

PROCUREMENT QUALITY REQUIREMENTS, Rev 02 ACKNOWLEDGEMENT

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By signing this page and returning it to BAE Systems-GSD, Seller hereby acknowledges receipt of the Procurement Quality Requirements manual, Revision 02.

SUPPLIER REFERENCE NO: _____

COMPANY NAME: _____

Printed Name

Title

Authorized Signature

Date

**BAE Systems
Ground Systems Division
York, PA**

BAE SYSTEMS PROCUREMENT QUALITY REQUIREMENTS

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BAE SYSTEMS **PROCUREMENT QUALITY REQUIREMENTS**

Part 1 - GENERAL REQUIREMENTS

This document outlines the general, administrative, pre-production, and quality requirements with which suppliers must comply when providing material and services covered by Purchase Orders.

All communications relative to the requirements of the Purchase Order, the drawings, the specifications, or this document shall be directed to the appropriate BAE Systems Authorized Procurement Representative.

As used in this document, the term "Supplier" shall have the same meaning as the term "Seller." Similarly, the term "Purchase Order" shall have the same meaning as "Contract."

This document shall apply in its entirety to every Purchase Order where specified. These requirements apply to all items, including those items normally supplied under a Federal Acquisition Regulation (FAR) 52.246-2 distributor or commercial quality system.

Part 2 of this document contains information on specific Contract Deliverable Requirements (CDRs).

Acronyms:

ADCN	Advance Drawing Change Notice
AQL	Acceptable Quality Level
CDR	Contract Deliverable Requirement
NOR	Notice(s) of Revision
PIR	Procurement Instruction Requirement
PQA	Procurement Quality Assurance
PQSE	Procurement Quality Support Engineering
QAP	Quality Assurance Provision(s)
QAR	Quality Assurance Requirement(s)
SME	Standard Measuring Equipment
SMTE	Standard Measuring and Test Equipment
SQAP	Supplementary Quality Assurance Provision(s)
SUPQA	Supplier Quality (AS)
TDP	Technical Data Package
VIR	Vendor Information Request

1. ORDER OF PRECEDENCE FOR TECHNICAL DOCUMENTS

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

- A. Purchase Order**
- B. Supplements to drawing/QAPs within the Purchase Order in the following order:**
 - 1. Configuration Notes
 - 2. NORs/Attachments/ADCNs
- C. Drawings**
- D. QAPs/SQAPs/QARs (may modify inspection/test requirements of specifications)**
- E. Specifications cited on the drawings**

*Contact the BAE Systems Authorized Procurement Representative regarding any questions or concerns. *The Configuration Requirements specified in the Purchase Order will contain applicable drawing and associated revision levels and supplemental drawing data. Supplier is responsible for determining specification revision levels.*

2. SPECIFICATION REVISION LEVELS

Products supplied under Purchase Orders shall be produced in accordance with the latest revision status of the specifications and standards referenced in the data package. The only exceptions to this rule are as follows:

- A. The Purchase Order or other relevant documents specify usage of an earlier version.
- B. The latest revision issued adversely affects cost, delivery or performance of the goods produced.

If any material specification is obsolete or available only in "mill run" quantities, which are not economical to procure, Supplier may substitute equal or better alternative materials. BAE Systems must approve the substitution in writing. Request to use a substitution shall be sent to the BAE Systems Authorized Procurement Representative utilizing VIR form UA-111.

3. SUPPLIER QUALITY PROGRAM/SYSTEM REQUIREMENTS

Supplier shall develop, document, implement and maintain a quality system which ensures compliance to contract requirements. The quality system can be patterned after or in accordance with ISO 9001-2000 or AS 9100. Certification to ISO 9001-2000 by a registered third party is also desirable. Objective evidence shall be on file verifying that such a system exists and is being maintained. Procedures and records shall be available for examination by authorized BAE Systems representatives.

4. SAMPLING PLANS

Supplier shall adhere to the AQL defined by the TDP.

The order of precedence shall be:

- A. Contract
- B. Performance Specification
- C. Drawing
- D. QAR or QAP

If no AQL is defined by the TDP, the following AQL shall apply:

Critical = 100% inspection

Major = 1.0 AQL

Minor = 4.0 AQL

Note: Reference to AQL is only to be used for determining sample size.

Supplier shall, in all instances where lot sampling is utilized, inspect characteristics in accordance with the following inspection plan:

C=0 SAMPLING PLAN:

LOT SIZE	AQL							
	.65	1.0 Major	1.5	2.5	4.0 Minor	6.5	10	S2N
2-8	ALL	ALL	ALL	5	3	2	2	2
9-15	ALL	13	8	5	3	2	2	2
16-25	20	13	8	5	3	3	2	2
26-50	20	13	8	5	5	5	3	3
51-90	20	13	8	7	6	5	4	3
91-150	20	13	12	11	7	6	5	3
151-280	20	20	19	13	10	7	6	3
281-500	47	29	21	16	11	9	7	3
501-1200	47	34	27	19	15	11	8	3
1201-3200	53	42	35	23	18	13	9	3
3201-10000	68	50	38	29	22	15	9	9
10001-35000	77	60	46	35	29	15	9	9
35001-150000	96	74	56	40	29	15	9	9
150001-500000	119	90	64	40	29	15	9	9
500001&OVER	143	102	64	40	29	15	9	9

Note: Accept lot on 0 (zero) defects
 Reject lot on 1 (one) or more defects

The following situations shall not utilize this C=0 Plan:

- A. Visual weld inspection shall be 100% or per applicable specification requirements.
- B. Non-Destructive Evaluation (NDE) / Non-Destructive Testing (NDT)
- C. Frequency-based testing such as sample/quantity or sample/time period
- D. Fastener quality assurance requirements

Where the AQL is not identified in the TDP, the sampling plans shall be in accordance with C=0 unless approved in writing by BAE Systems. C=0 sampling

shall be applied to all lots presented for final acceptance. Non-standard sampling plans must be approved in writing by the BAE Systems Authorized Procurement Representative prior to use.

5. STATISTICAL PROCESS CONTROL (SPC)

BAE Systems encourages and supports suppliers who are implementing or executing a sampling system using statistical process control techniques. Such statistical data must be comprehensive enough to adequately document quality conformance. If approved in writing by BAE Systems prior to implementation, SPC may be used in lieu of sampling.

6. MEASURING AND TEST EQUIPMENT

Supplier shall establish and maintain a documented calibration system for all measuring and test equipment (M&TE) such as gages, tools, jigs, fixtures and dies used to verify conformity to requirements. The program shall be in accordance with a recognized standard such as ISO 10012 or ANSI/NC SL Z540-1 and shall address the criteria described in the selected standard.

All equipment in the calibration system shall have unique identifiers traceable to the calibration report. Calibration standards shall be traceable to NIST. Calibration reports shall be maintained for all equipment used in the acceptance of product by the supplier and shall include the actual measurement data made during the process. Reports shall identify the person performing the calibration.

Material specifications, such as those addressing heat treatment (e.g., AMS2750), may impose specific calibration requirements in addition to those identified in the preceding paragraph. When imposed, Supplier must include the requirements in the calibration system.

7. FASTENER QUALITY REQUIREMENTS

Supplier shall have a system which controls threaded steel fasteners Grade 5 and higher as defined in SAE-J429 and metric fasteners with strength designations of 8.8 and higher as defined by SAE-J1199, or DIN standards with equivalent strength designations. These fasteners may be supplied to BAE Systems either in bulk quantities or as part of a subassembly.

