

Contract Deliverable Requirements

Rev 06, December 16, 2015



Platforms & Services

BAE SYSTEMS
INSPIRED WORK

Rev	Date	Change Description	Approved By	Change Request #
00	11/27/12	New Document Release		BPMS-00647
01	9/3/13	Added verbiage to CDR 017 , deleted 071	Tom Frazho	BPMS-01446
02	9/20/13	Added verbiage to 001, 032, changed verbiage to 057, 058, 059, 060, 061, 063, and 068	Tom Frazho	BPMS-01476
03	1/15/14	Changes to CDR 006, 053 and 070	Tom Frazho	BPMS-01593
04	3/10/15	Deleted the supplier website link	Tom Frazho	BPMS-02194
05	8/31/15	Revisions to CDR 001, 002, 003, 004, 005, 006, 009, 016, 018, 019, 020,023, 026, 028, 032, 034, 041, 042, 051, 057, 058, 059, 060, 081. Deleted 017, 040, 053, 054, 063, 068, 069, 070, 072, 073, 074, 075, 076, 077, 078, 079, 080. Added 083.; all reference of deleted CDRs have been removed from the body of the document; Consolidated all data submission CDRs into CDR 047; deleted 048, 049, 050, 051, 052	Tom Frazho	BPMS-02450
06	12/16/15	Changes to CDR 034; Changes to CDR 006 for corrective action response to Louisville DCMA	Tom Frazho/Anthony Conley	


 Thomas Frazho, Combat Systems SQA Manager


 Anthony Conley, Weapons Systems SQA Manager

12/16/2015

Date

12/16/2015

Date

Contents

001 INSPECTION/TEST DATA REPORTS	4
002 DETAILED INSPECTION TEST PROCEDURE.....	5
003 FIRST PIECE INSPECTION REPORT	6
004 FIRST ARTICLE TEST (FAT).....	6
005 CUSTOMER SOURCE SURVEILLANCE (CSS).....	6
006 GOVERNMENT SOURCE SURVEILLANCE/INSPECTION (GSS/GSI).....	7
007 WELDING-COMBAT VEHICLES	7
008 WELDING-WEAPON SYSTEMS.....	8
009 SOLDERING	9
010 SOLDERABILITY	9
011 PRINTED WIRING BOARDS (PWB)	10
013 NONDESTRUCTIVE EXAMINATION PROCEDURES	10
014 NONDESTRUCTIVE EXAMINATION INSPECTION REPORT	10
015 CONTROL TESTS.....	11
016 PLATING	11
018 PHYSICAL AND CHEMICAL TEST REPORTS	12
019 TEST SAMPLES – TENSILE TESTING	12
020 HEAT TREATING	12
A. VISUAL METALLOGRAPHIC INSPECTION.....	13
B. QUENCH AND TEMPER (CORE HARDNESS SPECIFIED)	13
C. QUENCH AND TEMPER (CORE HARDNESS NOT SPECIFIED).....	13
D. CASE HARDENING - CARBURIZING.....	13
E. CASE HARDENING - NITRIDING	14
F. SURFACE HARDENING - FLAME OR INDUCTION	14
G. STRESS RELIEF	14
021 MERCURY.....	14
022 MATERIAL TRACEABILITY	14
023 AGE CONTROL.....	14
024 NON-MANUFACTURED CONIFEROUS WOOD PRODUCTS	15
025 SPECIAL PACKAGING	15
026 QUALITY REQUIREMENTS.....	15
027 CERTIFICATE OF COMPLIANCE	16
028 UNIQUE IDENTIFICATION (UID).....	16
032 BALLISTIC REQUIREMENTS-TRANSPARENT ARMOR	16
034 BALLISTIC REQUIREMENTS- METAL AND COMPOSITE MATERIALS	16

041 CRITICAL SAFETY ITEM (CSI)	18
042 COMMERCIAL OFF THE SHELF (COTS) PARTS	18
044 PACKAGING INSTRUCTIONS FOR HARDWARE KITS	18
A. PACKAGING.....	19
B. MARKING.....	19
C. LABELS.....	20
D. PACKING	20
045 MRB AUTHORITY	21
047 DATA SUBMISSION INSTRUCTIONS	21
055 AQL 1.0	22
056 100% INSPECTION	22
057 PPAP-LEVEL 2	22
058 PPAP-LEVEL 3	23
059 PPAP-LEVEL 4-PREDEFINED REQUIREMENTS	24
060 PPAP-LEVEL 4-UNIQUE REQUIREMENTS	25
061 PPAP-LEVEL 5	26
062 CARC PAINT MARKING	26
064 YORK CAGE CODE	27
065 SANTA CLARA CAGE CODE	27
066 ANNISTON CAGE CODE-AFTERMARKET SPARES	27
067 ANNISTON CAGE CODE-FORGE FACILITY	27
081 COUNTERFEIT ELECTRONIC PARTS PREVENTION PLAN	27
083 ELECTROSTATIC DISCHARGE (ESD)	28

001 Inspection/Test Data Reports

All of Supplier’s actual inspection/test data for the specified item shall be submitted by the Supplier to BAE Systems on a suitable form. The data shall be submitted prior to shipment of the item in accordance with the Data Submission Instructions for this item. As applicable, the data shall include the following information:

