

PLAINTIFF'S EXHIBIT

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SS-A-00694c(GSA-FSS)
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Superseding
SS-A-00694b(GSA-FSS)
July 12, 1965 and
Int. Rev. of
Fed. Spec. SS-R-451
August 1, 1933

INTERIM FEDERAL SPECIFICATION

ASPHALT, PETROLEUM (COATING, BRUSHING AND SPRAYING*CONSISTENCY)

This Interim Federal Specification was developed by the General Services Administration, Federal Supply Service, Washington, D. C. 20405, based upon currently available technical information. It is recommended that Federal agencies use it in procurement and forward recommendations for changes to the preparing activity.

The General Services Administration has authorized Federal agencies to use this Interim Federal Specification as a valid exception to Federal Specification SS-R-451, dated August 1, 1933.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers asphalt roof coating containing asphalt, mineral filler or stabilizer, usually asbestos fiber, and volatile solvent.

1.2 Classification. The coating shall be of one type in the following container sizes, as specified (see 6.2):

1-gallon pail.	30-gallon drum.
5-gallon pail.	55-gallon drum.

2. APPLICABLE DOCUMENTS

2.1 Specifications and standards. The following specifications and standards of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Specifications:

PPP-D-705 - Drums, Metal, Shipping, Steel (over 12 and under 55 gallons).
PPP-D-729 - Drums, Metal, 55 gallon (for Shipment of Noncorrosive Material).
PPP-D-732 - Drums, Metal, Reconditioned, 55-gallon (for Shipment of Noncorrosive Materials).
PPP-P-704 - Pails, Shipping, Steel (1 through 12 gallon).

Federal Standard:

Fed. Std. No. 123 - Marking for Domestic Shipment and Storage.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C., 20402.

(Single copies of this specification and other product specifications required by activities outside the Federal Government for bidding purposes are available without charge at the General Services Administration Regional Offices in Boston, New York, Washington, D.C., Atlanta, Chicago, Kansas City, Mo., Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, Wash.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

FSC 5610

Military Standards:

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes..
- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-147 - Palletized Unit Loads, 40 Inches by 48 Inches, 4-Way Partial and 4-Way Pallets.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issues in effect on date of invitation for bids shall apply:

American Society for Testing and Materials (ASTM) Publications:

- D95 - Method of Test for Water in Petroleum Products and Other Bituminous Materials.
- D165- Method of Test for Proportion of Bitumen Soluble in Carbon Tetrachloride.
- D224- Specifications for Asphalt Roll Roofing Surfaced With Powered Talc or Mica.
- D609- Methods for Preparation of Steel Panels for Testing Paint, Varnish, Lacquer and Related Products.

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

3. REQUIREMENTS

3.1 Material. The coating shall consist of petroleum asphaltic materials and mineral filler thinned with a volatile solvent.

3.2 Qualitative requirements.

3.2.1 Condition in container. The material shall be a smooth homogeneous mixture after stirring, and shall be ready for use without heating or thinning. Settling in the container shall not occur to the extent that a hard cake, which cannot be redispersed by hand mixing, forms at the bottom of the container at 60°F. or above.

3.2.2 Working properties.

3.2.2.1 Brushing. The coating shall be of a heavy brushing consistency to insure a film thickness of not less than .018 inch at material temperature up to 90°F. and yet not so stiff at 60°F. to prevent easy application with a suitable brush (see 4.4.2.2).

3.2.2.2 Spraying. Coating shall be of a consistency to allow spraying with suitable equipment which will produce, at temperatures between 60°F. and 90°F., a surface that is uniform, continuous, and free from pinholing (see 4.4.2.3).

3.3 Quantitative requirements.

3.3.1 Nonvolatile material. The roof coating shall yield not less than 60 percent nonvolatile matter when tested in accordance with 4.4.3.

3.3.2 Mineral filler. The material shall contain not less than 7 percent and not more than 20 percent of a suitable mineral filler. The insoluble residue obtained from the ignition of the mineral filler shall not be less than 80 percent of the original weight of the mineral filler (see 4.4.4).

3.3.3 Water content. The roof coating shall have a maximum water content of 1.0 percent when tested in accordance with 4.4.5.

3.3.4 Behavior at 140°F. (60°C). Test pieces prepared and exposed shall show not more than 1/4 inch sagging or slipping on both roofing and metal. No blistering shall occur on metal panel. The reverse side of the roofing shall not show absorption of roof coating on more than 5 percent of the panel (see 4.4.6).