The system shall ensure traceability of fastener lots back to the manufacturer as well as objective evidence that the fasteners meet all technical requirements. Note that Grade 8.1 or 8.2 fasteners are not acceptable.

8. QUALITY DOCUMENTATION AND RECORD RETENTION

Supplier shall have a system for establishing and maintaining control of records documenting product compliance to applicable procurement documents, drawings, specifications, and standards.

Records shall provide traceability to specific products (i.e., Purchase Order, date of inspection, drawing and revision level/specification number) and use actual data (when required by applicable specifications) to indicate acceptability of the product. Inspection records are to indicate the characteristics and number of observations made (including sample plans), type of deficiencies found, quantities approved and rejected, and the disposition of the deficiencies. Records shall be maintained for a minimum of seven (7) years after final shipment. At the end of seven (7) years, Supplier must provide BAE Systems with the option of having the records forwarded to BAE Systems for retention as required by BAE Systems' prime contract or authorizing disposal at Supplier's convenience.

NOTE: Unless otherwise specified, documentation demonstrating compliance shall be maintained on file for review. BAE Systems retains the right to request any supporting documentation.

9. CERTIFICATE OF COMPLIANCE

A Certificate of Compliance shall be completed for each end item manufactured and maintained on file for each shipment. Certifications to support down level components need not be maintained but must be readily available when requested by BAE Systems. Supplier shall certify that the materials and processes used in performance of the Purchase Order meet all applicable specification requirements and that inspection/process control/test data necessary to substantiate the Certificate of Compliance are on file and available for BAE Systems to review. The Certificate of Compliance, signed by an authorized individual, certifies that a product or service has met all requirements of the Purchase Order including drawings and specifications at the prescribed revision level.

10. SOURCE CONTROLLED ITEMS

A source controlled drawing provides a list of approved sources of supply and the Supplier's item identification for the item(s) that have been qualified and approved for use. Any change in form, fit, function or testing requirements must be submitted in writing to the BAE Systems Authorized Procurement Representative prior to implementation for approval.

11. QUALIFIED PRODUCT LIST

Any items furnished on Purchase Order(s) applicable to a Government Qualified Products List must be manufactured by Government-approved sources.

12. NONCONFORMING MATERIAL

Supplier is responsible for establishing controls to ensure that products not conforming to the Purchase Order are identified, segregated, dispositioned and controlled to prevent inadvertent use.

Supplier shall request written authorization from the BAE Systems Authorized Procurement Representative (using VIR form UA-111) and receive approval, prior to shipping, in order to ship nonconforming product. Shipments received without written authorization shall be rejected and may be returned at Supplier's expense.

BAE Systems may return items that it finds to be nonconforming for appropriate rework, repair or replacement.

NOTE: Supplier shall state the condition of the returned product (i.e., repaired, reworked, replaced or, if no discrepancies were found by Supplier upon re-inspection, "returned as is") on the packing slip as well as clearly labeled on the package. When items are "returned as is," Supplier shall state on the packing slip the justification for returning "as is."

13. MATERIAL REVIEW BOARD

Material review authority is not delegated unless specifically invoked on the applicable Purchase Order. Products which do not conform to all applicable specifications must be adequately controlled.

14. VENDOR INFORMATION REQUEST (VIR)

Requests for the following shall be submitted by use of the "Vendor Information Request" (BAE Systems Form UA-111) and forwarded to the BAE Systems Authorized Procurement Representative:

- Authorization to differ from requirements imposed by BAE Systems for repair approval
- Clarification of drawing, specification or Purchase Order requirements
- Requests for drawing changes, specification or Purchase Order requirements

When a VIR is used to request departures from specification or drawing requirements or repair approval, the VIR must include a complete description of the departure, the point in the manufacturing cycle where it occurred or will occur, the quantity and identity of the applicable items or material, the rationale for why the approval should be granted by BAE Systems and/or the Government (to include any advantages to be realized by BAE Systems and/or the Government through approval of the request), and the action taken to prevent recurrence. The description must be clear and concise and must include full dimensional and location details.

If a VIR is used to request information or a change to the requirements of the Purchase Order, BAE Systems' response to the VIR constitutes a contractually binding interpretation of, or change to, the requirements of the Purchase Order.

When a VIR is used to document departure approval, the Vendor Information Request number (top right corner) shall be included on a tag and attached to appropriate parts.

A dispositioned VIR applies only to the item(s) for which it was submitted; the resolution may not be extended to any other item or piece on the same Purchase Order or to any other Purchase Order.

15. CORRECTIVE ACTION

Supplier is responsible for implementing quality systems capable of resolving problems adversely affecting quality and correcting those conditions. Suppliers shall contain discrepant parts in stock or in process, determine root cause (primary reason which caused product nonconformance or quality system deficiency), institute measures to prevent recurrence and implement corrective action. Nonconforming material or quality system deficiencies detected by BAE Systems may require Supplier response to a Supplier Corrective Action Request (SCAR). Failure to adequately respond to a SCAR may ultimately lead to suspended business/dealings.

16. QUALITY DOCUMENTATION

It is Supplier's responsibility to comply with all applicable requirements specified on the Purchase Order. Supplier is to develop the appropriate objective quality evidence necessary to demonstrate compliance to the requirements of the Purchase Order for each item being procured including sub-components, special processes (i.e., welding, painting, plating, NDE) and to support the Certificate of Compliance. As such, the following definitions and Supplier responsibilities apply:

A. First Piece Inspection

First Piece is an inspection performed on the first part, or first lot of parts, produced to verify conformance to top level drawing dimensional requirements.

Previous First Piece inspection reports may be utilized to satisfy the First Piece requirement provided that:

1. There has been continuous production with no breaks greater than 12 months.
2. The manufacturing process has not changed (i.e. moved the product line, introduced new manufacturing techniques, etc.).
3. The manufacturing facilities are the same.

Drawing revisions where drawing characteristics have changed, new characteristics added, or characteristics on previous reports have been impacted, only those characteristics require (re)inspection.

While First Piece inspection may not be specifically called out within the Purchase Order, QAP, or Specification, it remains the Supplier's

responsibility to be able to produce objective evidence of compliance to all drawing requirements.

When specified on the Purchase Order in the form of a Contract Deliverable Requirement (CDR), documentation showing actual results (where appropriate) from measuring equipment shall be submitted along with the first piece sample. The Supplier shall identify this sample and all associated documentation as "First Piece." First Piece inspection reports for castings and forgings shall indicate numeric values obtained and a material test report per the applicable specification.

B. First Article Test/Inspection

First Article Tests (FATs) involve testing and evaluating an item for conformance to performance requirements before or in the initial stages of production. It typically includes material verification processes, first piece inspection, acceptance testing, control testing (where applicable), performance and environmental testing, and marking and packing verification. First Article is a formal test which may require BAE Systems and/or Government witnessing. This formal test is invoked only when First Article is specified in the Purchase Order via a CDR.

Prior to Supplier's start of fabrication of any production lot of items covered by Purchase Order(s), Supplier shall perform a First Article Test on part(s) utilizing the same processes planned for use on the production lot. Supplier shall identify this sample as the "First Article." It is the responsibility of the Supplier to coordinate with BAE Systems for witnessing of the First Article Test.

Product WILL NOT BE ACCEPTED at BAE Systems without a letter of approval of FAT from BAE Systems. In the event Supplier purchases parts or components which require FAT, it is Supplier's responsibility to coordinate this activity and obtain all approvals from BAE Systems. Documentation of this activity shall be made an integral part of the end item documentation package. If the First Article procedure/report is rejected by BAE Systems, resubmittal of the procedure/report is required until formal written approval is given.

