

Amphenol Corporation

Amphenol Aerospace, Mil/Aero Operations, Amphenol Industrial Operations

STANDARD QUALITY REQUIREMENTS FOR SUPPLIERS

1. Scope of Requirements: Supplier shall comply with all Purchase Order requirements, including: 1) Terms and Conditions; 2) These Clauses; 3) Workmanship Standards; and 4) Drawing interpretation specification 9-3800. Supplier shall process any corrective action requests submitted to them. By act of shipping contracted items to Amphenol, Supplier certifies that shipment satisfies all requirements. Supplier shall meet all requirements of AS9100 Rev. D, Section 8.4.3. Suppliers shall ensure that all business is conducted in an ethical manner, with consideration for product safety, and conformance.

2. Documents: Supplier is responsible to obtain all referenced documents. Documents not provided with the Purchase Order are available upon request from Amphenol Purchasing. Some documents are also viewable via Internet: www.amphenol-aerospace.com/suppliers.html (For Workmanship Standards & 9-3800, click on *Support* then *Suppliers* and then select the desired item from the drop down menu.) Supplier Ratings are also available at <http://dashboard.amphenolmao.com/Purchasing>

3. Quality System: Supplier shall maintain an effective Quality System (e.g. ISO-9001/AS9100, AS9120, AC7004).

4. Changes:

4.1 Change in Amphenol Specified Drawings, Materials, Processes, and Toolings

Supplier shall not change the Amphenol specified Drawings, Materials, Special Processes, and Toolings without prior written approval by Amphenol Purchasing and Procurement Quality Engineering (AAO). (Special Processes include Soldering, Welding, Brazing, Plating, Heat-Treating, Potting, Wire-wrapping, casting, molding, non-conventional machining, and Bonding.) This requirement specifically includes changes made for RoHS compliance.

4.2 Change in Amphenol Approved Drawings, Materials, Processes, and Toolings

Supplier shall not change any drawing, process, material, or procedure without prior written approval by AAO, if such drawing, process, material, or procedures were originally approved by AAO.

Supplier shall not change any process, material, or procedure from that used to qualify items or which was used by Supplier to become a qualified source without written approval by AAO.

4.3 Notification of Facility Change

Supplier shall not use or relocate any production, manufacturing, and/or processing facilities during performance of the work specified on the Purchase Order from those production, manufacturing, or process facilities previously qualified by AAO without promptly notifying AAO, affording AAO an opportunity to examine such facilities for compliance with Quality Assurance requirements, and receiving prior approval from AAO. This includes in-plant machinery moves, process changes, or supplier changes that affect AAO products.

4.4 Notification of Obsolescence

Suppliers shall have a policy/program in place to control obsolescence. Supplier shall notify AAO of any part numbers that AAO has purchased in the past that are now considered obsolete.

5. Source Inspection: Supplier agrees that Amphenol, Amphenol's customers, and applicable regulatory authorities have the right to inspect any Amphenol order at the Supplier's facility upon request. Amphenol also reserves the right to contract a 3rd party source inspector at the suppliers expense, if deemed necessary to enforce due to supplier's inability to supply conforming product, or due to other supplier deficiencies.

6. **Each lot/shipment MUST have a Certificate of Conformance shipped with the parts.** The C of C should include the following as a minimum:

- 1) AAO Part number
- 2) AAO Drawing Revision
- 3) Part Name
- 4) AAO PO Number
- 5) Quantity Shipped
- 6) Lot/Batch/Serial Numbers A/R

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C of C's also need to include the raw material certifications as required by drawing and shall have a traceable heat, lot, or serial number for the raw material used in the manufacture of the product being delivered. C of C's should have a statement of conformance to all PO requirements, and be signed.

