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1.0 GENERAL REQUIREMENTS

1.1 PREFACE

The requirements in this manual are applicable when invoked by ArmorWorks' Purchase Orders. It is mandatory to use this manual when performing Contract Reviews and Quality Planning. Sections 1–3 shall be complied with in accordance with the purchase order flow down.

If a Supplier is working to a Purchase Order which pre-dates the current revision of this document, the Supplier may request authorization to work to the current revision by submitting a Variance Request using form QA-4040.

1.2 APPLICABILITY

The ArmorWorks Purchase Order is the official binding contract. In the event of any inconsistency or conflict between the provisions of an order, precedence shall be given in the following order:

- 1) ArmorWorks' Purchase Order and any purchase descriptions and specifications therein;
- 2) ArmorWorks' drawing;
- 3) Specifications referenced in the ArmorWork's drawing;
- 4) Purchase Order Terms and Conditions.

Supplemental Purchase Order Conditions (SPOCs) are specified on the Purchase Order by group (e.g., SPOC 001, 002, etc. See Section 3.0), by specific SPOC number(s), and/or by text. If conflicts between flow down documents and the Purchase Order are detected, the Supplier shall immediately notify the ArmorWorks Buyer.

Handwritten, lined-out or initialed changes to purchase orders are not allowed. Handwritten, lined-out or initialed changes to engineering drawings/specification or technical data are not allowed, except where:

- provided for by ArmorWorks' procedures; and,
- signed by an authorized ArmorWorks agent.

Verbal and/or email authorizations are not permitted.

1.2.1 SUBCONTRACTING POLICY

ArmorWorks suppliers shall ensure flow down to, and compliance with, all applicable Purchase Order and Engineering requirements to their sub-tier suppliers, including approved Special Process providers.

Purchase Order flow down to special processing providers must contain the following as a minimum:

- Special Processes to be performed and the applicable specification(s), revision letter(s) including the type, class, or methods and testing that are required by drawing or specification.
- Any special drawing instructions/notes, as applicable; such as inspection class, inspection grade and inspection acceptance requirements, or special handling requirements not otherwise stated, etc.
- Fixed / Frozen process (e.g., PPAP) revision level and approval date. If not provided on the ArmorWorks purchase order, contact the ArmorWorks buyer for proper information to flow down.

1.3 QUALITY REQUIREMENTS

ArmorWorks' quality requirement is summarized in the following statement: All features must comply 100% to specifications for all parts produced and shipped. If a Supplier's processes are not capable of meeting 100% yield it is ArmorWorks's expectation that all suppliers shall pursue measurable continuous quality and delivery improvements.

ArmorWorks defines our minimum performance expectation measured in conventional ways like Parts per Million (PPM) for quality and Percent On Time To Requirements (OTTR) on a supplier level as well as on a part number level.

When a supplier does not meet these minimum performance levels, ArmorWorks reserves the right to require the supplier to engage in an aggressive improvement project – lead by the supplier’s leadership as well as designated ArmorWorks’ personnel or outside resources. These projects will be focused on improving the supplier’s Quality Management Systems to attain sustainable achievement of minimum performance expectations.

ArmorWork’s minimum performance expectation is:

Quality – 10,000 PPM or lower based on a three Month Moving Average (3 MMA)

Delivery - 90 % On-Time to Requirements (OTTR).

1.4 AUDIT RIGHTS RESERVED / RIGHT OF ENTRY

ArmorWorks, ArmorWork’s customers, and Regulatory Authorities reserve the right to perform audits and/or inspections at the Supplier’s and/or supplier’s subcontractor’s facility on the manufactured parts. Supplier material, records, process and routing sheets, manufacturing, and test and inspection facilities are subject to review by ArmorWorks and/or ArmorWorks’ customers (Commercial, designated Government representatives, Regulatory authorities). When on-site verification of Contract / Purchase order conformance is required, the supplier shall provide the equipment, facilities, and personnel necessary for the ArmorWorks representatives to verify compliance.

1.5 CHANGES IN QUALITY SYSTEM, FACILITIES, MANAGEMENT OR OWNERSHIP

Suppliers shall immediately notify the ArmorWorks Buyer, the ArmorWorks Quality Assurance Manager, and the ArmorWorks Contracts Manager of changes to their Quality System, management or ownership. Changes requiring notification include but are not limited to:

- Change in location of facilities or manufacturing equipment. Notification must be prior to relocation and with adequate time (minimum 90 days) for hardware, system, and process re-qualification.
- Change in ownership, name changes, or change in senior company management
- Change in quality leadership, system or controlled processes certification status, including suspensions or disapprovals
- Change in holder of design authority or change in location of the design office (change of CAGE code or NSCM)

Supplier notifications shall contain the following supplier information as a minimum:

- Supplier ID/DUNS number
- Old data and new data (i.e. if address change, list the prior address and the new address)
- Name of supplier quality contact
- Phone number of supplier quality contact
- eMail address of supplier quality contact

1.6 LANGUAGE REQUIREMENTS

All quality records, data or correspondence to ArmorWorks are required to be in the English language. The Supplier shall maintain an English Language translation of its Quality Manual. Upon request, all supplier data related to furnished product must be translated to English and made available. If the supplier does not perform this service, translation fees will be debited to the Supplier.

1.7 CONFIGURATION MANAGEMENT

The Supplier shall ensure that the current configuration of all drawings, specifications, and instructions required by the Contract / Purchase Order, as well as authorized changes, are used for manufacturing, inspecting, and testing. Current revisions of ArmorWorks detail drawings and specifications may be obtained by contacting the ArmorWorks buyer.

1.8 NOTIFICATION OF DESIGN AND MANUFACTURING CHANGES

Suppliers with design authority are required to notify ArmorWorks promptly, in writing, of any changes of fit, form or function, or safety of product and obtain approval prior to manufacture and delivery. Supplier shall submit proposed changes to the Buyer including but not limited to: process – material – design – software.

1.9 SOURCE OF SUPPLY

When the source of supply is specified on the ArmorWorks drawing / technical data in any way, only those sources listed shall be used. Use of any alternate sources must be approved by ArmorWorks and added to the drawing/technical data before use.

1.10 QUALITY RECORDS

1.10.1 ACCESS TO RECORDS

ArmorWorks reserves the right to access records at the PO holder, or its sub-tiers involved in the manufacture of ArmorWorks' product. The Supplier shall make the records available within 48 hours, or 2 business days, of the request for access.

1.10.2 RECORDS STORAGE

Records must be stored in an area which meets all local Fire and Life Safety Codes that prevents loss, damage or deterioration. All data stored by electronic means shall be secure with back- up procedures, and audited to verify the integrity of the data.

1.10.3 DISPOSITION OF RECORDS

The supplier shall contact the ArmorWorks Buyer for disposition of records upon termination of business activity.

1.10.4 CORRECTIONS

Changes or corrections to records, regardless of the media, shall be made as follows: draw a single line through the old data, enter the correct data, date, and apply stamp or initials or signature of individual making the correction. No erasures, covering, or "white-out" allowed.

1.10.5 RECORD RETENTION

All Quality Records, including radiographic film, shall be retained for seven years, beginning with the completion of the contract. Quality Records shall include all documents necessary to show compliance of product, processes, and of the Quality Management System to ArmorWorks requirements.

1.11 PROHIBITED PRACTICES

The following acts or practices are prohibited:

- Unauthorized Repair - Repairs (by welding, brazing, the use of composites, adhesives, etc.) of parts damaged or found faulty in the fabrication process; repairing holes in castings, forgings or other materials by plugging or bushing without authorization from ArmorWorks Engineering.
- Unauthorized Processing - Addition, revision, or deletion of thermal, chemical, or electrochemical processes in manufacturing when processes are subject to specification control by ArmorWorks (i.e., defined by the Engineering drawing, specification invoked on the drawing, or specific Purchase Order requirement).
- Improper Material Submittal - Submission of material having known defects/problems and/or incomplete or altered documentation to ArmorWorks without notification.
- Improper Material Re-submittal - Resubmission of material to ArmorWorks without material being clearly identified as resubmitted material.
- Unauthorized Material and Information Transfer – No supplier shall buy, sell, trade, or transfer ArmorWorks owned/supplied drawings, data, material, parts, devices, assemblies or end equipment for purposes other than the performance of ArmorWorks business, without prior written approval.
- Reclaimed Material – No supplier shall use reclaimed material without prior written approval from ArmorWorks Engineering.
- AWE Supplied Material – Suppliers are prohibited from “replacing” ArmorWorks supplied materials without ArmorWorks Quality Assurance validation and written authorization (i.e. Purchase Order revision) prior to shipment.

1.12 GENERAL QUALITY SYSTEM REQUIREMENTS

Suppliers and supplier sub-tiers providing product, are responsible for maintaining Quality Systems that are compliant to applicable ArmorWorks Quality System Requirements. Suppliers shall be third-party registered and receive periodic system audits, or be subject to periodic compliance audits by ArmorWorks. Suppliers assume the cost of systems audits. ArmorWork's preferred Quality Systems levels are as follows:

- **Manufacturing with Design Authority:** ISO 9001, or AS/EN/JISQ 9100; design must be included in scope of registration, and suppliers may not exclude design portions of the Standard.
- **Manufacturing without Design Authority / Special Processes:** ISO 9001 or AS/EN/JISQ 9100
- **Special Processors (non-manufacturing):** ISO 9001, AS9003 or satisfactory audit to Nadcap (AC7004)
- **Materials Laboratories and NDT Laboratories:** ISO 17025, or AS9003, or satisfactory audit to Nadcap (AC7004)
- **Distribution and Brokers:** ISO 9001 or AS/EN/JISQ 9120
- **Calibration Laboratories:** ISO 17025
- **Software Suppliers:** ISO 9001, or AS/EN/JISQ 9100 and AS9115
- **General / Non-Product Suppliers:** no quality system approval required.

Alternate Quality System standards which do not meet the above requirements must be approved by ArmorWorks Quality Assurance Manager (or designee).

The supplier shall provide evidence of a certificate of registration from an organization accredited by a member of international accreditation forum (IAF) to one of the industry standard listed above, or successfully pass a compliance audit conducted by ArmorWorks or ArmorWorks's approved designee.

1.12.1 EVALUATION

ArmorWorks performs periodic evaluations on external suppliers. Failure to provide proof of compliance may result in a Quality System compliance audit being launched at the Supplier's expense.

1.13 CONSIGNED MATERIAL

The Supplier shall not return unused consigned material without authorization from the ArmorWorks Buyer.

1.13.1 NONCONFORMING CONSIGNED MATERIAL

If authorized for return, the material shall be labeled "Return of Consigned Materials, Do Not Route to Stores" on the outside of the shipping container (BARCODE LABELS ARE NOT TO BE USED).

The Supplier shall identify part number and dash number, and the reason for return on the packing slip.

1.14 CRISIS MANAGEMENT

1.14.1 NOTIFICATION

The Supplier must use best efforts to notify ArmorWorks Buyer within 24hrs if they experience an incident, including but not limited to: natural disasters, labor disputes, lockouts, evictions, power or systems failures, hazardous spills, fire, floods, explosions, sabotage, riots, war or other civil disturbances, and voluntary or involuntary compliance with any laws, regulations, or requirements of any government authorities that may impact their ability to make their scheduled shipments to ArmorWorks.

- Supplier must notify ArmorWorks Buyer within 24hrs of receiving notification that any of their critical sub-tiers have experienced an incident, including but not limited to those listed above, that may impact their ability to provide materials or components to the Supplier that are required in the manufacture or assembly of ArmorWorks product.

1.14.3 DISASTER RECOVERY

In the event of a supply interruption, ArmorWorks may engage the Supplier to collaborate on recovery. Supplier is expected to fully support any such engagement until the delivery schedule to ArmorWorks is recovered.

1.15 EMERGING INSPECTION TECHNOLOGY

Any inspection method used to accept ArmorWorks' product must be proven capable and accurate for the intended purpose.

The supplier must maintain formal documentation and/or data as objective evidence to support the capable and accurate determination for that specific application. Suppliers, who propose to use new or emerging technologies for certifying conformance to dimensional or other requirements (white light inspection, laser etc), shall ensure the proposed measurement process is correlated with results from measurement of the product with standard measuring instruments or Coordinate Measuring Machine. Those methods must also be traceable to NIST and AS9100 calibration standards.

2.0 SPECIFICATIONS AND GENERAL INFORMATION

2.1 GENERAL REQUIREMENTS

The applicable revision status of specifications shall be the revision in effect on the date of the Purchase Order, unless otherwise specified.

For Purchase Orders that are open longer than typical manufacturing Lead Times (e.g. Blanket PO's), specification changes that occur after issue of the PO shall be implemented within 60 days.

Parts on existing POs or Long Term Agreements that are processed before the specification change are acceptable unless otherwise specified in the specification revision document.

Material substitutions are not allowed without written approval through ArmorWorks Purchasing.

2.2 SPECIFICATIONS AND OTHER TECHNICAL DOCUMENTS

2.2.1 TO OBTAIN ARMORWORKS' TECHNICAL DOCUMENTS

When required for order fulfillment, ArmorWorks' technical documents and/or technical documents from ArmorWorks' Customers may be obtained by contacting the appropriate ArmorWorks Buyer.

2.2.2 OTHER SPECIFICATION DOCUMENTS (E.G. INDUSTRY, MILITARY) IDENTIFIED ON ARMORWORKS' PART DRAWINGS.

It is the responsibility of Suppliers to obtain copies of the latest revision of other specifications (e.g., Industry, Military, etc.) identified on ArmorWorks' or ArmorWorks' Customer drawings.

Industry specifications may be purchased through the publishing organization or through "IHS Markit" (global.ihs.com). Military specifications may be downloaded at no cost through "EverySpec" (everyspec.com).

3.0 SPOC GROUPS – SPOC 001 THROUGH SPOC 005

In all cases, contents of SPOC Manual Sections 1.0–General Requirements, and Section 2.0–Specifications and General Information, shall be reviewed and complied with in conjunction with the purchase order flow down of specific Group SPOCs, or individual SPOCs.

| SPOC Group Number | Individual SPOCs Invoked by SPOC Group |
|--|--|
| SPOC 001 MANUFACTURER WITH DESIGN AUTHORITY | Sections 1.0 and 2.0, 100, 110, 120, 130, 135, 150, 160, 165, 170, 180, 190, 290 |
| SPOC 002 MANUFACTURER WITHOUT DESIGN AUTHORITY (may include Specification Control drawings that call out specific dimensions, processing methods, etc.) | Sections 1.0 and 2.0, 100, 110, 120, 130, 135, 140, 150, 160, 165, 170, 180, 190, 290, 295 |
| SPOC 003 STANDARD AND/OR CATALOG HARDWARE (COTS) | Sections 1.0 and 2.0, 100, 110, 150, 160, 165, 180, 190 |
| SPOC 004 SHOP OVERLOAD OR SPOT OPERATIONS | Sections 1.0 and 2.0, 100, 110, 120, 130, 135, 140, 150, 160, 165, 170, 180, 190, 290, 295 |

SPOC 100 – CERTIFICATION OF CONFORMANCE / SHIPPING DECLARATION DOCUMENT / PACKING SLIP REQUIREMENTS

100.1 SCOPE

The Supplier is responsible for maintaining and supplying accurate and legible certification documentation as objective evidence of meeting drawing, specification, technical data, or purchase order requirements.

CERTIFICATION OF CONFORMANCE / SHIPPING DECLARATION DOCUMENT / PACKING SLIP REQUIREMENTS

A Certificate of Conformance (C of C) shall be provided with each shipment. The C of C can be a separate document, or it can be included as part of the shipping declaration/packing slip text. The following tables list the C of C data/information requirements for each group SPOC. The “X” under the SPOC indicates that requirement applies, and shall be included on each C of C from the supplier holding a direct PO from ArmorWorks.