Following First Article approval, Supplier shall notify the BAE Systems Authorized Procurement Representative to determine if testing must be repeated when any of the following occurs:

1. Significant change in manufacturing process (manufacturing line is moved, introduction of a new manufacturing technique, etc.)
2. Change in any drawing configuration, component, or sub-component parts
3. Manufacturing location changed
4. A break in production or process in excess of twelve (12) months, unless otherwise specified

C. Control Test

Supplier shall schedule Control Tests based on specification/QAP's frequency of test and test requirements. Supplier is responsible for determining the test schedule based on the production and delivery schedule for the Purchase Order. If any failures occur, regardless of whether it is test equipment or sample failure, Supplier shall immediately notify the BAE Systems Authorized Procurement Representative for further instructions prior to continuance of testing.

Where Control Testing is required by QAP or specification, documentation supporting compliance shall be retained on file and available upon request.

17. BAE SYSTEMS MARKING REQUIREMENTS

As a minimum, unless precluded by size, all items shall be positively identified with the supplier (VEN) number and part number. This can be accomplished with stamps, etching, and/or the use of tags or bulk marking methods for smaller items. If a part is large enough to be marked, it should be marked. MIL-STD-130 and drawings are provided as a guide. Unique Identification (UID)/Radio Frequency Identification (RFID) may be required. Only the top level assembly needs part marking unless the top level drawing requires sub-assemblies to be marked. Refer to drawings or purchase order for marking requirements.

Examples of identification:

SUPPLIER NUMBER	VEN000124
PART NUMBER	12553820

A. Supplier Number: The assigned supplier number can be found above the supplier's name and address on the GS Purchase Orders or in the upper right hand corner of the Purchase Order for AS Purchase Orders. The Prefix of "VEN", when using Vendor Number, or MFR, when using the manufacturer's Cage Code, shall be included in the marking to identify the manufacture or supplier of the product.

B. Part Number: All parts shall be identified with the complete BAE Systems part number. The part number is described on the drawing, reference specific Purchase Order line number for the appropriate dash number when applicable. Lower level components do not require part marking unless required by the top level drawing.

Serialized items, Hydraulic hoses, tubes and wiring harnesses (cables, wire assemblies and buses) **require** part marking per the drawing and/or specification. Unless otherwise specified by the Purchase Order, CQR, or product specification, part marking **per drawing requirements** (such as MIL-STD-130) is not required although paragraph 1 (above) still applies.

EXCEPTIONS/ALLOWANCES:

1. Method of application: Unless otherwise specified on the drawing, the term "Etch" refers to marking with a vibratory pencil. Gorten Type engraving tools may be used in lieu of steel stamp or etch.

2. Sand Casting Integral Marking alternatives. When the drawing requires a sand casting to be marked integral (integral to the pattern), the integral marking may be steel stamped or integral marking ground down to place the correct Part Number using Steel Stamping method.

Spare Parts Business:

Unless otherwise specified by Purchase Order or Quality Requirements Attachment, individual part marking **is required** for all items supplied to the Spare Parts Business. Marking shall be in accordance with drawing requirements and include the Spare Parts Business's Cage Code. Commercial Off-the-Shelf and Commercial OEM items may be marked with the firm's name or logo in lieu of the Cage Code.

Unique Identification (UID)/Radio Frequency Identification (RFID) may be required. Refer to drawing or purchase order for marking requirements.

18. CHEMICAL AND PHYSICAL (MECHANICAL) TEST REPORTS

Supplier shall maintain all Chemical and Physical (Mechanical) Test Reports. These shall be provided to BAE Systems upon request.

Unless otherwise specified in the Purchase Order, carbon, alloy, and armor steel plate shall be melted and rolled in the United States or Canada if the carbon, alloy, or steel armor plate is in Federal Supply Class 9515 or is described by specifications of the American Society for Testing Materials (ASTM) or American Iron and Steel Institute (AISI).

Aluminum plate 1 inch or greater in thickness shall be mechanically stress relieved by standard industry method of stretching to remove residual stress. In addition, all other specification requirements shall be met.

Supplier shall maintain all stress relief documentation. These shall be provided to BAE Systems upon request.

19. BEARINGS

Unless otherwise specified in the Purchase Order, Supplier agrees that all ball and roller bearings and ball and roller bearing components (including miniature and instrument ball bearings) delivered under Purchase Order(s), either as end items or components of end items, shall be wholly manufactured in the United States or Canada. Unless otherwise specified, raw materials (such as preformed bar, tube, or rod stock and lubricants) need not be mined or produced in the United States or Canada. The foregoing restriction does not apply to ball or roller bearings that are acquired as components if the end items or components containing ball or roller bearings

are commercial items or the ball or roller bearings are commercial components manufactured in the United Kingdom.

20. PRESERVATION, PACKAGING, PACKING AND HYDRAULIC CLEANLINESS

Unless otherwise specified, all uncoated or unprotected ferrous and nonferrous metal surfaces (internal and/or external) shall be protected against rust and corrosion for a minimum of sixty (60) days from the date of shipment. If a corrosion-protected ferrous or nonferrous metal is to be imported into the United States, the corrosion protection substance must be certified to be in compliance with the Toxic Substance Control Act (TSCA) prior to leaving U.S. Customs. They shall be suitably packed to prevent shipping and handling damage. All openings (i.e., fuel, hydraulic, electrical connections, etc.) shall be adequately protected by closures to prevent contamination or damage. All fuel system and hydraulic components shall be free from visible contaminants, foreign material, rust or burrs. Internal cleaning of components shall be performed by flushing with a suitable solution or dry filtered air. Fuel system components shall be protected with corrosion-protective compound compatible with DF-1, DF-2 and JP8. Hydraulic components shall be protected with corrosion-protective compound compatible with standard hydraulic oils.

When high-level hydraulic component cleanliness is specified on the drawing/specification, the following shall apply:

- A. Supplier of items requiring the removal of fine particulate and foreign elements shall develop and maintain a system for assuring cleanliness quality complies with contract requirements.
- B. Items such as tubes and hoses, if not otherwise stated on the drawing, shall be protected against contamination by using screw-on caps for assemblies and push-on caps for bulk hose and tubes after cleaning.

The following note shall be permanently affixed to the shipping container either through labeling or stenciling:

"CAUTION: Do not remove screw-on or push-on caps except in a controlled environmental condition. Prior removal will violate cleanliness requirements."

ESD Packaging:

All Class 1, Class 2 and Class 3 parts, assemblies, and equipment, as defined by MIL-STD-1686, are to be packaged in accordance with Paragraph 5.8 of MIL-STD-1686 (MIL-E-17555). External shipping packaging for Class 1, Class 2, and Class 3 devices shall be identified with the ESD symbol. All other components with solderable leads and considered non-ESD sensitive per MIL-STD-1686 shall be packaged in material that meets the requirements of MIL-B-81705, Type II or Type III. Bare printed wiring boards are to be

packaged in heat-sealed nonstatic-generating poly bags that meet the requirements of MIL-B-81705 and MIL-HDBK-263.

21. PRETREATMENT

Note: The requirements identified in the following paragraphs only apply to Purchase Orders for Ground Systems.

