Document Revision Log

TITLE: Binghamton Supplier Quality Requirements Manual	DOC. NUMBER: 8.003.583-BNG

Rev:	Date:	Description:	Changed By:
A	03-23-12	New Document	S. Asante and J. Vellenga
B	11-26-12	Document rewrite, and deviation form updated	S. Asante
C	11-06-13	Fixed Rev level on Supplier Action Report Form. Updated Score card in Exhibit B to new format.	R. Lerner
D	05/19/2014	Updated Score card in Exhibit B to new format.	R. Lerner
E	12/12/2014	Fixed instructions for filling out Exhibit A Updates to section 9 'Supplier Performance'. Updated Scorecard (Exhibit B) to reflect new targets.	R. Lerner
F	09/12/2016	Removed items that no longer apply Clarified section 9.1 Performance Measurements and Reporting Added section 11 Counterfeit Mitigation Requirements	R. Lerner
G	6/06/2017	Clarified section 6.3 – revision listing and 100% requirement. Section 6.8 – identified that special processes may be indicated on drawing or PO.	R. Lerner
H	10/16/2017	Added Personal Responsibility section 6.16. Added additional requirements to Counterfeit - section 11.1.	R. Lerner

Rev:	Date:	Description:	Changed By:
J	12/05/2018	Remove forms from document, add section 12.0 – FOD Prevention, and add section 13.0 - Requirements for ROHS and REACH. Change AMETEK Aerospace to AMETEK PDS all sections. Added Reference section and appropriate References in section 2. Fixed form titles.	R. Lerner
K	5/02/2019	Updated Form2 – added line for AMETEK verification sign-off.	R. Lerner
L	1/04/2022	Section 9.1 – Removed reference to quarterly scorecards and replaced with statement that performance evals will be sent out as deemed necessary. Also documented expected OTD and Quality targets.	R. Lerner
M	4/18/2024	Removed section 3.0 and added some wording clarifications in other sections. Modified section 5.3 concerning inspection of characteristics. Added additional requirements for notification to section 5.10. Changed title of section 5.13 to include facilities access. Added right of access to this section. Change to section 5.14 to explicitly state what is required for ESD sensitive parts. Added Section 10.3 for Electronic Component Distributors requiring transfer of OCM's information to sub-packaging labeling.	R. Lerner

1.0 PURPOSE

This document defines and communicates AMETEK Power and Data Systems (PDS) expectations, and requirements of suppliers. The supplier's compliance with and understanding of these conditions is an essential step towards fulfilling AMETEK PDS's 100% quality commitments to its customers.

2.0 APPLICABILITY

The requirements of this document apply as mandatory conditions of acceptance of all AMETEK PDS purchase orders (PO's).

References:

8.003.583-BNG.FORM1. (Deviation Request Form)

8.003.583-BNG.FORM2. (Supplier Corrective Action Report)

8.002.583-BNG – 'Binghamton Selection and Control of Suppliers'

Supplier Addendum to AMETEK 03.MA.05 for Electrical Component Suppliers.

SAE AS5553A - 'Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition'

AS9102 – 'Aerospace First Article Inspection Requirement'

ANSI/ESD S20.20 – 'Electrostatic Discharge'

3.0 AMETEK PDS'S SUPPLIER QUALITY OBJECTIVES

- Achieve 100% conformance with all PO's and referenced requirements.
- Promote long-term partnerships with all our qualified suppliers.
- Ensure that purchased material quality and reliability levels are maintained and improved proactively.
- Minimize and ultimately eliminate the need for AMETEK PDS Incoming Inspection through supplier control and certification.

4.0 AMETEK PDS'S SUPPLIER MANAGEMENT PHILOSPHY

AMETEK PDS's Procurement directives are focused on selecting and developing suppliers who are committed to the following key concepts:

4.1 Total Quality Management (TQM)

A philosophy dedicated to making quality everyone's job, in an environment where everyone is both a supplier and a customer. Quality must be designed and built into every step of the manufacturing process, not inspected in.

4.2 Quality systems must be dedicated to defect prevention (e.g. use of Statistical Process Control), not defect detection. Problem solving must be based on root cause analysis and corrective action. Adding more inspection only increases overall customer costs.

4.3 The responsibility for purchased product quality lies with both AMETEK PDS and the supplier.

5.0 SUPPLIER RESPONSIBLITIES

5.1 ORGANIZATION

The supplier must have a documented management function with well-defined responsibility, authority and freedom to perform quality functions: identify, evaluate and solve quality problems.

5.2 Quality System

The Supplier must have a documented quality system to ensure consistent, traceable compliance with AMETEK PDS's requirements. When required by purchase order, Suppliers are required to meet the requirements of AS 9100 or ISO.