- Part Number

- Serial Number
- Quantity of parts
- Identification of each characteristic inspected/tested.
- A ballooned drawing shall accompany the report to identify the characteristics inspected.
- Actual Inspection/test results
- Date of inspection/test
- Inspector's signature, stamp or initials
- Indication of First Piece (when applicable)

002 Detailed Inspection Test Procedure

The Supplier shall prepare and maintain a written, detailed inspection/test procedure for the subject item. The Supplier shall submit the procedure(s) to the BAE Systems in accordance with the Data Submission Instructions for this part prior to start of inspection/test. Each procedure shall contain the following information:

- Part Number
- Procedure Revision
- Identification of each characteristic to be submitted to inspection/test, its requirement, and drawing and/or specification requirement reference and their respective acceptance criteria
- Sequence of each inspection/test
- Equipment to be used for each inspection/test and for complex operations, the setup of the inspection/test equipment
- The inspection/test environment
- Definition of the test/inspection report documenting the test/inspection results

Changes to this inspection/test procedure shall be submitted to BAE Systems for approval prior to conduct of inspection/test.

003 First Piece Inspection Report

The Supplier shall submit their First Piece Inspection Report as specified in SQAM paragraph 8.3 prior to shipment of the product per the Data Submission Instructions for this item.

004 First Article Test (FAT)

The Supplier shall submit a FAT plan in accordance with the Data Submission Instructions for this item within thirty (30) days after receipt of the Purchasing Agreement. The FAT plan shall include:

- Dates for submittal of the FAT procedure
- Dates and location(s) for all testing with anticipated start/completion dates
- Date for submittal of the FAT report.

The Supplier shall update/resubmit the FAT plan to cover any changes to the schedule. The procedure and test reports may be prepared using MIL-HDBK-831 as a guide and shall be approved by BAE Systems prior to start of test. BAE Systems and its Government customer reserve the right to witness FAT testing at any point in the schedule.

Following First Article Test approval, it is the Supplier's responsibility to notify the BAE Systems Authorized Purchasing Representative to determine what testing must be repeated when any of the following occurs:

- Receipt of new Purchasing Agreement or contract
- Significant change in manufacturing process (introduction of a new manufacturing technique, etc.)
- Change in any drawing configuration, component, or sub-component parts
- Change in manufacturing location

A break in production or process in excess of twenty four (24) months, unless otherwise specified.

005 Customer Source Surveillance (CSS)

Source Surveillance, inspection, and/or test by a BAE Systems source inspection representative is required for each shipment of this item. In order to accommodate BAE Systems source inspection representatives, the Supplier shall make all facilities, equipment, inspection records, and assistance readily available.

The Supplier shall provide five (5) working days advance notification of requests for source inspection through submission of Form 092245. Requests shall be submitted in accordance with the Data Submission Instructions specified for this item. Unauthorized shipment of product without BAE Systems source inspection may result in the shipment

being rejected, a Supplier Corrective Action Request may be issued and product may be returned to the Supplier at the Supplier's expense.

006 Government Source Surveillance/Inspection (GSS/GSI)

Government surveillance/inspection is required prior to shipment from your plant and **cannot be waived** by BAE Systems.

Upon receipt of the Purchasing Agreement, promptly notify the Government representative who normally services your facility so that appropriate planning for Government inspection can be accomplished. If the local Government Representative directs that surveillance/inspection should take place at a sub tier supplier facility, the full wording of this requirement shall be incorporated into the Purchasing Agreement with that sub tier supplier. The text of this requirement may be incorporated by reference. At no time shall the supplier flow any Government surveillance/inspection requirements to their sub tier suppliers without the direction of their local Government Representative.

Unauthorized shipment of product without Government Source Surveillance may result in rejection and subsequent return at the Supplier's cost, and withholding of your invoice payment. GSS shall not replace Supplier inspection nor relieve the Supplier of its responsibility to meet all requirements of the purchasing agreement.

Supplier must notify BAE Systems prior to, or in conjunction with, notification to DCMA so that BAE Systems has the opportunity to schedule and perform any reviews/inspections prior to submission to DCMA.

Supplier shall notify the local Government DCMA representative of pending inspections in accordance with FAR 52.246-2(i) (2), which can be found at https://www.acquisition.gov/far/current/html/52_246.html.

007 Welding-Combat Vehicles

- **PRIOR** to implementation of the proposed process, procedure approval is required by BAE Systems Weld Engineering
- Supplying product to BAE Systems without an approved Welding Procedure Specifications (WPS) is cause for rejection
- The WPS shall include the Procedure Qualification Record (PQR) for the process
- If the Supplier has completed the BAE Systems Weld Training, they may use the BAE Systems procedures for which they are qualified
- Use of BAE Systems WPS still requires approval prior to use for each individual part number. If the Purchasing Agreement Part Number is changed through configuration, the WPS shall be resubmitted even if nothing is changed within the weld process/procedure

- The Supplier is responsible for the performance and maintenance of all supporting documentation required to demonstrate compliance with Purchasing Agreement requirements

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	Welding and Brazing Submittal Requirements and Instructions

Forms are available from a BAE Systems Authorized Purchasing Representative.