A. Supplier providing phosphate-coated parts in accordance with MIL-DTL-16232 shall, prior to production, submit in writing within 45 days after contract award a proposed procedure to include the following details:

- 1) Chemicals used.
- 2) Details of the test methods and frequencies.
- 3) The exact designation of all materials proposed for use, together with the names of the manufacturers, shall be stated.
- 4) Detailed method of control, with limits for time, temperature and pH values and all other pertinent details that will ensure compliance with the requirements of the specification.
- 5) The procedure must contain the part numbers that require phosphate coating. This requirement applies not only to the top-level assembly but also sub-component parts.

Note:

- Regardless of the processes or materials approved, the phosphate coatings shall conform to all the applicable requirements of the specification MIL-DTL-16232.
- If no prior approval is available the supplier must obtain written approval through BAE Systems before pretreating any BAE Systems product.
- Deviation from the approved procedure is not permitted without written approval from the procuring agency.

B. Supplier providing chemical conversion coatings and pretreatments to parts in accordance with TT-C-490 Types I and V shall, prior to production, submit a detailed written procedure identifying the following:

- 1) Cleaning processes
- 2) Pretreatment processes
- 3) Painting Processes
- 4) Process Time
- 5) Temperature
- 6) Chemical concentrations
- 7) Process controls
- 8) Acceptance criteria
- 9) Manufacturer and exact proprietary designation of any material used.
- 10) Any equipment used in the application of the procedure.

11) Any other pertinent details shall be listed for each step of the application process.

Note:

- The complete procedure should demonstrate ability to pass the performance tests within the TT-C-490 specification.
- Deviation from the approved procedure is not permitted without written approval from the procuring agency.

Phosphate Coating Procedures other than specification MIL-DTL-16232 or chemical conversion coatings and pretreatments to specification TT-C-490 Types I and V shall be retained on file at the Supplier's facility and available for review upon request.

C. Additional information:

1. When test panels or specimens are used in lieu of actual parts, they shall be made of the same material, alloy, and hardness and be representative of the manufacturing process.
2. Parts coated to MIL-DTL-16232 having a hardness of Rockwell C39 or greater shall be tested for hydrogen embrittlement on a frequency of no less than every 90 to 120 days.
3. TT-C-490 is not only a phosphate coating specification, but also a paint specification; therefore, it is Supplier's responsibility to assure all aspects of the phosphate and paint procedures are not only included in the procedure but also followed.
4. Notes applicable to specification TT-C-490 is as follows:
 - a. Lot size for salt spray testing per MIL-C-53072 shall be defined within the contractor's procedures based on historical performance. In no case shall testing be performed less than once every two weeks. Salt spray testing shall be performed per ASTM B117 (5% salt) for 336 hours.
 - b. Salt spray test panels shall be 4 X 6 inches minimum.
 - c. Salt spray test panels shall be pretreated (if applicable) and prime coated.
 - d. Salt spray panels shall have a single vertical scribe (as positioned in the salt spray cabinet) exposing the base metal.

22. CLASS 1 OZONE DEPLETING SUBSTANCES (C1ODS)

Buyer's customer, the Department of Defense, has an obligation under Public Law 102-484, Section 326 of the 1993 Defense Acquisition Authorization Act, not to allow the award of a contract that requires the use of Class 1 Ozone Depleting Substances (C1ODS).

The Government has conducted a best efforts review of the technical requirements, standards, and specifications of Buyer's contracts to see if the TDPs contain requirements for C1ODS. Those requirements have been identified along with a suggested alternative to eliminate C1ODS. For a copy of the most current list, contact your BAE Systems Authorized Procurement Representative or refer to the BAE Systems internet web page. Contact Authorized Procurement Representative for website information.

In an effort to assist our customer in their obligation, BAE Systems asks for your input. If you have any special knowledge regarding C1ODS required by Government specifications in the technical data packages, whether directly or indirectly, or if you know about potential substitutes for any C1ODS required by the Government specifications, BAE Systems and its customer would appreciate that information. It should be understood that you are not obligated to forward the information requested, and that neither BAE Systems nor its customer can provide any special or separate payment for this information.

The suggested alternatives recommended for use on the BAE Systems internet webpage can be substituted without notifying BAE Systems, in lieu of any specification required C1ODS. Class 1 Ozone Depleting Substances are not applicable to residual materials currently in your inventory procured under the Purchase Order.

This request for information and the elimination of Class 1 Ozone Depleting Substances is strictly voluntary on your part. BAE Systems hopes that you will join our customer and us in our efforts to reduce and eliminate environmentally harmful substances.

23. CHEMICALS

In order to assure the proper storage, handling, use, and disposal of hazardous or potentially hazardous materials, every container shall be clearly marked with the following, as a minimum:

- ◆ Product Name
- ◆ Manufacturer's Name
- ◆ Manufacturer's Part Number
- ◆ Manufacturer's Batch Number or Lot Number
- ◆ Date of Manufacture
- ◆ Expiration Date, as applicable
- ◆ Federal Hazardous Chemical Label (OSHA 1910, 1200 Compliant)
- ◆ BAE Systems Purchase Order Number

- ♦ BAE Systems Part Number
- ♦ Applicable DOT/UN Placard/Labels

In addition, all products containing Volatile Organic Compounds (VOCs), such as paint, must be labeled by the manufacturer in accordance with applicable state and/or federal codes.

A copy of the Material Safety Data Sheet (MSDS) shall accompany each shipment.

24. BALLISTIC REQUIREMENTS FOR METALS AND COMPOSITE MATERIALS

Supplier shall maintain the Government approval letter, including the firing number, for each heat/lot of material or other miscellaneous material for those items requiring ballistic firing. Supplier shall submit Objective Quality Evidence to BAE Systems upon request.

Supplier of armor castings or extrusions shall maintain a listing of the Government-approved firing number for all material supplied to BAE Systems.

25. CUSTOMER SOURCE SURVEILLANCE (CSS)

The items and supporting quality documentation covered by Purchase Order(s) may be subject to BAE Systems source surveillance/inspection and/or witnessing of tests prior to shipment from your plant. BAE Systems reserves the right to add BAE Systems source surveillance to any Purchase Order at any time throughout the period of performance at no cost to BAE Systems.

26. GOVERNMENT SOURCE SURVEILLANCE (GSS)

The items and supporting quality documentation covered by Purchase Order(s) may be subject to Government source surveillance/inspection and/or witnessing of tests prior to shipment from your plant. BAE Systems' Customer(s) reserve(s) the right to add Government source surveillance to any Purchase Order at any time throughout the period of performance.

27. MERCURY OR MERCURY CONTAINING COMPOUNDS

Mercury or mercury containing compounds shall not be intentionally added or come in direct contact with hardware or supplies furnished.

28. AGE CONTROL

DEFINITIONS

Shelf life - The maximum period of time between the cure date and the date the elastomeric product is first removed or unpackaged for installation or fabrication into a component part of a subassembly, assembly, or system. During the shelf life time, the stored elastomeric product is expected to retain its characteristics as originally specified.

Age resistance - Resistance to deterioration in storage by environmental factors, such as heat, light and ozone.

Cure date - The date the rubber is fully cured. Two methods in expressing the cure date are as follows:

- a. Shelf life to a maximum of 3 years. Cure date stated in terms of month of calendar year and the year, i.e., 6-83.
- b. Shelf life in excess of 3 years. Cure date stated in terms of the quarter of calendar year and the year, i.e., 2Q-83.

Acceptance life - This is the maximum life at the age of acceptance. The age limit at acceptance for hoses and hose assemblies is 32 quarters. See SAE AS1933 for aerospace hoses.

Service life - A general term used to quantify the average or mean life of an item once put in use. Service life, which is depicted in years, is the number of years of economical service reasonably expected of equipment as established in applicable DOD, Service, and/or Agency manuals, bulletins, regulations, instruction manuals, and/or the technical judgment of the item and/or equipment manager.