Country of Origin (COO) information may be included on Certificate of Conformance to meet COO requirements defined by General or Supplemental Purchase Order Terms & Conditions.

TABLE OF COC REQUIREMENTS BY SPOC

| Requirement | SPOC 001 | SPOC 002 | SPOC 003 | SPOC 004 | |
|---|-------------|-------------|-------------|-------------|--|
| 1. Supplier Name and Address ¹ | X | X | X | X | |
| 2. Statement that parts conform to the requirements ^{1,2} | X | X | X | X | |
| 3. P.O. and line item number ¹ | X | X | X | X | |
| 4. Original Manufacturer' name and part number (when source of supply is a requirement) ¹ | X | X | X | | |
| 5. Part number and as applicable, part revision and/or BOM revision level ¹ | X | X | X | X | |
| 6. Quantity shipped (listed quantities to be broken out by lot, and also totaled) ¹ | X | X | X | X | |
| 7. Date and identity (hand signature or electronic 'signature') of quality representative or company official | X | X | X | X | |
| 8. Evidence of Source Acceptance or Self Release (when required) ¹ | X | X | | | |
| 9. Reserved | | | | | |
| 10. Supplier work order | | | | | |

SUPPLEMENTAL PURCHASE ORDER CONDITIONS

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|---|---|---|---|---|--|
| 11. Technical data and revision | | | | | |
| 13. When required by drawing or technical data: | | | | | |
| Lot numbers ¹ | X | X | X | X | |
| Serial numbers ¹ | X | X | X | X | |
| Date code ³ | X | X | X | X | |
| 14. MRB (RMA) number, as applicable | X | X | X | X | |
| 15. ArmorWorks shipper number (as applicable for consigned material) ¹ | X | X | | X | |
| 16. Date of shipment ¹ | X | X | X | X | |
| 17. For returned parts, the supplier shall indicate on the COC if parts are reworked or replacements. | X | X | X | X | |

100.3 SHELF LIFE LIMITED AND CONTROLLED STORAGE

The following information shall be included on each C of C for shelf life limited product or material as applicable to the specification.

TABLE OF COC REQUIREMENTS FOR SHELF LIFE ITEMS

| Shelf Life/Controlled Storage Requirements | SPOC 001 | SPOC 002 | SPOC 003 | SPOC 004 | |
|---|-----------------|-----------------|-----------------|-----------------|--|
| 1. Manufacturers name | X | X | X | X | |
| 2. Environmental storage conditions | X | X | X | X | |
| 3. Date of manufacture and/or cure date (month/year or quarter/year) | X | X | X | X | |
| 4. Date of shipment | X | X | X | X | |
| 5. Lot number, or batch number and compound number (as applicable) ^{1,3} | X | X | X | X | |
| 6. Shelf life expiration date (MM/YY) If there is no Expiration Date or Shelf Life required, indicate such (examples include "None", "No Expiration Date", etc.) | X | X | X | X | |



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100.4 CERTIFICATION PACKAGE REQUIREMENTS

The following items, when applicable to the drawing, specifications, technical data or purchase order, shall be maintained, made available and submitted with shipment by the supplier unless otherwise specified on the purchase order. Consult SPOC 150 for additional certification requirements for SPOC 150 products.

NOTE 1: The flammability call out for materials is FMVSS 302 Flammability of Interior Materials and all material must meet this spec.

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TABLE OF CERTIFICATION PACKAGE REQUIREMENTS BY SPOC

| Certification Package Requirement | SPOC 001 | SPOC 002 | SPOC 003 | SPOC 004 | |
|--|----------|----------|----------|----------|--|
| 1. Fixed process certification | X | X | | | |
| 2. Material certification ⁴ | X | X | X | | |
| 3. Controlled process certification ⁴ | X | X | | | |
| 4. Test Reports or Functional Test Data sheets | X | X | X | | |
| 5. FAIR Package | X | X | | | |
| 6. PPAP Package | X | X | | | |
| 7. Inspection results or report | X | X | | | |
| 8. Rework route tag or equivalent | | | | | |
| 9. Teardown or findings report | | | | | |
| 10. ArmorWorks shipper | X | X | | | |
| 11. Manufacturer's Certificate of Conformance ⁵ | X | X | X | | |
| 12. RFV (Request for Variance) per the Armorworks requirement | X | X | X | X | |
| 13. When material is consigned by or purchased from ArmorWorks, the supplier shall retain a copy of the ArmorWorks Shipper or Certificate of Conformance for the material and treat such items as customer supplied material. ¹ | X | X | X | X | |
| 14. Physical and Chemical Analysis certified by an independent laboratory, if applicable ⁴ | X | X | X | X | |

Notes:

1. Required information to be listed on the shipping declaration and/or packing slip, if not part of the C of C.

2. Requirements of the statement of conformance include flowdown from the purchase order. Exact verbiage is supplier option.
3. Each inspection lot must be listed as a separate line item along with evidence of testing to the applicable specification as required. All required documentation shall be completely legible, and reproducible.
4. Certifications shall include name of process source, specifications and revision letters used. The actual physical and chemical process and heat numbers as applicable shall be indicated. Certifications of Conformance (C of C) must clearly state conformance to all specifications in their entirety, including type, class and grade and material hardness values exactly as described from the drawing or BOM note, embedded specifications that contain specific acceptance testing criteria, additional processing requirements, and/or any specific requirements that pertain to hardware approval or acceptance.
5. Applicable to SPOC 003 only when specifically called out in the purchase order text.

100.5 PARTIAL SHIPMENT RELEASE SHEETS

If the shipment contains less than the original quantity of product that was accepted by Source Inspection, then a Partial Shipment Release Sheet shall be provided.

100.6 BULK RAW MATERIALS

Unless otherwise specified, purchased bulk raw material (sheet, strip, plate, wire, rod, bar, tubing, solder, powder, paint, oil, fluids, etc.) shall be supplied to the latest procurement specification issue. Material certified to a previous specification issue and of the proper type, grade, or class called for by the engineering drawing or technical data, may be used until depleted, unless restricted by the superseding specification revision. Certifications for material shall include specification number and revision letter applicable to each lot of material.

100.7 EVIDENCE OF SOURCE APPROVAL

An ArmorWorks Source Acceptance Stamp (or facsimile) shall be placed on the shipping documentation (packing slip and/or C of C) for Purchase orders requiring Source Inspection. A Source Acceptance stamp is independent of the Certificate of Conformance signature requirements. C of C required signature and date should not be placed in the Source Acceptance Stamp area.

The individual performing the Source Inspection is responsible for providing their signature or Stamp Impression and Date. This may be an ArmorWorks approved Source Inspector or it may be a Self Release Approved Supplier representative, whichever is appropriate.

Example of Source Acceptance Stamp:

Armorworks Source Accepted:

Stamp Impression _____

Date _____

A signature is acceptable in lieu of a stamp impression for an Approved Self Release Supplier representative in organizations that do not issue internal employee acceptance stamps and control electronic approval within their Quality Management System.

Note: If applicable, Request for Variance number shall be referenced under the “ArmorWorks Source Accepted” stamp.

Note: If acceptance stamp is too large, it is permissible to write in the stamp number on the stamp Impression line.

100.8 CERTIFICATES OF CONFORMANCE FOR KITS

For materials supplied as a kit, a top level certification of conformance, subject to the documentation requirements above, will be accepted for the entire lot or receipt of kit(s) as long as:

- Manufacturing and procurement traceability and configuration management for every component part in the kit is maintained;
- Associated data such as procurement certificates of conformance, test data, first article inspection reports, etc. are maintained and available upon request.

110.1 SCOPE

Material that departs from drawing or specification requirements shall be identified and controlled to prevent unauthorized use or delivery to ArmorWorks or other designated destinations.

110.2 MATERIAL REVIEW AUTHORITY

The Supplier shall not exercise Material Review authority without written approval by ArmorWorks' Quality Organization. This applies to material that is designed by ArmorWorks or ArmorWorks' Customers and/or designs controlled to ArmorWorks' specifications.

Action shall not be taken on any nonconformance which could affect safety of personnel; adversely affect performance, durability, interchangeability or reliability; materially affect weight; or otherwise result in failure of the end article to perform its intended function. All doubtful cases shall be submitted to ArmorWorks Supplier Quality on form QA-4040, Request for Variance.

ArmorWorks reserves the right to reject the decision of the Supplier's Material Review Board (MRB).

110.3 REQUEST FOR MATERIAL REVIEW ACTION

The Supplier may request consideration for nonconforming material that cannot be reworked to fully conform to drawing or purchase order requirements. Requests for ArmorWorks' Material Review shall be submitted on form QA-4040, Request for Variance.

The form and instructions can be obtained by contacting the ArmorWorks' buyer.

Nonconforming articles shall be retained by the Supplier until the completed, dispositioned and approved Material Review document is returned to the Supplier.

Note: ArmorWorks reserves the right to subtract monies from the purchase order or debit the supplier, for ArmorWorks incurred costs related to supplier responsible RMAs.

110.4 MATERIAL DISCOVERED NONCONFORMING AFTER SHIPMENT

The Supplier shall promptly notify ArmorWorks when nonconforming product has been shipped. The notification shall include part numbers, design activity CAGE code, traceability (lot, serial, manufacturer numbers), ship dates, quantities, and a description of the nonconformance. This applies to any nonconformance that departs from drawing, specifications, aftermarket maintenance technical data or purchase order requirements.

The Supplier shall send written notification, referencing their ArmorWorks-assigned supplier code, to the attention of the ArmorWorks Buyer **and** Supplier Quality Manager.

110.5 CONTAINMENT OF NONCONFORMING MATERIAL

When a nonconformance is discovered by the Supplier, or the Supplier is notified of a discrepancy, the Supplier must take immediate action to determine if the condition exists on any other work-in-process, in Stores at the Supplier's facility, or in prior shipments. Containment action must be taken and documented prior to the next shipment of the part number involved.

Containment activities taken and/or planned shall be communicated to ArmorWorks within 48 hours when formally requested through a Quality notification, RTV disposition or other documented notification/discovery of nonconforming shipment.

Product identified as source inspection accepted shall be re-inspected prior to shipment.

The Supplier shall not wait for the discrepant hardware to be returned to begin an investigation.

110.6 CORRECTIVE ACTION

ArmorWorks reserves the right to issue a Corrective Action Request (CAR) requiring completion of a part number specific investigation to determine causes and to define and implement corrective action(s).

The Supplier is responsible for prompt replies to ArmorWorks' requests for containment and corrective action. Replies may be submitted using ArmorWorks' form QA-4014 Corrective Action Request or an equivalent Supplier form. Suppliers are required to respond to any Corrective Action Request (CAR) or any NCR's with an effective Preventative Action within fifteen (15) working days after receipt. Any extension beyond the response due date must be approved by ArmorWorks Quality.

110.7 RETURN PURCHASE ORDERS FOR REPLACEMENT, REWORKED OR REPAIRED PARTS

Any part being supplied to ArmorWorks on a return purchase order must either fully comply with all drawing requirements or have ArmorWorks' MRB approval on ArmorWorks' form QA-4040 (Request for Variance) for any repairs. Under no circumstances are parts known to be used or overhauled to be sent as a replacement for a new part.

A label shall be affixed to the containers used for returning the material to ArmorWorks. Seller shall ship reworked/repai red/replacement material to ArmorWorks clearly identified as "Reworked Material", "Repaired Material", or "Replacement Material". The "RED TAG" that is affixed to the non-conforming product shall remain on the part when returned to ArmorWorks. Do not mix material rejected on different nonconforming reports (NCR) in return shipments. Do not mix shipments of returning rejected material with new material.

Parts that cannot be reworked to full drawing compliance economically or where repair authorization will not be granted are to be scrapped at the suppliers' facility. Supplier shall contact the ArmorWorks' Purchasing agent prior to scrapping these parts, and ArmorWorks reserves the right to witness the scrapping activity.

110.8 ADDITIONAL FAILURE REPORTING

ArmorWorks reserves the right to request failure analysis on nonconforming hardware submitted from the Supplier.

Failure analysis reports must contain, at a minimum:

- A process map identifying key inputs and outputs of each affected manufacturing step.
- A product/process Failure Mode Effects Analysis (FMEA) tied to the process map identifying the failures or risks associated to the known nonconformance.
- A control plan developed from process map and FMEA identifying how the Supplier shall monitor those known nonconforming characteristics on future lots to prevent re-submittal of nonconforming product.

110.8.1 APPLICABILITY

Upon request, the Supplier shall submit failure analysis, a short term customer escape prevention plan, and a permanent corrective action plan, focusing on the root cause of the discrepancy. Reports shall be submitted within 30 calendar days of request unless otherwise specified.

110.9 COST RECOVERY

The supplier is responsible for cost that ArmorWorks incurred as a result of supplier responsible nonconformance.

SPOC 120 – MONITORING AND MEASURING RESOURCES**120.1 SCOPE**

Unless otherwise specified by the Purchase Order, the supplier shall determine the monitoring and measurement to be undertaken and the monitoring and measuring equipment needed to provide evidence of conformity of product to determined requirements.

120.2 REGISTER OF MONITORING AND MEASURING EQUIPMENT

The Supplier shall maintain a register of the monitoring and measuring equipment and define the process employed for their calibration/verification including details of equipment type, unique identification, location, frequency of checks, check method and acceptance criteria. Records of the results of calibration and verification shall be maintained.

SPOC 130 – CHARACTERISTIC ACCOUNTABILITY

130.1 SCOPE

Suppliers shall have a verifiable methodology for controlling and recording inspection of all design characteristics, as well as a method of validating received components from sub-tiers.

130.2 DETAILED INSPECTION PLANS

A Detail Inspection Plan (DIP) documents the inspection plan for a part to ensure that all engineering drawing characteristics and notes are inspected and/or controlled by appropriate methods. DIPs shall be documented in a manner that meets the intent of the sample ArmorWorks DIP/FAIR form (available from the ArmorWorks Buyer). Optional Field 14 of AS9102 Form 3 may be used to satisfy the DIP requirement as long as the following are recorded:

- Feature classification and accept/reject results for each characteristic, and
- Sample Size.

A DIP may be used as a record, or may reference supporting records such as routings/travelers, receiving or in-process inspection sheets, final test/inspection reports, or statistical data as long as the DIP and/or supporting records is complete, accurate and reproducible. The DIP shall define the manufacturing operation at which the characteristic is inspected and the inspection method used, including the type of tooling/gauging instrumentation used. Characteristics that are subject to change after in-process acceptance (e.g., growth, shrinkage, and/or distortion) must be re-inspected prior to final acceptance.

DIPs which contain characteristics which are “tool controlled” (stampings, laser/water-jet cut parts, parts produced by CNC machining, CNC castings, molded parts, etc.) may contain less than 100% of the ArmorWorks drawing characteristics provided the following conditions are met:

- A number of characteristics shall be selected as “control” dimensions.
- Control dimensions shall be of quantity and type such that inspection of these characteristics will give the supplier enough information (based on tool construction, assembly, process variation, and drawing tolerance) to assure that all other drawing characteristics are in conformance.
- The supplier shall maintain a plan which clearly documents the control dimensions for all design characteristics.
- Software programs used to control production processes shall be validated prior to final release for production and shall be controlled to prevent changes without re-validation.

DIPs are not applicable to Standard, Commercial and Catalog hardware identified as ArmorWorks Vendor Items, Specification Controlled, Industry / commercially available hardware AN, MS or AS and other lower level hardware or details, that if procured directly would be classified as SPOC 003 (Standard and/or Catalog Hardware).

130.3 SAMPLING OF CHARACTERISTICS

After ArmorWorks acceptance of a FAIR or PPAP, the supplier shall inspect all design characteristics per an ArmorWorks specified/approved sampling plan. Suppliers shall not implement any other alternate sampling plans unless provided by specification or with written approval obtained from ArmorWorks Quality Management or Engineering.

Note: All welds shall be inspected 100%; no sampling is allowed.