Aluminum Welding Code 12472301 replaces these specifications (reference page 4, Table P.1):

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

Steel Welding Code 12479550 replaces these specifications (reference page 4, Table P.1):

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

008 Welding-Weapon Systems

- Prior to the Supplier's start of fabrication (or repair to raw material, casting, forgings, etc.), the Supplier shall submit procedure(s) and supporting qualification test data in accordance with the applicable specifications

(including weld personnel certifications) and form KA-021 to the BAE Systems Authorized Purchasing Representative

- Supplying product to BAE Systems without an approved Welding Procedure Specifications (WPS) is cause for rejection
- The WPS shall include the Procedure Qualification Record (PQR) for the process when applicable
- If the Supplier has completed the BAE Systems Weld Training, they may use the BAE Systems procedures for which they are qualified
- Use of BAE Systems WPS still requires approval prior to use for each individual part number
- The Supplier is responsible for the performance and maintenance of all supporting documentation required to demonstrate compliance with the Purchasing Agreement requirements
- Changes/revisions to previously approved weld procedures must be submitted for re-approval

009 Soldering

- The Supplier shall submit soldering plans in accordance with the Data Submission Instructions for this item within (30) days of receipt of the Purchasing Agreement
- Procedures shall 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 Purchasing Agreement requirements
- A new Purchasing Agreement 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
- The 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 Soldering Audit. The approved program must be utilized in the performance of Purchasing Agreement
- 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

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.

For each shipment, the Supplier shall provide a written certification stating that the components provided were tested and meet the applicable solderability requirements as stated above. Certification shall be submitted in accordance with the Data Submission Instructions for this item.

011 Printed Wiring Boards (PWB)

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

013 Nondestructive Examination Procedures

When the Purchase Order specifies Nondestructive Examination such as radiography, magnetic particle, liquid penetrant, or ultrasonic inspections, the Supplier shall submit the procedure to BAE Systems in accordance with the Data Submission Instructions for this part for approval. The procedure shall be submitted within thirty (30) days after receipt of the Purchasing Agreement. If the submittal is requested during performance of the Purchasing Agreement, the Supplier shall submit the procedure within three (3) days of receiving the request.

All changes 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.

014 Nondestructive Examination Inspection Report

The 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 include:

- Type of test and coverage
- Applicable procedure specification (title, number and revision)
- Applicable acceptance criteria (title, number and revision)
- Name and address of the company that actually performed the testing
- Certificate of process compliance

A test plan shall be developed detailing the Nondestructive Examinations to be performed (including test equipment to be used, angles to be captured in radiographic testing, etc.) and shall be made available to BAE Systems upon request.

015 Control Tests

The Supplier shall perform Control Tests at the frequency defined by the specification/QAP. The Supplier is responsible for determining the test schedule based on the production and delivery schedule for the Purchasing Agreement. The Supplier shall submit, in accordance with the Data Submission Instructions for this item, a control test procedure within thirty (30) days after receipt of the Purchasing Agreement for approval by BAE Systems. The Supplier shall notify the BAE Systems Authorized Purchasing Representative of the projected test schedule and any changes as they occur. If any failures occur, either through defect of the test equipment or of the test sample itself, the Supplier shall immediately notify the BAE Systems Authorized Purchasing Representative for further instructions prior to continuance of testing.

Following the completion of testing, a test report shall be submitted in accordance with the Data Submission Instructions for this item for approval.

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

- BAE Systems Part Number
- BAE Systems Purchasing Agreement Number
- Prime Contract Number (this is specified on the Purchasing Agreement)
- 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 Purchasing Agreement line number)
- Printed name, signature, and title of Supplier's representative
- Report date
- Any additional data or information required to show full compliance to the control test requirements

016 Plating

The Supplier shall provide written certification documenting that the plating was performed in accordance with drawing and Purchasing Agreement requirements. The facility actually performing the plating shall prepare the certification. When baking for hydrogen embrittlement relief is required, the certification shall define the required bake

time at temperature and contain a statement that the items were baked at the required temperature for the required minimum time specified in accordance with the required revision level of the specification.

Certification **MUST** include as a minimum:

- Part number
- Purchasing Agreement number
- Plating process specification used
- Baking temperature
- Baking time
- A statement that the baking operation was started within 3 hours of plating completion
- Complete lot traceability to all certifications related to the BAE Systems Purchasing Agreement
- Signature/title of the Supplier's representative
- Report date

018 Physical and Chemical Test Reports

With each shipment, the Supplier shall provide a material certification including all actual chemical, mechanical, and/or physical test results pertaining to the material shipped under this Purchasing Agreement with traceability to the original mill/manufacturer, heat lot, and country of origin, as applicable. This data shall be provided to BAE Systems in accordance with the Data Submission Instructions for this part.

019 Test Samples – Tensile Testing

With each shipment, the Supplier shall provide a set of two samples (un-machined test bars/sheet stock) suitable for the mechanical testing as required by Purchasing Agreement or referenced specification. Both shall be made from the same melt and heat treated in the same lot as the supplied parts. Identify by paint marking.

020 Heat Treating

With each shipment, the Supplier shall provide a written certification that heat treatment was performed in accordance with drawing and Purchasing Agreement requirements.

Supplier shall conduct a visual inspection for cracks or other injurious defects.

When the drawing specifies a hardness range for materials due to quench and temper or other practices, actual results shall recorded on the certification.

