American Ordnance LLC
QUALITY ASSURANCE PROVISIONS

GENERAL QUALITY REQUIREMENTS

The scope of the supplier's efforts includes the following as defined in this purchase order:

Manufacture and deliver the quantities called for in this purchase order, in accordance with the specifications and drawings listed.

Develop/delineate the manufacturing processes and tooling to manufacture, inspect and deliver the quantities required.

Articles defined in the purchase order are subject to the applicable supplier quality assurance provisions contained herein.

Articles will not be accepted by AO, and payment will be withheld if the supplier fails to meet the requirements of the purchase order.

The supplier should contact AO with questions/improvements so AO can provide assistance in correcting the problems if needed.

Preliminary evaluation samples can be provided at any time for AO to review and provide assistance in improving a process.

This document and any resulting subcontract document is to be considered proprietary information to American Ordnance. Your firm is expected to treat such information with the same degree of care it uses to handle its own proprietary information and it shall not be duplicated or used for any other internal purposes than those directly related to your performance of this order. No disclosure, in whole or in part, of any AO proprietary information is permitted without the written authorization of AO.

AO will list top level drawings and specifications in the applicable purchase order. It is the responsibility of the seller to obtain all drawings and specifications as well as secondary and general support specifications. Should you be unable to obtain these documents, contact the buyer.

QAP-1

PACKING AND MARKING

Unless otherwise directed by this purchase order, referencing specifications and/or drawings, the supplier shall determine the method of shipment. The method must provide adequate protection to prevent damage in transit and/or storage and be conducive to normal material handling practices. Gross weight of container will not exceed 50 pounds, unless otherwise approved by AO LLC (Note: Supplier must notify prior to shipment). Each container contains the same quantity, except one short pack container is allowed. The short pack is to be marked "SHORT PACK" or in a manner that is easily identifiable by AO LLC. At least one side of each container is to be marked with the following information:

(AO Part Number)
(Part Name)
(Drawing Number OR Specification Number as stated on purchase order)
(Lot Number, if applicable)
(Quantity)
(PO Number)

NOTE: AO LLC reserves the right to correct improperly marked shipping containers. Charges resulting from these corrections may be deducted from the seller's invoice.

QAP-2

CERTIFICATE OF COMPLIANCE

The supplier shall submit, with each shipment, a certificate signed by their authorized representative, stating that the raw materials used, and articles furnished to AO LLC, are in conformance with applicable requirements of the purchase order, drawings, specifications, and that supporting documentation is on file and available to AO LLC upon request. Each Certificate of Compliance should contain the following minimum information:

- Supplier
- Purchase Order Number
- Lot or Batch Number
- Quantity
- Shelf Life Expiration Date (if applicable)
- Statement of Certification
- Signature by Authorized Representative
- Typed Name of Authorized Representative
- Company Title or Position of Authorized Representative
- Date Signed

An example of an acceptable statement of certification is as follows: "This is to certify that all items supplied are in compliance with the purchase order, drawings, specifications and other applicable documentation. All certifications, including material certifications, and other inspection and test reports, as applicable, are on file at this facility, (or included with the shipment, if required) and are available for review by AO LLC". An example of a Certification of Compliance can be obtained from AO LLC upon request. In addition, retain these records for a period of seven years after final delivery of the items procured. If the supplier is not the manufacturer, a certificate of conformance will be required from the manufacturer only.

QAP-3

RAW MATERIAL CERTIFICATION

The supplier shall submit, with each shipment, a Certified Test Report (CTR) indicating conformance to requirements of the applicable drawings/specifications. Each CTR should contain the following minimum requirements:

- Name and address of material supplier
- Contract #
- Identification of material by specification, revision, amendment, and dates, together with size, grade, type, etc.
- Quantity of material
- Test results identified by reference to the applicable requirements
- Quantity tested, sample size, specimen type, as applicable
- Date, signature, and title of supplier representative that is attesting to the accuracy of the test report

The CTR is to be traceable to the material used to produce each shipment against this contract. In addition, retain these records for a period of seven years after final delivery of the items procured.

QAP-4

SHELF LIFE

Manufacturing date and shelf life is to be noted on the label. AO LLC does not accept material if more than 15 percent of the indicated shelf life has elapsed upon receipt.

QAP-5

INSPECTION AND TEST RECORDS

The supplier **shall submit, with each shipment**, the inspection and test records which show that the material was inspected for all critical, special, major, and minor defect characteristics per the requirements of the specification, drawing and the AO LLC contract requirements. The Inspection and Test requirements to be per specifications and drawings unless otherwise specified by the purchase order. Critical/Special characteristics and 100% major characteristics require 100% inspections. In addition, the supplier must provide with the first lot records that show inspections of all unlisted drawing dimensions including all notes on the drawings. Unless otherwise specified in the specifications, drawings, and/or this purchase order, the sample size for these unlisted characteristics must be ten (10). In addition variable data must be collected and provided when possible. When variable data cannot be obtained, attribute data will be provided. (Note: If a first article is performed on this purchase order and data is sent to support all unlisted characteristics and drawing notes, the ten (10) samples will not be required on the first lot.) These records are to be traceable to the material shipped.

Inspection records should contain the following minimum requirements:

- Purchase Order Number
- Lot Number and Description of Component Part
- Description of Each Characteristic Inspected
- Total Amount in the Lot/Shipment, Amount Inspected/Amount Accepted/Amount Rejected
- Independent laboratory name and address (if used)

In addition, retain these records for a period of seven years after final delivery of the items procured.