SPOC 135 – SIGNIFICANT CHARACTERISTICS (SC) MANAGEMENT

Significant characteristics (SCs) defined on drawings or in specifications shall be controlled in accordance with the engineering requirements associated with the indicated feature. Significant characteristics shall be controlled per the requirements of this SPOC. SCs which are listed on the drawing shall comply to both this SPOC and all applicable engineering requirements.

135.1 SIGNIFICANT CHARACTERISTICS

Significant Characteristics (SC) for a part, subassembly or system are those selected geometrical, material properties, functional and/or cosmetic features which are measurable, whose variation control is necessary in meeting Customer requirements and enhancing Customer Satisfaction. The requirements of SAE AS9103 shall be applicable to SCs designated by ArmorWorks.

The Supplier is responsible for SCs not only for the assembly part number called out on the Purchase Order, but also for all detail Armorworks part numbers associated with the assembly.

135.2 DATA SUBMITTAL

Suppliers are required to submit inspection data information for all SCs. SPC/Inspection data is required to be submitted for each shipment. Failure to submit data on parts designated as SC's may result in lot rejections. After ArmorWorks acceptance of a FAIR or PPAP, the supplier shall inspect SC's in accordance with H1331, Zero Acceptance Number Sampling Plans (Fifth Edition), c=0 Sampling Plans/Table 1 (published by American Society of Quality [ASQ]). Suppliers shall not implement any other alternate sampling plans unless written approval is obtained from ArmorWorks Quality Assurance.

Note: All welds shall be inspected 100%; no sampling is allowed.

135.3 SC, ALTERNATE CONTROL METHOD, AND CPK EXEMPTION REQUESTS

Submit requests for substitute SC's or alternate control methods to the ArmorWorks Buyer. Any request to use substitute SC's or alternate control methods must be approved in writing by ArmorWorks Quality.

135.4 DATA ANALYSIS

The Supplier shall review their aggregate SC performance. Unless otherwise specified, all ArmorWorks Significant Characteristics are to be produced by processes that are, at a minimum, stable and in control $Cpk \geq 1.33$. Process capability should be evaluated once the supplier has achieved 20 or more in-control points. The supplier is required to submit all inspection data during the initial collection of the 20 data points.

Suppliers not meeting this SC performance level shall have a Cpk Improvement Plan and track the progress to the plan. These plans should be made available when requested by ArmorWorks representatives.

SPOC 140 – FIRST ARTICLE INSPECTION (FAI) REQUIREMENTS**140.1 SCOPE**

The Supplier holding the ArmorWorks Purchase Order is responsible for assuring completion of the First Article Inspection Report (FAIR) per AS9102 and this SPOC for all ArmorWorks design characteristics generated by the supplier or their sub-tiers.

The FAI requirement applies to each bill of material or parts list item with a ArmorWorks part number that is invoked in the product design, including lower level ArmorWorks detailed drawings identified on top level assembly drawing(s), and each cavity or tool serial number for products whose dimensions are controlled by the tool. FAIRs may be required on Customer or Supplier Drawings that are non ArmorWorks designs or CAGE codes if specified on the Purchase Order.

Suppliers may offer an alternate FAI plan to meet the requirements of this SPOC. Approval to operate under this alternate plan shall only be authorized in writing by ArmorWorks Site Quality management.

ArmorWorks or Customer FAIR approval does not relieve the supplier of the responsibility and/or liability for full compliance with all contract requirements.

The following items are exempt from the requirements of this SPOC:

- Bar and sheet stock.
- Unaltered material consigned by or purchased from ArmorWorks or its authorized distributors.
- ArmorWorks vendor item drawings including specification-controlled drawings.
- While these drawings do not require a detailed FAIR, they shall be documented on form 1 of AS9102 for all assemblies and/or lower level FAIRs where they form part of the top level assembly part number.
- Discrepant hardware either returned to the manufacturing supplier or sent to an alternate supplier and dispositioned rework or repair.
- Nonfunctional hardware (protective covers, shipping hardware, etc.), unless otherwise specified.

140.2 ON-LINE FIRST ARTICLE SYSTEM USAGE

ArmorWorks' will design and implement an on-line First Article system. When functional, Suppliers will be notified. Until the on-line system is available, Suppliers shall verify FAIR status through the ArmorWorks' Supplier Quality representative or ArmorWorks' Buyer.

140.3 PERIODIC/REPEAT FAIS

ArmorWorks reserves the right to exercise the requirement of additional and/or periodic/repeat FAI requirement on a part number basis to assure continued product conformity. Also, ArmorWorks reserves the right to validate multiple production lots if needed to determine overall process capability. FAI requirements are governed by SPOC 140 (Event Tables).

140.4 ADDITIONAL REQUIREMENTS

- Parts defined as data sets shall use Electronic Part Definition (Solid Model) to substantiate the dimensional requirements in accordance with SPOC 165.
- AS9102 Form 3 Block 5: Each characteristic or feature shall have a corresponding designator "ballooned" from the drawing to the AS9102 FAIR form.
- Actual Results for Basic Dimensions: Record the actual measurement or deviation from the basic and reference to the applicable feature control frame's item number. CMM printouts may be used to document the actual measurement or deviation from basic provided that the correlation to feature control frames is identifiable and a printout is retained as part of the FAIR package.

FAIR EVENT TABLE

| Event Description | Fair type due | On-line First Article System | ArmorWorks/ Customer FAIR Review Required | Note |
|---|---------------|------------------------------|---|---|
| New base part number or first time supplied by source | FULL | All | YES | |
| New dash number(s) issued and manufactured. See note | FULL | All | YES | Consult FQE to request partial FAIR per AS9102 if ArmorWorks has approved a Full / Baseline |

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| | | | | |
|---|---|-----|-----|---|
| | | | | FAIR on other dash number(s) |
| The engineering drawing for the part receives a revision letter change and part has an ArmorWorks approved FAIR | PARTIAL | All | YES | |
| Current FAIR conditionally accepted based on Deviation, RMRA, Case Record, MRB or Manufacturing Revision authorizing rework or requirement modification | PARTIAL FAIR due on next lot manufactured or expiration of deviation/waiver | All | YES | |
| A change in process, material, tooling, or inspection method that can potentially affect form, fit, or function | PARTIAL | All | YES | SPOCs 110 and/or Spec. may contain additional requirements |
| A change in manufacturing source or location of manufacturing equipment, including tooling transferred from another Supplier or division of the same supplier | FULL | All | YES | Consult FQE to request partial FAIR per AS9102 |
| One year (1) lapse in production | FULL | All | YES | Reference Table 1 Notes 1, 2, 3 |
| Casting tool reaches Table 2 usage levels | FULL | All | YES | See 140.3 |

NOTES (Table 1):

1. The 1st tier supplier holding the ArmorWorks Purchase Order shall have the responsibility of assuring hardware manufactured internally and/or procured from their suppliers are maintained and are in compliance with the One Year (1) lapse in production requirement in accordance with AS9102, Unless otherwise specified by the ArmorWorks procuring site Quality Department. Evidence of continued manufacturing may be requested by ArmorWorks either at the 1st tier Purchase Order Holders facility or at their sub-tier suppliers as applicable.
2. For Stock / Inventory hardware that was manufactured and placed in inventory/stock at a supplier BEFORE the two year lapse in production (and which was covered by a ArmorWorks-approved FAIR at time of manufacture), a full FAIR with FQE approval will be required for the next lot manufactured.

3. Unless otherwise specified by the ArmorWorks procuring site Quality Department or by specific purchase order text, a 2 year lapse in casting production will require the casting supplier to create a casting level partial FAIR consisting of only design characteristics that are not a direct product of the casting tool/pattern. Some examples are: dimensions which are straightened, added part marking, machining or targeting, gating removal, welding, or other features which were altered in the casting manufacturer's process. The partial casting FAIR Package shall be subject to approval by ArmorWorks FQE or authorized agent as defined elsewhere in SPOC 140.

140.5 APPROVALS

140.5.1 APPROVAL REQUIRED BEFORE HARDWARE RELEASE

When a FAIR is required per Tables 1 or 2, the ArmorWorks Supplier Quality Manager (or an ArmorWorks-delegated authorized agent) is required to review FAIRs prior to hardware release. The Supplier shall notify the ArmorWorks Supplier Quality Manager at least two (2) weeks prior to the anticipated completion of the FAIR to schedule the FAIR review.

140.5.2 COMPONENT AND/OR ASSEMBLY PART NUMBERS THAT REQUIRE CONTROLLED SOURCES DUE TO FIXED PROCESS REQUIREMENTS SHALL BE REVIEWED AT THE SOURCE.

ArmorWorks Purchasing personnel shall flow down this requirement in Purchase Order text. Except as stated above, Quality Engineers normally will not be dispatched to perform FAIR validations of sub-tier-supplied product, however, **ArmorWorks reserves the right to perform on-site sub-tier FAI audits to confirm conformance with part requirements.**

140.6 DOCUMENTATION AND RECORDS

Unless otherwise specified by ArmorWorks, an ArmorWorks approved copy of AS9102 Form 1 shall be retained by the Supplier with all supporting FAI documentation. For FAIRs that do not require ArmorWorks review the supplier-approved AS9102 forms shall be retained. All documents used to support the review and approval of a FAIR are considered part of the FAIR package and shall be retained by the supplier per Quality Record retention requirements defined in Section 1. FAIR records may not be discarded as long as active shipments of the respective product are being made with ties/accountability back to that specific FAIR record.

ArmorWorks reserves the right to request the FAI package at any time. When requested, the Supplier shall ensure that FAI documentation is provided within the time frame listed below:

USA, Canada – 2 business days;

Outside of USA, Canada – 5 business days.

FAIR forms shall be compliant with AS9102 and the AS9102 First Article Instructions. ArmorWorks' preferred AS9102 form can be obtained through the ArmorWorks Buyer. For additional guidance contact the Armor Works' Supplier Quality Manager. All Material & Process fields shall contain applicable revision level, Type, Class, and/or Grade designation.

140.7 LAST ARTICLE INSPECTION REPORT

In cases where a process or product is to be discontinued at a supplier, ArmorWorks may require a Last Article Inspection Report (LAIR) from the current supplier. This report is identical to a First Article Inspection Report (FAIR), and is provided by the supplier for one of their last production runs, or processing runs. The LAIR must be approved just as would a typical AS9102 First Article. Full or partial LAIR depends upon whether part of a production process, part of a set of processing operations, or a complete product is being discontinued. LAIR requirement will be communicated to the supplier via ArmorWorks PO.

SPOC 145 – PRODUCTION PART APPROVAL PROCESS (PPAP) REQUIREMENTS

145.1 SCOPE



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This SPOC defines generic requirements for Production Part Approval. The purpose of PPAP is to determine if all customer engineering design record and specification requirements are properly understood by the Supplier and that the manufacturing process has the capability to produce product consistently meeting these requirements during an actual production run at the quoted production rate. When specifically required by the Purchase Order, the Supplier is responsible for assuring completion of a PPAP submittal.

When specified, PPAP applies to production parts and service parts, regardless of the design authority; PPAP may be required on Customer or Supplier Drawings that are non ArmorWorks designs or CAGE codes if specified on the Purchase Order.

Approval of PPAP by ArmorWorks and/or ArmorWork's Customer does not relieve the supplier of the responsibility and/or liability for full compliance with all contract requirements.

145.2 SITUATIONS REQUIRING PPAP SUBMISSION TO ARMORWORKS

When the ArmorWorks' Purchase Order invokes SPOC 145 (PPAP), Suppliers shall submit for PPAP approval prior to the first production shipment in the following situations unless the requirement is waived by ArmorWorks Quality (see the **PPAP Submission Table** below). Regardless of whether ArmorWorks waives a formal submission, the Supplier shall review and update, as necessary, all applicable forms in the PPAP file to reflect the production process. When a waiver is granted, the Supplier shall maintain a record of the waiver in their PPAP file.

PPAP SUBMISSION TABLE

| Requirement | Clarifications |
|---|---|
| 1. A new part or product (i.e. a specific part, material, or color not previously supplied to the customer) | Submission is required for a new product (initial release) or a previously approved product that has a new or revised product/part number (e.g., suffix) assigned to it. A new part/product or material added to a family may use appropriate PPAP documentation from a previously approved part within the same product family. |
| 2. Correction of a discrepancy on a previously submitted part. | Submission is required to correct any discrepancies on a previously submitted part. A "discrepancy" can be related to: <ul style="list-style-type: none"> • The product performance against the customer requirements • Dimensional or capability issues • Supplier issues • Approval of a part replacing an interim Approval • Testing, including material, performance, or engineering validation issues |
| 3. Engineering change to design records, specifications, or materials for production product/part numbers(s). | Submission is required on any engineering change to the production product/part design record, specifications or materials. |
| Additionally, for Bulk Materials: 4. Process technology new to the organization, not previously used for this product. | |

145.3 SITUATIONS REQUIRING NOTIFICATION OF ARMORWORKS

Once PPAP approval has been requested, the Supplier shall notify the ArmorWorks Buyer and Quality Representative of any planned changes to the design, process, or location of production as defined in the **Customer Notification Table** below. Upon notification and approval of the proposed change by ArmorWorks, and after change implementation, a new PPAP submission is required unless otherwise directed in writing by ArmorWorks Quality.

CUSTOMER NOTIFICATION TABLE

| Changes Requiring Notification (Examples) | Clarifications |
|---|---|
| 1. Use of other construction or material than was used in the previously approved part or product. | For example, other construction as documented on a deviation (permit) or included as a note on the design record and not covered by an engineering change as described in Table 3.2, #3. |
| 2. Production from new or modified tools (except perishable tools), dies, molds patterns, etc. including additional or replacement tooling. | This requirement only applies to tools, which due to their unique form or function, can be expected to influence the integrity of the final product. It is not meant to describe standard tools (new or repaired), such as standard measuring devices, drivers (manual or power), etc. |
| 3. Production following upgrade or rearrangement of existing tooling or equipment. | <p>Upgrade means the reconstruction and/or modification of a tool or machine or to increase the capacity, performance, or change its existing function. This is not meant to be confused with normal maintenance, repair or replacement of parts, etc., for which no change in performance is to be expected and post repair verification methods have been established.</p> <p>Rearrangement is defined as activity that changes the sequence of product/process flow from that documented in the process flow diagram (including the addition of a new process).</p> <p>Minor adjustments of production equipment may be required to meet safety requirements such as, installation of protective covers, elimination of potential ESD risks, etc</p> |
| 4. Production from tooling and equipment transferred to a different plant site or from an additional plant site. | Production process tooling and /or equipment transferred between buildings or facilities at one or more sites. |
| 5. Change of supplier for parts, non- equivalent materials, or services (e.g., heat- treating, plating). | The organization is responsible for approval of supplier provided material and services. |

| | |
|--|--|
| 6. Product produced after the tooling has been inactive for volume production for twelve months or more. | For product that has been produced after tooling has been inactive for twelve months or more: Notification is required when the part has had no change in active purchase order and the existing tooling has been inactive for volume production for twelve months or more. The only exception is when the part has low volume, e.g., service or specialty vehicles. However a customer may specify certain PPAP requirements for service parts. |
| 7. Product and process changes related to components of the production product manufactured internally or manufactured by suppliers. | Any changes, including changes at the suppliers to the organization and their suppliers that affect customer requirements, e.g., fit, form, function, performance, durability |
| 8. Change in test/inspection method - new technique (no effect on acceptance criteria). | For change in test method, the organization should have evidence that the new method has measurement capability equivalent to the old method. |
| <p>Additionally, for bulk materials:</p> <p>9. New source of raw material from new or existing supplier.</p> <p>10. Change in product appearance attributes.</p> | These changes would normally be expected to have an effect on the performance of the product. |

145.4 PPAP SUBMISSION LEVELS

The Supplier shall submit the items and/or records specified in the **PPAP Submission Levels** table below.