Additional Resources For Rubber Products

- **MIL-HDBK-695**: This handbook may be used for guidance only. This handbook establishes guidelines for time periods for the expected life of elastomeric products during shelf storage.
- Aerospace o-rings and other molded seals. Refer to **SAE ARP5316** for recommended shelf lives.
- Aerospace bulk hoses and hose assemblies. Consult **SAE AS1933A** for age control limits for acceptance of aerospace bulk hoses and hose assemblies.
- Non-aerospace bulk hoses and hose assemblies (surface vehicle, industrial and marine application). Consult **SAE J517** for age control limits for acceptance of non-aerospace bulk hoses and hose assemblies.

29. SPECIAL PROCESSES

Suppliers providing products that require special processes such as painting, plating, heat-treatment, etc., must have objective quality evidence on file and available for BAE Systems review which demonstrates that all requirements of the purchase order, drawings, and specifications in question are being performed and documented.

BAE Systems will accept National Aerospace Defense Contractors Accreditation Program (NADCAP) certification for the special process being performed in lieu of objective evidence, with the exception of Phosphate Coating. Suppliers must ensure that documentation supporting acceptance of product is available upon request.

Part 2 - CONTRACT DELIVERABLE REQUIREMENTS

The following Contract Deliverable Requirements (CDRs) identify Purchase Order deliverable documentation to be supplied with each shipment of material to BAE Systems or actions required by Supplier to demonstrate compliance to Purchase Order requirements.

The assignment of a CDR to the Purchase Order does not relieve Supplier from complying with all requirements of PQR Section 1, the Purchase Order, drawing, and associated specifications.

CDR - 001 - Inspection/Test Data Reports

All of Supplier's actual inspection/test data for the item(s) covered by Purchase Order(s) shall be submitted by Supplier to BAE Systems on a suitable form. The data shall be submitted with the shipment of the item(s). As applicable, the data shall include the following information:

- ◆ Part Number
- ◆ Serial Number
- ◆ Quantity of parts
- ◆ Identification of each characteristic inspected/tested to include but not limited to: dimensional coordinates, drawing notes, (e.g., protective coatings, chemical and physical properties), etc.
- ◆ Inspection/test results (variable data)
- ◆ Date of inspection/test
- ◆ Inspector's signature, stamp or initials
- ◆ Indication of First Piece (when applicable)

CDR - 002 - Detailed Inspection Test Procedure

Supplier shall prepare and maintain a written, detailed inspection/test procedure for each item covered under Purchase Order(s). The procedure shall be used by Supplier in the performance of Purchase Order(s). Prior to the start of inspection, Supplier shall submit the procedure(s) to the BAE Systems Authorized Procurement Representative and obtain approval of the procedure(s). As a minimum, each procedure shall contain the following information, as appropriate:

- ◆ Part Number
- ◆ Procedure Revision
- ◆ Purchase Order Number
- ◆ Identification of each characteristic to be submitted to inspection/test, its requirement, and drawing and/or specification requirement reference
- ◆ Sequence of each inspection/test
- ◆ Equipment to be used for each inspection/test and for complex situations, the setup of the inspection/test equipment
- ◆ The inspection/test environment

CDR - 003 - First Piece Inspection

A single item from the first production lot shall be selected for inspection of all drawing characteristics. As a minimum, First Piece inspection documents shall include an inspection/test data report in accordance with CDR-001.

The first piece inspection report shall be submitted to BAE Systems Authorized Procurement Representative and approved prior to shipping of parts. Notification of approval will be sent to Supplier.

CDR - 004 - First Article Test (FAT)

Supplier shall submit a FAT plan to the Authorized Procurement Representative within thirty (30) days after receipt of the Purchase Order. The FAT plan shall include dates for submittal of the FAT procedure, dates and location for all testing with anticipated completion date, and date for submittal of the FAT report. The procedure and test reports may be prepared using MIL-HDBK-831 as a guide.

If requested by BAE Systems, Supplier shall ship a sample item produced with the same processes planned for use on the production lot for approval prior to Supplier's start of fabrication of any production lot of items covered by Purchase Order(s). Supplier shall identify this sample and all associated documents as the "First Article."

Following First Article approval, Supplier shall notify the BAE Systems Authorized Procurement Representative to determine if testing must be repeated when any of the following occurs:

1. Receipt of new purchase order or contract.
2. Significant change in manufacturing process (introduction of a new manufacturing technique, etc.)
3. Change in any drawing configuration, component, or sub-component parts.
4. Change in manufacturing location.
5. A break in production or process in excess of twelve (12) months, unless otherwise specified.

If source inspection (CDR 005) is required by Purchase Order(s), Supplier need not ship the First Article sample to BAE Systems but shall notify the Authorized Procurement Representative of the date of the FAT for witnessing purposes.

If Government Source Surveillance (CDR 006) is required by the purchase order, the supplier shall notify in sufficient time, the local government representative servicing their company of the pending FAT and the location and times of the tests for witnessing purposes.

CDR - 005 - Customer Source Surveillance (CSS)

Source Surveillance, inspection, and/or test by a BAE Systems source inspection representative is required for the products and/or services to be supplied under Purchase Order(s). In order to accommodate BAE Systems source inspection representatives, Supplier shall make facilities, equipment, inspection records and assistance readily available.

NOTE: Suppliers are requested to provide ten (10) working days' advance notification of requests for source inspection. BAE Systems understands that in some cases requests for source inspection will not meet the requested 10 working days advance notification; however, Suppliers shall provide a 10 day advance notification whenever possible. Written requests for source inspection must be submitted to the BAE Systems Authorized Procurement Representative. Failure to notify BAE Systems of a source inspection cancellation in writing 48 hours prior to the schedule could result in a charge to Supplier for costs incurred.

All Suppliers, regardless of status, are required to submit Source Inspection requests per CDR-005.

All items are subject to inspection, test, and acceptance upon receipt at BAE Systems facilities regardless of Preferred/Certified Supplier status or any prior inspection and tests. Source surveillance, inspection and/or test shall not relieve Supplier of any responsibility to meet the requirement of Purchase Order(s). The packing list, signed by the BAE Systems PQA representative, must accompany every shipment that has been inspected by BAE Systems. Unauthorized shipment of product without BAE Systems source inspection may result in a rejected shipment.

CDR - 006 - Government Source Surveillance (GSS)

Government surveillance is required prior to shipment from your plant. Upon receipt of Purchase Order(s), promptly notify the Government representative who normally services your plant so that appropriate planning for Government inspection can be accomplished.

In the event the representative or office cannot be located, the BAE Systems Authorized Procurement Representative shall be notified immediately. Unauthorized shipment of product without Government source surveillance may result in a withholding of invoice payment.

NOTE: Three (3) days' written notice is required prior to submission for inspection for resident and seven (7) days' for itinerant Government representatives. Obtain Government inspection prior to shipment. Receipt of material without GSS shall be cause for rejection. GSS shall not replace Supplier inspection nor relieve Supplier of its responsibility for furnishing an acceptable end item.

CDR - 007 - Welding and Brazing - Ground Systems

Note: This CDR only applies to Purchase Orders received from BAE Systems - Ground Systems

PRIOR to implementation of the proposed process, procedure approval is required by BAE Systems Weld Engineering.

Supplying product to BAE Systems without an approved WPS (Welding Procedure Specifications) is cause for rejection.

The WPS shall include the PQR (Procedure Qualification Record) for the process.