QAP-6

FIRST ARTICLE SAMPLE (FAS) INSPECTION

Perform and submit an acceptable FAS as defined in the applicable military specification, drawings and/or this purchase order. **Note: Sample size for the first article must be per the specification. If no sample size is listed in the specification, contact AO for the appropriate number of samples required.** Regular production may not begin until the supplier receives approval of FAS acceptance by AO LLC. The FAS must be produced using the same methods, equipment, processes and materials that are to be used for production runs on this contract. The supplier will present to AO LLC the specified number of "known good" finished items as verified by 100 percent inspection using approved inspection equipment. The supplier shall submit with the first article samples the inspection and test records which show that the material was inspected for all critical, special, major and minor defect characteristics per the requirements of the specification, drawing and the AO LLC contract requirements. In addition, Inspection Records must show inspections of all unlisted drawing dimensions including all drawing notes for the same number of samples required by the item specification for first article or the AO specified sample size. Variable data must be provided using AIE approved gages when possible or standard measuring equipment. When variable data cannot be obtained, attribute data will be provided. These records are to be traceable to the material shipped. Inspection records should contain the following minimum requirements:

- Purchase Order Number
- Lot Number and Description of Component Part
- Description of Each Characteristic and Note Inspected
- Total Quantity Produced For FAS/First Article Amount Inspected/Amount Accepted/Amount Rejected

In addition, retain these records for a period of seven years after final delivery of the items procured.

QAP-7A

DOCUMENTATION
One copy of required documentation is to be sent with each shipment. In addition, a copy of all required documentation for each shipment is to be mailed under separate cover to:

American Ordnance LLC
Attn: Incoming Inspection
2280 Hwy 104 West, Suite 2
Milan, TN 38358-3177
Phone No 731-686-6586

NOTE: This documentation is extremely important to American Ordnance and is required for final acceptance of material. Documentation may be faxed to: Incoming Inspection Supervisor, Fax No. 731-686-6132.

QAP-7B

DOCUMENTATION
One copy of required documentation is to be sent with each shipment. In addition, a copy of all required documentation for each shipment is to be mailed under separate cover to:

American Ordnance LLC
Attn: Purchasing
17575 State Hwy 79
Middletown, IA 52638-9701
Phone No 319 753-7801

NOTE: This documentation is extremely important to American Ordnance and is required for final acceptance of material. Documentation may be faxed to: Purchasing, Fax No. 319 753-7924.

QAP-8

CORRECTIVE ACTION
The supplier shall perform corrective action on lots found to be non-conforming, during either Source Inspection or after receipt at the Buyer's facility. Notification of non-conformance will be made with a Defect Material Report (DMR). The supplier shall answer the report as required and return to AO LLC no later than the due date required.

In the event that discrepancies are found and documented by the Government (DCAS) in the form of a Quality Deficiency Report (QDR), a copy of the QDR must be forwarded to AO LLC immediately upon receipt.

QAP-9

CHANGES IN DESIGN
The supplier must notify and obtain approval of the Customer, through AO LLC, prior to making any change to the design of the product or material required by this Purchase Order. An Engineering Change Proposal (ECP) shall be submitted to AO LLC for approval, prior to submitting to the Customer. AO LLC is responsible for making such submission to the Customer. The supplier will be notified, in writing, of the result of such submission.

QAP-10

PRODUCTION PROCESS/LOCATION, MATERIAL, TECHNICAL CHANGES, SCHEDULING
If major changes are made or will occur in production processes, type of material, specification/technical data and/or the supplier's production has been or will be down for 90 days or more between production runs, notify AO LLC to determine if a First Article, or limited First Article is required. Some examples of major changes to a production process include (1) installation of new production machines, (2) relocation of production machine, (3) major modification to existing machines.

QAP-11

SOURCE INSPECTION
AO maintains the right to perform a Source Inspection to evaluate the product or service being procured by this purchase order. This evaluation may take the form of any or all of the following:

- Product Inspection
- Process Verification
- Audits

Audits may be performed on item affecting product quality such as:

QAP 11 CONT'D

- Measurement & Test Equipment (M&TE) Calibration
- Special Processes
- Work Instructions
- Statistical Process Control (SPC)

Reasonable facilities and equipment shall be made available to the AO LLC Representative while performing these tasks. Access must be provided to appropriate work areas, M&TE, records, inspection/quality plans, etc. AO LLC must be provided the opportunity to inspect all listed characteristics and those unlisted ones specifically identified at the point where acceptance is determined. Before submitting product to AO LLC, it shall have been accepted under the terms of your inspection plan. After acceptance by AO LLC, the product may be submitted to the Customer if required.

AO LLC may choose to waive Source Inspection but any such waiver will not jeopardize future opportunities for Source Inspection. AO LLC reserves the right to make final acceptance of the product or service. AO LLC reserves the right to assign the costs associated with Source Inspection to the supplier if the AO LLC Source Inspector arrives for a scheduled inspection and determines that the supplier is not ready for the performance of inspection. **Notify AO LLC at least one week in advance to arrange an AO LLC representative to be at your facility. Earlier notification would be appreciated.**

QAP-12

GOVERNMENT SOURCE INSPECTION (GSI)
GSI is required prior to shipment from your facility. A copy of the contract covering the item under procurement is furnished by the Government Industrial Operations Representative at AO LLC to the Defense Contract Administrative Services (DCAS) element. Upon receipt of this order, promptly notify the DCAS Government Representative who normally services your facility so that appropriate planning for GSI can be accomplished. The supplier is required to notify the DCAS element ten days in advance of contractual due date after material is ready for inspection.