Level 3 shall be used as the default level for all submissions unless otherwise specified in writing by the ArmorWorks Buyer or Supplier Quality representative.

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PPAP SUBMISSION LEVELS TABLE

| PPAP Submission Level | Submission Requirements |
|-----------------------|--|
| Level 1 | PSW only submitted to ArmorWorks. |
| Level 2 | PSW with product samples and limited supporting data submitted to ArmorWorks. |
| Level 3 | PSW with product samples and complete supporting data submitted to ArmorWorks. |
| Level 4 | PSW and other requirements as defined by ArmorWorks. |
| Level 5 | PSW with product samples and complete supporting data reviewed at the Supplier's manufacturing location. |

145.5 RETENTION / SUBMISSION REQUIREMENTS BY PPAP LEVEL

The following table provides definition of the data required to be submitted to ArmorWorks, and/or retained at the Supplier location(s) for submittal to ArmorWorks upon request, or review at the Supplier location(s) by ArmorWorks or our customer(s).

RETENTION / SUBMISSION REQUIREMENTS TABLE BY PPAP LEVEL

| <u>Requirement</u> | | <u>Level 1</u> | <u>Level 2</u> | <u>Level 3</u> | <u>Level 4</u> | <u>Level 5</u> |
|--------------------|---|----------------|----------------|----------------|----------------|----------------|
| 1. | Design Customer Engineering approval, if required | R | S | S | • | R |
| | -for proprietary components/details | R | R | R | • | R |
| | -for all other component/details | R | S | S | • | R |
| 2. | Engineering Change Documents, if any | R | S | S | • | R |
| 3. | Customer Engineering approval, if required | R | R | S | • | R |
| 4. | Design FMEA | R | R | S | • | R |
| 5. | Process Flow Diagrams | R | R | S | • | R |
| 6. | Process FMEA | R | R | S | • | R |
| 7. | Control Plan | R | R | S | • | R |
| 8. | Measurement System Analysis Studies | R | R | S | • | R |
| 9. | Dimensional Results | R | S | S | • | R |
| 10. | Material, Performance Test Results | R | S | S | • | R |
| 11. | Initial Process Studies | R | R | S | • | R |
| 12. | Qualified Laboratory Documentation | R | S | S | • | R |
| 13. | Appearance Approval Report (AAR), if applicable | S | S | S | • | R |
| 14. | Sample Product | R | S | S | • | R |

| | | | | | | |
|-----|---|---|---|---|---|---|
| 15. | Master Sample | R | R | R | • | R |
| 16. | Checking Aids | R | R | R | • | R |
| 17. | Records of Compliance with Customer-Specific Requirements | R | R | S | • | R |
| 18. | Part Submission Warrant (PSW) | S | S | S | S | R |
| 19. | Bulk Material Checklist | S | S | S | S | R |

S = The Supplier shall submit to ArmorWorks and retain a copy of records or documentation items at appropriate locations.

R = The Supplier shall retain at appropriate locations and make available to ArmorWorks upon request.

• = The Supplier shall retain at appropriate locations and submit to ArmorWorks upon request

145.6 PPAP SUBMITTAL REQUIREMENTS

For production parts, product for PPAP shall be produced at the production site, using the production tooling, production gaging, production process, production materials, and production operators. When possible, PPAP parts shall be produced at the intended production rate as part of a production run of between one hour to eight hours.

For bulk materials, the submitted sample shall be taken in a manner as to assure that it represents “steady state” operation of the process.

The PPAP submittal package shall include the following:

145.6.1 DESIGN RECORD

The Supplier shall present the design record for the saleable product/part, including design records for components or details of the saleable product/part. Where the design record is an Electronic Part Definition (Solid Model; see SPOC 165), the Supplier shall produce a hard copy (e.g., pictorial, geometric dimensioning & tolerancing [GD&T] sheets, drawing) to identify the measurements taken.

145.6.2 AUTHORIZED ENGINEERING CHANGE DOCUMENTS

The Supplier shall submit authorized engineering change documents for those changes not yet recorded in the design record but incorporated in the product, part, or tooling.

145.6.3 PROCESS FLOW DIAGRAM(S)

The Supplier shall submit a process flow diagram in a format acceptable to ArmorWorks that clearly describes the production process steps and sequence, as appropriate, and meets the requirements of the AIAG **Advance Product Quality Planning and Control Plan** manual.

145.6.4 PROCESS FAILURE MODE AND EFFECTS ANALYSIS (PROCESS FMEA; PFMEA)

The Supplier shall develop and submit a PFMEA in accordance with the AIAG **Potential Failure Mode and Effects Analysis** manual.

A single PFMEA may be applied to a process manufacturing a family of similar parts or materials.

145.6.5 CONTROL PLAN

The Supplier shall submit a Control Plan that defines all methods used for process control in accordance with the requirements of the AIAG **Advance Product Quality Planning and Control Plan** manual.

Control plans for “families of parts” are acceptable if new parts have been reviewed for commonality.

145.6.6 MEASUREMENT SYSTEM ANALYSIS STUDIES

The Supplier shall conduct and maintain on file applicable Measurement System Analysis studies, e.g., gage R&R, bias, linearity, stability, for all new or modified monitoring and measurement equipment (see the AIAG **Measurement Systems Analysis** reference manual).

145.6.7 DIMENSIONAL RESULTS

The Supplier shall provide evidence that dimensional verifications required by the design record and the Control Plan have been completed and results indicate compliance with specified requirements. Results for each unique manufacturing process shall be submitted. The Supplier shall record, with the actual results: all dimensions (except reference dimensions), characteristics, and specifications as noted on the design record and Control Plan.

All dimensional results shall clearly reference the date and change level of the design record, and any authorized engineering change document(s) not yet incorporated in the design record to which the part was made.

145.6.8 SAMPLE PRODUCTION PART(S)

The Supplier shall identify and provide a sample product with the PPAP submission to allow ArmorWorks’ verification of dimensional results.

145.6.9 MASTER SAMPLE

When practical, the Supplier shall identify and retain one of the parts measured as the master sample. The master sample shall be from the same period as the production part approval records and shall show the ArmorWorks approval date on the sample.

145.6.10 RECORDS OF MATERIAL TEST RESULTS

The Supplier shall submit records of material test results for tests specified on the design record or Control Plan. Material test results shall indicate and include:

- The name of the laboratory performing the tests;
- Signature of an authorized representative of the laboratory;
- The number, date, and change level of the specifications to which the part/material was tested;
- The date on which the testing took place;
- The quantity tested;
- The actual results;
- The material supplier’s name.

For products with customer-developed material specifications and/or a customer–approved supplier list, the organization shall procure materials and/or services (e.g., painting, plating, heat-treating, welding) from suppliers on that list. **Suppliers are responsible for the conformity of all externally provided processes, products, and services, including from sources defined by the customer.**

145.6.11 RECORDS OF PERFORMANCE TEST RESULTS

The Supplier shall perform tests for all part(s) or product material(s) when performance or functional requirements are specified by the design record or Control Plan.

Performance test results shall indicate and include:

- The name of the laboratory performing the tests;
- Signature of an authorized representative of the laboratory;
- The number, date, and change level of the specifications to which the part/material was tested;
- The date on which the testing took place;
- The quantity tested;
- The actual results.

145.6.12 QUALIFIED LABORATORY DOCUMENTATION

Inspection and testing for PPAP shall be performed by a qualified laboratory as defined by ArmorWorks requirements (e.g., an accredited laboratory). The Supplier shall present documentation stating the laboratory scope and qualifications for the type of measurements or tests conducted.

When an external/commercial laboratory is used, test results submitted on the laboratory letterhead or the normal laboratory report format may, with ArmorWork's approval, satisfy this requirement.

145.6.13 INITIAL PROCESS STUDIES

When requested by ArmorWorks, the level of initial process capability or performance shall be determined to be acceptable prior to submission for all Special/Key Characteristics designated in the Design Record.

145.6.14 CHECKING AIDS

If requested by ArmorWorks, the Supplier shall submit with the PPAP submission any part-specific assembly or component checking aid(s). Checking aids can include fixtures, variable and attribute gages, models, templates, mylars specific to the product being submitted.

The Supplier shall certify that all aspects of checking aids agree with part dimensional requirements. The Supplier shall document all released engineering design changes that have been incorporated in the checking aid(s) at the time of submission. The Supplier shall provide for preventive maintenance of any checking aids for the life of the part.

Measurement system analysis studies, e.g., gage R & R, accuracy, bias, linearity, stability studies, shall be conducted for checking aids.

145.6.15 PART SUBMISSION WARRANT (PSW)

Upon completion of all PPAP requirements, the Supplier shall complete a Part Submission Warrant (PSW).

A separate PSW shall be completed for each customer part number unless otherwise agreed to by ArmorWorks Quality.

If production parts will be produced from more than one cavity, mold, tool, die, pattern, or production process, e.g., line or cell, the Supplier shall complete a dimensional evaluation (see 145.6.7) on one part from each. The specific cavities, molds, line, etc., shall then be identified in the "Mold/Cavity/Production Process" line on a PSW, or in a PSW attachment.

The Supplier shall verify that all of the measurement and test results show conformance with customer requirements and that all required documentation is available and, for Level 2, 3, and 4, is included in the submission as appropriate. A responsible official of the Supplier shall approve the PSW and provide contact information.

One PSW per customer part number can be used to summarize many changes providing that the changes are adequately documented, and the submission is in compliance with ArmorWorks' program timing requirements.

145.7 PART SUBMISSION STATUS

An ArmorWorks Quality representative shall review and approve each PPAP submission. Review of PPAP documentation pertaining to welding shall be performed by an ArmorWorks Certified Weld Inspector (CWI).

The status of a PPAP shall be defined as:

145.7.1 APPROVED

Approved indicates that the part or material, including all sub-components, meets all customer requirements. The organization is therefore authorized to ship production quantities of the product, subject to releases from the customer scheduling activity.

145.7.2 INTERIM APPROVAL

Interim Approval permits shipment of material for production requirements on a limited time or piece quantity basis. Interim Approval will only be granted when the organization has:

- clearly defined the non-compliances preventing approval; and,
- prepared an action plan agreed upon by the ArmorWorks. **PPAP** re-submission is required to obtain a status of "Approved."

Note 1: The Supplier is responsible for implementing containment actions to ensure that only acceptable material is being shipped to ArmorWorks.

Note 2: Parts with a status of "Interim Approval" are not to be considered "Approved."

Material covered by an interim approval that fails to meet the agreed-upon action plan, either by the expiration date or the shipment of the authorized quantity, will be rejected. No additional shipments are authorized unless an extension of the interim approval is granted.

For bulk materials, the organization shall use the "Bulk Material Interim Approval" form, or its equivalent (see Appendix F of the AIAG **Production Part Approval Process** manual).

145.7.3 REJECTED

Rejected means that the **PPAP** submission does not meet ArmorWorks' requirements, based on the production lot from which it was taken and/or accompanying documentation. In such cases, the submission and/or process, as appropriate, shall be corrected to meet customer requirements. The submission shall be approved before production quantities may be shipped.

SPOC 150 – SUPPLIER COUNTERFEIT PARTS PREVENTION REQUIREMENTS**150.1 PURPOSE**

This SPOC 150 is intended to prevent suspect and confirmed counterfeit Electrical, Electronic and Electromechanical (EEE), and Materiel commodities from entering ArmorWorks' supply chain and to standardize practices to:

- Specify the flow down of these requirements to applicable suppliers/contractors and their sub-tier suppliers/contractors who are performing work on behalf of ArmorWorks;
- Maximize availability of authenticated EEE and Materiel;
- Procure EEE and Materiel from authorized sources where available;
- Clear risks with ArmorWorks when EEE and Materiel are not available from authorized sources;
- Assure authenticity and conformance of procured EEE and Materiel;
- Control EEE and Materiel identified as suspect or confirmed counterfeit within the ArmorWorks supply chain and in the Supplier/Contract Manufacturers' supply chain;

- g) Report suspect counterfeit and confirmed counterfeit EEE and Materiel, to other potential users and to Government investigative authorities as required by contract or by law;
- h) This SPOC is specific to counterfeit prevention and detection, and not fraudulence beyond counterfeiting.

The provisions of this SPOC 150 are in addition to Supplier's responsibility to meet all contractual / purchase order requirements. The requirements of this SPOC 150 supplement the requirements of a higher level quality standard (e.g. ISO 9001, AS9100), ArmorWorks' Prevention of Counterfeit Parts plan, and other quality management system requirements. The requirements of SPOC 150 support both SAE counterfeit prevention Standards: AS5553A and AS6174 (see Section 2.1.3). SPOC 150 is not intended to stand alone or to supersede or cancel requirements found in other quality management system documents, requirements imposed by contract, or applicable laws and regulations unless an exemption and variance has been granted in writing by the ArmorWorks Quality Manager or designee.

150.2 APPLICABILITY

- (a) The requirements defined in SPOC 150 apply to all commodity and assembly (EEE and Materiel) purchase orders issued to ArmorWorks suppliers except for those transactions where the supplier (OEM/OCM) has design authority. Suppliers with design authority are expected to clear their own risk through their own counterfeit prevention control plan.
 - 1. ArmorWorks suppliers shall flow these requirements down to their lowest level sub-tier suppliers on behalf of ArmorWorks no later than the effective date of this SPOC Manual.
 - 2. Periodic audits
 - Will be performed to assess compliance to SPOC150 requirements.
 - Will be determined by ArmorWorks.
 - Will assess SPOC150 flowdown requirements for compliance.
 - Will be conducted by ArmorWorks as applicable.
- (b) EEE and Materiel delivered by a supplier after the effective date of this SPOC Manual shall comply with the requirements set forth in the current SPOC 150 revision.

150.4 REFERENCE DOCUMENTS

The following documents are directly associated with the application of SPOC 150.

- For dated references, only the edition cited applies.
- For updated references, the latest edition of the document, including all amendments, applies unless otherwise specified by contract.

In the event of conflict between the provisions of this SPOC 150 and references cited herein, the provisions of SPOC 150 take precedence.

150.4.1 SAE PUBLICATIONS

- SAE Aerospace Standard AS5553 (current release) - Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition
- SAE Aerospace Standard AS6174 (current release) - Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel

150.4.2 COMMERCIAL PUBLICATIONS

- DEA-STD-1010 Acceptability of Electronic Components Distributed in the Open Market

Available from Independent Distributors of Electronics Association (IDEA), 6312 Darlington Avenue, Buena Park, CA 90621, Tel: 714-670-0200, www.idofea.org.