When heat treating is performed by a facility other than the Supplier shown on Purchasing Agreement, 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 the drawing and/or the Purchasing Agreement, test samples shall be provided to BAE Systems for evaluation.

The below processes shall be completed as stated per specific drawing requirements.

A. Visual Metallographic 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 detectable by metallographic sectioning under magnification at 100X, method specified on drawing or appropriate specification. Exceptions are stress-proof, fatigue-proof, precipitation hardening grades of steel, marring steels and structural steel such as HY-, HY-100, Cor-ten, etc. This will minimize distortion and assure that proper hardness is 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 or two times the diameter. The specimen or sample part shall be cross sectioned at mid-length of the largest cross section thickness plus or minus 3/8 inch. The 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)

The report shall include a statement of the surface hardness findings for each heat treat lot. Testing shall be done in areas identified on the drawing or in such a manner as to not damage the critical surface finish as defined by the 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. The Supplier shall submit a report with the required case depth hardness actual results obtained and microstructure per specified standard. Certification 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. The Supplier shall submit a report with required case depth, hardness, process temperature, and actual results obtained. Certification shall be submitted with each heat treat lot.

F. Surface Hardening - Flame or Induction

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

G. Stress Relief

Certification shall report the actual processing time, temperature and number of cycles for each lot as defined in the drawing or specification.

021 Mercury

With each shipment, the Supplier shall provide certification that the material shipped under this Purchasing Agreement does not contain functional mercury in any form and that no mercury-bearing instruments and/or equipment that might cause contamination have been used in the manufacture, fabrication, assembly, or testing of any material shipped under this Purchasing Agreement. This requirement must be included in all sub-tier Purchase orders however certification is only required from the BAE Systems tier 1 supplier.

022 Material Traceability

All finished product lots must be traceable to raw material heat/lots, and the Supplier must maintain material traceability throughout all steps of the manufacturing process including any outside processing.

023 Age Control

Age-sensitive items include, but are not limited to, paint, adhesives, and rubber products. The following requirements apply to all items with this requirement:

- Age-sensitive items shall be delivered as directed by requirement assigned from below.
 - a) With a minimum of 50% of the shelf life remaining or
 - b) With a minimum of 75% of the shelf life remaining.
 - c) With a minimum of 85% of the shelf life remaining.
 - d) Other as directed by contract.
- Age-sensitive items shall be delivered with a minimum of 50% of the shelf life remaining or as directed by contract.

- All age-sensitive items and their respective shipping containers shall be permanently marked with the cure/manufacture and the expiration dates in addition to any other marking requirements
- For parts delivered on a spool or reel, the marking must be applied to a visible location on the outside of the spool or reel
- The cure/manufacture and expiration dates shall be in either Quarter/Year format (for product with a shelf life in excess of three (3) years) or Month/Year format (for product with a shelf life of three (3) years or less). The method of marking and the marking height shall be in the manufacturer's format, however the marking shall not affect the part's form, fit, or function

Example: CURE 4Q/2010
 EXP 4Q/2016

- In addition to the requirements of SQAM paragraph 8.5, Certificates of Conformance for age sensitive items shall include:
 - Lot traceability by run, batch, lot, or date of manufacture
 - Shelf life expiration date (as required by specification)
 - Storage conditions to achieve shelf life, if not stated on the material package

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. The Supplier shall maintain on file at their facility, and provide upon request to BAE Systems, a certificate of conformance from the accredited heat treat facility.

025 Special Packaging

Material is to be packaged in accordance with the packaging instructions provided in the body of or attached to this Purchasing Agreement. A statement that the packaging is in accordance with the specified requirements will be included in the Certificate of Compliance (reference SQAM paragraph 8.5).

026 Quality Requirements

The Supplier **shall** maintain on file, and provide to BAE Systems upon request, objective quality evidence demonstrating compliance to all of the requirements of this Purchasing Agreement. When documentation is requested by BAE Systems, the documentation shall be provided in a commonly readable electronic format and **shall** be provided to BAE Systems in accordance with the Data Submission Instructions for this part.

027 Certificate of Compliance

The Supplier shall provide with each shipment a copy of their Certificate of Compliance as defined by paragraph 8.5 of the SQAM. Copies shall be delivered as specified by the Data Submission Instructions for this item.

028 Unique Identification (UID)

This item requires UID marking in accordance with the TDP requirements.

If the UID marking is already present, verify that it is intact and able to be scanned. If the scan fails, replace the existing marking with new UID marking.

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

- Cage Code
- Part Number
- Serial Number

032 Ballistic Requirements-Transparent Armor

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.

BAE Systems source inspection shall be requested prior to shipping the samples for ballistic testing.

In addition to the marking requirements, specified in the PO and on the drawings, ALL test specimens, shipping containers and associated documents shall be clearly marked "First Article Sample" or "Lot Sample."

All Ballistic test documentation shall be provided in accordance with the Data Submission Instructions for this item.

Following Ballistic First Article approval, the supplier shall submit lot samples for testing per the schedule in the ballistic test specification.

034 Ballistic Requirements- Metal and Composite Materials

FIRING RECORDS (Plate and Composite):

The Supplier shall provide a copy of the:

- Physical and Chemical Test Reports

- Government Ballistic Test Certification, including firing number for each heat/lot of ballistic material. Results shall be submitted in accordance with the Data Submission Instructions for this item.