GSI does not constitute acceptance; nor in any way replace the supplier's or purchaser's inspection, or otherwise relieve the supplier of his responsibility to furnish conforming material. When inspection at the supplier's plant is performed by the Government, such inspection is not considered by the purchaser as evidence of effective inspection by the supplier. **If a Government Inspector finds material to be unacceptable, the supplier does not ship the material to AO LLC until such time that the Government Inspector's findings have been satisfactorily resolved with AO LLC.**

QAP-13

STATISTICAL PROCESS CONTROL (SPC) PLANS
A Supplier SPC General (Management) Plan is to be approved by AO LLC prior to any production. The SPC Management Plan is to be in accordance with instructions outlined in the requirements listed below. Management SPC Plan submission is required two weeks after Purchase Order award. If Management SPC Plan submission cannot be completed within two weeks, supplier is required to submit a milestone plan and date for completion within the same two weeks after Purchase Order award. This plan requires approval by American Ordnance. A template can be provided for your use in developing this General (Management) Plan. Any changes to this plan require approval by AO LLC. AO recognizes that suppliers and/or subcontractors play a key role in continuous improvement. If suppliers and/or subcontractors do not practice SPC and the philosophy of continuous improvement, AO's own improvements will be minimized. Current suppliers without a SPC program are encouraged to develop one.

The Supplier SPC General (Management) Plan Requirements are as follows:

1. The SPC Management Plan defines the supplier's SPC concepts and methodologies to be in accordance with ANSI/ASQC B1, B2 and B3 Standards. As a minimum, the plan addresses the following:

- SPC Plan to define management's SPC responsibilities and involvement and shall include management's commitment to continuous process improvement.
- SPC Plan to embrace a total commitment to quality and shall be capable of standing on its own merit.
- SPC Plan to describe the policy for applying SPC, including goals and management commitment to SPC
- SPC Plan to list documents that are the basis for the contractor's SPC program (i.e., ANSI standard, textbooks, Government documents).
- SPC Plan to define the SPC management structure within the organization.
  SPC Plan to identify and include interrelationships of all departments involved in SPC (i.e. Production, Quality, Engineering, Purchasing, etc.).
- SPC Plan to identify by job title or position all key personnel within departments involved in the application of SPC.
- SPC Plan to describe which functions are performed by key personnel and when these functions are performed (i.e., include personnel responsible for performing inspections/audits, charting and interpreting data; personnel responsible determining, initiating and implementing corrective action upon detecting assignable causes, etc.)
- SPC Plan to identify by job title or position the primary individual responsible for overseeing that SPC training is accomplished.
- SPC Plan to describe the qualification program required and in use for all personnel utilizing SPc techniques, including the qualification of trainers.
- SPC Plan to identify who is to be trained and the type, extent and length of such training (i.e., on-the job, classroom, etc.)
- SPC Plan to identify when refresher training is required and how personnel using SPC techniques are monitored.

- SPC Plan to identify the criteria for performing SPC gage capability studies and describe how and when these studies are applied. Repeatability and accuracy of gages should be addressed.
- SPC Plan to describe how the process/operation parameters are determined appropriate for SPC application for critical, special and major process/operation parameters (i.e., Pareto analysis; analysis of characteristics with tight tolerances, etc.).
- SPC Plan to identify the criteria for performing process capability studies and describe how and when these studies are applied. Describe how the process capability index is calculated and include the frequency of these calculations.
- SPC Plan to describe what actions are taken as a result of each process capability study.
- SPC Plan to describe the methodologies when process capability is for variable and attribute data.
- SPC Plan to determine what constitutes and capable process. When variable data is utilized capability (Cp) shall be determined. Process performance index shall be greater than or equal to 1.33 (Cpk). For critical parameters/characteristics, the process performance index shall be greater than or equal to 2.0 (Cpk).
- SPC Plan to determine what constitutes a capable process. When attribute data is utilized process capability/performance shall be the percent beyond the upper/lower specification limit less than or equal to 0.003 percent (Cpk=1.33).
- SPC Plan to describe what actions will be taken if process/operation is sub-marginal or marginal. (Cpk less than 1.33 or 2.0 for criticals) or grand average fraction defective is greater than .003 percent.)
- SPC Plan to include the analysis of statistical distributions and define all formulas and symbology utilized.
- SPC Plan to describe the type of charts to be used (i.e., X bar/R, X bar/S, etc.) and rationale for use; the criteria for selection of sample size, frequency of sampling and rational subgroups.
- SPC Plan to identify the procedures for establishing and updating control limits, including frequency of adjustments.
- SPC Plan to describe the criteria for determining out-of-control conditions (i.e., trends, points beyond control limits, etc.) and the corrective action taken; to include failure analysis when the process is unstable or when nonconforming product has resulted from unstable processes.
- SPC Plan to illustrate out-of-control tests.
- SPC Plan to describe the method of recording pertinent facts on control charts such as changes in raw material, machines, manufacturing methods and environment, and corrective actions taken and describe how control charts are traceable to the product.
- SPC Plan to identify whether suppliers are required to utilize SPC and describe the extent the vendor's policies and procedures are consistent with in-house procedures.
- SPC Plan to describe the methods utilized to determine that suppliers have adequate controls to assure defective product is not produced and delivered.
- SPC Plan to describe the system utilized to audit suppliers, what will be audited and how often.
- SPC Plan to describe what action will be taken when out-of-control conditions exist at subcontractor or vendor facilities.
- SPC Plan to describe the contractor's SPC Audit System. This system, at a minimum, shall consist of auditing compliance with the planned arrangements specified in the General and Detailed SPC Plans followed by a review and analysis of the outcome to include implementation of necessary corrective action.
- SPC Plan to identify various records to be used in support of SPC and describe their use.
- SPC Plan to identify retention periods of SPC records.