150.5 TERMS AND DEFINITIONS

- **AFTERMARKET MANUFACTURER** refers to a manufacturer that meets one or both of the following criteria:
 - The manufacturer is authorized by the original manufacturer to produce and sell replacement materiel, usually due to an original manufacturer decision to discontinue production of materiel. Materiel supplied is produced from dies, molds, or other manufacturing equipment that has been:
 1. transferred from the original manufacturer to the aftermarket manufacturer;
 2. produced by the aftermarket manufacturer using original manufacturer tooling and intellectual property (IP); or
 3. produced by the aftermarket manufacturer through redesign to match the original manufacturer's specifications without violating the original manufacturer's intellectual property rights (IPR), patents, or copyrights.
 - The manufacturer produces materiel by emulating or reverse-engineering obsolete materiel to satisfy continuing customer needs without violating the original manufacturer's intellectual property rights, patents, or copyrights.
- **APPROVED SUPPLIER** refers to suppliers that are formally assessed by the current design activity or the original manufacturer, determined to be a trusted source that will reliably provide authentic and conforming materiel, and entered on a register of approved suppliers.
- **AUTHORIZED RESELLER** refers to an entity who has a legally binding relationship with the legally authorized source, but does not provide direct product support to the customer.
- **AUTHORIZED SUPPLIER** refers to aftermarket manufacturers as defined above, and suppliers authorized by the current design activity or the original manufacturer to produce and/or sell materiel (i.e., franchised distributors).
- **BROKER DISTRIBUTOR** refers to a type of independent distributor that works in a "Just in Time" (JIT) environment. Customers contact the broker distributor with requirements identifying information such as the part number, quantity, target price, and date required. The broker distributor searches the industry and locates parts or other materiel that meet the target price and other customer requirements.
- **CERTIFICATE OF AUTHENTICITY (C of A)**: A statement to the effect that all materiel items listed above furnished on this contract are genuine, new and unused unless otherwise specified in writing herein; are suitable for the intended purpose; are not defective, suspect, or counterfeit; have not been provided under false pretenses; and have not been materially altered, damaged, deteriorated, or degraded.
- **CERTIFICATE OF CONFORMANCE (C of C, CoC)**: A document provided by a supplier formally declaring that all buyer purchase order requirements have been met. The document may include information such as manufacturer, distributor, quantity, lot and/or date code, inspection date, etc., and is signed by a responsible party for the supplier. See SPOC 100.
- **CERTIFICATE OF CONFORMANCE AND TRACEABILITY (CoCT)** refers to a certificate of conformance required by certain U.S. military specifications which requires documented traceability from the QPL/QML manufacturer through delivery to the U.S. Government if the material is not procured directly from the approved manufacturer.
- **COUNTERFEIT MATERIEL** refers to suspect materiel that has been confirmed to be a copy, imitation or substitute that has been represented, identified, or marked as genuine, and/or altered by a source without legal right with intent to mislead, deceive or defraud.
- **CURRENT DESIGN ACTIVITY** refers to the organizational entity currently responsible for the design of materiel. This may be the original design activity or a design activity to which the design responsibility has been transferred.
- **FRANCHISED DISTRIBUTOR** refers to a distributor with which the original manufacturer has a contractual agreement to buy, stock, re-package, sell and distribute its product lines. Franchised distributors normally offer the product for sale with full manufacturer flow-through warranty. Franchising contracts may include clauses that provide for the original manufacturer's marketing and technical support inclusive of, but not limited to, failure analysis and corrective action, exclusivity of inventory, and competitive limiters.

- **FRAUDULENT MATERIEL** refers to suspect materiel misrepresented to the customer as meeting the customer's requirements.
- **GIDEP (GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM)** refers to the cooperative activity between U.S. and Canadian government and industry participants seeking to reduce or eliminate expenditures of resources by sharing technical information essential during research, design, development, production and operational phases of the life cycle of systems, facilities and equipment.
- **INDEPENDENT DISTRIBUTOR** refers to a distributor that purchases new materiel with the intention to sell and redistribute it back into the market. Purchased materiel may be obtained from original manufacturers or contract manufacturers (typically from excess inventories), or from other independent distributors. Resale of the purchased materiel (re-distribution) may be to original manufacturers, contract manufacturers, or other independent distributors. Independent distributors do not have legally binding relationships with current design activities or original manufacturers.
- **LEGALLY AUTHORIZED SOURCE** refers to the current design activity or a supplier authorized by the current design activity or the original manufacturer to produce an item.
- **MANUFACTURER** refers to the point of origin of any materiel covered by the standard, including factories, mills, foundries, mines, chemical plants, laboratories, etc.
- **MATERIEL** refers to material, parts, assemblies, and other procured items.
- **ORIGINAL MANUFACTURER** refers to an organization that designs and/or engineers and produces materiel and is pursuing or has obtained the intellectual property rights to that materiel. Notes:
 - The materiel and/or its packaging are typically identified with the original manufacturer's trademark;
 - Original manufacturers may contract out manufacturing and/or distribution of its product;
 - Different original manufacturers may supply product for the same application or to a common specification.
- **REFURBISHED** refers to materiel that has been cleaned, freshened, painted, polished or renovated in an effort to restore it to a "like new" condition.
- **SUPPLY CHAIN TRACEABILITY:** Documented evidence of materiel's supply chain history. This refers to documentation of all supply chain intermediaries and significant handling transactions, such as from original manufacturer to distributor, or from excess inventory to broker to distributor.
- **SUSPECT MATERIEL** refers to materiel, items, or products in which there is an indication by visual inspection, testing, or other information that it may meet the definition of fraudulent materiel or counterfeit materiel.

150.6 REQUIREMENTS

150.6.1 MATERIEL PROVIDERS

150.6.1.1 Guarantee of Materiel Source(s)

The Supplier shall ensure that only new and authentic materials are used in materiel delivered to ArmorWorks. The Supplier may only purchase Materiel directly from original manufacturers, manufacturer franchised distributors, or authorized aftermarket manufacturers. Use of materiel that was not provided by these sources is not authorized unless first approved in writing by ArmorWorks Engineering or Quality. The seller must present compelling support for its request (e.g., original manufacturer documentation that authenticates traceability of the materiel to the original manufacturer), and include in its request all actions to ensure the materiel thus procured is authentic and conforming.

The supplier shall verify that the source of the purchase is authorized by performing the actions detailed in the following table. The buyer shall verify each Authorized Source prior to purchase to prevent counterfeit EEE and Materiel part numbers from entering the supply chain. Verification results shall be retained as a quality record.

TABLE 4: VERIFICATION OF SOURCE AUTHORIZATION

| Commodity Type | Verification that Source is Authorized |
|-----------------------------------|---|
| EEE Parts (other than MIL Spec) | <ol style="list-style-type: none"> 1. Verify that the OEM/OCM has a distribution agreement with the Supplier OR, 2. Refer to Manufacturer's website with list of authorized distributor sources OR, 3. Obtain a Letter from a person of authority at OEM/OCM authorizing the source OR, 4. Utilize a Source Control Drawing (SCD) or Vendor Item Drawing (VID) with the supplier identified on the drawing. Note: Source Control Drawings only show required suppliers; <p>Supplier must verify a selected source is authorized by the manufacturer. OR</p> <ol style="list-style-type: none"> 5. Aftermarket Manufacturer – <ol style="list-style-type: none"> a. Buyer confirms that the Aftermarket Manufacturer is listed as an approved source on the OEM or OCM website, OR b. The buyer obtains documented evidence that the Aftermarket Manufacturer is authorized by the OEM or OCM to produce the specific part number. |
| Materiel (other than MIL Spec) | <ol style="list-style-type: none"> 1. Obtain copy of the OEM/OCM distribution agreement with supplier OR, 2. Generate screen shot from manufacturer's website with list of authorized sources OR, 3. Request and obtain a letter from person of authority at OEM/OCM authorizing the source OR, 4. Utilize a Source Control Drawing (SCD) or Vendor Item Drawing (VID) with the supplier identified on the drawing OR, 5. Build to Print – refer to the ArmorWorks Buyer to identify the authorized source for the part number, OR 6. Aftermarket Manufacturer <ol style="list-style-type: none"> a. Buyer confirms that the aftermarket manufacturer is listed as an approved source on the OEM or OCM website, OR |

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| | |
|----------------|---|
| | <p>b. The buyer obtains documented evidence that the Aftermarket Manufacture is authorized by the OEM or OCM to produce the specific part number.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. All hardware items must be procured to a set of manufacturing standards and have a Spec or Part Number, 2. Hardware items may have a QPL (Quality Part List) which specifies the authorized supplier, 3. Hardware consumables must be ordered to a set of manufacturing standards as required by the specifications. |
| MIL Spec Parts | Refer to a source controlled drawing; slash sheet or Vendor Item Drawing (VID) from DLA website (http://www.dla.mil) showing the authorized source. |

150.6.1.2 Supply Chain Traceability

The Supplier shall maintain a method of commodity and item level traceability that ensures tracking of the supply chain back to the manufacturer of all Materiel being delivered per this order. This traceability method shall clearly identify the name and location of all of the supply chain intermediaries from the manufacturer to the direct source of the materiel for the seller and shall include the manufacturer's commodity or item level identification for the item(s) such as date codes, lot codes, heat codes, serializations, unique item identifiers, or batch identifications.

150.6.1.3 Certificate of Conformance and Traceability (U.S. Department of Defense Contracts)

This clause is applicable to all contracts for Qualified Products List (QPL) or Qualified Manufacturers List (QML) controlled materiel. This clause applies regardless of the point of inspection designated in the contract award. This clause applies both to contracts awarded directly to a manufacturer listed on the applicable QPL/QML and to suppliers (e.g., distributors) not listed as approved manufacturers on the applicable QPL/QML.

The materiel supplied must be in strict conformance to the requirements set forth and/or referenced in the item description, including applicable revisions and slash sheets. To ensure this conformance, the contractor must provide a Certificate of Conformance and Traceability (CoC/T) with the information and documentation required by the applicable specification. This documentation must reference the contract number and include a certification signed by the approved QPL/QML manufacturer. In addition, if the materiel is not procured directly from the approved manufacturer, all additional documentation required by the specification must be provided to establish traceability from the QPL/QML manufacturer through delivery to the Government. The CoC/T is required to determine acceptability of the supplies. If the CoC/T is not provided, is incomplete or otherwise unacceptable, the supplies will be determined not to meet contract requirements and will be rejected.

If the contract requires inspection and acceptance at origin, the contractor shall furnish the original and two copies of the CoC/T to the Government Quality Assurance Representative (QAR) with the items offered for acceptance. The CoC/T must clearly reference the applicable contract number. The contractor shall submit one signed copy to the contracting officer. The second copy shall be retained by the QAR. The original shall be maintained by the contractor.

If the contract requires inspection and acceptance at destination, the contractor shall mail one copy of the CoC/T to the contracting officer upon shipment/delivery. The CoC/T must clearly reference the applicable contract number.

150.6.2 INDEPENDENT DISTRIBUTORS

150.6.2.1 Test and Inspection Requirements

The seller shall establish and implement test and inspection activities necessary to assure the authenticity and conformance of purchased materiel, including:

- Traceability and documentation verification;
- Visual examination;
- Tests and inspections [see Appendix E of this standard for examples and descriptions of test and inspection activities].

Tests and inspections shall be performed in accordance with clearly delineated accept/reject criteria provided or approved by ArmorWorks. The seller shall prepare and provide to ArmorWorks records evidencing tests and inspections performed and conformance of the materiel to specified acceptance criteria.

Tests and inspections should be performed by persons that have been trained and qualified concerning detection of the types and means of counterfeiting and how to conduct effective product authentication.

150.6.2.2 Supply Chain Traceability

The seller shall maintain a method of commodity and item level traceability that ensures tracking of the supply chain back to the manufacturer of the materiel being delivered per this order. This traceability method shall clearly identify the name and location of all of the supply chain intermediaries from the manufacturer to the direct source of the materiel for the seller, and shall include the manufacturer's commodity or item level identification for the item(s) such as date codes, lot codes, heat codes, serializations, unique item identifiers, or batch identifications.

150.6.2.3 Certificate of Conformance

In addition to the requirements of SPOC 100, Distributors shall include their name for each part shipped.

150.6.2.4 Product Impoundment and Financial Responsibility

If suspect/counterfeit materiel is furnished under this purchase agreement, such items shall be impounded. The seller shall promptly replace such items with items acceptable to the ArmorWorks and the seller may be liable for all costs relating to impoundment, removal, and replacement. ArmorWorks may turn such items over to Authority Having Jurisdiction for investigation and reserves the right to withhold payment for the suspect items pending the results of the investigation. Any known instances of fraud or attempted fraud shall be documented in writing to ArmorWorks.

150.6.2.5 Penalties Associated with Fraud

This purchase order and activities hereunder are within the jurisdiction of the United States Government. Any knowing and willful act to falsify, conceal or alter a material fact, or any false, fraudulent or fictitious statement or representation in connection with the performance of work under this purchase order may be punishable in accordance with applicable legal statutes.

Seller employees engaged in the performance of work under this purchase order shall be informed in writing prior to performance of work that there is a risk of criminal penalties associated with any falsification, concealment, or misrepresentation in connection with work performed under this purchase order.

Seller shall include the following statement preprinted on each Certificate of Conformance initiated by the seller and provided to the buyer in conjunction with this purchase order:

NOTE: The recording of false, fictitious or fraudulent statements or entries on this document may be punishable as a crime under United States Government statute.

Seller shall include all provisions of this contract clause, including this sentence, in all lower tier contracts under this order. Any inability or unwillingness of a lower-tier supplier to comply with this provision should be documented in writing and submitted to ArmorWorks.

SPOC 150 APPENDIX A**A.1 COUNTERFEIT MATERIEL DETECTION**

For cases where there is reason to doubt the authenticity of materiel or compliance with manufacturing specifications, additional tests and inspections should be performed, as necessary, to detect counterfeits. The following mitigation methods can be applied to reduce the risk of receiving counterfeit materiel. These methods may not definitively distinguish authentic materiel from counterfeit materiel, but when properly used will minimize the risk of counterfeit materiel entering the production system. For high risk applications, it may be necessary to perform life testing and other static, dynamic and functional testing as additional tests in order to attain the requisite confidence level. Questionable test results may require performance of comprehensive failure analysis.

The process flow shown in Figure E1 is a recommended flow for assessing the authenticity of materiel. This suite of tests and inspections is intended to supplement, not to replace, product acceptance procedures applied by the organization. It assumes that there is capability for a full set of tests. It is recommended that a sequential flow similar to this be followed for each procurement.

A.1.1 Documentation and Packaging Inspection

The supplier should provide an unbroken chain of documentation (certifications, packing slips, etc.) tracing the movement of the materiel back to through the supply chain to origin, and certification that the materiel has not been salvaged, reclaimed, otherwise used, or previously rejected for any reason.

Any Certificates of Conformance or other documentation should be examined for authenticity and applicability to the delivered materiel, including:

- a. Lot and/or date codes on the packaging do not match the lot and/or date codes on the parts;
- b. Review of logos, trademarks and other identifying marks to ensure they match manufacturers' marks as applicable;
- c. Changes to or irregularities in the documentation and/or paper trail;
- d. Part number marked on the materiel does not match the part number on the Purchase Order and the certifications;
- e. Materials are inconsistent with the description on the supplied documentation;
- f. Serial number issues or duplication of UII (Unique Item Identifier).

If there is an elevated concern for product integrity, it may be possible to verify with the manufacturer that date, lot codes, serial numbers, and quantities listed on the documentation are valid.

A.1.2 Visual Inspection

Visual examinations should be performed at a magnification appropriate to the attribute under examination in appropriate lighting, at least 75 foot-candles. For materiel with product identification and/or other identifying/traceability markings, a representative sample based on a determination of product risk should be examined from each lot (date code or other identification code) for evidence of remarking and/or salvaged, reclaimed, or other indications of re-use. Industry and government standard "resistance to solvents" test methods can be effective, but more aggressive methods may be necessary to reveal forged markings, to remove coatings applied to disguise sanding marks, and to reveal other indications that the original device marking has been removed. Other methods include the use of acetone or scraping the surface of the materiel to remove markings and coatings or to detect original part numbers under resurfaced and remarked materiel. Examples of suspect counterfeiting include, but are not limited to:

- a. Altered or unexplained markings, stampings, moldings, and engravings;
- b. Improper surface treatment or signs of refurbishment without being identified as refurbished materiel;
- c. Re-marked, smeared or illegible bar codes (IUID or UII);

- d. Faceplates and nameplates showing signs of removal and re-installation;
- e. Altered labels and tags;
- f. Signs of re-painting or re-coating;
- g. Other signs of re-used materiel such as oil stains, overheated areas, signs of disassembly and reassembly, erosion, wear, dents and scrapes, etc.

Suppliers should consider establishing a library of digital photographs for material received, that can be used to supplement other inspection criteria.

