

INCH-POUND

MIL-A-3029A  
 30 May 1989  
 SUPERSEDING  
 MIL-A-3029  
 22 August 1949

## MILITARY SPECIFICATION

## ASPHALT, WATERPROOFING

(For Use in Manufacture of Fiber Ammunition Containers)

This Specification is approved for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 Scope. This specification covers one type of asphalt suitable for use in manufacture of fiber containers for packing of ammunition.

## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards and handbooks. The following specifications, standards and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

## SPECIFICATIONS

## MILITARY

- |             |  |
|-------------|--|
| MIL-A-48078 | - Ammunition, Standard Quality Assurance Provisions, General Specification for                             |
| MIL-A-70625 | - Automated Acceptance Inspection Equipment for Non-Electronic Components, Design, Testing and Approval of |

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Armament, Munitions, and Chemical Command, Attn. AMSMC-QA, Picatinny Arsenal, New Jersey 07806-5000 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 5610

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## MIL-A-3029A

### STANDARDS

#### MILITARY

- |             |  |
|-------------|--|
| MIL-STD-105 | - Sampling Procedures and Tables for<br>Inspection by Attributes |
| MIL-STD-129 | - Marking for Shipment and Storage                               |

(Unless otherwise indicated, copies of federal and military specifications, standards and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.1.2 Other Government documents, drawings and publications.  
The following other Government documents, drawings and publications form a part of this specification to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

#### PUBLICATIONS

##### CODE OF FEDERAL REGULATIONS

##### TITLE 49 - Transportation, Parts 100-199

(Application for copies should be addressed to the superintendent of Documents, Government Printing Office, Washington, DC 20402. Order should specify "49 CFR 100-199" (latest revision).)

2.2 Non-Government publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issue of the documents cited in the solicitation.

## MIL-A-3029A

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM-D5	Penetration of Bituminous Materials, Standard Test Method for (DoD adopted)
ASTM-D36	Softening Point of Bitumen (Ring and Ball Apparatus), Standard Test Method for
ASTM-D92	Flash and Fire Points by Cleveland Open Cup (DoD adopted)
ASTM-D140	Sampling Bituminous Materials, Standard Methods of (DoD adopted)
ASTM-D2042	Solubility of Asphalt Materials in Trichloroethylene, Standard Test Method for

(Application for copies of ASTM publications should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103).

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Material. Material shall be prepared from asphaltic petroleum.

3.2 Appearance. Freshly melted asphalt shall be black and glossy, and upon aging for one week, its surface shall not show any separations of oil, grease, paraffin scale or similar material.

3.3 Insoluble material. The asphalt shall have a maximum (max.) solubility in trichloroethylene of two (2) percent.

3.4 Softening point. The softening point shall be between 80° and 85° C.

3.5 Penetration. The minimum (min.) penetration shall be 25 hundredths (.25) of a centimeter.

3.6 Flash point. The flash point shall be 232° C min.

## MIL-A-3029A

3.7 Mineral matter. The mineral matter shall be 0.5 percent, max.

3.8 First article inspection. This specification contains technical provisions for first article inspection. Requirements for the submission of first article samples by the contractor shall be as specified in the contract.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of Sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.3)
- b. Quality conformance inspection (see 4.4)

## MIL-A-3029A

4.3 First article inspection.

4.3.1 Submission. The contractor shall submit a first article sample as designated by the Contracting Officer for evaluation in accordance with provisions of 4.3.2. The first article shall consist of one pound of asphalt obtained by sample as described in 4.4.3. The sample shall be obtained from a production batch which has been produced by the contractor using the same production processes, procedures and equipment as will be used in fulfilling the contract. All materials shall be obtained from the same sources of supply as will be used in regular production.

4.3.2 Inspection to be performed. The sample will be subjected by the Government to any or all of the examinations or tests specified in 4.5 of this specification.

4.3.3 Rejection. See MIL-A-48078.

4.4 Quality conformance inspection.

4.4.1 Inspection lot formation. Inspection lots shall comply with the lot formation provisions of MIL-A-48078. For the material covered by this specification, a lot shall consist of one or more batches of asphalt produced by one manufacturer, in accordance with the same specification, or same specification revision, under one continuous set of operating conditions. Each batch shall consist of that quantity of asphalt that has been subjected to the same unit chemical or physical mixing process intended to make the final product homogeneous. Unless otherwise specified, a lot shall consist of not more than 10,000 pounds.

4.4.2 Examination. Unless otherwise specified in the Classification of Defects and test tables, sampling plans for major and minor defects shall be in accordance with MIL-STD-105, Inspection Level II (see MIL-A-48078).

QUALITY CONFORMANCE INSPECTION

MIL-A-3029A

**CLASSIFICATION OF DEFECTS & TESTS**

PARAGRAPH	TITLE	NO. OF SAMPLE UNITS	AQL OR 100%	REQUIREMENT PARAGRAPH	DRAWING NUMBER
4.4.2.1	Container, Sealed			1 of 1	NA NEXT HIGHEN ASSEMBLY
CATEGORY	EXAMINATION OR TEST				NA PARAGRAPH REFERENCE /INSPECTION METHOD
<u>Critical</u>	None defined				
<u>Major</u> 131	Container damaged to extent that contents are exposed or liable to become exposed		0.40%	5.1	Visual
132	Marking incorrect, misleading or unidentifiable		0.40%	5.1	Visual
<u>Minor</u>	None defined				
NOTES:					

## MIL-A-3029A

4.4.3 Sampling and testing. The tests, depicted in 4.5.1 through 4.5.6, shall be performed on a representative sample prepared in accordance with ASTM-D140. If the sample fails to meet any of the applicable requirements, the lot represented by that sample shall be rejected. The classification for the tests shall be as given in Table I.