If Supplier has completed the BAE Weld Training, they may use the BAE procedures which are qualified.

Use of BAE WPS still requires approval prior to use for each individual part number.

Aluminum and Steel Arc Welding; Resistance Welding and Brazing

Procedure submittal requirements for aluminum, steel, resistance, and brazing weldments are addressed on the following forms/ procedures:

Form Number/ Procedure	Document Title		
12472301	Ground Combat Vehicle Welding Code - Aluminum		
12479550	Ground Combat Vehicle Welding Code - Steel		
LAA-5128	Welding Procedure Extension Request		
LAA-5130	Brazing or Braze Welding Procedure - Cover Sheet		
LAA-51301	Brazing or Braze Welding Procedure		
LAA-5131	Recorded Joint Welding Procedure for Resistance Welding - Cover Sheet		
LAA-51311	Recorded Joint Welding Procedure for Resistance Welding		
LAA-5272	GSD/SPD Welding and Brazing Submittal Requirements and Instructions		

Forms are available on the BAE Systems Procurement website or from a BAE Systems Authorized Procurement Representative.

Aluminum Welding Code 12472301 replaces these specifications:

- ◆ MIL-STD-1946
- ◆ MIL-STD-372
- ◆ MIL-W-45205
- ◆ MIL-W-45206

Steel Welding Code 12479550 replaces these specifications:

- ◆ MIL-STD-1261
- ◆ MIL-STD-1941
- ◆ MIL-STD-1185
- ◆ MIL-W-46086

Supplier is responsible for the performance and maintenance of all supporting documentation required to demonstrate compliance with Purchase Order requirements.

CDR - 008 - Welding (includes Weld Repairs) - Armament Systems

Note: This CDR only applies to Purchase Orders received from BAE Systems - Armament Systems

Prior to Supplier's start of fabrication (or repair to raw material, casting, forgings, etc.), Supplier shall submit procedure(s) and supporting qualification test data in accordance with the applicable specifications (including weld personnel certifications) to the BAE Systems Authorized Procurement Representative. Changes/revisions to previously approved weld procedures must be submitted for re-approval.

CDR - 009 - Soldering

Supplier shall submit soldering plans to the BAE Systems Authorized Procurement Representative thirty (30) days after receipt of the Purchase Order. Procedures shall also be submitted for all subcontracted soldering operations.

BAE Systems reserves the right to disapprove the plan or to require changes in the plan, which it deems necessary to ensure the product conforms to IPC-J-STD-001, Class 3 and Purchase Order requirements.

An approval extension request is only required if the Purchase Order number changes. A new Purchase Order number with the same prime contract number as previously approved does not require extension of approval.

The plan shall include, as a minimum, detailed procedures to be followed and utilized throughout all areas of performance.

Supplier must have approval from BAE Systems prior to beginning production. This approval will be in the form of a letter notifying you that your facility has satisfactorily completed a High-Reliability Audit. The approved program must be utilized in the performance of Purchase Order(s). Any and all records required by the approved program may be requested at any time and must be immediately available for review. BAE Systems must approve changes to this program following approval.

CDR - 010 - Solderability

Material supplied shall meet the solderability requirements of the product fabrication specification. When no solderability test is specified, the test shall be performed in accordance with MIL-STD-202, Method 208. (Note: One hour steam aging is required for wire.)

- ◆ With each shipment, Supplier shall provide a written certification stating that the components provided were tested and meet the applicable solderability requirements as stated above.

CDR - 011 - Printed Wiring Boards

Supplier shall provide with each shipment a written certificate stating that the boards were fabricated to the relevant specifications identified within the TDP. Test coupons and microsections must be maintained for a period of two (2) years and available for examination by BAE Systems.

CDR - 012 - Acceptance Tests

Acceptance Test Procedures are to be developed and submitted to the BAE Systems Authorized Procurement Representative at least thirty (30) days in advance of the test date for BAE Systems review and concurrence. Upon completion of acceptance tests, the test reports at the top level assembly (deliverable line item) shall be forwarded to the Authorized Procurement Representative with the applicable component certifications.

CDR - 013 - Nondestructive Examination Procedures

When the Purchase Order specifies Nondestructive Examination such as radiography, magnetic particle, liquid penetrant, or ultrasonic inspections, Supplier shall submit the procedure to the BAE Systems Authorized Procurement Representative for approval. The procedure shall be submitted within thirty (30) days after receipt of the Purchase Order. If submittal is requested during performance of the Purchase Order, Supplier shall submit the procedure within three (3) days of receiving the request.

Significant change to the approved procedure shall require re-submittal and approval. The revised procedure shall not be implemented until written approval is received from BAE Systems.

CDR - 014 - Nondestructive Examination Inspection Report

Supplier shall furnish a certified test report stating that Nondestructive Examination(s) required per the TDP have been performed in accordance with an approved test procedure as required by the referenced specification and that the material is acceptable. The certification shall also certify:

- ◆ Type of test and coverage
- ◆ Applicable procedure specification (title, number and revision)
- ◆ Applicable acceptance criteria (title, number and revision)
- ◆ Name of company that actually performed testing

CDR - 015 - Control Test

Supplier shall schedule Control Tests based on specification/QAP's frequency of test and test requirements. Supplier is responsible for determining the test schedule based on the production and delivery schedule for the Purchase Order. Supplier shall submit for approval by BAE Systems a control test procedure within thirty (30) days after receipt of the Purchase Order. Supplier shall notify the BAE Systems Authorized Procurement Representative of the projected test schedule and any changes as they occur. If any failures occur, regardless of test equipment or sample failure, Supplier shall immediately notify the BAE Systems Authorized Procurement Representative for further instructions prior to continuance of testing.

Following completion of testing, the test report shall be submitted to the BAE Systems Authorized Procurement Representative for approval.

MIL-HDBK-831 should be used as a guide in developing test report format. As a minimum, the test report shall include:

- ◆ BAE Systems Part Number
- ◆ BAE Systems Purchase Order Number
- ◆ Prime Contract Number (BAE Systems' contract with its customer)
- ◆ Applicable drawings/specification and revision level
- ◆ Type of test (i.e., Group "C," Group "D," etc.)
- ◆ Tests performed and results
- ◆ Test completion date
- ◆ Sample size
- ◆ Sample identification, if applicable
- ◆ Production interval (or Purchase Order line number deliverable)
- ◆ Signature and title of Supplier's representative
- ◆ Report date

CDR - 016 - Plating

Supplier shall maintain written certification documenting that plating was performed in accordance with drawing and Purchase Order requirements. The facility actually performing the plating shall prepare the certification. When baking for hydrogen embrittlement relief is required, the certification shall contain a statement that the items were baked at the required temperature for the required minimum time within specified time limit.

A. Electroplated Coating of Cadmium or Zinc:

Components requiring electroplated coating of cadmium or zinc, which are incorporated in equipment to be delivered under Purchase Order(s), shall allow the use of ASTM B 633, Type 2, of equivalent thickness, except salt spray test per ASTM B 633 is not required. An alternate coating for ASTM B 633 shall be Ion Vapor Deposited (IVD) Aluminum MIL-DTL-83488, Type II, of equivalent thickness. For components requiring non-electroplated coatings of cadmium or zinc, the alternate coating shall be MIL-DTL-83488, Type II, of equivalent thickness.

B. Solid Film Lubricant, MIL-PRF-46010:

When performing solid film lubricant on steel products, the parts shall receive a solid film bake cure at 300° F, unless the drawing specifies a specific temperature.