A.1.3 Nondestructive Testing

Nondestructive Testing (NDT) can also be described as Nondestructive Inspection (NDI) or Nondestructive Evaluation (NDE). NDT encompasses a wide variety of analytical techniques used in science and industry to evaluate the properties of materials, components, subcomponents, or systems without damaging or permanently altering them. The following NDT Techniques can be used to validate the materials, processes and markings of materiel:

- a. Visual, weight, optical and infrared (if applicable), and dimensional inspections. Can be used on all items;
- b. Liquid penetrant inspection (surface defects only). It can be used only on non-porous materials; either metal or nonmetals. Liquid penetrant may be fluorescent (Type I) which requires black lighting inspection, or non- fluorescent (Type II) also called visible dye which requires white light inspection. Most commonly used materials are postemulsified hydrophilic, post-emulsified lipophilic, water-washable and solvent removed penetrants;
- c. Magnetic particle inspection (surface to ~ 0.25 inch depth). It is limited to the inspection of iron/steel items only. The process may be wet particle inspection using stationary or portable equipment, or dry particles inspection using portable equipment such as yokes, contour probes or prods. The inspections may be fluorescent which requires black lighting inspection, or non-fluorescent which requires white light inspection;
- d. Ultrasonic inspection may include thru transmission, pitch/catch, straight beam, shear, immersion or phased array. The inspection can be performed though the entire part depending on configuration, but is not good on/near surface). Used on all materials except very porous or non-homogenous materials;
- e. Eddy current inspection (also called electromagnetic inspection). It is limited to the inspection of metals only, to about 0.25 inch depth. Special controls are needed to use eddy current on iron/steel items. May also include phased-array eddy current. Eddy current is only used rarely to detect flaws on new/unused items, and is used extensively to detect flaws on used items, (in-service inspections, corrosion, wear, crack, impact, fatigue, etc). Other uses of eddy current are conductivity testing, alloy sorting, coating thickness tests, and tubing/piping inspections.
- f. Radiological inspection includes film radiography, digital radiography, computed radiography, real time radiography and computed tomography. There are three main types of penetrating radiation used; those are X-ray, gamma ray (also called radioisotope source inspection), and neutrons. Can be used for internal inspections for most configurations or items or materials (metals, composites, etc.), and is also used to inspect assemblies. Neutron radiography is used to inspect explosives and plastic materials. Radiological inspections are not commonly used to find surface defects. X-ray fluorescence analysis (XRF) is sometimes used to identify the thickness and composition of plating, as well as being a viable method for detecting certain metal alloys.
- g. Thermography inspections. Used on both metals and non-metals to find defects, however, can be used to find "hot spots" in systems and assemblies.
- h. Acoustic Emission. Used to test systems for noise/noise reduction. Occasionally, the term is used for inspections that generate sounds into materiel to check for delaminations, (for example, tap tests or hammer tests, etc). Used on systems requiring a certain level of sound control (i.e., submarines) and on composite materials/components (i.e., composite tap tests).
- i. Holography/shearography. Laser inspections, mainly used on composites and tires to find flaws and delaminations;
- j. Heat Flow Microcalorimetry. Inspections performed using comparative heat transfer rates of known versus unknown/suspect materials. Can be used to determine if material has been properly processed. Can also be used to predict corrosion or other material changes prior to its occurrence;

- k. Functional tests: Install part to see if it works, fit tests, perform dynamometer tests, etc.;
- l. Other types of technology-specific nondestructive tests not listed.

A.1.4 Destructive Testing

Destructive Testing can include: deformation tests (bend, vibration, shock, tensile, compression, shear, fatigue, hardness, adhesion, impact, etc.); metallurgical tests (cut materiel, polish and evaluate under magnification); exposure tests (heat, cold, fuel, weathering, aging, UV, ozone, chemical, salt spray, corrosion, etc.); analytical tests (gas chromatography, spectral analysis, electron microscopic inspections, wet chemistry composition analysis, etc.); functional tests (run it until it breaks), etc. These tests should be applied as appropriate per contractual agreements.

A.1.5 Other Tests

Other tests may be helpful in detecting counterfeit materiel. Scanning Acoustic Microscopy, for example, may be used to detect original laser-etched part numbers under resurfaced and remarked materiel.

SPOC 150 APPENDIX B

B.1 CONTROL OF SCRAP OR SURPLUS MATERIEL

B.1.1 Scrap Materiel

Materiel that has been found to be nonconforming or otherwise unsuitable for use should be physically identified (e.g., tag, label, mark), segregated from conforming materiel, and rendered unusable by physical destruction (e.g., grinding, breaking, or crushing) prior to disposal. Paragraph B.1.4 discusses the control of suspect or confirmed counterfeit materiel.

B.1.2 Surplus Materiel

Excess inventory or surplus materiel originally procured for use in deliverable product should only be re-sold or dispositioned to external organizations with demonstrated adherence to higher level quality standards, this standard, and/or rigorous business, ethical, and quality standards intended to avoid acquiring and reselling counterfeit goods. If such action is taken, the supplier should provide a copy of any certification, traceability information, with the surplus product.

B.1.3 Return Materiel

In order to mitigate the risk of counterfeit materiel returning to the supply chain through supplier acceptance of returns, steps should be taken to permit supplier validation of authenticity. The following information should be provided to the supplier at the time of return:

- a. Part/lot/heat/item/date code/number of materiel to be returned;
- b. Name of manufacturer;
- c. Purchase order number under which materiel was supplied;
- d. Quantity to be returned;
- e. Reason for return.

Returns should not be made to suppliers without proper return materiel authorization. After receipt of return authorization, the returned materiel should include copies of the original paperwork.

B.1.4 Control of Suspect or Confirmed Counterfeit Materiel

In the event that product assurance actions, in-process inspections/tests, or product failure experiences indicate that materiel may be counterfeit, the following steps should be implemented:

- a. Physically identify the materiel as suspect/counterfeit materiel (e.g., tag, label, mark).

- b. Physically segregate the materiel from acceptable non-suspect materiel and place in quarantine. Quarantine should consist of physical barriers and controlled access.
- c. Do not return the materiel to the supplier for refund, replacement, etc., except under controlled conditions which would preclude resale of the suspect counterfeit materiel into the supply chain, and to allow the supplier to conduct internal investigation.
- d. Confirm conclusively the authenticity of the materiel. This may include further tests, communications with the materiel's supposed manufacturer, third-party analysis, etc.
- e. Upon confirmation that materiel is counterfeit, identify and place on "Hold" all potential additional counterfeit materiel in storage and installed in product pending disposition by appropriate authorities.
- f. Report counterfeit materiel in accordance with guidelines provided in Appendix G, Reporting.
- g. The known counterfeit material should be scrapped or mutilated (using a method that prevents its re-use by others), after confirming that the agency contacted (See Appendix G) does not require a sample of the material for legal proceedings.

SPOC 150 APPENDIX C**C.1 TRACEABILITY AND CONTRACTOR CONTROL OF SUPPLIERS**

Traceability and contractor control of suppliers (subcontractors and vendors) is a key element of assuring authentic and conforming materiel. Unique quality assurance requirements should be strictly adhered to by the contractor for procurement of items designated as "Critical" (i.e., critical safety items, critical application items, mission critical, maintenance critical, fracture critical traceable, etc.). The protocols outlined in Sections C.1.1 and C.1.2 may be imposed in contracts where appropriate (for safety critical items, for example) or where required by the acquisition regulations to reduce the risk of receiving counterfeit materiel or unauthorized substitutions.

C.1.1 Traceability

All technical/quality requirements applicable to the supplies and services under the contract should be traceable to the time and place of production. Records should provide the degree of traceability required to enable verification, at any point from raw material to final product, of all aspects of material, manufacturing, and documentation.

C1.1.1 Material

Includes but is not limited to raw material and stock material. Traceability requirements include assurances that:

- a. The correct materials are utilized, including material for replacement and spare parts. It is imperative that traceability be maintained from the material to the material certification test report and other required Objective Quality Evidence (OQE). The material certification test report should completely and accurately reflect that the material supplied meets all specified requirements.
- b. The supplier should develop written procedures that implement the material control requirements stated herein and elsewhere in the contract/purchase order.
- c. Purchase orders for raw material should specify that it be traceable to material certification test reports by traceability codes that are marked on the material and identified on the test reports.
- d. Material traceability codes should be permanently applied to the material and annotated on test reports for each individual heat lot/heat treatment of material, manufacturing lot, or production batch supplied. Where lot traceability is not possible due to manufacturing processes (e.g. continuous casting operations), lot traceability should be provided as defined in the applicable material specification and, when applicable, as further defined in the contract/purchase order. Traceability marking should either be heat/lot number, a unique vendor traceability number/code, or a combination thereof to maintain complete traceability to certification for OQE.
- e. Traceability should be maintained through all process operations, including any subcontracted operations, to the finished component.
- f. Material distributors should provide documentation with direct traceability of characteristics between incoming and outgoing product.

- g. Material distributors should provide positive documentation that "No Additional Processing Has Been Performed" by the distributor or disclose on a certification if processing was performed which altered the incoming material condition, properties or dimensions.
- h. Prohibited - The contractor should not provide altered material as a means to achieve required final thickness if a physical process (e.g., forging, rolling, etc.) is specified. For example, the contractor should not substitute cut plate for bar stock.

C.2.1.2 Manufacturing

Traceability applies to prime contractors and their suppliers for manufacturing processes that include but are not limited to special processes applied to raw material or parts such as casting, forging, heat treatment, shot peening, and nondestructive testing; assembly processes; inspection processes especially those related to critical characteristics.

- a. The contractor should identify on their process/operation sheets, all manufacturing sources performing processes/operations outside their facilities.
- b. Operations sheets for all manufacturers (prime contractor and suppliers) should be available for review by the procuring organization.

C.2.1.3 Documentation

- a. A paper copy of all traceability documents for each lot should be presented for inspection with each submittal for acceptance.
- b. The inspection method sheets, which list the characteristics of each item produced under the contract, should have positive traceability to the raw material.
- c. The contractor should include with each shipment the raw material manufacturer's test report and/or certification (e.g. mill test report) that states that the lot of material furnished has been tested, inspected and found to be in compliance with the applicable material specifications. The test specimen should come from the same thickness/diameter that is being supplied. The test report should contain the following information:
 - 1. Specifications including revision numbers or letters to which the material has been tested and/or inspected to;
 - 2. Heat and lot numbers;
 - 3. When the material specification requires quantitative limits for chemical, mechanical, or physical properties, the test report should contain the actual test and/or inspected values obtained.
- d. The contractor should provide certifications, with each shipment, to demonstrate that all required processing (e.g. forming, heat treating, thermal cycling, conversion, etc.) has occurred and the results meet all specification and testing requirements. No unauthorized process should be allowed.
- e. The contractor should provide with each shipment a Certificate of Compliance (COC) to certify that the material meets the related requirements when non-destructive evaluations are required.
- f. If the material was altered (e.g. forged, rolled, heat treated, etc.) subsequent to procurement from the original material source and prior to delivery, the contractor should provide with each shipment an independent laboratory test certifying that the material complies with the requirements and the test report should contain all of the information in C.1.3.a. through C.1.3.c. Tests are to be completed after all subsequent conversion processing.
- g. Traceability documents should be retained at the contractor's facility for a minimum of three years, unless other requirements in the contract require a longer period of time. The longest period of time, past the completion of the contract, will take precedence. The contractor should make these documents available to the procurer upon request. At the end of this period, or in the event of contractor relocation or shutdown, all traceability documentation should be offered to the procurer prior to disposal.

C.2.2 CONTRACTOR CONTROL OF SUPPLIERS

All supplies and services under the contract, whether manufactured or performed within the contractor's plant or at any other source, should be controlled at all points necessary to assure compliance to contractual requirements, which includes this specification. The contractor should maintain an effective control of purchased materials and subcontracted work.

- a. The contractor is responsible for assuring that all supplies and services procured from their suppliers conform to the contract requirements.
- b. When the procurer elects to perform inspection at a supplier's plant, such inspection should not be used by contractors as evidence of effective control of quality by such suppliers. It does not relieve the contractor of their responsibility for furnishing supplies that meet all specification requirements or for the performance of specified inspections and tests for such material.
- c. The contractor should assure that all applicable requirements (design, material, quality, etc.), in the contracts and associated technical requirements are properly included or referenced in all purchase orders for products ultimately applied to the contract.
- d. The contractor's quality program should assure that raw materials to be used in fabrication or processing of products conform to the applicable physical, chemical, and other technical requirements. Laboratory testing should be employed as necessary. Suppliers should be required by the contractor's quality program to exercise equivalent control of the raw materials utilized in the production of the parts and items which they supply to the contractor.
- e. All documents and referenced data for purchases applying to a contract should be available for review by the procurer to determine compliance with the requirements for the control of such purchases.
- f. The contractor should make available to the procurer reports of any nonconformance found on source inspected supplies and should (when requested) require the supplier to coordinate with the procurer on corrective action.

APPENDIX D - REPORTING

D.1 GENERAL

Upon identification of suspect or confirmed fraudulent/counterfeit materiel, the organization should provide timely notification to the reporting service organizations (as applicable) listed herein and to Authority Having Jurisdiction (as applicable).

D.1.1 Government Industry Data Exchange Program (GIDEP)

The Government-Industry Data Exchange Program (GIDEP) is a Department of Defense program established to promote and facilitate the sharing of technical information between government agencies and industry partners to increase systems safety, reliability, and readiness and to reduce systems development, production, and ownership costs. GIDEP has been designated by OMB Policy Letter 91-3 as the provider of the government's central database for receiving and disseminating information about nonconforming products and materials. Similarly, DoD has designated GIDEP as DoD's Diminishing Manufacturing Sources and Material Shortages (DMSMS) centralized database for sharing DMSMS information among DoD and Industry groups. Funded by the U.S. and Canadian governments, GIDEP membership is open and free to U.S./Canadian government agencies and their industry partners.

GIDEP participants should consult the GIDEP Operations Manual for guidance concerning participation in the program, reporting requirements, and procedures for the exchange of reports, data, and information. Non-participants may contact the GIDEP Help Desk (951-898-3207) for guidance.

D.1.2 Government Investigative Authorities and Law Enforcement Agencies

In general, if counterfeit materiel is discovered, the appropriate Authority Having Jurisdiction (AHJ) should be contacted. Generally, reports can be provided directly to the AHJ points of contact, or via independent hotline reporting systems. The table below lists contract sources for use by companies in the U.S.

D.1.3 Customer Notification

In addition to reporting to the appropriate agency listed in Table G1, all customers that are impacted by counterfeit material should be notified in writing of the counterfeit material details, along with an assessment/recommendation pertaining to any material in-house at the supplier/sub-contractor, or any previously delivered material. Additionally, If the supplier reported the counterfeit material information to one of the sources listed in Table G1, a copy of the reported information should be provided to the customer(s).

SPOC 160 – CONTROL OF ITEMS WITH LIMITED SHELF-LIFE**160.1 SCOPE**

This SPOC covers the certification and shipment requirements of items that require shelf life control of uncured compounds and storage life control of cured elastomers. The items include:

- Uncured compounds (for example: paint, adhesives, curing agents, primers, varnishes, elastomeric molding compounds, pressure sensitive adhesives, Prepregs, sealants, inks etc.)

NOTE: Items such as tapes and labels which have pressure sensitive adhesive back are categorized under uncured compound.

- Cured Elastomers (for example: O-rings, gaskets, plate seals, molded shapes etc.)

160.2 DEFINITIONS

Shelf Life: For uncured compounds - the maximum period of time that the uncured compounds may be stored under the manufacturer's recommended storage condition and remain suitable for use.

Storage Life: For cured elastomers - the maximum period of time that the appropriate packaged cured elastomers may be stored under specific conditions, after which time it is regarded as unserviceable for the purposes for which it was originally manufactured. The time of manufacture is the time of cure for thermoset elastomers or the time of conversion into a finished product for thermoplastic elastomers.

160.3 SYSTEM FOR SHELF LIFE AND STORAGE LIFE CONTROL

The supplier shall maintain a documented system for storing and controlling uncured compounds with limited shelf-life and age-sensitive cured elastomers. The system shall include a method of identifying and controlling such items.

