimensions and applicable notes. A FAIR is not required for standard Commercial-Off-The-Shelf (COTS) parts, standard catalog items or deliverable software. The parts used to perform the First Article shall be marked. First Article acceptance by *Air Electro, Inc.* shall neither constitute final acceptance of the lot nor relieve the Supplier of the obligation to furnish all parts that meet all drawing, specification and/or Purchase Order requirements. The Supplier is required to use the latest revision of AS9102 for First Article Inspections.

If a First Article Inspection is required on a part for which a similar First Article Inspection Report has already been delivered to *Air Electro, Inc.*, a Partial (Delta) First Article Inspection may be acceptable. Questions regarding the suitability of Partial First Article Inspections should be directed to *Air Electro, Inc.*'s Quality Department at quality@airelectro.com.

V. Counterfeit Parts Prevention

The Supplier/subcontractor must take an active role in the elimination of all possible shipments containing counterfeit parts. The Supplier/subcontractor must only supply parts which are traceable to the actual manufacturer. The requirements of AS6174 and/or AS5553 are to be met. To eliminate the possibility of reentering the supply chain, Suspect or Counterfeit parts will be destroyed at Air Electro. No payment will be issued from Air Electro for suspect or counterfeit parts.

W. Calibration

The Supplier shall perform all inspections and tests using calibrated equipment. For calibration service providers or test laboratories, accreditation to ISO 17025 and ANSI/NCSL Z540.3 is preferred. Materials used to meet applicable drawing requirement and procurement documents shall not be excluded.

X. Configuration Management

For Supplier-controlled drawings, the Supplier shall maintain a specific and unique part number with revision control for *Air Electro, Inc.* No significant change affecting the design or manufacturing process/location shall be made without prior written authorization from *Air Electro, Inc.* Significant changes include, but may not be limited to, changes that affect performance, integration, system compatibility, size, function, functional performance, testing requirements, material, material types, etc.



Y. Maintenance of Records

Supplier shall maintain and make available to *Air Electro, Inc.* all records for, or related to, *Air Electro, Inc.* products. Records must be retained at least ten (10) years following *Air Electro, Inc.*'s final payment under its prime contract unless otherwise specified. Accordingly, the Supplier shall receive written approval from an *Air Electro, Inc.* Authorized Representative prior to destroying any of these records.

Z. Temperature & Shelf Life Sensitive Material

For all shelf life sensitive material, Supplier shall provide certifications for temperature, perishable and age sensitive materials (e.g. rubber products, epoxies, paints, bonding agents, adhesives, etc.), which reflect date of manufacture, date of test, shelf life, expiration date, and storage temperature as it applies to each lot/batch. Container label(s) must also reflect applicable lot/batch number(s), storage temperature, expiration date, and date of shipment. Product delivered to Buyer shall have a minimum of 80% remaining of shelf life upon receipt.

AA. Conflict Minerals

The Supplier/subcontractor is required to comply with section 1502 of the "Dodd-Frank Wall Street Reform and Consumer Protection Act" and must certify its supply base to be "Conflict Mineral" free. Use of the E.I.C.C. template is preferred & can be found at <http://www.conflictreesmelter.org>. Complete & forward to the attention of the *Air Electro Inc.* Quality Department, quality@airelectro.com.

AB. Soldering

Any soldering process shall be completed in accordance with IPC series of J-STD, depending on the type of soldering being accomplished. The following standards apply: J-STD-001, J-STD-002, J-STD-003, J-STD-004A, J-STD-005, and J-STD-006.

AC. Crisis Management Program

Air Electro, Inc. Suppliers are expected to establish a comprehensive crisis management approach to deal with potential disruptions (proactive) and disasters (reactive). The approach should include plan of action, checklist of activities, communication plans, escalation procedures, and organization with teams, roles, and responsibilities.

When *Air Electro, Inc.* deems necessary, based on the risk situation or as part of the Management Review process, the Supplier may be asked to provide risk management and business continuity plans. The Supplier is expected to conform to the risk management and business continuity requirements including alternate manufacturing site or process options wherever applicable to ensure operation's continuity. *Air Electro, Inc.* will notify Suppliers in writing when identified as part of a risk situation or as part of the Management Review process. In any financial risk, *Air Electro Inc.* expects their Suppliers to provide requested financial information wherever applicable.