Table I. Test classification

<u>Inspection/Requirement</u>	<u>Defect Classification</u>	<u>Test Paragraph</u>
Appearance/3.2	Major	4.5.1
Insoluble material/3.3	Major	4.5.2
Softening point/3.4	Major	4.5.3
Penetration/3.5	Major	4.5.4
Flash point/3.6	Major	4.5.5
Mineral matter/3.7	Major	4.5.6

4.4.4 Inspection equipment. The inspection equipment required to perform the tests prescribed herein is described in 4.5. When Automated Acceptance Inspection Equipment is to be used, the provisions of MIL-A-70625 shall apply. The contractor shall submit for approval inspection equipment designs in accordance with the terms of the contract. See Section 6 of MIL-A-48078 and 6.3 herein.

4.5 Method of inspection (see 6.4). The inspections in 4.5.1 through 4.5.6 shall be performed using prescribed analytical procedures for replicate determinations given in standard analytical textbooks.

4.5.1 Appearance. Carefully melt about ten (10) grams of the representative sample (see 4.4.3) at a temperature not exceeding 200° C and pour into a small tin box or other suitable container provided with a cover. At least one half of the surface shall be free from froth or bubble. Allow the asphalt to cool in a place free from drafts and dust. When cool, examine the surface, then cover and set aside for a week. Immediately after cooling, the surface shall be gloss black, and after standing one week, there shall be no separation of paraffin or greasy or oily material.

4.5.2 Insoluble material. The insoluble material content, of the sample, in trichloroethylene shall be determined in accordance with ASTM-D2042.

4.5.3 Softening point. The softening point of the sample shall be determined in accordance with ASTM-D36.

4.5.4 Penetration. The penetration of the sample shall be determined in accordance with ASTM-D5.

## MIL-A-3029A

4.5.5 Flash point. The flash point of the sample shall be determined in accordance with ASTM-D92.

4.5.6 Mineral matter. Transfer five (5) grams of the sample to a tared porcelain crucible (Coors #1 or equal). Melt the sample with the aid of a low Bunsen burner flame. Slowly heat to flash point temperature. Ignite the evolved vapors with the aid of the Bunsen flame. Continue gentle heating, at a rate such that the material burns continually, but does not froth, until all the liquid matter has burned off. Transfer the crucible and contents to a muffle furnace. Ignite four (4) hours at  $800^{\circ} \pm 50^{\circ} \text{C}$ , cool in a desiccator and weigh. Calculate the increase in weight of the crucible to percentage of mineral matter.

## 5. PACKAGING

5.1 Preservation. None required.

5.2 Packing. The asphalt shall be prepared for shipment in accordance with CFR Title 49 parts 100-199 so as to insure acceptance by common or other carriers for safe transportation at the lowest rate to the delivery point.

5.3 Marking. In addition to any special marking required by the contract or order, shipments for the Army shall be marked in accordance with MIL-STD-129 and CFR Title 49, parts 100-199.

## 6. NOTES

6.1 Intended use. This asphalt is used in the manufacture of fiber ammunition containers.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of the specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2).
- c. When first article is required.

6.3 Submission of inspection equipment for design approvals. See MIL-A-48078. Submit designs as required to: Commander, U.S. Army Armament Research, Development and Engineering Center, ATTN: AMSMC-QAR-I (D), Picatinny Arsenal, NJ 07806-5000. This address will be specified on the Contract Data Requirements List, DD Form 1423 in the contract. Unless otherwise specified, data item DI-R-1714 will apply.



## MIL-A-3029A

6.4 Equivalent test methods. Prior approval of the Contracting Officer is required for use of equivalent test methods. A description of the proposed method should be submitted through the Contracting Officer: Commander, U.S. Army Armament Research, Development and Engineering Center, ATTN: AMSMC-QAR-Q (D), Picatinny Arsenal, NJ 07806-5000. This description should include but not be limited to the accuracy and precision of the method, test data demonstrating the accuracy and precision and drawings of any special equipment required.

6.5 Subject terms (keyword listing).

Asphalt  
 Container, Fiber  
 Packing  
 Waterproofing

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodian:  
 Army-AR  
 Navy-OS

Preparing activity:  
 Army-AR

(Project 5610-0523)

Review activities  
 Army-EA  
 Army-ME  
 Air Force-84  
 Air Force-99

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-A-3029A		2. DOCUMENT TITLE	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)  <input type="checkbox"/> VENDOR  <input type="checkbox"/> USER  <input type="checkbox"/> MANUFACTURER  <input type="checkbox"/> OTHER (Specify): _____	
b. ADDRESS (Street, City, State, ZIP Code)			
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	

**INSTRUCTIONS:** In a continuing effort to make our standardization documents better, the DoD provides this form for use in submitting comments and suggestions for improvements. All users of military standardization documents are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (**DO NOT STAPLE**), and mailed. In block 5, be as specific as possible about particular problem areas such as wording which required interpretation, was too rigid, restrictive, loose, ambiguous, or was incompatible, and give proposed wording changes which would alleviate the problems. Enter in block 6 any remarks not related to a specific paragraph of the document. If block 7 is filled out, an acknowledgement will be mailed to you within 30 days to let you know that your comments were received and are being considered.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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