160.4 CURE DATE IDENTIFICATION FOR STORAGE LIFE CONTROLLED ELASTOMERS

Elastomeric parts shall be identified by marking the cure date (quarter and year) on the part or container.

The year shall be divided into quarters as follows:

- 1st quarter: January, February, March
- 2nd quarter: April, May, June
- 3rd quarter: July, August, September
- 4th quarter: October, November, December

The cure date shall show the applicable quarter of the year by number, the letter "Q", and the last two digits of the applicable year. Example: May 2008 would be designated by 2Q08.

An elastomeric part cured during any given quarter is not considered one quarter old until the end of the succeeding quarter.

160.5 CERTIFICATION REQUIREMENTS

When shipping shelf-life controlled compounds and storage-life controlled elastomers, the supplier shall include the following additional information on the Certification of Conformance:

- Date of manufacture for shelf-life controlled compounds

- Cure date (QQ/YY) for storage-life controlled elastomers
- Shelf-life expiration date (MMYY) for shelf-life controlled compounds
- Storage life expiration date (QQ/YY) for storage-life controlled elastomers
- Batch and or lot number as applicable
- Date of shipment
- Manufacturer's name

160.6 SHELF LIFE OF UNCURED COMPOUNDS SHIPPED TO ARMORWORKS

Items that have exceeded their expiration date shall be removed from the supplier's inventory and conspicuously identified as scrap to preclude inadvertent use. All lots must be segregated and identified to maintain batch and/or lot number and cure date.

Shelf life of any uncured material as certified to by the material manufacturer will not be extended unless authorized either by the material manufacturer, or by ArmorWorks.

Expiration date of Pressure Sensitive Adhesive (PSA) used on name plates shall be identified in the Certificate of Conformance. This expiration date shall be stamped on each container of name plates shipped to ArmorWorks. Expiration date of the adhesive also applies to the name plate to which the adhesive is applied.

In any case of conflict between documented expiration dates, ArmorWorks reserves the right to return the material to the supplier, or resolve the conflict internally via ArmorWorks MRB action.

On the shipment date, uncured items/compounds must have 25% or greater shelf life remaining, but not less than 6 months unless otherwise approved by the procuring site. Exceptions are noted below.

160.7 SHELF LIFE OF CURED ELASTOMERS SHIPPED TO ARMORWORKS

On the shipment date, unless otherwise specified or required by drawing or specification, elastomers which have a storage life control in accordance with ARP5316 for elastomer seals must have 50% or greater storage life remaining. Elastomeric hoses which have a storage life control in accordance with AS1933 must have 75% or greater storage life remaining.

Where no storage life information is available consult ArmorWorks .

All separate lots and/or batches of shelf-life controlled elastomers shall be segregated and identified to maintain lot and/or batch number and cure date.

160.8 BEARING LUBRICATION

Unless otherwise required by specification: Bearings that are lubricated for use shall be shipped to ArmorWorks no less than 18 months from the lube application date. Bearings lubricated with preservative compounds shall be inspected for corrosion prior to shipping if more than 5 years from the application date.

160.9 REFRIGERATED, FROZEN OR CRYOGENICALLY-STORED ITEM

If the Purchase Order specifies Refrigerated, Frozen or Cryogenic, the items shall be shipped under these temperature conditions:

- Refrigerated - less than 40° F (4.4° C)
- Frozen - less than 10° F (-12.2° C)
- Cryogenic - less than -40° F (-40° C)

A temperature indicator shall be included in the shipping container and a Refrigerate/Frozen/Cryogenic sticker as applicable is required on the outside of the shipping container. Packaging shall conform to SPOC 190 requirements for Refrigerated, Frozen or Cryogenically-stored items.

160.10 SHELF LIFE OF COMPOUNDS APPLIED TO PRODUCTS

The supplier shall maintain a documented system for identification and control of limited shelf life compounds so that compounds that had expired shelf life were not used on product shipped to ArmorWorks. (Examples of limited shelf life compounds are adhesives and paints).

160.11 STORAGE LIFE CONTROL OF ELECTRONIC COMPONENTS

The date codes marked on components shall be no older than specified by the purchase order at time of shipment.

160.11.1 STORAGE LIFE LIMIT – 1 YEAR

The date codes marked on components shall be no older than 1 year at time of shipment.

160.11.2 STORAGE LIFE LIMIT – 2 YEARS

The date codes marked on components shall be no older than 2 years at time of shipment.

160.11.3 STORAGE LIFE LIMIT – 4 YEARS

The date codes marked on components shall be no older than 4 years at time of shipment.

SPOC 165 – ELECTRONIC PART DEFINITION (SOLID MODEL)

165.1 SCOPE

Applicable when using ArmorWorks-supplied Electronic Part Definition (EPD) databases to manufacture and inspect hardware procured directly by ArmorWorks or indirectly through a sub-tier supplier.

165.2 REQUIREMENTS

165.2.1 SOFTWARE QUALITY ASSURANCE PLAN (SQAP)

The supplier utilizing the ArmorWorks-supplied EPD databases for the manufacture and inspection of product shall maintain a comprehensive SQAP.

165.2.2 DIMENSIONAL INSPECTION PLAN (DIP)

A DIP shall be used that describes the methods for inspection and verification of compliance to the ArmorWorks-supplied EPD database. The Supplier shall furnish a copy of the DIP to ArmorWorks when requested.

In conjunction with standard layout / inspection practices, the following minimum requirements for part inspection should be utilized as a reference guideline. The DIP must contain enough data points to adequately describe the inspected feature:

TABLE OF MINIMUM REQUIREMENTS FOR EPD DETAILED INSPECTION PLAN

| <i>Feature</i> | <i>Minimum Point Density or Equivalent</i> |
|--|---|
| Continuous Surface > 10" | 1 point per square inch |
| Continuous Surface < 10" | 2 points per square inch |
| Non Standard Radii | 3 points |
| Diameter | 6 points |
| Standard Radii (i.e. fillets, corners, etc.) | Standard gauging may be used |
| Wall Thicknesses | Conventional inspection methods may be used |

165.3 TRANSLATION PROCESS

Suppliers shall have an ArmorWorks approved procedure that outlines their translation process. The documentation must demonstrate traceability and compliance to the EPD database.

SPOC 170 – CONTROL OF GOVERNMENT / CUSTOMER OR ARMORWORKS OWNED PROPERTY AT SUPPLIERS**170.1 SCOPE**

Government, customer or ArmorWorks owned acquired/furnished property is:

- Tooling, test equipment and material supplied by ArmorWorks for use in the performance of this purchase order.
- Tooling, test equipment and material made by the Supplier and paid for by ArmorWorks in the performance of a purchase order. The Seller is responsible for such property in accordance with the General Terms and Conditions clause of this Order and this Government/Customer or ArmorWorks Owned property clause.
- The Supplier's Property Management System to control, use, preserve, protect, repair and maintain such property shall be reviewed and approved by ArmorWorks. Documentation should be submitted to the buyer for approval.

170.2 U.S. GOVERNMENT OWNED CONTRACTS

U.S. Government owned, acquired or furnished property supplied by ArmorWorks is Government Property and subject to the provisions of the Federal Acquisition Regulation (FAR) 52.245-2 (FP) or 52.245-5 (CP), or 52.245-1 for purchase orders placed after June 2007.

170.3 CONTROL OF GOVERNMENT / CUSTOMER OR ARMORWORKS OWNED PROPERTY**170.3.1 PROCEDURES**

The Supplier shall have a system, which includes written procedures for control of all tooling, test equipment and material. Procedures shall be in accordance with the controls specified within the terms and conditions and this SPOC.

170.3.2 RECEIVING AND IDENTIFICATION

Each individual piece of test equipment and tooling acquired under this order shall be marked in a permanent manner with the appropriate identification number and ownership as provided by the Buyer. Unless otherwise directed by ArmorWorks, Supplier will make use of ArmorWorks' numbering system for all items of tooling and test equipment acquired hereunder. General purpose equipment type components of test equipment which are incorporated in a manner that makes removal and reutilization feasible and economical will be physically identified if the acquisition cost is \$5,000 or more.

Upon receipt or fabrication, of tools and test equipment, complete and return photos of the tools or test equipment that clearly illustrate the permanent mark or tag, to the Buyer.

If not otherwise specified, all equipment that is used to determine acceptance of material will be subject to, as a minimum, an initial inspection and calibration, and a re-inspection and re-calibration every 6 months thereafter.

170.3.3 RECORDS

The supplier shall maintain a record of all Government/customer and ArmorWorks owned property. The list shall include:

- Description and gage/tool name

- ArmorWorks identification number (applicable to equipment, tooling, test equipment, gages, etc.)
- Part Number (applicable to material)
- ArmorWorks Purchase Order number, contract or equivalent code
- Part numbers used to manufacture
- Unit of measure (material)
- Quantity (if other than 1)
- Unit price

The list may also include (when applicable):

- Weight,
- Material content (wood, steel, aluminum, etc.),
- Supplier name,
- Signature of the company's approved representative,
- Date of certification,
- Program name (if supplied),
- ArmorWorks Purchase Order site supplier code

When the property is transferred to another supplier or returned to ArmorWorks, supplier is required to maintain the records of the move for 5 years.

170.3.4 PHYSICAL INVENTORY

The Supplier is required to perform a physical inventory of all of the Government/customer or ArmorWorks owned property acquired/furnished against this Purchase Order upon request from the ArmorWorks' Buyer. A copy of the Supplier's Inventory reconciliation must be submitted to the Buyer, unless otherwise specified.

170.3.5 MAINTENANCE

The Supplier shall maintain the calibration on all the gages as shown in ISO10012-1 or ANSIZ540.

Maintain, protect and preserve tooling and test equipment.

170.3.6 DISPOSITION

The Supplier shall retain all Government/customer or ArmorWorks owned property at its expense until disposition directions are received from the Buyer.

Supplier is required to report immediately to the ArmorWorks Buyer any loss, theft or destruction of, or damage to, the Government/customer or ArmorWorks owned property while in its possession.

170.3.7 UTILIZATION

Utilization of Government acquired/furnished material, test equipment or tooling under this order on other orders is prohibited. Through the Buyer, authorization will only be granted if utilization of the property can be accomplished on a non-interference basis with orders received from the Buyer.



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170.3.8 SEGREGATION

Government or ArmorWorks owned special tooling and special test equipment shall be segregated when not in use.

170.3.9 CONFIGURATION

No modifications or changes to any of the test equipment or tooling are permitted without prior ArmorWorks approval.

170.3.10 TRANSFER OF PROPERTY

Contact the ArmorWorks Buyer before the transfer of test equipment, or tooling between supplier facilities (address location) or to other suppliers.

170.3.11 REPORTING EXCESS PROPERTY

Report to ArmorWorks any acquired/ furnished property that becomes excess to the needs of the purchase order.

170.4 FURNISHED PROPERTY PROVIDED ON AN "AS IS" BASIS

All Government/customer or ArmorWorks owned property authorized for is provided on an "as is" basis subject to the following:

- Buyer and the Government/customer make no warranty whatsoever with respect to the property authorized for use "as is".
- The seller may repair any Government/Customer or ArmorWorks property made available on an "as is" basis. Such repair will be at the seller's expense except as otherwise provided in this clause.
- Such property may be modified at the Seller's expense, but only with the written permission of Buyer.
- Any repair or modification of such property furnished "as is" shall not affect the title of the Government/customer or ArmorWorks.

170.5 PAYMENT FOR SPECIAL TOOLING

To obtain payment, the supplier shall send a signed description of the asset and photos to the ArmorWorks Buyer. Buyer will clear line item from Purchase Order which allows Supplier to be paid.

170.6 SHIPMENT TO ARMORWORKS

Supplier should contact the applicable ArmorWorks buyer to determine proper address to return ArmorWorks or Customer owned gages. The shipment shall conform to SPOC 190.

SPOC 180 – PART MARKING REQUIREMENTS

180.1 SCOPE

Part marking shall be in accordance with MIL-STD-130.

ArmorWorks prohibits the use of part marking or numbering that is false or misleading.

SPOC 190 – PACKAGING AND PACKAGE IDENTIFICATION**190.1 GENERAL REQUIREMENTS****190.1.1 PRODUCT DELIVERY**

The Supplier must ensure that all items are packaged and preserved adequately to guarantee that the hardware is delivered to ArmorWorks undamaged and free of corrosion. Unless otherwise specified, all hardware shall be packaged and preserved in accordance with the drawing, applicable specifications, or purchase order requirements. If there is no drawing or specification requirement, hardware shall be packaged and identified in accordance with Industry Standards (e.g., ATA Spec 300, ASTM-D-3951-98 and MIL-STD-2073).

190.1.2 WEIGHT LIMITATIONS

Hand-handled containers, including bundles are not to exceed 50 pounds (22.7 KG) gross weight.

Containers in excess of 50 pounds shall be put on skids or pallets to permit mechanical handling. Hand-handled containers may be skidded or palletized to consolidate a shipment, but containers must be properly identified, stacked, and secured to the pallet. Unless approved by the ArmorWorks Buyer, shipping skids/pallets or boxes shall not exceed 2,500 pounds (1,136 KG) gross weight, and have appropriately placed pallet jack compatible fork truck slots or openings to allow mechanical handling.

190.1.3 PROHIBITED PACKAGING

- Newspaper wadding, loose-fill dunnage, macerated (shredded) paper, peanut foam, ecofoam, shredded materials, discarded paper, and broken or recycled foam-in-place are not acceptable as packing (dunnage) materials in any container.
- Paper wraps, envelopes or bags as exterior packages or any packaging material in the form of egg boxes, egg crate trays or dividers. Padded mailers (jiffy bags and similar) with bubble cushioning or packaging material which contains Penta DBE or Octa DBE.
- Bags made from bubble wrap or grocery paper sacks shall not be used as unit packs.
- Wood containers constructed from OSB wafer board, particle board, very thin plywood or any other manufactured wood product which is fragile and will not tolerate handling, stacking and re-closing throughout the entire transportation system and subsequent supply chain handling and forwarding.
- Used containers unless specifically designed to be reusable and are in adequate shape. Polystyrene die cuts are prohibited except for small, light, non-critical items.
- Parts that have contact preservation (oil), or have residual fluids or operating oils, shall not be packed/wrapped in paper bags, bubble wrap, sheet foam, or Kraft paper.
- Skin packs that have film-to-film attachments under the item, making part removal difficult, or subjecting the item to damage during opening. Multi-compartment skins packs or blister packs unless they can be positively re-closed after opening, and provide continued part protection.
- Any type of container closure, or lack of a closure, which will result in safety issues, damaged parts or unserviceable packaging when opened.
- Any packaging material which may cause Foreign Object Damage (FOD) or part contamination, part obstruction or leave non-preservation residue.

190.1.4 INAPPROPRIATE CLOSURES

Staples are prohibited as a means of closure for exterior shipping containers. Staples are permitted in nonclosure portions of box type containers, such as bottom closure, side stitching, etc. The portion of the container meant to be opened must remain staple-free. Staples and other penetrating forms of unit package closure also are prohibited for use on bags (polyethylene or paper), bubble wrap, sheet foam, Kraft paper or other intermediate or interior containers. These types of unit packages must be heat sealed (if applicable) or sealed by folding, taping, Zip-Lok, or zipper sealing, etc.

190.1.5 FLUID-SOAKED PACKAGES

Fluid tight packaging shall be as required by hazardous material / dangerous goods regulations and as follows:

- Bagged and heat-sealed closed in accordance with MIL-DTL-117. The bags shall be made from MIL-PRF-22191, Type I material also known as “bearing bag” material. This method is required for corrodible parts which have contact preservative.
- For non-corrodible items, residual fluids may be contained by bagging and sealing in heavy duty (6 mil or thicker) zip lock type polyethylene bag.
- If the item has internal fluids which may be released during transportation, the first bag shall be surrounded by appropriate absorbent packing and enclosed in a second fluid tight bag or package.