Detailed SPC Plans (item specific) are to be approved by AO LLC prior to any production. The Detailed SPC Plans are to be in accordance with instructions outlined in the Supplier Detailed SPC Plan Requirements listed below. Detailed SPC Plan submission is required two weeks after Purchase Order award. If Detailed SPC Plan submission cannot be completed within two weeks, supplier is required to submit a milestone plan and date for completion within the same two weeks after Purchase Order award. This plan requires approval by American Ordnance. It is recommended that AO LLC's Form 760S be used as a format. These plans are comprised of descriptions of SPC techniques planned for use, on a characteristic by characteristic basis, for all characteristics identified in the specification as critical, special, and major. The supplier may provide justification for not using SPC techniques for any or all of the characteristics identified. These justifications must be accepted by American Ordnance LLC.

1. Each Detailed SPC Plan contains the following:

    - Component name
    - Defect characteristic number and/or defect characteristic nomenclature
    - SPC applicable (to include chart type, sample size, sample frequency) or SPC not applicable (to include brief justification why not applicable). **Justifications must include how the supplier's processes are controlled to assure all product delivered to A.O. LLC is in conformance to specifications and/or drawings.**
    - List the Production Machinery used for each characteristic subject to SPC
    - List the Inspection Equipment used for each characteristic subject to SPC
    - Define the production steps (example could be a flowchart of the process)

Control Charts - The supplier is expected to document (CP) and (CPK) indices and investigations & corrective action for out-of-control conditions. In addition, each chart is expected to show control limits, purchase order number, lot number (if applicable), and defect characteristic number. All charts are to be submitted to AO LLC with each shipment of parts/material.

Control charts are to be documented in a manner that assures traceability to the product. The supplier shall retain copies of all data and control charts for a period of seven years after final delivery of the items procured.

QAP-14

ACCEPTANCE INSPECTION EQUIPMENT (AIE)
The supplier's AIE designs (drawings or descriptions), including any changes, are to be approved by AO and the Government prior to any production, including First Article Inspection. AIE submission is required two weeks after Purchase Order award. If AIE submission cannot be completed within two weeks, supplier is required to submit a milestone plan and date for completion within the same two weeks after Purchase Order award. Two copies of each design or description, identified to the characteristic to be inspected and to the contract number, are to be submitted to AO.

Use of approved AIE is mandatory for acceptance of parts. The Supplier is responsible for assuring the AIE is in calibration.

Instructions for Supplier Inspection Equipment List
Suppliers to submit to the AO Purchasing Department, a list of all inspection equipment and their procedures to be used to inspect parts for the purchase order.

The supplier's list to include all instruments, measuring and test equipment (M & TE) and their instructions for use for their part(s) acceptance in accordance with purchase order specifications. Standard Measuring Equipment (SME), commercial equipment such as micrometers, calipers, gage pins, snap gages, etc., to be described in detail, examples below:

Micrometer, OD, 1" range x .0001" divisions;
Caliper, Dial 6" range x .001" divisions;
Gage Standard Commercial Pin, .1500 ± .0002" diameter.
Torque Wrench, 0-50 in/lbs x 2 in/lbs divisions x ± 2% (accuracy)

Commercial Equipment (CE) to be listed by brand, model and capacity/range. Supplier-designed M & TE which are unique designs are to be furnished on a drawing format with instructions for use. These drawings to indicate unique design number, revision, M & TE nomenclature, inspected part name, number, and characteristic being inspected. List the drawing number and revision on the Inspection Equipment List.

Requirements Example

ITEM:	List part number effected.
SPEC:	Item Specification used to perform inspection.
CODE:	List the Critical, Special, Major, and Minor characteristics as listed in the item specification. i.e., "C1 (Critical), 101 (Major), Spl A (Special), 201 (Minor)"
CHARACTERISTIC:	List characteristic as listed in the item specification. i.e. "Overall Length of body, max."
METHODS:	List inspection equipment type, brand/model, measuring capacity/units, if commercial equipment, supplier drawing number/revision.

NOTE: Upon approval of the submitted designs, a copy of the government approval will be forwarded to the supplier for their record.

If the purchase order is a follow-on order on which AIE approval was obtained, and if the parameters of the product and the AIE have not changed, "rollover" approval may be granted. Submit letter, FAX, or email citing the previous order and the AO or government document that approved the AIE.

In the event that automatic inspection equipment is used to make its own accept/ reject decision, the drawings, software and calibration procedures relevant to making the accept/reject decision will be required. Other pertinent information may be requested from the supplier by AO during the review of any submittal on an as needed basis. See Mil-A-70625 for specific requirements. When a revision to any approved inspection equipment or method is anticipated, it must be submitted to AO 60 days prior to intended use for evaluation and approval. Approval of an initial design does not imply approval of subsequent revisions.

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QUALITY SYSTEMS
The supplier is to provide and maintain a quality program or system in accordance with MIL-Q-9858.
ISO 9001-2000 registration or QS 9000 registration is an acceptable alternative. A copy of the Supplier's Quality Manual is to be submitted to AO LLC upon request.