FIRING RECORDS (CASTING):

- For armor castings and extrusions, the Supplier shall maintain a listing of Government approved firing numbers for all material recipes supplied to BAE Systems. Results shall be submitted in accordance with the Data Submission Instructions for this item.

FIRING RECORDS (ALUMINUM FORGINGS):

- Require ballistic test for each log, including longitudinal and transverse tensile tests per MIL-DTL-45225. Results shall be submitted in accordance with the Data Submission Instructions for this item.

MIL-DTL-46100/12560 STEEL ARMOR THERMALLY CUT EDGES:

Shall meet the following:

PROCEDURE:

- Supplier shall have a written and controlled Procedure for cutting steel armor.
- The Procedure shall be a range of cutting parameters (similar to a Weld Procedure) including:
 - Thickness range, energy level (laser wattage, plasma parameters, etc.), and travel speed.
 - Samples shall be made from each range to qualify the Procedure and test for:
 - Heat affected zone (hardness traverse)
 - Edge cracking (Magnetic Particle or Liquid Penetrant Inspection)

PROCESS INSPECTION:

- Visual Inspection Per ASNT Level I (minimum) Frequency = 100%
- Non-destructive test frequency (based on 12369234)
- ANSI/ASQ Z 1.4 Inspection Level II, AQL 2.5%
 - i.e. For Lot = 50, Inspection Level D = 5 samples inspected
 - If rejectable indication is found, institute 100% inspection of subject lot.
- Inspection SHALL be performed in accordance with ASTM E1417 (Liquid Penetrant) or ASTM E1444 (Magnetic Particle).
- Inspection Personnel shall be a minimum of ASNT Level I or II.

DEFINITION:

Lot – Shall mean “inspection lot” or “inspection batch” of parts of the same material, the same thickness and processed continuously under one Procedure.

Example – Supplier A cuts 10 Part Numbers, with different quantities, all from the same thickness of high hardness armor. If they are processed (cut) in a constant continuous process, then the collection of parts can be inspected as one Lot.

RESULTS:

Non-Destructive Inspection documentation shall be provided in accordance with the Data Submission instructions for this item.

041 Critical Safety Item (CSI)

The Supplier shall provide documentation for all Critical Safety Items (CSI), Hardness Critical Items (HCI), or Observable Critical Items (OCI) identified for this item by the TDP. **Sample size for this inspection shall be 100% for the identified characteristic(s).** Actual results, including an authorized signature and date of acceptance, traceable to a specific shipment shall be recorded and provided prior to shipment. Submission of documentation shall be made in accordance with the Data Submission Instructions for this item.

042 Commercial Off The Shelf (COTS) Parts

Commercial Off the Shelf (COTS) parts are ordered out of a standard catalog by the catalog part number and include items such as fuel filters, standard hydraulic fittings, and light bulbs. These parts are not designed for a specific application and are typically acquired from manufacturers and authorized distributors that supply the same part to a variety of markets.

Paragraph 8.3 of the SQAM is not applicable to this item; the Supplier shall provide a certificate of conformance and/or a packing slip as the objective quality evidence where no other objective evidence is available.

044 Packaging Instructions for Hardware Kits

All hardware and small components kits shall be packaged, marked, and packed as follows unless other requirements are provided through the Purchasing Agreement.

The contents of this kit shall be packaged, identified, consolidated and packed per the instructions below. The BAE Systems Purchasing Order and/or Engineering Drawing provide the part numbers and quantities required for each kit. Packaging of this kit is to be accomplished through good commercial practices, and is intended to provide adequate protection of the kit(s) and the kit components during transit and handling as well as for short-term storage.

A. Packaging

Cleanliness – Items shall be free of dirt and other contaminants that would contribute to deterioration of the item.

Preservation – Bare steel surfaces shall be provided protection such as preservative coatings. Zinc plating or cadmium plating is not considered bare and will not require preservative protection. Items made from stainless steel material do not require preservative protection. When rubber items are unit packaged in quantities of more than one, the items shall be dusted with talcum (soapstone).

Unit Package – The unit packaging shall consist of an item of the same part number and the specified quantity per kit. Place the required item quantity in a close fitting poly bag as to keep package cube to a minimum. Use multiple bags per part when applicable. The minimum size bag shall be 3 x 4 inches; the bag shall be a minimum of 3-MIL thick. The bag shall be heat-sealed in a manner to keep the items contained within the bag. The trapped air volume in the bag shall be kept to a minimum to reduce package cube.

Consolidation – Consolidate the required unit packages for each specified part number into a poly bag, 6-MIL thick, or a snug fitting fiberboard carton (a fiberboard carton is preferred method). If a poly bag is used for consolidation, the weight shall not exceed 10 lb. A Packing List will be enclosed in each consolidated package detailing the contents, to include; the kit part number, and the part number, description, and quantity for each component included. The bag and/or carton size used for the specified kit shall be identical throughout the contract.