Note: The item must be cushioned & the first bag must be strong enough to avoid puncture during transportation, as contamination from the absorbent material may FOD the item.

190.1.6 PACKAGE DESIGN CHARACTERISTICS

190.1.6.1 Exterior Shipping Container

The exterior shipping container shall be sufficiently strong and functional to ensure product delivery, packaging identification and subsequent distribution and must withstand superimposed stacking loads, both as presented to the carrier and as may be expected during shipment.

190.1.7 HAZARDOUS MATERIALS AND DANGEROUS GOODS

The Supplier shall define, mark, label and prepare for hazardous goods, dangerous material and/or dangerous equipment for shipment in accordance with Department of Transportation HM181, CFR Title 49, “Dangerous Goods”, as classified by IATA, IMDG or ICAO.

Due to regulation requirements and potential liability issues, ArmorWorks may report violations of hazardous materials & dangerous goods regulations to the appropriate governmental agencies.

190.1.8 INTERNATIONAL BUG BAN ON CONTAINERS WITH SOLID WOOD

Containers, dunnage, pallets & skids other than those containing non-manufactured coniferous lumber shall be used when possible. If containers with solid wood components must be used, they shall be certified and marked bug free in accordance with ISPM 15 and/or as indicated by <http://www.aphis.usda.gov>

190.2 PACKAGE IDENTIFICATION REQUIREMENTS

190.2.1 APPLICATION

Bar code identification (labeling) is required on all exterior containers. Labels must be located to allow the markings to be easily read when stored on shelves or stacked, and to ensure marking will not be destroyed when the container is opened for inspection. When stencils are used, ink must be black waterproof.

Instead of using labels, it is permissible to print identification information directly on the container or packing slip as long as all other requirements are met.

190.2.2 BAR CODING GENERAL

Bar code labels shall be printed directly on or be permanently affixed to the exterior shipping container.

Additional internal packaging requirements may be specified by the Purchase Order, specification and/or drawing.

Bar codes shall be Code 39 symbology, also referred to as 3 of 9, and printed in medium density.

Bar code height shall be 0.375 inches. The human readable text shall be in English. The characters shall be 0.110 to 0.125 in high, & shall be left justified over the bar code information.

The margin, or quiet zone, is an area surrounding each bar code and shall be a minimum of 0.25 inches at the left and right end of each bar code to decrease bar code reading errors.

Data identifiers shall appear in text on the label within parentheses immediately following the item (such as "Part Number (P)"). Data identifiers shall be programmed to precede the item in the bar code (part IN HARDCOPY Revision M Effective Date: October 30, 2014 69 number text "3001488-113" coded as "P3001488- 113"). No space, or other character, shall be allowed between the data identifier and the part number.

Label material/paper shall be white with black printing for maximum contrast. The label may be self-adhesive, either pressure-sensitive or dry gummed, or held in place on the package with a self-adhesive over-laminate.

FIGURE 1 (CRITICAL LABEL SPACING)



Note: in Part Number field above, the bar code contains the characters "P3073609-1" with start & stop characters at each end.

Critical spacing dimensions for all fields on exterior container label.

Readability:

- Bar Codes shall conform to AIM BC1.
- Check digits and confirmation characters (\$, /, + %) shall not be used.
- X dimension (width of narrow segment) shall be from .010 to .015 inches. Ratio of average width of wide sections to average width of narrow sections shall be from 2.8:1 to 3.2:1. The inter-character gap should be the same as the X dimension.
- Reflectivity and contrast shall be measured at 660 nanometers. Bar codes shall meet one of the following contrast requirements:

- ◆ Print contrast signal $\geq 75\%$, or
- ◆ Minimum reflectance difference $\geq 37.5\%$







Distinguish numeric zeros from the letter “O” by using “Ø”, “•” or similar character for human-readable data.

190.2.3 EXTERIOR CONTAINER LABELS

A representative sample of an acceptable label is shown in Figure 2.

- Minimum label size shall be 3.937 inches (100 mm) high by 6.0 inches (152 mm) wide.
- Maximum label size shall be 5.0 inches (127 mm) high by 6.5 inches (165 mm) wide

FIGURE 2: SAMPLE EXTERIOR CONTAINER (LABEL NOT TO SCALE)

| | |
|--|--|
| From: Supplier Name 1234 E. Drive Rd. City, State, Zip... | To: Honeywell Engines 402 S. 36th Ave. Phoenix, AZ 85072 |
| P.O. Number(K): G00002164  | |
| Item Number(4K): 0052  | |
| Part Number(P): 2-063-320-31  | |
| Quantity(Q): 1234567  | Shipment Number: 12345678  |
| Optional(Z): H12345678901  | Box ____ of ____ |
| COUNTRY OF ORIGIN: _____ | |

“To” address to be as indicated on the purchase order.

Note: Some purchase orders show a combination of purchase order number and line item number (example: G00002164-0052). In this example, the 0052 is not part of the purchase order number, but rather is the line item number, which shall go on the second line of the label (Figure 2).

Note: Hand annotation of Box _ of _ numbers is acceptable and is required on boxes only. This field required for all boxes including Box 1 of 1.

The optional block is for additional supplier information, which may be human-read by ArmorWorks, but will not be read by bar code scanners. Data Identifiers, including prefix, shall be separated from item by a colon.

190.2.3.1 Detailed Field Requirements

- Data Area is space containing field title, human-readable data, and bar coded data.
- Data Area dimensions are shown in (Height, Width) inches; these are minimum values.
- Valid data identifiers are shown in parenthesis prefixing bar code item. The data identifier must be imbedded in the bar code as a data identifier - not as the data itself. Character lengths shown do not include data identifiers.

| Data identifiers (Bar code prefix) | Item |
|---|---|
| K | Purchase Order |
| Data identifiers (Bar code prefix) | Item |
| 4K | Line Item Number |
| P | Part Number |
| Q | Quantity |
| 3S | Packing Slip Number |
| Z | Optional (anything except s/n or l/n literal) |

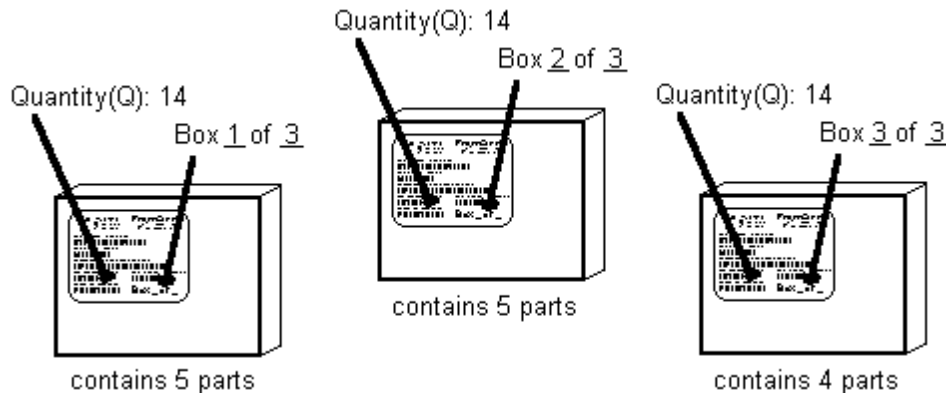
FIGURE 2 DETAILED FIELD REQUIREMENTS

| | |
|-----------------------|--|
| Addresses | Data Area (.80, 6.00) for both “From:” and “To:” addresses |
| (K) PO Number | 15 alphanumeric characters, left-justified (flush left) & null filled. (.60, 6.00) |
| (4K) Line Item Number | <p>4 alphanumeric characters, right-justified with leading zeroes (.60, 6.00). For example, print “0023R” and not “23R”, and bar code “4K0023R”, not “4K23R”.</p> <p>Note: Exceptions to the 4-character length requirement: 1) For SAP POs, 5 alphanumeric characters are required, 2) Rework “W” P.O. item number may be followed by an ‘R’ making item number 5 alphanumeric characters in length</p> |
| (P) P/N | 25 alphanumeric characters, left-justified null filled. (.60, 6.00) |
| (Q) Quantity | 7 numeric characters, left-justified null filled. (.60, 2.70) |
| (3S) Shipment Number | 8 alphanumeric characters, left-justified null filled (.60, 3.30). If truncation of shipment number is required, only the last 5 right hand numbers shall be used |
| (Z) Optional | 12 alphanumeric characters, left-justified null filled (.80, 2.70) |
| Boxes | No bar code. Readable text should be .20 to .25 inches high and may be hand-written (.80, 3.30). Legible written characters are acceptable. |
| Country of Origin | No bar code. |

Note: “Null filled” refers to null, meaning “nothing”. If a field is null filled, it’s filled with nothing.

FIGURE 3: SHIPMENT OF 14 PARTS WITH SAME P.O. NUMBER, ITEM, PART NUMBER,

SPLIT ACROSS THREE BOXES



Note the quantity shown on the Exterior Container for any order shall reflect the quantities that are in the entire order.

190.2.4 INTERMEDIATE PACKAGE MARKING

Intermediate packages, when used, shall be marked with the Part number, as specified on the PO, PO Number, Quantity and Unit of Measure (each, feet, etc.) and Supplier's Name (bar coding is optional). If product is shelf life sensitive, packaging is to be marked by the supplier with the expiration date.

190.2.5 HAND TAGS

When the packaging material prohibits the use of containers that allow the application of self-adhesive labels, a tag shall be securely fastened to the material. The Supplier shall ensure that the location and attachment of the tag, under normal conditions, will not cause damage or premature removal of the tag prior to reaching ArmorWorks.

190.2.6 ADDITIONAL CONTAINER IDENTIFICATION

When there are identical part numbers with multiple lot numbers, serial numbers, life tracking numbers and/or multiple orders within the same exterior shipping container, it shall be indicated on the exterior container, such as: multiple lot numbers in this container, multiple serial numbers in this container, multiple life tracking numbers and/or, multiple orders enclosed.

190.2.7 SHIPPING DOCUMENTS / PACKING SLIP

Shipping documents; including the C of C, and/or the packing list required by SPOC 100, shall be attached to the exterior of container #1 in a weather-proof envelope marked "Packing List Enclosed". Specific additive customer requirements will be specified via PO and linked to receiving inspection line items. The envelope may be placed in a Tyvec envelope and securely attached to the exterior of the #1 container to prevent damage.

Identification and traceability (I&T) sheets, if provided, shall be placed inside the container or inside Box 1 of a multiple container shipment, at the top of the container (on top of the item shipped). ATP sheets shall be attached to each item or to the first wrap or bag of each item if direct item attachment is not practical.

190.2.8 SEPARATION OF MULTIPLE PART NUMBERS, PURCHASE ORDERS, ITEM NUMBERS AND ADDRESSES

Shipping containers that contain multiple part number or purchase order items shall be clearly identified on the outside of the container as containing such. Place a label for each internal container on the exterior of the consolidation container. Orders to separate addresses shall be packaged separately and routed accordingly.

190.2.10 COUNTRY OF ORIGIN AND MARKING (INCLUDES U.S.A.)

Country of origin marking is mandatory to comply with Customs Regulations or ArmorWorks requirements. Packaging of articles must be legibly, conspicuously and permanently marked with the parts' country of origin. For a product to be called Made in USA, or claimed to be of US origin without qualifications or limits on the claim, the product must be "all or virtually all" made in the U.S. The term "United States," as referred to in the Enforcement Policy Statement includes the 50 states, the District of Columbia, the U.S. territories and possessions. "All or virtually all" means that all significant parts and processing that go into the product must be of U.S. origin. That is, the product should contain no - or negligible - foreign content.

U.S. suppliers should contact the Federal Trade Commission, Division of enforcement, since the phrase "made in U.S.A." is under their jurisdiction. Guidance can be found at the following link, <http://www.business.ftc.gov/documents/bus03-complying-made-usa-standard>. For the purpose of this SPOC, the designation "U.S.A." is not adequate country of origin marking.

It is the supplier's responsibility to ensure that marking on the product reflects the true country of origin of the product and that no illegal transshipment through a third country has occurred. The supplier must also ascertain that foreign suppliers are familiar with the country of origin rules.

190.3 ELECTRO-STATIC DISCHARGE (ESD) LABELING AND PACKAGING

Packaging and labeling for ESD product should comply with Mil-Std-1686 or ANSI/ESD S20.20 (reference SPOC 354).

190.4 REFRIGERATED, FROZEN OR CRYOGENICALLY-STORED ITEMS

For refrigerated, frozen or cryogenically-stored product, the supplier shall display the type of storage necessary on the outside of the package. Packages must be adequately thermally insulated to ensure temperature requirements are maintained through reasonably anticipated transportation, in-transit delays, transfers and destination.

The supplier's container shall be marked with:

- Net contents
- Manufacturer's production lot number
- Date of manufacture and expiration date
- Date and time shipped
- Warning notes and safety precautions in accordance with federal and state safety and health regulations.

190.4.1 SPECIFIC FROZEN PACKAGING REQUIREMENTS

Supplier shall package material in dry ice to maintain -40 degrees Fahrenheit during shipment, and must use a 24 hour delivery service for this shipment.

SPOC 290 – FOREIGN OBJECT DAMAGE (FOD) CONTROL

The supplier shall ensure that Foreign Objects and subsequent Foreign Object Damage (FOD) is eliminated from all parts prior to shipment. All suppliers must maintain a FOD free environment during machining, manufacturing, assembly, maintenance, inspection, storage, packaging and shipping.

- Potential FOD includes but is not limited to burrs, chips, dirt, corrosion and contamination resulting from the manufacturing, assembly, maintenance, processing, cleaning, storage and subsequent packaging of parts.
- Suppliers must ensure all passageways are clear of chips, dirt, breakout of walls, weld splatter, etc.
- Prior to closing inaccessible or obscured areas and compartments during welding or assembly, supplier shall ensure the areas are free of FOD.
- Suppliers must ensure all parts are clean and FOD free prior to shipment.
- Suppliers should maintain a FOD prevention program, which includes prevention and elimination of FOD from the manufacturing processes and work area.

Specific attention should be given, where applicable, to items such as:

- Housekeeping and cleanliness
- Food and beverage control
- Tool and small part accountability
- Loose objects
- Material handling and parts protection
- External cleaning following evidence of external contamination

Supplier should ensure that the responsibility for the FOD prevention program is clearly defined and appropriate personnel have received FOD awareness training.

Suppliers are responsible for flow down of these requirements to their sub-tier suppliers to ensure FOD free products.

For additional information regarding FOD prevention, refer to National Aerospace Standard NAS 412, "Foreign Object Damage / Foreign Object Debris (FOD) Prevention". The NAS 412 document may be used as a baseline FOD prevention resource.

SPOC 295 – WELDING

Unless specified by an ArmorWorks' (ArmorWorks, Mandall, ShockRide) drawing or by a specification invoked on the drawing, the following weld requirements shall apply to all work performed for ArmorWorks Enterprises, Inc.

Applicable Commercial Welding Codes:

- AWS D1.3 Structural Welding Code Sheet Steel, For material equal to or less than 3/16" thick;
- AWS D1.1 Structural Welding Code Steel, for material equal to or greater than 1/8" thick;
- All welds to be inspected to AWS D1.1 visual weld acceptance criteria table 6.1 or table 9.16 for tubular;
- All welders and/or welding operators must be qualified to the applicable code with a qualified WPS;
- WPS may be prequalified or qualified by testing and PQR;
- Prequalified WPS's must meet the requirements of the applicable welding code.

Welding of Armor shall be in accordance with TACOM 12479550, *Ground Combat Welding Code – Steel*, or MIL-STD-3040, *ARC Welding of Armor Grade Steel*, as specified on the applicable part drawing. All Armor welds are to be inspected in accordance with and to the requirements of the applicable code.

Prior to performing welding for ArmorWorks, WPS's, PQR's, and Welder Qualification records, along with required testing reports, must be submitted to and approved by ArmorWorks' Quality CWI.