In addition, AO LLC reserves the right to audit or examine the adequacy of your quality/inspection program. The basis for any audit shall be the contractor's quality/inspection plan and procedures, company quality manual, subcontractor requirements related to product quality, applicable military specifications/standards and the purchase order. In the event that discrepancies are found, corrective action will be required no later than the due date provided by AO LLC.

QAP-16

QUALITY SYSTEMS
The supplier is to provide and maintain a quality program or system in accordance with MIL-I-45208.
ISO 9001-2000 registration or QS 9000 registration is an acceptable alternative. A copy of the Supplier's Quality Manual is to be submitted to AO LLC upon request.

In addition, AO LLC reserves the right to audit or examine the adequacy of your quality/inspection program. The basis for any audit shall be the contractor's quality/inspection plan and procedures, company quality manual, subcontractor requirements related to product quality, applicable military specifications/standards and the purchase order. In the event that discrepancies are found, corrective action will be required no later than the due date provided by AO LLC.

QAP-17

OTHER QUALITY SYSTEMS
The supplier is to provide and maintain a quality and inspection system capable of producing product that meets specification and/or drawing requirements. The quality and inspection plan includes the procedures for calibration of test and measuring equipment, when applicable.

In addition, AO LLC reserves the right to audit or examine the adequacy of your quality/inspection program. The basis for any audit shall be the contractor's quality/inspection plan and procedures, company quality manual, subcontractor requirements related to product quality, applicable military specifications/standards and the purchase order. In the event that discrepancies are found, corrective action will be required no later than the due date provided by AO LLC.

QAP-18

QUALITY SYSTEMS
The supplier is to provide and maintain a quality program or system in accordance with ISO 9001:2000. QS 9000 registration is an acceptable alternative. A copy of the Supplier's Quality Manual is to be submitted to AO LLC upon request.

In addition, AO LLC reserves the right to audit or examine the adequacy of your quality/inspection program. The basis for any audit shall be the contractor's quality/inspection plan and procedures, company quality manual, subcontractor requirements related to product quality, applicable military specifications/standards and the purchase order. In the event that discrepancies are found, corrective action will be required no later than the due date provided by AO LLC.

QAP 19

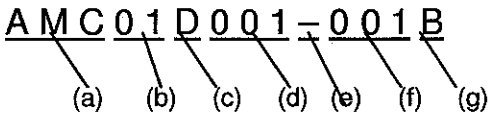
QUALITY SYSTEMS
The supplier is to provide and maintain a quality program or system that complies to ISO 9001: 2000 Tailored per AO LLC's requirements. A copy of the tailored requirements can be obtained from AO LLC. ISO 9001:2000 registration is an acceptable alternative. A copy of the Supplier's Quality Manual is to be submitted to AO LLC upon request.

In addition, AO LLC reserves the right to audit or examine the adequacy of your quality/inspection program. The basis for any audit shall be the contractor's quality/inspection plan and procedures, company quality manual, subcontractor requirements related to product quality, applicable military specifications/standards and the purchase order. In the event that discrepancies are found, corrective action will be required no later than the due date provided by AO LLC.

LOT NUMBERING

Special Note: **Due to lot numbering restrictions, product delivered on this purchase order must be new product. If the supplier has previously run product that meets requirements of this purchase order and they would like to use to fulfill this purchase order, it must be previously approved by American Ordnance, LLC prior to shipment.**

The lot numbering system of MIL-STD-1168 applies and the supplier is responsible to assure this specification is followed. If a manufacturer's identification symbol has not been previously obtained, or if any clarification is needed, contact AO buyer. AO LLC will assign the initial interfix number to be used unless AO directs otherwise in the purchase order. The lot number does not exceed 14 characters in length with no characters being separated by spaces. The minimum number of characters used is 13 (see example below). If a one or two character manufacturer's identification code is used, the remaining positions of the three (3) character field is filled by dashes (-); e.g., A--, AB-, etc. The following illustrates the construction of a number.



(a) Manufacturer's identification symbol (assigned by AO LLC).
(b) A two digit numeric code identifying the year that production of lot was started.
(c) A single alpha code signifying the month that production of lot was started.
(d) Lot interfix number (assigned by AO LLC)
(e) This dash is replaced with an A for First Article lots. (See para. e)
(f) Lot sequence number
(g) Ammunition lot suffix (for reworked lots only).

The various parts of the lot number are explained in the following paragraphs.

a. Manufacturer's identification symbol - Identifies the supplier which manufactured or supplied the item or material.
b. Year of production - The last 2 numbers of the year in which manufacture of the lot was initiated. The supplier is responsible for the correct application and placement of the year of production code into the lot number.
c. Month of production - The month of production is a single alpha code assigned as follows:

A	January	E	May	J	September
B	February	F	June	K	October
C	March	G	July	L	November
D	April	H	August	M	December

NOTE: The letter "I" is not used.

The single alpha code reflects the month of the year in which the manufacture of the lot was initiated. The supplier is responsible for the correct application and placement of the month of production code into the lot number.

d. Lot interfix - A number not to exceed 3 digits. The interfix number indicates the basic material, process, drawing and specification. Any change in any of these basic conditions requires a change in the interfix number. Any such change requires authorization by the purchaser. A new interfix number is assigned for material supplied under each new contract even through the basic process, drawing and/or specification have not changed.
e. When first article lots are required by the contract, replace the hyphen between the lot interfix number and the lot sequence number with a capital "A".