Air Electro, Inc. Suppliers must plan for the following (as applicable) disruptions:

1. Business Continuity to deal with event-based risks such as fires, chemical spills, natural disasters, terrorist threats, medical emergencies, and human resources (Example: Strikes)
2. Supply Chain Continuity to check and prepare the “Supplier’s” Suppliers to deal with potential disruptions (proactive) and disaster situations (reactive)
3. Pandemics Preparedness Plan (Example: Avian Flu Pandemic)
4. IT Disaster Recovery and IT Security for “Supplier” telecommunications, data, systems and infrastructure
5. Eliminate potential disruptions due to Financial and Regulatory Non-Compliance
6. Confidentiality Policy (including protection of *Air Electro, Inc.* Intellectual Property), as applicable

AD. Labor, Human Rights, and Ethical Behavior

Air Electro, Inc. expects our suppliers to provide their employees a safe and healthy work environment, that they treat their workers with dignity and respect, that they engage in environmentally friendly manufacturing processes, and that they comply with the law in all countries in which they conduct business. Suppliers shall not traffic in persons or use any form of slave, bonded, forced, or involuntary prison labor. This includes the transportation, recruitment, harboring, transfer, or receipt of persons by means of threat, force, fraud, abduction, or payments to any person having control over another person for the purpose of exploitation. *Air Electro* expects Suppliers to conduct their business ethically and lawfully.

AE. Declaration Regarding North Korean Labor

The [Countering America's Adversaries Through Sanctions Act \(CAATSA\)](#), which was signed into law in 2017, restricts entry into the United States of goods made wholly or in part by North Korean labor, wherever located, and imposes property-blocking sanctions on non-U.S. persons that knowingly employ North Korean laborers, subject to limited exceptions. The Supplier shall make a reasonable effort to determine that no North Korean nationals or citizens have been involved in the mining, production, or manufacturing, wholly or in part, of any significant goods, wares, articles, and merchandise (including parts and components). The supplier shall communicate to the supply base the restrictions on the use of labor of North Korean citizens or nationals.

AF. Supplier Tool Accountability Requirements

a. Returning Tooling to Air Electro, Inc.

Air Electro, Inc. reserves the right to request recall or return to *Air Electro, Inc.* headquarters of any and all tooling which *Air Electro, Inc.* had previously paid for. Supplier shall return Accountable Tools furnished by *Air Electro, Inc.* in the same condition in which they were purchased or as specified on the tooling purchase order, manufactured, or furnished, except for normal wear and tear. Upon return to *Air Electro, Inc.*, all Accountable Tooling shall be properly identified. Supplier shall be responsible for the full acquisition cost or replacement cost, whichever is greater,



for any Accountable Tool that is lost, damaged or destroyed while in Supplier's care, custody or control. Supplier is responsible to properly protect and remedy master tools against any damage (including but not limited to corrosion, etc.) before returning such tools to Air Electro, Inc., or placing such tools in storage. Supplier shall, at all times, store master tools, master gages, and master inspection jigs inside the proper storage boxes within the confines of a physical structure providing complete shelter from outside weather elements.

b. Review and Approval

Supplier's Tool Designs (including but not limited to Tool Designs for Critical Tools) are subject to Air Electro, Inc. review and approval including Air Electro, Inc. design or contracted to supplier design in which Air Electro, Inc. has paid for a service of design and/or manufacturing of the tooling.

c. Inventory of Air Electro, Inc. Tooling

Supplier shall, after executing or commencing performance of a Contract, establish and maintain a list of Accountable Tools within its possession or control. This list shall include the following items, as applicable:

- Physical location of the Accountable Tool (including company / sub-tier company name, facility and street address, A complete list of all Accountable Tools.
- A Certified Tool List, signed by Supplier, including a tool number, tool code,
- equipment number, ownership (as per the Air Electro, Inc. tool order / purchase order), and engineering rev letter or Tool Design, as applicable.

d. Storage and Maintenance of Tool(s)

Supplier shall store, handle and maintain, Accountable Tools in accordance with AS9100 standards. Supplier shall take appropriate steps to protect Accountable Tools from the elements to preserve Accountable Tool life, durability and usefulness.