B. Marking

Each package used in this kit, shall identify the contents with the applicable part number, nomenclature, quantity, and kit number. For unit packaging see Label Example A, and for consolidation packages see Label Example B. The markings for each pack can be printed on a label or applied directly on to the bag or carton. If a label is used it shall meet the requirements as outlined below, and if a label is used to identify a bag, the label may be heat-sealed in the bag along with the item(s). If the label is placed in the bag, the label identification must be able to be read from the exterior of the package. If a Packing List is enclosed in the package, the package is to be marked with "Packing List Enclosed", and is to be located in the same area and adjacent to where the kit identification is applied.

Age Control – Shelf-life markings shall be shown as part of the item identification data on unit packs, intermediate containers, exterior containers, and unpacked items. Shelf-life markings shall include the manufactured, cured, assembled or

packed date (apply one date), and the expiration or inspect/test date, as appropriate. This information must appear on the unit package unless it is visible through a clear plastic bag, and on the intermediate and exterior container (only when unit pack is exterior container). When two or more unit packs of identical items are marked with different dates, the earliest date should be shown on the intermediate container. Exterior containers and multi-packs containing age control items shall be marked "CONTAINS SHELF-LIFE ITEMS).

- a. Non-extendable shelf-life items: manufactured (MFD) date, cured date, assembled date, packed date (subsistence only) (apply one date, as appropriate), and expiration (EXP) date. For items that contain rubber or synthetic elastomers, the expiration date shall be calculated from the cured date of the rubber/elastomer.
- b. Extendable shelf-life items: manufactured date, cured date, assembled date, packed date (subsistence only) (apply one date, as appropriate), and inspect/test (INSP/TEST) date. For items that contain rubber or synthetic elastomers, the inspect/test date shall be calculated from the cured date of the rubber/elastomer.

EXAMPLE 1
(Non-extendable)
 MFD DATE 10/10
 EXP DATE 10/13

EXAMPLE 2
(Extendable)
 ASSEMBLED DATE 10/10
 INSP/TEST DATE 10/13

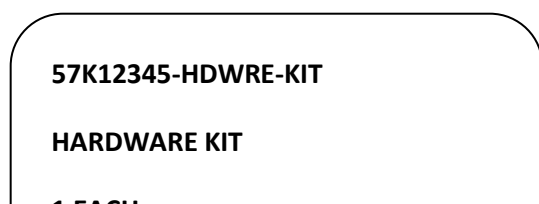
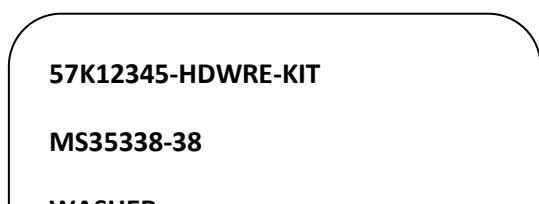
EXAMPLE 3
(Extendable)
 CURED DATE 4Q09
 INSP/TEST DATE 4Q11

C. Labels

All labels used shall meet or exceed the following requirements: pressure sensitive, water-resistant, size 2 x 2-1/2 inches (min). The part number, nomenclature, quantity, and kit number shall be in a stacked configuration, font size 12 to 14, black ink on white label, and upper case letters. Direct printing on the bag is also acceptable.

D. Packing

Palletize and/or consolidate required kit quantities per contract schedule. Before stretch wrapping or banding, place fiberboard on four sides and top to further protect cartons from damage. The palletized load(s) shall be marked with the appropriate shipping address as specified in the Purchasing Agreement. Apply special handling marking "Do Not Stack".



Example B

Consolidation Pack Label

045 MRB Authority

MRB Authority is granted for the associated item number and the Supplier is authorized to perform repairs or disposition parts use-as-is so long as the disposition does not affect the form, fit, function, performance, or reliability of the part. The Supplier is required to keep records of all MRB activity related to this part for this Purchasing Agreement and shall make those records available to BAE Systems personnel upon request.

The Supplier is **not** authorized to flow this authority to their sub-tier suppliers.

047 Data Submission Instructions

All data submissions for this item, unless otherwise specified, shall be submitted electronically, with the exception of Louisville and Minneapolis. The email subject line should include the relevant Purchasing Agreement number and part number. Paperwork does not need to be shipped with the product.

For Louisville and Minneapolis, all data submissions shall be packaged in a separate envelope clearly marked "Certifications". This envelope shall be placed inside of the shipping container with the parts. For shipments with multiple containers of the same product, the envelope will be located in Box 1 of the delivery. In addition, do not include data submissions with certified parts or with parts which have completed source inspection.

Please see the following for the respective site you will be shipping to:

- a. Anniston, AL - sqa.anniston@baesystems.com.
- b. Louisville, KY - sqa-admin.minneapolis@baesystems.com
- c. Minneapolis, MN - sqa-admin.minneapolis@baesystems.com
- d. Santa Clara, CA - pqasc.landa@baesystems.com
- e. Sterling Heights, MI - sqasterlinghts.pands@baesystems.com
- f. York, PA - pqayork.landa@baesystems.com
- g. Aiken, SC - sqaiken.pands@baesystems.com

055 AQL 1.0

This item requires inspection at AQL 1.0 to the C=0 Sampling Plan defined in SQAM paragraph 8.3 for all major drawing characteristics. Major drawing characteristics are dimensions with a total tolerance of $\leq .010$ or where the characteristic is identified as a “major” by a drawing note or SQAP/QAP/QAR

056 100% Inspection

This item requires 100% inspection of all critical drawing characteristics. Critical characteristics are any dimensions with a total tolerance of $\leq .001$ or where the characteristic is identified as a “critical” by a drawing note or SQAP/QAP/QAR.