5.3 Control of Documents

The supplier will review all requirements specified on AMETEK PDS POs, engineering drawings and referenced specifications at the earliest practical phase to ensure that compliance is achieved.

The supplier must have a system that assures the product being manufactured meets the configuration required by AMETEK PDS's purchase order. The supplier must consult the appropriate AMETEK PDS drawing or specification revision listing to determine the required revision level for raw materials and/or specification documents that are to be used for the build. Obsolete documentation must be purged.

Supplier's internal inspection and manufacturing control plans must reflect the revision level of the current purchase order. AMETEK PDS will issue an updated specification listing as needed.

In the event of conflict between drawing and/or PO requirements, the supplier must contact their AMETEK PDS Buyer to secure proper Interpretation and appropriate documented authorization to proceed.

Suppliers are required to have data on file showing either 100% inspection of characteristics, or other data showing characteristics are met 100% of the time. An AQL plan may be used with sufficient data to support.

5.4 Calibration

Suppliers must have a system to insure measuring and test equipment is calibrated at intervals appropriate for the device, its use and stability. This system must comply with AS 9100 and or ISO

5.5 Statistical Process Control

SPC is a means of assuring that a process is stable and capable of consistently meeting quality and delivery requirements at the lowest possible cost. Suppliers are encouraged to use SPC where applicable, useful or when required by AMETEK PDS.

5.6 Tooling Approvals

Suppliers are required to perform first article inspections to AS9102 on all parts produced by AMETEK PDS-purchased or AMETEK PDS-supplied tooling. The purpose is to determine, prior to starting production, that the part meets all drawing requirements and that correlation between AMETEK PDS and the supplier's inspection is achievable.

To recover tooling costs, when authorized by Purchase Order, a minimum of one (1) sample must be submitted with a first article inspection report. Verification of conformance may be conducted at AMETEK PDS. Suppliers will be notified in writing of sample inspection disposition.

All samples and inspection reports must be representative of that produced from production tooling which can be duplicated on future shipments. First article reports (AS 9102 form) must be resubmitted per the requirements of Q.C. Code letter "F" on the applicable purchase order on a maintenance basis.

5.7 Sub-tier Supplier Control

Suppliers are responsible for control of subcontracted products and processes that are used on AMETEK PDS products. Care must be exercised on raw materials and Special Processes (see paragraph 6.8). Suppliers must have documented evidence that their sub tier sources can perform or provide the product and/or service specified. Suppliers must “flow down" the required AMETEK PDS, industry, or other specifications (and revisions thereto) needed to fulfill AMETEK PDS's drawing requirements.

5.8 Special Processes

Definition: A manufacturing process which causes material to undergo chemical, physical or metallurgical transformation for which normal inspection is not sufficient to evaluate quality. This may include plating, heat treating & nondestructive evaluations (x-ray, magnetic and fluorescent penetrant inspections, etc.)

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AMETEK PDS purchased parts that require special processes have the requirement defined on the drawing and/or PO, and it is the responsibility of the contracted supplier(s) to ensure that the special process is performed on the part – per proper specifications. All orders are to be accompanied by a certificate of conformance that states that the special process was performed on the said part. The "Supplementary Procurement Terms and Conditions" portion of the Purchase Order reinforces this policy.

5.9 Records

Suppliers are expected to maintain accessible files, traceable to AMETEK PDS's PO. and/or part numbers, which contain:

- Inspection and test reports for each shipment.
- Engineering drawings & specifications, at correct engineering change(revision) level.
- Process capability and process control data if used for substantiation.

Any deviations authorized by AMETEK PDS.

- Certification data for sub-tier contracted items and raw materials.
- Records, unless specified by a customer, will be maintained for a minimum of 7 years after shipment date. Suppliers should contact their respective buyers for further guidance if need be.

5.10 Notification of Change

Suppliers are responsible for notifying AMETEK PDS Purchasing of any changes affecting product quality, performance, reliability, delivery, and workmanship. These requirements apply to both work in process and to any shipment previously made to AMETEK PDS for which a determination has been made that nonconforming material may have been shipped.

Suppliers should also notify AMETEK PDS if there is change of ownership, location of production, or key personnel.

No revisions to design, materials or specifications are permitted without prior documented approval from AMETEK PDS.

5.11 Material Identification

All parts will be marked per the methods, nomenclature and specifications referenced on AMETEK PDS's Engineering drawings. Where required, location of marking will be specified.

5.12 Supplier Data Requirements

Data and certification requirements are transmitted primarily by the Q.C. Code letters on the PO. Supplementary data may be required by line items on the body of the PO or per drawing notes. Data is required with each shipment.