e. Air Electro, Inc. Tooling Obsolescence

Supplier shall, at Air Electro, Inc's request, ship to Air Electro, Inc. Accountable Tools rendered obsolete for production by an Air Electro, Inc. tool notification. Upon receipt, Air Electro, Inc. shall evaluate and disposition such Tools. Supplier shall not, under any circumstances, scrap or render useless Accountable Tools unless Supplier receives prior written authorization from Air Electro, Inc. Supplier shall immediately notify Air Electro, Inc in the event any third party (including Air Electro, Inc's customer) directs Supplier to scrap or render useless Accountable Tools. If Supplier scraps or renders useless Accountable Tools without Air Electro, Inc's prior written approval, then Supplier is responsible for the full acquisition or replacement cost of such Accountable Tools.

f. Duplicate and Sequential Tools Identification

Supplier shall differentiate between multiple Accountable Tools used to make the same product according to the nomenclature in the table below:

	Tool Code	Prefix Number	Suffix Number	Written AS
Original Accountable Tool	AEST	-	-	AEST
Duplicate of original Accountable Tool	AEST	-	2	AEST2
Sequence Accountable Tool	AEST	2	-	2AEST
Duplicate of sequence Accountable tool	AEST	2	2	2AEST2

In no event is supplier permitted to use master tools for direct manufacturing. In no event is supplier permitted to rework, repair, add to or remove any master tools or parts thereof without Air Electro, Inc., prior written consent.



4. ASSIGNABLE CLAUSES

THE FOLLOWING CLAUSES ARE INDIVIDUAL REQUIREMENTS ONLY WHEN SPECIFIED IN THE PURCHASE ORDER

AEIAC-01:

ORIGINAL MANUFACTURER (OEM) CERTIFICATE OF CONFORMANCE

Valid Certificate(s) of Conformance shall be provided for all Original Manufacturers' (OEM) components/processes. The Supplier shall provide product certification which shows complete lot traceability to the Original Manufacturer (OEM). All certifications must be legible and reproducible. Amendments or changes to any certification must be initialed and dated by the authorizing party.

AEIAC-02:

MATERIAL CERTIFICATION, CHEMICAL, PHYSICAL TEST DATA, LOT TRACEABILITY

The Supplier shall furnish a complete set of material certifications traceable to lot, batch, block, or heat number of the mill or original material manufacturer. Where applicable, these certifications must list all chemical and physical test reports & results traceable to the lot, batch, block, or heat lot number **back to mill**, unless waived by *Air Electro, Inc.* in accordance with the applicable specification, engineering drawing and/or *Air Electro, Inc.* Purchase Order. All certifications shall contain all information required by Clause F of this document, and their records shall be maintained per Clause Y of this document. It shall be signed by the Material Supplier's Authorized Quality Representative, and indicate the Representative's title. All test data and certifications traceable to the materials supplied must be kept on file for a minimum of ten (10) years unless otherwise specified by the *Air Electro, Inc.* Purchase Order.

AEIAC-03:

DIMENSIONAL INSPECTION REPORT

The Supplier shall furnish an inspection report for each lot of parts submitted, including inspections of critical features on drawing callouts.

AEIAC-04:

NONDESTRUCTIVE TEST REPORT

A nondestructive test report/Certificate of Conformance shall be provided by the Supplier for each shipment of material. The Report/Certificate of Conformance shall include, at a minimum; the *Air Electro, Inc.* Purchase Order Number, Sales Order Number, Part Number, inspection method, quality requirement used for evaluation, rejection or acceptance of article, flaw indication sheet, and identification of inspecting personnel. A report must be submitted for each NDT method performed.

AEIAC-05:

SOURCE INSPECTION

Air Electro, Inc. Source Inspection shall be performed as specified (in-process and/or final). Please notify *Air Electro, Inc.* Supplier Quality Management (quality@airelectro.com) two (2) working days in advance of the date source inspection will be required at your facility. An *Air Electro, Inc.* Source Inspection does not preclude subsequent inspection nor does it relieve the Supplier of the responsibility of providing acceptable product. Source inspections may include personnel from *Air Electro, Inc.* in addition to *Air Electro, Inc.* customer representatives and/or regulatory authorities, and shall include access to all records applicable to *Air Electro, Inc.* product or orders.