057 PPAP-Level 2

The Supplier shall complete a PPAP in accordance with Level 2 of the Production Part Approval Process (PPAP) manual and shall submit the following to BAE Systems for approval:

Design Record

Engineering Change Documents (if applicable)

Dimensional Results with ballooned drawing (all characteristics, including drawing notes, numbered)

Photograph of the part marking

Material, Performance Test Results

Qualified Laboratory Documentation

Appearance Approval Report (if applicable)

Sample Product

Part Submission Warrant (PSW)

All other requirements of the PPAP shall be completed, retained on file, and made available to BAE Systems upon request.

The Supplier shall not ship product to BAE Systems prior to receipt of a signed/approved PSW. Product shipped in advance of PPAP approval shall be subject to rejection.

Process or product changes require PPAP resubmission. Notification to BAE Systems prior to changes is essential as additional audits or supplier identification may be required prior to resubmission; such changes are to be communicated to your BAE Systems Procurement or Quality contact via the Product/Process Change Request (Form 1310). Process or product changes are defined as changes in the processing of the product that could affect its ability to meet design, durability, and reliability requirements, including:

- Use of a process or material other than those which were previously approved,
- Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling,
- Production following any refurbishment or rearrangement of existing tooling or equipment,
- Production from tooling and equipment transferred from another manufacturing site,
- Change of a supplier for parts or services (e.g. heat treating, plating, welding),
- Break in production or product produced after tooling has been inactive for volume production for 24 months or more,
- Any change in material, including not only raw material but also chemical compounds or processes (i.e. paints, adhesives, sealers, lubricants, plating, heat treat processes, etc.) which become part of the finished product; this includes changing to an engineering approved alternative material or any change in the sequence of operations,
- Upon request of BAE Systems' Purchasing or Quality representative.

058 PPAP-Level 3

The Supplier shall complete a PPAP in accordance with Level 3 of the Production Part Approval Process (PPAP) manual and shall submit the following to BAE Systems for approval:

Design Record

Engineering Change Documents (if applicable)

Customer Engineering Approval (if required)

Design FEMA

Process Flow Diagrams

Process FEMA

Control Plan

Measurement System Analysis Studies

Dimensional Results with ballooned drawing (all characteristics, including drawing notes, numbered)

Photograph of the part marking

Material, Performance Test Results

Initial Process Studies
Qualified Laboratory Documentation
Appearance Approval Report (if applicable)
Sample Product
Records of Compliance
Part Submission Warrant (PSW)

All other requirements of the PPAP shall be completed, retained on file, and made available to BAE Systems upon request.

The Supplier shall not ship product to BAE Systems prior to receipt of a signed/approved PSW. Product shipped in advance of PPAP approval shall be subject to rejection.

Process or product changes require PPAP resubmission. Notification to BAE Systems prior to changes is essential as additional audits or supplier identification may be required prior to resubmission; such changes are to be communicated to your BAE Systems Procurement or Quality contact via the Product/Process Change Request (Form 1310). Process or product changes are defined as changes in the processing of the product that could affect its ability to meet design, durability, and reliability requirements, including:

- Use of a process or material other than those which were previously approved,
- Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling,
- Production following any refurbishment or rearrangement of existing tooling or equipment,
- Production from tooling and equipment transferred from another manufacturing site,
- Change of a supplier for parts or services (e.g. heat treating, plating, welding),
- Break in production or product produced after tooling has been inactive for volume production for 24 months or more,
- Any change in material, including not only raw material but also chemical compounds or processes (i.e. paints, adhesives, sealers, lubricants, plating, heat treat processes, etc.) which become part of the finished product; this includes changing to an engineering approved alternative material or any change in the sequence of operations,
- Upon request of BAE Systems' Purchasing or Quality representative.

059 PPAP-Level 4-Predefined Requirements

The Supplier shall complete a PPAP in accordance with Level 4 of the Production Part Approval Process (PPAP) manual and shall submit the following to BAE Systems for approval:

Dimensional Results with ballooned drawing (all characteristics, including drawing notes, numbered)

Photograph of the part marking
Process Certifications
Material, Performance Test Results
Part Submission Warrant (PSW)

All other requirements of the PPAP are waived for this order and do not need to be completed.

The Supplier shall not ship product to BAE Systems prior to receipt of a signed/approved PSW. Product shipped in advance of PPAP approval shall be subject to rejection.

Process or product changes require PPAP resubmission. Notification to BAE Systems prior to changes is essential as additional audits or supplier identification may be required prior to resubmission; such changes are to be communicated to your BAE Systems Procurement or Quality contact via the Product/Process Change Request (Form 1310). Process or product changes are defined as changes in the processing of the product that could affect its ability to meet design, durability, and reliability requirements, including:

- Use of a process or material other than those which were previously approved,
- Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling,
- Production following any refurbishment or rearrangement of existing tooling or equipment,
- Production from tooling and equipment transferred from another manufacturing site,
- Change of a supplier for parts or services (e.g. heat treating, plating, welding),
- Break in production or product produced after tooling has been inactive for volume production for 24 months or more,
- Any change in material, including not only raw material but also chemical compounds or processes (i.e. paints, adhesives, sealers, lubricants, plating, heat treat processes, etc.) which become part of the finished product; this includes changing to an engineering approved alternative material or any change in the sequence of operations,
- Upon request of BAE Systems' Purchasing or Quality representative.