The minimum requirement is a Certificate of Conformance.

Data must be enclosed with the material, in the #1 container.
Failure to submit required data will result in a lot rejection which will affect a supplier's performance rating.

5.13 Source Inspection and Facilities Access

When "Inspection at source" is required, AMETEK PDS expects suppliers to comply and provide reasonable notice to arrange for on-site inspection in time to support delivery requirements.
This requirement also applies to Government Source Inspection (Q.C. Code "G"). Refer to Supplementary Procurement Terms and Conditions for complete requirements and definition.

Suppliers are expected to allow access, with reasonable notice, by AMETEK PDS employees, AMETEK PDS Customers or Regulatory authorities to applicable areas in their facility and applicable documented information.

5.14 Packaging & Preservation

If packaging instructions are not specified, the supplier must insure that good commercial packaging techniques are followed. Improper packaging or lack of identification will be cause for rejection at AMETEK PDS Receiving.

Material subject to corrosion must be properly protected by rust preventive measures.

Parts subject to Electro-Static Discharge (ESD) damage must be handled, packaged, and marked per ANSI/ESD S20.20 or equivalent industry standard. All ESD Sensitive Parts are required to have ESD Metallic Static Shielding Packaging for their outer packaging prior to being boxed. ESD pink antistatic polyester bags do not meet the static shielding requirement for outer packaging. Any ESD Sensitive part(s) can be packaged in ESD Dissipative Tubes, Trays, or foam inside the outer static shielding packaging. Any ESD Sensitive Part(s), such as ICs or Transistors but not limited to; should not be sent in a loose piece packaging i.e. loose in a bag without approval from AMETEK.

5.15 Supplier Liability

AMETEK PDS operates on the premise that the supplier has effectively screened and removed all defective parts from each shipment. A single defect found in the lot will be cause rejection and may, at AMETEK PDS's discretion, result in the return of the entire quantity(lot) without further inspection.

A shipment accepted by AMETEK PDS may prove to be defective at a later point in the manufacturing cycle. The supplier is liable for parts supplied to AMETEK PDS throughout AMETEK PDS's storage, manufacturing and customer's use, except for deterioration due to improper handling or expired shelf life.

5.16 Personal Responsibility

Suppliers are expected to ensure that their employees are aware of the following:

- Their contribution to product conformity.
- Their contribution to product safety.
- The importance of ethical behavior – as an example – ensuring that accepted product meets all specified requirements before acceptance sign-off.

6.0 Inspection at AMETEK PDS

AMETEK PDS employs a variety of inspection and sampling methods for purchased materials. These include: 100% screening, sampling, inspection, and periodic skip lot inspection.

The level of Inspection is based on historical performance, product complexity and criticality of product end use. Squeglia' s z=0 acceptance plan is used at incoming inspection.
AMETEK PDS's primary disposition is to return all rejected lots to the supplier. The decision to sort, repair or otherwise use any nonconforming material is AMETEK PDS's sole prerogative. Any alternate dispositions will be counted as rejected lots in supplier performance ratings.

7.0 Nonconformance Requests

AMETEK PDS expects its suppliers to manufacture conforming parts. Deviation requests made to AMETEK PDS's must be made through the AMETEK PDS Purchasing or Quality Engineering departments using AMETEK PDS Deviation Request Form (8.003.583-BNG.Form1), an example of this form is shown in Exhibit A.

The top portion of the Deviation Request form must be completely filled out by the supplier (through 'Deviation Description').

No requests will be considered without adequate cause and corrective action. Shipments to AMETEK PDS are not permitted without approval of requests. AMETEK PDS will make reasonable efforts to grant deviations but is under no obligation to do so.

8.0 Supplier Performance

8.1 Performance Measurements and Reporting

AMETEK PDS conducts an evaluation of the supplier's performance from both Quality and procurement viewpoints.
Suppliers are monitored for both Quality, Pricing and On Time Delivery (OTD). Suppliers are requested to strive for a target of 97% On Time Delivery and a maximum Quality return level of 7500 PPM (by piece count).
As deemed appropriate and necessary by SQE and the Materials team, suppliers may receive OTD and Quality performance Scorecards. Suppliers are requested to take any action to address any deficiencies reported in the Scorecards.

8.2 Supplier Corrective Actions

A SCAR may be issued when either the results of a single quarter's activities, or through collective trend analysis, result in any of the following conditions:

- A supplier has an unacceptable rating.
- A Supplier has provided repetitive defects for the same part number.
- There is an unfavorable trend allocated to a supplier.
- The discrepancy is severe in nature.