3.3.5 Behavior at 32°F (0°C). Metal test pieces bent quickly over 1 inch mandrel shall show no cracking of the coating and no separation of metal and coating (see 4.4.7).

3.3.6. Settling properties. Drainings from apparatus at the end of 72 hours shall yield an ash content not less than 80 percent of the ash content of the original coating. (see 4.4.8).

4. QUALITY ASSURANCE PROVISIONS

4.1. Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any other commercial laboratory acceptable to 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 that supplies and services conform to prescribed requirements.

4.2 Sampling.

4.2.1 Lot. Unless otherwise specified (see 6.2), a lot shall consist of all of the asphalt coating offered for delivery at the same time.

4.2.2 Visual examination of end item. Sampling for visual examination shall be in accordance with level S-3 in MIL-STD-105.

4.2.3 Sampling for tests. Samples for tests shall be in accordance with level S-2 in MIL-STD-105.

4.3 Inspection.

4.3.1 End item. Coating selected in accordance with 4.2.2 shall be examined for defects listed in table I. The Acceptable Quality Levels (AQL's) for defects shall be 2.5 percent defective for major defects and 4.0 percent defective for minor defects in accordance with MIL-STD-105.

TABLE I. Classification of defects, end item

Defects	Major	Minor
Size not as specified		X
Coating not ready for use without heating or thinning	X	
Hard cakes in containers which are not dispersed by hand mixing	X	
Damage or defects not affecting function or serviceability		X

4.3.2 Inspection of preparation for delivery. The samples selected in accordance with 4.2 shall be examined to determine compliance with Section 5 of this specification, and as required by specifications referenced therein.

4.4 Tests.

4.4.1 Acceptable quality level. The AQL for tests shall be 4.0 percent defective.

4.4.2 Brushing and spraying.

4.4.2.1 Specimens. Prepare 2 specimens approximately one foot square from 18 gage (0.0516 inch thick) zinc coated steel. Clean the specimens in accordance with method A, procedure 3 in ASTM D609 except that hand brushing and scrubbing may be used in place of power brushing. Mask a strip, approximately 1 by 12 inches along one edge for the specimen used in 4.4.2.2.

4.4.2.2 Brushing. With the specimen at 75 plus or minus 5°F and the panel on horizontal surface apply the coating using a brush, at the rate of 50 plus or minus 5 square feet per gallon. Dry specimen, remove tape and measure thickness of asphalt coat and bare zinc coated steel using a micrometer (see 3.2.2.1).

4.4.2.3 Spraying. Using a standard heavy material spray gun equipped with a 1/4 inch internal mixing nozzle and employing a maximum air pressure on the coating pump and gun nozzle of 80 lbs. per square inch, spray the compound onto the specimen held in a 45° plus or minus 5° angular position from the horizontal, to an average wet film thickness of 1/16 inch (see 3.2.2.2).

4.4.3 Nonvolatile material. Weigh approximately 10 grams of the sample in a tared flat bottom metal dish about 8 cm. in diameter or in a friction top can plug. Heat the dish with its contents in an oven at 325°F. plus or minus 5°F. for five hours or at 221°F. plus or minus 5°F. for 24 hours; cool and weigh. From the weight of the residue in the dish and from the weight of the original sample taken, compute the percentage of nonvolatile matter (see 3.3.1).

4.4.4 Mineral filler. Determine mineral filler or stabilizer in accordance with ASTM D165 (see 3.3.2).

4.4.5 Water content. Determine water content in accordance with ASTM D95 (see 3.3.3).

4.4.6 Behavior at 140°F. (see 3.3.4).

4.4.6.1 Specimens. Prepare 4 specimens measuring approximately 6 inches by 10 inches. Two specimens shall be obtained from smooth surfaced asphalt prepared roofing weighing approximately 55 pounds per 100 square feet in accordance with ASTM D224. The remaining two specimens shall be obtained from 22 gage (0.0336 inch thick) zinc coated steel. Clean the steel specimens in accordance with Method A, Procedure 1, in ASTM D609.

4.4.6.2 Template. Prepare a template from 18 gage (0.0478 inches thick) steel sheet. Length and width of the template shall be the same as the specimens in 4.4.6.1. Cut a rectangular hole measuring approximately 3 inches by 7 inches out of the center.