060 PPAP-Level 4-Unique Requirements

The Supplier shall complete a PPAP in accordance with Level 4 of the Production Part Approval Process (PPAP) manual and shall submit requirements as specified in the PPAP Requirements Checklist included as part of the Purchasing Agreement. All other requirements of the PPAP shall be completed, retained on file, and made available to BAE Systems upon request. Inspection data shall be accompanied by a ballooned drawing (all characteristics, including drawing notes, numbered) and a photograph of the part marking.

The Supplier shall not ship product to BAE Systems prior to receipt of a signed/approved PSW. Product shipped in advance of PPAP approval shall be subject to rejection.

Process or product changes require PPAP resubmission. Notification to BAE Systems prior to changes is essential as additional audits or supplier identification may be required prior to resubmission; such changes are to be communicated to your BAE Systems Procurement or Quality contact via the Product/Process Change Request (Form 1310). Process or product changes are defined as changes in the processing of the product that could affect its ability to meet design, durability, and reliability requirements, including:

- Use of a process or material other than those which were previously approved,
- Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling,
- Production following any refurbishment or rearrangement of existing tooling or equipment,
- Production from tooling and equipment transferred from another manufacturing site,
- Change of a supplier for parts or services (e.g. heat treating, plating, welding),
- Break in production or product produced after tooling has been inactive for volume production for 24 months or more,

- Any change in material, including not only raw material but also chemical compounds or processes (i.e. paints, adhesives, sealers, lubricants, plating, heat treat processes, etc.) which become part of the finished product; this includes changing to an engineering approved alternative material or any change in the sequence of operations,
- Upon request of BAE Systems' Purchasing or Quality representative.

061 PPAP-Level 5

The Supplier shall complete a PPAP in accordance with Level 5 of the Production Part Approval Process (PPAP) manual and shall retain all documentation at their facility. Inspection data shall be accompanied by a ballooned drawing (all characteristics, including drawing notes, numbered) and a photograph of the part marking. The documentation shall be made available to BAE Systems upon request.

062 CARC Paint Marking

All parts large enough to be individually marked shall be marked with the name or logo of the painter and the date or lot identification on which the parts were painted. If the Supplier paints the parts, only the date on which the parts are painted is required. Marking shall be ink stamped in a contrasting color with the size and font at the discretion of the supplier. Items too small to be individually marked shall have this information marked on the packaging.

Example:
ABC Finishing Company
1/1/2012

064 York CAGE Code

The CAGE code to be marked on this part is 06085.

065 Santa Clara CAGE Code

The CAGE code to be marked on this part is 80212.

066 Anniston CAGE Code-Aftermarket Spares

The CAGE code to be marked on this part is 076M6.

067 Anniston CAGE Code-Forge Facility

The CAGE code to be marked on this part is 05386.

081 Counterfeit Electronic Parts Prevention Plan

A Counterfeit Electronic Part is an Electronic Part that is: (1) an unauthorized copy or substitute that has been identified, marked, and/or altered by a source other than the Original Component Manufacturer (OCM) or Authorized Distribution Chain and has been misrepresented to be an OCM's authorized Electronic Part; and/or (2) previously used Electronic Parts that are misrepresented as being "new" when provided. The Supplier is responsible to prevent counterfeit materials from being provided to BAE Systems. To that end, the Supplier shall:

- Obtain Electronic Parts only from the OCM or their Authorized Distribution Chain
- Obtain written authorization from BAE Systems prior to purchasing parts from any source other than the OCM or their Authorized Distribution Chain (i.e. Independent Distributors)
- Verify parts obtained from Independent Distributors through in-house or third-party testing/inspection or through supplied certificates of authenticity/origin to determine authenticity; documentation must be retained on file and provided upon request to BAE Systems
- Quarantine all suspect/identified Counterfeit Electronic Parts to ensure that they cannot reenter the market; **do not return counterfeit/suspect counterfeit parts to the supplier**
- Notify the BAE Systems APR in writing in the event that Counterfeit/Suspect Counterfeit Parts are found

- Supplier must have processes for maintaining electronic part traceability (e.g., item unique identification) that enable tracking of the supply chain back to the original manufacturer, whether the electronic parts are supplied as discrete electronic parts or are contained in assemblies. This traceability process shall include certification and traceability documentation developed by manufacturers in accordance with Government and industry standards; clear identification of the name and location of supply chain intermediaries from the manufacturer to the direct source of the product for the seller; and, where available, the manufacturer's batch identification for the electronic part(s), such as date codes, lot codes, or serial numbers. If IUID marking is selected as a traceability mechanism, its usage shall comply with the item marking requirements of DFAR 252.211-7003, Item Unique Identification and Valuation.

083 Electrostatic Discharge (ESD)

- A. Supplier **shall** have an ESD program in place per ANSI/ESD S20.20.
- B. Supplier **shall** protect the parts using approved ESD protective packaging per MIL-STD-2073 preservation code GX.
- C. Labeling **shall** be per MIL-STD-130 and MIL-STD-129.