A SCAR response is expected from the supplier within 2 weeks of receipt of the SCAR. An Example of AMETEK PDS Supplier Corrective Action Report Form (8.003.583-BNG.Form2) is in Exhibit B.

8.3 Supplier Evaluations

When necessary, a quality survey will be performed at the supplier's facility by AMETEK PDS's Quality Engineering and Purchasing personnel. Typically, this is done for prospective suppliers prior to a PO award, and afterwards at periodic intervals. AMETEK PDS, customer representatives, Government, and other regulatory agencies (i.e., Federal Aviation Administration and Department of Defense) reserve the right to audit supplier, and sub-tier manufacturing processes and test procedures.

The purpose of the surveys will be to evaluate the supplier's manufacturing processes and quality system capabilities.
Suppliers may be disapproved by Quality if the supplier facilities, quality systems, and or attitude are judged inadequate. All new business activity is stopped, no PO can be placed, **unless authorized by management.**

9.0 Supplier Contacts

Suppliers should feel free to contact or visit AMETEK PDS at any time to discuss and resolve problems that may arise. All visits must be coordinated with AMETEK PDS's Purchasing Department. Technical discussions may be arranged with AMETEK PDS's Quality Engineering group.

10.0 Counterfeit Mitigation Requirements

10.1 Requirements for all AMETEK PDS Suppliers

All AMETEK PDS suppliers are required to take appropriate steps to prevent use of Counterfeit parts. Suppliers shall have in place (when appropriate to supplier's business):

- Training of appropriate persons in awareness and prevention of counterfeit parts.
- A parts obsolescence program.
- Proper controls for acquiring externally provided products from original or authorized manufacturers, authorized distributors, or other approved sources.
- Traceability of parts and components to their original or authorized manufacturer.
- Methods for verification and testing to detect counterfeit parts.
- Process for monitoring of counterfeit parts reporting from external sources.

- Process for quarantine and reporting of suspect or detected counterfeit parts.

10.2 Requirements specific for AMETEK PDS suppliers of EEE (Electronic, Electrical and Electro-Mechanical) Parts

AMETEK PDS requires all suppliers of EEE (Electronic, Electrical, and Electro-Mechanical parts) to conform to SAE AS5553A - Aerospace Standard 'Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition, as appropriate.
See http://www.ametekaerodefense.com/suppliers.cfm, and proceed to the Binghamton Suppliers Requirements page for additional information under the item: Supplier Addendum to AMETEK 03.MA.05 for Electrical Component Suppliers.

10.3 For Electronic Components Distributors

When repackaging electronic components from the Original Component Manufacturers packaging to sub-packaging for AMETEK, all information from the OCM's labeling, must be transferred to the new sub-packaging, including date code, lot code, and MSL level (if available).

11.0 FOD Prevention

All AMETEK PDS suppliers are required to implement a FOD Prevention program that conforms with AS9146 as appropriate to their product.

12.0 ROHS and REACH requirements

All AMETEK PDS suppliers are required to comply to REACH and ROHS requirements if called out on the AMETEK drawing.

Exhibit A - Sample of AMETEK PDS Deviation Request Form

TO: QUALITY /MANUFACTURING ENGINEERING

FROM: _____ _____

SUPPLIER DATE

PART NAME /NUMBER _____ PURCHASE ORDER # & QTY _____

ITEM DWG _____ REV._____

DEVIATION DESCRIPTION: _____

_____

_____

RECOMMENDED DISPOSITION BY AMETEK: _____

_____

_____

_____

_____

TYPE OF APPROVAL:

____MRB ____ECN ____ ME EVALUATION ____ OTHER ____ REPAIR

___DISAPPROVE: _____ _____

Quality Engineer Mfg Engineer

8.003.583-BNG.FORM1

SAMPLE

Exhibit B - Sample of AMETEK PDS Supplier Corrective Action Report Form

Supplier Corrective Action Report

To be completed by AMETEK PDS:

1. SCAR Number:
2. Supplier Name:
3. Supplier Code:
4. Type of Request:
5. Date Issued:
6. Issued By:
7. Issued To:
8. Date Due:
9. Part Number:
10. Purchase Order:
11. Quantity:
12. Reported Discrepancy:

To be completed by Supplier:

13. Supplier Confirmed Discrepancy and Root Cause:

14. Supplier Containment Action(s):

15. Supplier Corrective Action(s):

16. Supplier Verification or Validation of Corrective Action Effectiveness
(Document plan and send update within 15 days of SCAR submittal)

AMETEK Review:

Accepted By:

Rejected By: Reason

Date Returned to Supplier: Returned by:

Verification Closure (sign and date):

8.003.583-BNG.FORM2

SAMPLE