AEIAC-06:

SOFTWARE

Any software used for qualification or acceptance of hardware or software deliverables, including firmware, shall have a system for control including procedures and records available for review any time upon request from *Air Electro, Inc.*

AEIAC-07:

PHOTOS

Photos are required of the product, or a portion of the product being supplied;

- The resolution of each photo shall be a minimum of 10 megapixels.
- Photos shall be delivered to *Air Electro, Inc.* on either a CD or DVD. The disc shall be clearly labeled with PO, Part Number, and Revision.
- Photos must be saved on the disc with each photo file name referencing Part Number and Serial Number (format example: "PN 00041282-501 SN 45023-4").

**AEIAC-08:****DROP SHIPMENTS**

This purchase order will require a drop shipment of *Air Electro, Inc.* owned material. The Supplier must check quantity and condition of furnished material and perform complete inspection and/or test to verify compliance to requirements. After approval of the shipment the Supplier must submit to *Air Electro, Inc.* all documentation for review (e.g. Inspection Records, Material certs, Special process certs, sub-tier traceability, etc.). A representative sample must be sent to *Air Electro, Inc.* for our own records. Once approved by *Air Electro, Inc.* Approval to ship will be given to the Supplier along with the AEI documentation to be included with the shipment. After confirmation of delivery the Supplier shall contact the AEI Buyer with proof of delivery. All customer furnished material shall be identified, handled, stored, and protected from damage, deterioration and loss.

AEIAC-09:**PENETRANT AND/OR X-RAY NDT REQUIREMENTS**

1. For each part number requiring penetrant and/or X-Ray NDT, the Supplier shall have radiographic and penetrant techniques approved by *Air Electro, Inc.* prior to shipment. To submit a technique for approval, the Supplier shall send a package containing film shot using the submitted technique and the accompanying reader sheets to *Air Electro, Inc.*
2. The Supplier shall use only *Air Electro, Inc.* approved techniques for all radiographic and penetrant testing for the applicable part number and shall not modify these techniques without approval from the *Air Electro, Inc.* NDT Level III. Approval must be given in the form of a signature on the new technique.
4. Parts shall be cleaned of all background penetrant following NDT analysis and prior to shipment to *Air Electro, Inc.*
5. All parts, unless otherwise formally stated, require pre-penetrant chemical etch (local etch may be acceptable in reworked/blended areas)
6. The Supplier shall provide all X-Ray film upon hardware delivery. Film must be packaged with the representative parts and packaged in such a way as to prevent damage during shipping and handling.
7. Any indication viewed during double wall radiography shall be read to the single wall thickness and, if accessible, shall be shot with a single wall view to confirm location and size of discontinuity

AEIAC-10:**SUBCONTRACTED DESIGN**

All subcontracted design shall be performed in accordance with the requirements of MIL-STD-1528A, paragraph 5.2.

AEIAC-11:**HEAT TREATING / OVEN CURE CHARTS**

The Supplier shall provide all heat treating/oven cure charts as required.

AEIAC-12:**PERFORMANCE TEST REQUIREMENTS**

Suppliers shall conduct performance testing to confirm that current production meets design requirements. Testing is to be conducted in accordance with the established control plan/drawing. Performance test failures are cause for a supplier to stop production immediately, pending analysis of the process and corrective action. Suppliers are required to immediately notify *Air Electro Inc.* Buyer of test failure, suspend shipments and identify shipped suspect lots.

AEIAC-13:**MEASUREMENT SYSTEM ANALYSIS (MSA) REQUIREMENTS FOR SPECIAL CHARACTERISTICS**

The Supplier shall perform Measurement Systems Analysis (MSA) studies for all gauges used to measure special characteristics (see Definitions) as defined by the design record (drawings and specifications). The Supplier's measurement and calibration methods must be agreed to by *Air Electro, Inc.* Engineering and/or Quality to ensure consistent qualification of parts. Suppliers should reference the latest version of the AIAG Measurement Systems Analysis manual for further details.

AEIAC-14:**PROCESS CAPABILITY STUDY**

Special Characteristics require process capability analyses at new product launch and when product or process changes affect these characteristics. Additional periodic capability analyses may be required. If no special characteristics are identified, the Supplier should evaluate and identify product and/or process characteristics that can be used to ensure process capability. This should be reviewed and agreed to by *Air Electro, Inc.* Quality and/or Engineering representatives to ensure alignment and process quality. Initial process studies shall be summarized with the following capability or performance indices: (Cp / Cpk / Pp / Ppk)

**RESULTS AND INTERPRETATION:**

An *Air Electro, Inc.* minimum requirement for short-term capability and stability is an Index > 1.67.