Example: AMC01B001A001 (Indicates interfix 001 - first submission)
AMC01C001A002 (Indicates interfix 001 - second submission)
AMC01M002A001 (Indicates interfix 002 - first submission, etc.)

f. Lot sequence number - The three digit lot sequence number identifies a lot according to the sequence of production with each lot interfix number. The lot sequence number within each interfix begins with "001" and continues until production is completed, a change is made in the item or a change in the purchase order is made. The supplier is responsible for the assignment of sequence number and for making changes as necessary.

A sequence number changes with each shipment of a lot delivered to the purchaser. Sampling, inspection, acceptance and payment is normally made on the basis of lot sequence numbers.

g. Lot suffix number - The lot suffix, when required, becomes an integral part of the lot number and is applied directly after the sequence number as shown below. Lot suffixes consist of one (1) alpha character and is a capital letter. The suffix is used in identifying lots which are being reworked. The lot suffix is assigned in alphabetical sequence starting with the letter "A". Lots reworked twice are marked with "B". Each subsequent rework is shown by the use of the next letter alphabetically except that letters E, I, O and X are not used in this series.
Example: Lot ABC01J006-002, original production lot, is rejected. After rework, the lot number becomes ABC01J006-002A. The suffix letter becomes an integral part of the lot number.

QAP-21

AMMUNITION DATA CARDS
The supplier prepares ammunition data cards in accordance with MIL-STD-1168 and submits a copy to AO LLC with each shipment. Data card distribution requirements of MIL-STD-1168 do not apply.

QAP-22

MATERIAL SAFETY DATA SHEETS (MSDS)
The supplier is to provide a copy of the MSDS with initial shipment.

QAP-23

PROPELLANT LOT NUMBERING
The lot numbering system of MIL-STD-1168 applies. The appropriate manufacturer's identification symbol and the correct month and year of production must be applied. Propellant lot serial numbers shall range from "00001" to "99999" and will be obtained from the contracting officer.

Propellant lot numbers shall not exceed fourteen characters in length and no characters shall be separated by spaces. The minimum number of characters used shall be 13. This occurs only if no lot number suffix is added.
Regular production lots shall be identified by retaining the numeric character "0" immediately after the hyphen in the propellant lot number, while those lots not of regular production, included in the non-standard lots shall be identified by replacing that numeric character "0" with the appropriate lot identifier code.

EXAMPLE:
ABC01D-056342A
/ / \ \ \ \
a b c d e f

(a) Manufacturer's identification symbol.
(b) A two digit numeric code identifying the year of production.
(c) A single alpha code signifying the month.
(d) A one digit code signifying regular production propellant lots or nonstandard propellant lots as specified in the following paragraphs.
(e) A five digit number representing the serial number.
(f) Ammunition suffix (the alpha suffix), (only when applicable).
Lot suffix number – The lot suffix, when required, becomes an integral part of the lot number and is applied directly after the sequence number as shown below. Lot suffixes consist of one alpha character and are a capital letter. The suffix is used in identifying lots which were reworked or reblended. The lot suffix is assigned in alphabetical sequence starting with the letter "A". Lots reworked or reblended twice are marked with "B". Each subsequent rework or reblend is shown by the use of the next letter alphabetically except that letters E, I, O, and X are not used in this series.

Example: Lot ABC01D-056342 original production lot rejected. After rework or reblending, the lot number becomes ABC01D-056342A. The suffix letter becomes an intregal part of the lot number.

QAP-24

INSPECTION AND TEST RECORDS FOR TEN PIECE SAMPLE

The supplier must provide with the first lot/shipment records that show inspection results of all drawing dimensions including all notes on the drawings. The sample size to be inspected and documented is ten (10). Variable data must be collected and provided when possible. When variable data cannot be obtained, attribute data will be provided. These records are to be traceable to the material shipped.

Inspection records should contain the following minimum requirements:

- Purchase Order Number
- Lot Number (as applicable) and Description of Component Part
- Description of Each Characteristic
- Total Amount in the Lot/Shipment, Amount Inspected/Amount Accepted/Amount Rejected

In addition, retain these records for a period of seven years after final delivery of the items procured.

QAP-25

REWORK AND REPAIR OF NONCONFORMING MATERIAL

1. Rework and Repair are defined as follows:
   - Rework – The reprocessing of nonconforming material to make it conform completely to the drawings, specifications or contract requirements.
   - Repair – The reprocessing of nonconforming material in accordance with approved written procedures and operations to reduce, but not completely eliminate, the nonconformance. The purpose of repair is to bring nonconforming material into a usable condition. Repair is distinguished from rework in that the item after repair still does not completely conform to all of the applicable drawings, specifications or contract requirements.
2. Rework procedures along with the associated inspection procedures shall be documented by the supplier and submitted to American Ordnance. **Rework procedures are required to be approved by both American Ordnance and the Government Quality Assurance Representative (QAR) prior to implementation**.
3. Whenever the supplier submits a rework procedure for American Ordnance and Government review, the submission shall also include a description of the cause for the nonconformances and a description of the action taken or to be taken to prevent recurrence.
4. The rework procedure shall also contain a provision for reinspection which will take precedence over the Technical Data Package requirements and shall, in addition, provide American Ordnance and the Government assurance that the reworked items have met reprocessing requirements.
5. **REPAIR OF NONCONFORMING MATERIAL IS NOT ALLOWED.**

QAP-26

SPECIAL PROCESSES CONFORMANCE

Supplier and/or any subtier supplier engaged in special process (e.g. soldering, x-ray, welding, magnetic particle and penetrant inspection, heat treating, plating, chem film or surface treatment) may have the special processes audited by AO.
Any sub-tier supplier performing special processes or special tests must be qualified. Written documentation establishing the basis for your selection(s) must be furnished to AO for approval. AO reserves the right to disapprove the basis for supplier selection.
You must maintain objective evidence, subject to AO review that:

- The special process was performed by a qualified source.
- The special processes were performed in accordance with the requirements of the applicable specification.