CDR - 017 - Painting

Supplier shall maintain, and provide upon request, written certification documenting that painting was performed in accordance with all drawing, specifications, and Purchase Order requirements. The facility actually performing the painting shall prepare the certification. Paint thickness of a sample of actual parts shall be recorded on paint certification. All test and inspection documentation shall be available for BAE Systems review.

Items requiring painting in accordance with MIL-STD-1303 (Cancelled) shall instead be painted in accordance with NAVSEA Drawing 7250920 and associated paint photographs (if applicable) to define masking.

CDR - 018 - Physical and Chemical Test Reports

With each shipment, Supplier shall provide all actual chemical, mechanical, and/or physical test results pertaining to the material shipped under Purchase Order(s), as applicable.

CDR - 019 - Test Samples - Tensile Testing

With each shipment, Supplier shall provide a set of two test bars un-machined and suitable for the mechanical testing required by Purchase Order(s) or referenced specification. Both bars shall be made from the same melt and heat treated in the same lot as the supplied parts.

CDR - 020 - Heat Treat

With each shipment, Supplier shall provide a written certification that heat treatment was performed in accordance with drawing and Purchase Order requirements. When the drawing specifies a hardness range for materials due to quench and temper or other practices, statements of findings for each heat shall be reported. When heat treating is performed by a facility other than the Supplier shown on Purchase Order(s), the name of that subcontractor and a copy of the certificate furnished by the subcontractor for the heat treatment shall be furnished to BAE Systems. When specified on drawing and Purchase Order test samples shall be returned.

(A) - Visual Metal Graphic Inspection

Visual inspection at a magnification of 5X shall be performed on heat treated items. Cracks, seams, laps or other injurious defects shall not be allowed. For steel carburized parts, the heat treat condition prior to carburizing shall be either quench and tempered or normalized and tempered. Heat treat process and atmosphere control shall be such that no decarburization occurs on the surface as detectible by metal graphic sectioning under magnification at 100X. Exceptions are stress-proof, fatigue-proof, precipitation hardening grades of steel, maraging steels and structural steel such as HY-, HY-100, Cor-ten, etc. This will minimize distortion and assures proper hardnesses are achieved.

(B) - Quench and Temper (Core Hardness Specified)

A test specimen (or additional part) of the same alloy and same size, within 20% of the largest cross section thickness, shall be heat treated with each heat treat lot. The test sample shall have a length at least one inch longer than the section thickness. The specimen or sample part shall be cross sectioned at mid-length of the largest cross section thickness plus or minus 3/8 inch. Supplier shall submit a report including the actual surface hardness and core hardness at 1/2 radius (core hardness measured on cut surface).

(C) - Quench and Temper (Core Hardness Not Specified)

Report shall include statement of surface hardness findings for each heat treat lot. Testing shall be done in such a manner as to not damage surface finish as required by drawing.

(D) - Case Hardening - Carburizing

A test specimen of the same alloy and similar configuration as the part shall be processed with each heat treat lot to verify case depth, surface and core hardness requirements, and microstructure. Supplier shall submit a report with required case depth, hardnesses, and actual values obtained. Statement of findings shall be submitted with each heat treat lot.

(E) - Case Hardening - Nitriding

A test specimen of the same alloy, same hardness, and similar configuration as the part shall be processed with each heat treat lot to verify case depth, hardness requirements, and to monitor thickness of white layer. Supplier shall submit a report with required case depth, hardness, and actual values obtained. Statement of findings shall be submitted with each heat treat lot.

(F) - Surface Hardening - Flame or Induction

Supplier shall provide certification with each lot reporting the actual case depth surface and core hardness values obtained. First Article proof tests with pattern and equipment power setting along with other critical process parameters shall be maintained by vendor.

CDR - 021 - Mercury

With each shipment, Supplier shall provide certification that the material shipped under Purchase Order(s) does not contain functional mercury in any form and that no mercury-bearing instruments and/or equipment that might cause contamination has been used in the manufacture, fabrication, assembly or testing of any material shipped under Purchase Order(s).

CDR - 022 - Material Traceability and Identification

Material which requires heat/lot traceability shall be stored and processed in a manner which will preclude mixing. Each piece shall be individually identified to material type/grade, the heat/lot number and Purchase Order number traceable to the Purchase Order documentation including test reports. Material furnished by BAE Systems to Supplier shall be used for the intended purpose. Identification marking on or with said material shall be maintained throughout the manufacturing cycle. Any excess material including salvaged material shall be returned to BAE Systems.

CDR - 023 - Age Control

Supplier of items subject to age control such as paint, adhesives, rubber products, etc., shall mark the date of manufacture and expiration date on components and shipping container.

The requirements of this CDR are as follows:

- Mark cure date per applicable specification.
- Date of manufacture and expiration (quarter and year, or date/month/year configuration) shall be permanently marked on the parts.
- The method of marking shall not be detrimental to form, fit, or function. Due to size or the configuration of the parts, optional marking methods may be applied when agreed upon with PQA Department. If approved for

- optional marking methods, all markings and the quantities shall be placed on the container(s) & be legible.
- Cure date and expiration date marking shall be as defined in Part 1 of the PQR:
CURE ____ **Q**; **YR** ____
EXP ____ **Q**; **YR** ____
 - Product must have a **minimum of 75% of shelf life remaining upon receipt at BAE Systems.**
 - The following specifications can be used for guidance for determining acceptable shelf life requirements. MIL-HDBK-695, ARP SAE 5316, SAE AS 1933.

CDR - 024 - Non-Manufactured Coniferous Wood Products

All wooden pallets and wood containers produced entirely or in part of non-manufactured softwood species shall be constructed from heat-treated coniferous material. This material must be certified accordingly by an accredited agency recognized by the American Lumber Standards Committee (ALSC) in accordance with Non-manufactured Wood Packaging Policy and Non-manufactured Wood Packaging Enforcement Regulations both dated May 30, 2001. Supplier shall maintain on file at their facility a certificate of conformance from the accredited heat treat facility.

CDR - 025 - Special Packaging

Material is to be packaged in accordance with the packaging instructions provided in the body of the applicable Purchase Order or by Purchase Order attachment. With each shipment, the Supplier shall maintain, and provide upon request, a certificate of conformance documenting that the material was packaged in accordance with the Purchase Order requirements.

CDR - 026 - Quality Requirements (Ground Systems only)

All purchase order and drawing requirements, in addition to the quality requirements of part 1 of this PQR document, shall be met. OQE (Objective Quality Evidence) must be retained on file and shall be made available upon request within time specified.

CDR - 027 - Certificate of Compliance (C of C)

A copy of the Supplier's Certificate of Compliance shall be submitted with each shipment of material. The Certificate of Compliance, signed by an authorized individual, certifies that a product or service has met all requirements of the contract including drawings and specifications at the prescribed revision level and may include:

- A. Company's name and address
- B. BAE Systems Purchase Order number
- C. BAE Systems Part Number (as it appears on contract)
- D. Part description
- E. Quantity
- F. Authorized signature
- G. Statement of compliance, indicating documents supporting compliance are on file for review

CDR - 028 - Unique Identification (UID)/Radio Frequency Identification (RFID)

Part must be UID marked per MIL-STD-130.

If the UID marking is already present, verify that it is intact and scannable. If the scan fails, replace with a new marking.

It is acceptable to add the UID mark to an existing data plate as long as the following human readable information (HRI) is present:

Cage Code:

Part Number:

Serial Number:

UID data plate drawing 12496537 references marking material types and methods for dot peen, laser and thermal marking methods. Any equivalent marking media or method per MIL-STD-130 is acceptable as long as the marking lasts for the usable life of the component being marked.