An *Air Electro, Inc.* minimum requirements for long-term capability and stability is an index >1.33.

If acceptance criteria are not satisfied, Supplier shall contact *Air Electro, Inc.* with a corrective action plan and a modified Control Plan providing for 100% inspection. Variation reduction efforts shall continue until the acceptance criteria are met, or until approval is obtained from *Air Electro, Inc.* Note: 100% inspection methodologies are subject to review and concurrence by *Air Electro, Inc.*

Suppliers should reference the latest version of the AIAG manual for further details.

AEIAC-15:**PRODUCTION PART APPROVAL PROCESS (PPAP)**

The PPAP submission will be based on the latest edition of the Production Part Approval Process (PPAP) Manual, available through AIAG (Automotive Industry Action Group). An *Air Electro, Inc.* representative from Quality Assurance or Engineering will identify the appropriate PPAP submission level and additional requirements for the part or component to be sourced. Unless otherwise specified, a Level 3 PPAP shall be submitted.

All PPAP samples must be produced using production tooling and processes at the production line rate. Supplier shall ensure compliance to all requirements listed on *Air Electro, Inc.* drawings, purchase orders, and engineering specifications. Sample parts shall be submitted to Quality Engineering and/or specified *Air Electro, Inc.* personnel. Suppliers may be required to perform annual layout/validation and PPAP submission as directed by *Air Electro, Inc.*

AEIAC-16:**COMMERCIAL OFF THE SHELF (COTS) Parts**

Supplier shall provide a revision-controlled drawing with all relevant specifications and maintain revision control. Any changes to fit form or function of the *Air Electro, Inc.* ordered part or any change to functional testing must be submitted for approval. Changes to fit, form or function of a component part do not need to be submitted for approval at the component part level, but such changes shall be considered a revision of the *Air Electro, Inc.* ordered part and must be submitted for approval (at the ordered part level). Approved changes will require a revision increase. Fit, form and function are defined as follows:

- **Fit** - The ability of the part to integrate with or become an integral part of another component. *Air Electro, Inc.* must be informed if any change is proposed that affects the parts ability to integrate.
- **Form** - The physical characteristics of the part, including shape, size and mass. *Air Electro, Inc.* must be informed if any change is proposed that alters any aspect of the part's form, including changes to dimensional tolerances.
- **Function** - The actions that the part is designed to perform in fulfilling its function. *Air Electro, Inc.* must be informed if any change is proposed that could alter any aspect of the part's functionality, including material changes.

AEIAC-17:**SPECIALTY METALS (DFARS)**

The Supplier certifies that all products supplied against the purchase order fully comply with DFARS clause [252.225-7009](#).

AEIAC-18:**ROHS COMPLIANCE**

RoHS Compliance to the latest [RoHS Directive](#) regulations is required.

AEIAC-19:**NADCAP COMPLIANCE**

If an item on this Purchase Order contains heat treating, plating (including under plating), surface finish, or conditioning process(es) the Supplier shall be a NADCAP approved processor for the required process or flow-down this requirement to any sub-tier Supplier.

AEIAC-20:**REACH COMPLIANCE**

[REACH compliance](#) to the latest regulation shall be adhered to in the manufacturing of product supplied.

AEIAC-21:**MERCURY FREE**

Supplies furnished under this order shall contain no mercury and shall be free from mercury contamination. Mercury-bearing instruments and/or equipment which may cause contamination shall not be used in the manufacture, fabrication, assembly, or testing of materials furnished under this order. Contact the buyer if there is suspicion of contamination or questions regarding acceptable practices. The seller shall flow-down this requirement to applicable lower tier Suppliers associated with this order. Seller shall provide a "mercury free" certificate of conformance with the



furnished supplies.

AEIAC-22:

ITAR COMPLIANCE

Supplier shall control the disclosure of and access to technical data, information and other items received under this Purchase Order in accordance with U.S. export control laws and regulations, including but not limited to the ITAR. Supplier agrees that no technical data, information or other items provided by *Air Electro, Inc.* in connection with this Purchase Order shall be provided to any foreign persons or to a foreign entity, including without limitation, a foreign subsidiary of Supplier, without the express written authorization of *Air Electro, Inc.* and the Supplier's obtaining of the appropriate export license, technical assistance agreement or other requisite documentation for the ITAR-controlled technical data or items. It shall be the sole responsibility of the Supplier to determine whether the information provided by *Air Electro, Inc.* is technical data as outlined in the ITAR (22 CFR 120-130) and EAR (15 Parts 730-774) prior to any release to a third party abiding by the terms outlined herein. Supplier shall indemnify Buyer for all liability's penalties, losses, damages, costs or expenses that may be imposed on or incurred by *Air Electro, Inc.* in connection with any violations of such laws and regulations by Supplier.