7. **Material Reports:** Accompanying each lot, Suppliers of items made from a single material and suppliers of raw materials shall submit a material report listing physical and chemical properties of the lot(s) in English. Material Reports shall only come from a certified lab or the raw material manufacturer. If more than one material comprises the procured item, the supplier shall possess and maintain material reports for each material for a period of 10 years with copies provided to Amphenol upon request. The material report shall specify chemical and physical properties in accordance with Amphenol imposed requirements. Exceptions: 1) For materials that the supplier considers proprietary, provide instead a Certificate of Conformance that specifies a traceable lot/batch number; 2) Qualified Mil-Spec items and COTS (Commercial Off The Shelf); 3) material supplied by Amphenol; 4) Items/materials that are purchased to the supplier's catalog or to supplier's specific part number. **All Specialty metals shall be compliant to DFARS clause 252.225-7009 (sections a & b) and have the country of origin (melting) specified on the material report.**

8. **Drop Ship Suppliers:** If contract stipulates that shipment is to be made directly to Amphenol's customer, Supplier shall submit to Amphenol Procurement Quality the inspection plan to be applied and an approved First Article Report for each part number to be shipped. Supplier shall receive written approval from Amphenol Procurement Quality prior to making Drop Shipments. Supplier shall retain inspection records. Form QD-544 will be completed, with any special requirements as noted above, and approved before the drop ship is approved. Drop ship forms will be maintained by Quality, and kept in the Quality files. Cheers/Quality/Drop Ship Forms.

9. **Molding and Casting Suppliers:** Supplier shall submit a First Article Report whenever any of the following events first occurs; 1) a new or revised part is to be produced; 2) a new or modified tool or cavity is to be used; or 3) the process or material has changed. A separate First Article is required for each cavity. In addition, rubber compound suppliers shall submit a cured, representative test specimen with each lot shipped; the specimen's durometer and tensile strength values shall be recorded in the accompanying Material Report.

10. **First Articles:** Whenever a First Article is required, (First time build, revision change, a lapse in production of 24 months, significant process change, or a plant relocation, per AS9102) Suppliers shall provide a production part and a QDF-QV40 Supplier report in English of actual measurement data for each characteristic which the Supplier generated. QDF-QV40 (AS9102 or equivalent form) Supplier Forms and instructions for completing the Forms are available on line at the Amphenol Aerospace Supplier site.

www.amphenol-aerospace.com/suppliers.html

COTS (Commercial off the shelf), Catalog items, MIL, Raw material, and QPL parts do not require FAI's.

Material Test Reports for all materials in an item are to be included in the First Article report. If the drawing refers to a lower level drawing whose characteristics were likewise generated by the Supplier, a First Article shall also be submitted for that part. All samples and reports shall be sent to Amphenol Procurement Quality. Production shall not start until written approval is received from Amphenol Procurement Quality.

11. **Records:** Supplier shall retain required records in good condition for at least ten (10) years unless otherwise specified. Records shall be provided to Amphenol upon request. Supplier is advised that the recording of false or fraudulent statements or entries in any record created for Amphenol may be punished as a felony under statutes including U.S. federal law, Title 18, Chapter 47.

12. **Sub-tier Suppliers:** Suppliers shall flow down to sub-tier suppliers all applicable requirements including Critical Items and Key Characteristics when defined.

Sub-tier suppliers shall not change any drawing, process, material, or procedure without prior written approval by AAO, if such drawing, process, material, or procedures were originally approved by AAO. Suppliers are responsible for relaying this information to AAO.

13. **Perishable Materials:** Suppliers shall ensure that perishable materials, if employed, are not used beyond their recommended expiration dates. Suppliers shall also furnish date of manufacture for each lot as applicable.

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14. Soldering Requirements: All solder alloys used shall be in accordance with IPC J-STD-006. All terminations shall meet the soldering requirements of IPC J-STD-002. Any solder containing tin (Sn) shall contain at least 3% lead (Pb) unless specifically required by the Amphenol Purchase Order requirements.
15. ITAR Restrictions: Orders relayed may involve information and/or items that are subject to the International Traffic in Arm Regulations (ITAR) and may not be released to "Foreign Persons" inside or outside the United States of America without the proper export authority.
16. Ozone Depleting Substances (ODS): Class I or II Ozone Depleting Substances, as listed in 40 CFR Part 82 Appendices A & B, are prohibited from directly contacting Amphenol parts in the manufacturing process and shall not be contained in products sold to Amphenol. See below websites for further details:
Appendix A (Class I Substances)
<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=db95bdbde021c44250a8cee903e90b0f&rqn=div9&view=text&node=40:17.0.1.1.2.1.1.23.2&idno=40>