You must furnish copies of this objective evidence upon request.

QAP 27

PROPELLANT MANDATORY REQUIREMENT

The supplier must assure the following requirements are met:

1. The producer of propellant is required to submit a five pound sample within six months of manufacture to the following address:

   U.S. Army REDCOM-ARDEC
   ATTN: Nathan Zink AMSTA-AAR-AEE-W, Building 938
   Picatinny Arsenal, NJ 07806-5000

2. The producer of propellant is required to submit a copy of the propellant description sheet to the following address:

   Marcia Garrison
   SFSJM-QAP
   Rock Island Arsenal, Building 350, 4th Floor
   Rock Island, IL 61299-6000

3. In addition, the supplier must send American Ordnance LLC a copy of the propellant description sheet with each shipment of propellant. Propellant cannot be accepted without this document.

QAP-28A

CRITICAL CHARACTERISTICS CLAUSE (7 MAY 2001)

a. The supplier's processes shall be designed to prevent the creation or occurrence of critical nonconformances. The contractor shall establish, document and maintain specific procedures, work and handling instructions and process controls relating to any critical characteristics.

b. The supplier shall assure his critical processes are robust in design such that product and performance are relatively insensitive to design and manufacturing parameters. A robust design anticipates changes and problems. Robust processes shall be designed to yield less than one nonconformance in one million.

c. An inspection/verification system shall be employed that will verify the robustness of your critical processes. Maximum use should be made of automated inspection equipment to accomplish verification of product quality. Mistake proofing techniques of your material handling and inspection systems are encouraged.

d. Previous Practices/Special Characteristics. As a result of previous practices, the government's technical data may refer to "Critical" (not annotated with I or II) and "Special" characteristics. Characteristics classified as "Critical" (not annotated with a I or II) shall be subject to all requirements herein associated with Critical (I) characteristics and level I Critical nonconformances. Unless otherwise stated in Section C, characteristics classified as "Special" shall be subject to all requirements herein associated with Critical (II) and Level (II) Critical nonconformances.

e. Supplier Identified Critical Characteristics List. Not including critical characteristics defined in the government's technical data (drawings, specifications, etc.), the supplier shall identify and document all material, component, subassembly and assembly characteristics whose nonconformances may result in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product. All additional critical characteristics identified by the supplier shall comply with the critical characteristic requirements of the technical data package, supplemented herein. The supplier's additional critical characteristics shall be classified as "Critical (I)" or "Critical (II)", and shall be reviewed and approved by American Ordnance prior to manufacturing (DI-SAFT-80970A). The following definitions are provided.

Level I critical nonconformance: A nonconformance of a critical characteristic that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product; or a nonconformance that judgment and experience indicate would prevent performance of the tactical function of a weapon system or major end item. The following (as a minimum) are classified as Level I critical nonconformances:

(1) A nonconformance that will result in a hazardous or unsafe condition (often referred to as a single point failure).

(2) A nonconformance that will remove or degrade a safety feature (such as those in a safe and arm device or fuzing system).

(3) A nonconformance that will result in violation of mandatory safety policies or standards.

Level II critical nonconformance: A nonconformance of a critical characteristic, other than Level I. This includes the nonconformance of a characteristic that judgment and experience indicate may, depending upon the degree of variance from the design requirement, the presence of other nonconformances or procedural errors,:

(1) result in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product, or

(2) prevent performance of the tactical function of a major end item.

f. In the event that a Critical level (I) nonconformance is found anywhere in the production process, the contractor, as part of his quality system, shall have procedures in place to ensure:

(1) The nonconformance is positively identified and segregated so that there is no possibility of the item inadvertently re-entering the production process. This control shall be accomplished without affecting or impairing subsequent defect analysis.

(2) The operation that produced the defective component or assembly and any other operations incorporating that component or assembly is immediately stopped.

(3) American Ordnance is immediately notified of the critical nonconformance (telephonically and electronic mail.) (DI-SAFT-80970A).

(4) Any suspect material (material in process that may contain the same defect) is identified, segregated and suspended from any further processing.

(5) An investigation is conducted to determine the cause of the deficiency and required corrective actions. A report of this investigation shall be submitted to American Ordnance (DI-SAFT-80970A).

(6) A request to restart manufacturing or to use any suspect material associated with the critical nonconformance is submitted to American Ordnance (DI-SAFT-80970A). Restart of production shall not occur until the investigations are complete or upon authorization from American Ordnance Purchasing. All objective evidence of the investigations to date shall be available for review at the time of restart. Suspect materiel found to be nonconforming shall not be used without American Ordnance approval.

g. The supplier may develop alternative plans and provisions relative to American Ordnance or Supplier identified Critical level (II) characteristics. The provisions shall be submitted to American Ordnance for advanced approval and shall address the following:

(1) Complete explanation of potential failure mode(s) together with supporting historical and statistical data.

(2) Pre-established plan of action (POA) to be taken when a critical nonconformance occurs and a description of controls to ensure there is no possibility of the nonconforming item inadvertently entering the production process.

(3) Means of tracking nonconformance rate, investigative results and corrective actions taken.

(4) Method to immediately verify that a produced critical nonconformance is consistent with the identified failure mode(s) and does not exceed the historical nonconformance rate.