4.4.6.3 Procedure. Using the template apply roof coating at the rate of approximately 1 gallon per 50 square feet to the 4 test specimens over a 3 inch by 7 inch area, as follows:

(a) Place reference lines on the specimens 1-1/2 and 1-1/4 inches from the bottom, and 1-1/2 inch from the top extending the width of the specimens.

(b) Place template over each specimen in turn so that the opening coincides with the 1-1/2 inch reference lines.

(c) Apply a generous amount of coating filling the opening and level off using the edge of a wide metal scraper. Hold scraper at approximately 45° angle.

(d) Hold template firmly to prevent sagging or slipping while scraping down the roof coating, noting that the surface of the coating is lower than the template due to the draw down characteristics. After scraping remove the template. Within five minutes after applying the roof coating place the specimens in an oven at 140° plus or minus 2°F. and position the specimens at an angle of approximately 30° to the horizontal. Remove the specimens after 5 hours. Examine both the roofing and metal for sagging or slipping beyond the bottom 1-1/2 inch reference line. Examine only the metal specimens for blistering.

4.4.7 Behavior at 32°F. Cool the two coated metal specimens used in 4.4.6.3 to room temperature and immerse in an ice-water mixture for one hour. Immediately after their removal from the bath, bend the specimens at a uniform rate, in approximately 2 seconds time, over a 1-inch mandrel, with the coating on the outside. Dry thoroughly and examine for cracking and adhesion (see 3.3.5).

4.4.8 Settling properties (see 3.3.6).

4.4.8.1 Test cylinder. Prepare a test cylinder as follows:

- (a) Cut a 2-1/2 inch (NPS) steel pipe to approximately 9 inches in length. Chamfer inside edge to remove burrs.
- (b) Tap a 1-inch hole centered 2-5/16 inch from the top. Insert a short threaded plug such that the end is flush with the inside wall of the cylinder.
- (c) Cut or machine a disc 1/4 inch thick to fit flush inside the bottom of the cylinder. Seal after assembly.
- (d) Scribe a line on the inside wall 1-inch from the top.
- (e) Prepare a piece of aluminum foil to cover the test cylinder. Use a 2 pound weight to hold the foil in place.

4.4.8.2 Procedure. Stir coating until it appears to be homogeneous. Heat approximately a 1 quart sample and the test cylinder to approximately 120°F and fill to the engraved line. Place covered cylinder in an oven at 120°F plus or minus 2°F for 72 hour period. Remove from oven. Immediately unscrew plug from cylinder and collect all drainings during a 3 minute period. Thoroughly mix all drainings and run ash content determination. Compare with ash content of the original sample. Use a 1 to 2 gram sample to determine ash content and record as percent of total roof coating. If no material drains from the outlet at the conclusion of the 72 hour test, or if the ash content of the final sample is at least 80 percent of the original, the coating passes this test.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A, B or C as specified (see 6.2).

5.1.1 Level A. The asphalt coating furnished in 1-, 5-, 30-, and 55-gallon quantities shall be packaged in pails conforming to PPP-P-704, type II, class 3, or drums conforming to PPP-D-705, type IV or V, PPP-D-729, or PPP-D-732, type III or IV, respectively.

5.1.2 Level B. The asphalt coating furnished in 1-, 5-, 30-, or 55-gallon quantities shall be packaged as specified in 5.1.1.

5.1.3 Level C. The asphalt coating shall be packaged in accordance with the suppliers commercial practice.

5.2 Packing. Packing shall be level A, B or C as specified (see 6.2).

5.2.1 Level A. Filled 1-, 5-, and 30-gallon containers shall be palletized in accordance with MIL-STD-147. The load type and number of containers per pallet shall be determined by the appendix of the standard.

5.2.2 Level B. Packing shall comply with 5.2.1, when specified (see 6.2).

5.2.3 Level C. The asphalt coating shall be packed to insure carrier acceptance and safe delivery to destination in containers complying with the rules and regulations applicable to the mode of transportation.

5.3 Marking

5.3.1 Civil agencies. In addition to markings required by the contract or order, the pails and drums shall be marked in accordance with Fed. Std. No. 123.

5.3.2 Military activities. In addition to markings required by the contract or order, the pails and drums shall be marked in accordance with MIL-STD-129.