Appendix B (Class II Substances)
<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=db95bdbde021c44250a8cee903e90b0f&rqn=div9&view=text&node=40:17.0.1.1.2.1.1.23.3&idno=40>
17. Mercury Prohibition: The intentional incorporation of mercury (Hg) or mercury containing compounds exceeding 0.001% by weight per homogenous material into products sold to Amphenol is prohibited.
18. Nonconforming Material: Supplier shall not ship Nonconforming material without prior authorization, Suppliers need to submit a deviation request form and have it approved, and returned prior to shipping non-conforming material. This deviation also need to have a copy shipped with the product supplied to AAO (Form QDF PR459). If supplier determines Nonconforming material has shipped, they must notify Amphenol Co. within 48 hours of finding the non-conformance. A Supplier cannot disposition Nonconforming material for repair or 'use as is' without authorization.
19. FOD Control: Suppliers shall maintain a FOD control program and ensure Foreign Objects and subsequent Foreign Object Damage (FOD) is eliminated from all parts prior to shipment. In addition, work areas shall be controlled in such a manner as to preclude the risk of FOD incidents. This program should meet the requirements of AS9146. Suppliers are responsible for flow down of these requirements to their sub-tier suppliers to ensure FOD-free products.
20. Counterfeit Materials: In accordance with AS5553 and AS6174, the seller will ensure that only new and authentic materials are used in products delivered to Amphenol. The seller may only purchase parts directly from the Original Component Manufactures (OCMs), OCM franchised distributors, or authorized aftermarket manufactures. Use of product that was not provided by these sources is not authorized by Amphenol. This requirement must be flowed down to all sub-tier suppliers as well. As deemed necessary, suppliers are subject to an on-site AAO audit to verify compliance to AS5553 and AS6174.
21. Toxic Substances Control Act (TSCA):
Seller shall ensure for every chemical substance or mixture or applicable article supplied:
 - 1) The chemical constituent(s) of the product(s) is listed by the Toxic Substances Control Act (TSCA) Inventory and is not offered for entry in violation of TSCA or any applicable rule or order under TSCA; or
 - 2) The chemical constituent(s) of the product(s) is not subject to TSCA
22. Bar Code Packaging Requirements – AAO requires Bar Code labels for the Purchase Order Number, Part Number and Quantity be applied to each box or package shipped. Bar Codes shall be based on Mil-Std-129 pg. 27 requirements for font and text.

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23. PPAP (Production Part Approval Process) – AAO requires PPAP methods be employed at your facility. Completed PPAP data shall be submitted to AAO Procurement QA for approval. Specifically the following elements are required:
- Process Flow Diagrams
 - Process FMEA (failure mode effects analysis)
 - Process Control Plan
 - Dimensional results (submitted at FAI)
 - Material, performance and test results
 - Sample product (submitted at FAI)
- Note: Final Inspection shall be performed on all purchased assembled products such as completed connectors, flex assemblies and assembled contacts per print. A final inspection report shall be provided to AAO along with the PPAP report.
24. Lot Control Requirements – Supplier shall maintain lot control integrity for all AAO supplied components for value added products. Amphenol Aerospace Stock Requisition sheets which include pertinent data part number(s) and lot control number(s) shall be kept with the lot and sent back to AAO with the finished product. AAO will scan and maintain as a record for 10 years.
25. Final Inspection shall be performed on all purchased assembled products such as completed connectors, flex assemblies and assembled contacts per print. A final inspection report shall be provided to AAO along with the PPAP report.
26. AAO has the authority to return all NCMR's 48 hours after their creation. NCMR's can be returned without the receipt of an RMA, etc. from the vendor.
27. All suppliers shall have the capability to inspect product to a minimum of 10X magnification.
28. Corrective actions can be issued by Amphenol Aerospace for quality issues, on-time delivery issues, late responses, etc. All corrective actions need to be responded to within 10 working days of issuance. Any SCARs not answered within 30 days will negatively affect the overall quality rating of the supplier. Containment of any product affected by a return, or SCAR needs to be completed within 48 hours of issuance. Documented evidence of the containment should be sent to the issuer of the above noted document.