The supplier can resume production with specific government approval based upon the pre-approved alternate plans and provisions for Critical (II) characteristics and level (II) Critical nonconformances.

h. If a critical nonconformance is discovered during further processing or loading, the original supplier or manufacturer who introduced the critical nonconformance shall bear responsibility for the nonconformance.

i. The American Ordnance Supplier Quality Assurance Representative will perform the surveillance actions necessary to ensure compliance with this clause.

(End of Clause)

QAP-28B

CRITICAL CHARACTERISTICS CLAUSE (FEB 2004)

(a) The supplier's processes shall be designed to prevent the creation or occurrence of critical nonconformance. The contractor shall establish, document and maintain specific procedures, work and handling instructions and process controls relating to any critical characteristics.

(b) The supplier shall assure his critical processes are robust in design such that product and performance are relatively insensitive to design and manufacturing parameters. A robust design anticipates changes and problems. Robust processes shall be designed to yield less than one nonconformance in one million.

(c) An inspection/verification system shall be employed that will verify the robustness of your critical processes. Maximum use should be made of automated inspection equipment to accomplish verification of product quality. Mistake proofing techniques of your material handling and inspection systems are encouraged.

(d) Previous Practices/Special Characteristics. As a result of previous practices, the government's technical data may refer to "Critical" (not annotated with I or II) and "Special" characteristics. Characteristics classified as "Critical" (not annotated with a I or II) shall be subject to all requirements herein associated with Critical (I) characteristics and level I Critical nonconformance. Unless otherwise stated in Section C, characteristics classified as "Special" shall be subject to all requirements herein associated with Critical (II) and Level (II) Critical nonconformance.

(e) Supplier Identified Critical Characteristics List. Not including critical characteristics defined in the government's technical data (drawings, specifications, etc.), the supplier shall identify and document all material, component, subassembly and assembly characteristics whose nonconformance may result in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product. All additional critical characteristics identified by the supplier shall comply with the critical characteristic requirements of the technical data package, supplemented herein. The supplier's additional critical characteristics shall be classified as "Critical (I)" or "Critical (II)", and shall be reviewed and approved American Ordnance prior to manufacturing (DI-SAFT-80970A). The following definitions are provided.

Level I critical nonconformance.
A nonconformance of a critical characteristic that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining or depending upon the product; or a nonconformance that judgment and experience indicate would prevent performance of the tactical function of a weapon system or major end item. The following (as a minimum) are classified as Level I critical nonconformance:

(1) A nonconformance that will result in a hazardous or unsafe condition (often referred to as a single point failure).

(2) A nonconformance that will remove or degrade a safety feature (such as those in a safe and arm device or fusing system).

(3) A nonconformance that will result in violation of mandatory safety policies or standards.

Level II critical nonconformance.
A nonconformance of a critical characteristic, other than Level I. This includes the nonconformance of a characteristic that judgment and experience indicate may, depending upon the degree of variance from the design requirement, the presence of other nonconformance or procedural errors,:

(1) Result in a hazardous or unsafe conditions for individuals using, maintaining or depending upon the product, or

(2) Prevent performance of the tactical function of a major end item.

(f) In the event that a Critical nonconformance is found anywhere in the production process, the contractor, as part of his quality system, shall have procedures in place to ensure:

(1) The nonconformance is positively identified and segregated so that there is no possibility of the item inadvertently re-entering the production process. This control shall be accomplished without affecting or impairing subsequent defect analysis.

(2) The operation that produced the defective component or assembly and any other operations incorporating that component or assembly are immediately stopped.

(3) American Ordnance is immediately notified of the critical nonconformance (telephonically and electronic mail.)(DI-SAFT-80970A).

(4) Any suspect material (material in process that may contain the same defect) is identified, segregated and suspended from any further processing.

(5) An investigation is conducted to determine the cause of the deficiency and required corrective actions. A report of this investigation shall be submitted to American Ordnance (DI-SAFT-80970A).

(6) A request to restart manufacturing or to use any suspect material associated with the critical nonconformance is submitted to American Ordnance (DI-SAFT-80970A). Restart of production shall not occur until the investigations are complete or upon authorization from American Ordnance Purchasing. All objective evidence of the investigations to date shall be available for review at the time of restart. Suspect materiel found to be nonconforming shall not be used without American Ordnance approval.

(g) The supplier may develop alternative plans and provisions relative to American Ordnance or Supplier identified Critical level (I) and Critical Level (II) characteristics. The provisions shall be submitted to American Ordnance for advanced approval and shall address the following:

(1) Complete explanation of potential failure mode(s) together with supporting historical and statistical data.

(2) Pre-established plan of action (POA) to be taken when a critical nonconformance occurs and a description of controls to ensure there is no possibility of the nonconforming item inadvertently entering the production process.

(3) Means of tracking nonconformance rate, investigative results and corrective actions taken.

(4) Method to immediately verify that a produced critical nonconformance is consistent with the identified failure mode(s) and does not exceed the historical nonconformance rate.

The supplier can resume production without specific American Ordnance approval based upon the pre-approved alternate plans and provisions for Critical (I) characteristics and level (I) Critical nonconformance and Critical (II) characteristics and level (II) Critical nonconformance.

(h) If a critical nonconformance is discovered during further processing or loading, the original supplier or manufacturer who introduced the critical nonconformance shall bear responsibility for the nonconformance.

(i) American Ordnance Supplier Quality Assurance Representative will perform the surveillance actions necessary to ensure compliance with this clause.

(End of clause)