In the event the print location for the UID mark cannot be met, it is acceptable to locate the UID mark in an area close to the desired location.

BAE Ground Systems utilizes the construct #2 2D matrix per MIL-STD-130. Linear bar-coding is not required. Machine readable information (MRI) shall be applied as a data matrix ECC 200 symbol encoded as a Construct #2 data set comprised of the following information:

Cage Code

Part Number

Serial Number of the component being marked

CDR - 029 - Solder Type

Supplier shall notify BAE Systems in writing of the type of solder material (lead or lead-free) used to fabricate the item(s) under contract. For lead-free solder, the supplier shall also submit sufficient data to verify there is no degradation in performance or reliability with the use of lead-free solder. BAE Systems' written approval of Supplier's solder type is required.

CDR - 030 - Key Characteristics and Variation Management

A. BAE Systems' Designs

When BAE Systems' drawing, specification, and/or Purchase Order includes "key characteristic" requirements, the Supplier shall utilize Variation Management to ensure key characteristic integrity. Key characteristics are identified by the "KEY" symbol or word on the drawing, specification and/or Purchase Order. The Supplier shall develop control plans for applicable key characteristics and shall have a Cpk goal of 1.33 or better. VM data shall be retained by the Supplier and shall be provided to BAE Systems as part of their quality metrics. For more information regarding VM guidelines, see standard SAE AS9103.

B. Supplier Designs

When Suppliers' designs include "key characteristics," the Supplier shall utilize Variation Management to ensure key characteristic integrity. Key characteristics are defined as the features of a material, process or part whose variation has a significant influence on product fit, performance, service life, or manufacturability. The Supplier shall document a Variation Management system that emphasizes control of identified key characteristics and mitigates or eliminates them during the design effort. The Supplier shall submit the identified Key Characteristic(s) to BAE Systems for concurrence. For more information regarding key characteristics and Variation Management guidelines, see standard SAE AS9103. VM data shall be retained by the Supplier and shall be provided to BAE Systems as part of their quality metrics. The Supplier shall develop control plans for applicable key characteristics and shall have a Cpk goal of 1.33 or better.

CDR - 031 - Cage Code

Cage Code will be referenced on the Purchase Order or in the configuration notes.

CDR - 032 - Transparent Armor Ballistic Requirements

A ballistic first article test shall be performed and accepted prior to any production of transparent armor. All drawing and specification requirements shall be met as required for the ballistic FAT and ballistic lot testing. Supplier shall identify the samples and all associated documents as the "First Article Sample or Lot Sample." Marking requirements of the ballistic samples shall meet the purchase order and or drawing requirements. The FAT and lot acceptance test reports shall be prepared using MIL-HDBK-831 as a guide and submitted through the procuring agent for acceptance by BAE Systems SQA.

Following Ballistic First Article approval, Supplier shall notify the BAE Systems Authorized Procurement Representative to determine if testing must be repeated when any of the following occurs:

1. Receipt of new purchase order or contract.
2. Significant change in manufacturing process (introduction of a new manufacturing technique, etc.)
3. Change in any drawing configuration, component, or sub-component parts.
4. Change in manufacturing location.
5. A break in production or process in excess of twelve (12) months, unless otherwise specified.

CDR - 033 - Santa Clara GSS

Government surveillance is required prior to shipment from your plant. Upon receipt of Purchase Order(s), promptly notify the Government representative who normally services your plant so that appropriate planning for Government inspection can be accomplished.

In the event the representative or office cannot be located, the BAE Systems Authorized Procurement Representative shall be notified immediately.

Unauthorized shipment of product without Government source surveillance may result in a withholding of invoice payment.

NOTE: Three (3) days' written notice is required prior to submission for inspection for resident and seven (7) days' for itinerant Government representatives. Obtain Government inspection prior to shipment. Receipt of material without GSS shall be cause for rejection. GSS shall not replace Supplier inspection nor relieve Supplier of its responsibility for furnishing an acceptable end item.

CDR - 034 - Armor Ballistic Requirements

Supplier shall maintain the Government approval letter, including the firing number, for each heat/lot of material or other miscellaneous material for those items requiring ballistic firing. Supplier shall submit Objective Quality Evidence to BAE Systems when requested.

Supplier of armor castings or extrusions shall maintain a listing of the Government-approved firing number for recipes all material supplied to BAE Systems.

CDR - 035 - First Time Vendor Deliverable(s)/Certification(s) (AS Only)

Unless required per purchase agreement, the following certifications apply only to vendor delivering components for the first time or for the first time in five or more years. Time line requirements must be adhered to so schedule is not impacted.

CDR - 036 - Phosphate and Pretreatment Coating Procedure

Preproduction Government Approval of the phosphate coating procedure is required through BAE Systems.

1. Supplier providing heavy manganese or zinc base phosphate coated parts in accordance to MIL-DTL-16232 or to the chemical conversion coatings and pretreatments for ferrous surfaces to TT-C-490 ,Types I and V shall have their procedure approved through BAE Systems for each part number that has phosphate coating applied. This requirement applies not only to the top-level assembly but also sub-component parts. If no prior approval is available the supplier must obtain written approval through BAE Systems before pre-treating any BAE Systems product. Any change to an approved procedure requires resubmitted preproduction approval for the parts affected.
2. Weight of phosphate coatings. The weight of phosphate coatings, prior to application of any supplementary treatment, shall conform to the following:
 - a. Type M shall be a minimum of 16 grams per square meter (g/m^2) (11 g/m^2 when specified on purchase order.
 - b. Type Z shall be a minimum of 11 g/m^2
3. Stress Relief
To prevent reduction of hardness as a result of stress relief, the following applies:

- ◆ Stress relief temperature is not to exceed tempering temperatures of the final heat treat process (i.e., carburizing and temper, quench and temper, normalize and temper, flame or induction hardening).
 - ◆ When the tempering temperature is less than 400°F, stress relieve at a temperature 25°F lower than the tempering temperature, with a tolerance of +20°F.
 - ◆ Minimum stress relief times as referenced in MIL-DTL-16232 apply as stated.
4. Supplementary Treatments
To prevent corrosion of parts during shipping and handling, a supplementary treatment shall be applied to all MIL-DTL-16232 coatings provided by BAE Systems suppliers. Specifically, when the drawing calls for no supplementary treatment (i.e., MIL-DTL-16232, Type M, Class 3), the parts shall be protected with a coating of light oil preservative.
5. Workmanship
Phosphate coatings shall be evenly deposited, and shall have a uniform crystalline texture with a pattern not readily visible to the unaided eye and shall not produce any evidence of etching or intergranular attack of the base metal. Coatings shall be gray to black, and shall not have a mottled appearance. They shall be free of white stains (due to dried phosphating solution), rust, and fingerprints. However, brown or orange stains caused by chromic acid mix nonuniformity of color due to heat treatment, degree of cold work, or composition of the base metal shall not be cause for rejection.

CDR - 039 - Special Projects Certificate of Compliance

Only to be used in special circumstances, i.e. - no drawings, 3D models only.
This is a temporary CDR, and is to be replaced after drawings are created.

CDR - 040 - PQR Not Invoked

No longer active, as of January 1, 2009.

CDR - 041 - Product Safety Critical Feature

With each shipment, Supplier shall provide all actual inspection data for Product Safety Critical Features. Each feature must be inspected 100% with actual results recorded. Sample inspection is not acceptable for these features.