AEIAC-23:

DDTC REGISTRATION

If the order falls under the regulations of ITAR (International Traffic and Arms Regulations), all manufacturers, exporters, brokers of defense articles, defense services or related tech data are required to register with DDTC (Director of Defense Trade Controls). Registration is specified in Part 121 of the ITAR.

AEIAC-24:

MSDS (SDS)

A Material Safety Data Sheet (MSDS) that meets the OSHA hazard communication standard on all potentially hazardous chemicals or materials must accompany your shipment.

AEIAC-25:

SOLDERABILITY

All delivered product supplied against this Purchase Order, unless otherwise specified, shall be accompanied with proof of solderability testing in accordance with the latest revision of the following standards:

MIL-STD-202 Method 208, MIL-STD-883, and/or ANSI/J-001/002, as applicable.

AEIAC-26:

FOD-FREE PACKAGING

All delivered product supplied against this Purchase Order must be packaged using "FOD-Free" packaging materials. Use of cardboard egg trays, foam, Styrofoam, or any other packaging material that has the potential to leave fibers, residue or other FOD on parts is strictly prohibited. Suggested types of packaging include, but are not limited to: plastic egg trays, plastic vials, sealed poly bags, etc.

AEIAC-27:

PRODUCTION SAMPLE APPROVAL

Prior to the first Production run of new AE Custom product, samples shall be produced using production tooling and processes. Supplier shall ensure compliance to all requirements listed on Air Electro, Inc. drawings, purchase orders, and engineering specifications. Sample parts must be submitted to Quality Management for approval prior to starting the production run.



AEIPQ:

SPECIAL PROCESS

All delivered product supplied that has been through any special processes listed in Table 1 against the Purchase Order, when specified, shall be accompanied with proof of compliance articles and/or test report(s) in accordance with the latest revision of the following:

Table 1 – Special Procurement Quality Codes

Special Procurement Quality Code	Special Process	Part Item Type							Supplier Data with Delivery		
		Contact	Hood	Jam Nut	Standoff Adapter	Shell	Backshell	Connector	C of C	Test Report	Test Sample
PQ01.1A	Plating - Gold - NADCAP	X						X	X	X	
PQ01.1B	Plating - Gold, Non-NADCAP	X						X	X	X	
PQ01.2A	Plating - Nickel - NADCAP		X	X	X	X	X	X	X	X	
PQ01.2B	Plating - Nickel, Non-NADCAP		X	X	X	X	X	X	X	X	
PQ01.3A	Plating - Cadmium - NADCAP			X	X	X		X	X	X	
PQ01.3B	Plating - Cadmium, Non-NADCAP			X	X	X		X	X	X	
PQ01.4A	Plating - Palladium - NADCAP	X						X	X	X	
PQ01.4B	Plating - Palladium, Non-NADCAP	X						X	X	X	
PQ01.5A	Plating - Nickel PTFE - NADCAP			X	X	X		X	X	X	
PQ01.5B	Plating - Nickel PTFE, Non-NADCAP			X	X	X		X	X	X	
PQ02A	Passivation - NADCAP	X	X			X		X	X		
PQ02B	Passivation, Non-NADCAP	X	X			X		X	X		
PQ03A	Welding - NADCAP							X ^{1/}	X	X	
PQ04A	Heat Treat - NADCAP	X						X	X	X ^{3/}	
PQ04B	Heat Treat, Non-NADCAP	X						X	X	X ^{3/}	
PQ05A	Annealing - NADCAP	X						X	X	X ^{3/}	X ^{2/}
PQ05B	Annealing, Non-NADCAP	X						X	X	X ^{3/}	X ^{2/}
PQ06A	Vibropeen - NADCAP							X ^{1/}	X		
PQ07A	Soldering - NADCAP							X	X		
PQ07B	Soldering, Non-NADCAP							X	X		

Note:

1/ Only applicable to Honeywell complete connectors

2/ Test sample of hardness test

3/ Only applicable to Crimp contacts