

INCH- POUND
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MIL-D-3134J (NAVY)

5 October 1988

SUPERSEDING

MIL-D-3134H (NAVY)

9 December 1975

(See 6.7)

## MILITARY SPECIFICATION

## DECK COVERING MATERIALS

This specification is approved for use by the Department of the Navy and is available for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 Scope. This specification establishes the requirements for poured or pre-cast composition deck covering materials consisting of portland cement, or a synthetic or resinous binder that may include rock or glass chips. These deck coverings are intended for use on shipboard interior decks.

1.2 Classification. Deck covering materials shall be furnished in the following types and classes, as specified (see 6.2).

Type I - Deck covering material with exposed marble chips (terrazzo) for interior spaces in 1/4-inch thickness.

Class 1 - Latex mastic and resin emulsion deck covering.

Class 2 - Two part deck covering materials consisting of base material and an accelerator or curing agent.

Type II - Deck covering, uniformly colored latex mastic or resin emulsion used for interior spaces in 1/8- and 1/4-inch thickness.

## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 5523, Department of the Navy, Washington, DC 20362-5101 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.
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## SPECIFICATIONS

## FEDERAL

- UU-S-48 - Sacks, Shipping, Paper.
- PPP-C-96 - Cans, Metal, 28 Gage and Lighter.
- PPP-F-320 - Fiberboard; Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes.
- PPP-P-704 - Pails; Metal: (Shipping, Steel, 1 Through 12 Gallons).

## MILITARY

- MIL-S-901 - Shock Tests, H.I. (High-Impact); Shipboard Machinery, Equipment and Systems, Requirements for.
- MIL-L-19140 - Lumber and Plywood, Fire-Retardant Treated.

## STANDARDS

## FEDERAL

- FED-STD-601 - Rubber: Sampling and Testing.

## MILITARY

- MIL-STD-1186 - Cushioning, Anchoring, Bracing, Blocking and Waterproofing; with Appropriate Test Methods.
- MIL-STD-1623 - Fire Performance Requirements and Approved Specifications for Interior Finish Materials and Furnishings (Naval Shipboard Use).
- MIL-STD-2073-1 - DoD Materiel Procedures for Development and Application of Packaging Requirements.

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

2.2 Non-Government publications. The following documents form a part of this document 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 issues of the documents cited in the solicitation (see 6.2).

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- C 642 - Standard Test Method for Specific Gravity, Absorption, and Voids in Hardened Concrete.
- D 750 - Standard Test Method for Rubber Deterioration in Carbon-Arc Weathering Apparatus. (DoD adopted)
- D 1242 - Standard Test Methods for Resistance of Plastic Materials to Abrasion. (DoD adopted)
- D 3951 - Standard Practice for Commercial Packaging. (DoD adopted)

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

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(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Qualification. Deck covering materials furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list at the time of award of contract (see 4.3 and 6.4).

3.2 Materials. Deck covering materials shall be suitable for application with a trowel. Asbestos fibers and components containing asbestos fibers are prohibited (see 6.3).

3.2.1 Type I. The aggregate and the marble chips shall be sized for applying the deck covering in a 1/4-inch thickness in one coat. After installation, the deck covering shall be ground smooth exposing both the binder and the marble chips and then coated with sealer.

3.2.1.1 Class 1. Class 1 deck covering material shall be compounded from liquid synthetic rubber latex or resin emulsion and dry mix.

3.2.1.2 Class 2. Class 2 deck covering material shall be compounded from a synthetic resin base material, accelerator or curing agent, and aggregate.

3.2.2 Type II. The aggregate shall be sized to avoid protrusion through the surface for application of the deck covering in a 1/4- or 1/8-inch thickness in one coat. The deck covering shall be such that it may be installed with a feather edge. The surface shall be of a uniform color and sealed with a sealer or topping.

3.2.3 Sealer. A liquid sealing material shall be furnished for type I and a sealing coating or topping shall be furnished for type II deck covering, as required by the manufacturer.

3.3 Application. The deck covering shall adhere to the deck or structure on which it is applied without the use of clips or other devices welded to the deck, or other reinforcement not a part of the compound as mixed for application (see 3.14).

3.4 Color. The color of the deck covering shall be as specified (see 6.2).

3.5 Weight. The deck covering shall be a minimum practicable weight (see 4.6.2), but shall not exceed the following:

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- Type I - 3.0 pounds per square foot (lb/ft<sup>2</sup>) in a thickness of 1/4-inch.  
 Type II - 2.8 lb/ft<sup>2</sup> in a thickness of 1/4-inch or 1.40 lb/ft<sup>2</sup> in a thickness of 1/8-inch.

3.6 Resistance to elevated temperature. The deck covering shall not flow or slip in any part by more than 1/16-inch, nor shall it soften (see 4.6.3).

3.7 Nonslip properties. The deck covering shall not show any friction factors less than those in table I (see 4.6.4).

TABLE I. Friction factors.

Contacting surface	Static friction condition			Sliding friction condition		
	Dry	Wet	Oily	Dry	Wet	Oily
Leather	0.60	0.50	--	0.30	0.40	--
Rubber	0.60	0.70	0.30	0.40	0.70	0.10

3.8 Moisture absorption. The deck covering shall not have absorbed more than 5 percent moisture based on its weight at normal atmospheric conditions (see 4.6.5).

3.9 Resistance to moisture and temperature changes. The deck covering shall show no signs of cracking, separation from the steel plate, or corrosion other than what may be caused by the liquid latex in a class 1 material during the setting period immediately after application (see 4.6.6).

3.10 Oil resistance. Deck covering shall show the following maximum percentage change in weight and volume after immersion (see 4.6.7).

<u>Change</u> <u>in</u>	<u>Percent,</u> <u>maximum</u>
weight	3
volume	2

3.11 Resistance to accelerated light and weather aging (type II only). The exposed surface on the deck covering shall show no appreciable change in color, signs of checking, cracking, or any other deterioration (see 4.6.8).

3.12 Corrosion resistance. The deck covering shall not soften or become detached. The surface of the steel beneath the deck covering shall show no signs of corrosion other than what may be caused by the liquid latex in a class 1 material during the setting period immediately after application (see 4.6.9).

3.13 Wear resistance. The deck covering shall not show wear characteristics exceeding 0.150 inch (see 4.6.10).

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3.14 Adhesive strength. The adhesive strength of the deck covering shall be not less than as shown in table II (see 4.6.11).

TABLE II. Adhesive strength.

Test	Type I		Type II
	Class 1	Class 2	
Initial, lb/in <sup>2</sup> , minimum	65	250	65
After aging, percent of original, minimum	95	70	95
After moisture and temperature cycling, percent of original, minimum	95	70	95

3.15 Impact resistance. The deck covering shall show no visible signs of chipping, cracking, or detachment from the steel plate. There shall be not more than 1/16-inch of permanent indentation (see 4.6.12).

3.16 Resistance to indentation. The deck covering shall show no signs of cracking or becoming detached from the steel plate. The initial indentation of the deck covering shall be not more than 7 percent for either type I or type II material (see 4.6.13).

3.17 Shock resistance. The deck covering shall show no signs of chipping, cracking, or detachment from the steel backing plate (see 4.6.14).

3.18 Fire performance. The fire performance of the finished decking system, including any primer and sealer coats, shall conform to the requirements in MIL-STD-1623 (see 4.6.15).

3.19 Serviceability. The deck covering shall show no breaks, loss of adhesion, corrosion of the deck, or other deficiency that would limit its serviceability when examined during and after the minimum service period specified in 4.6.16.

3.20 Directions for application. Each container shall be clearly labeled with directions for application and shall include the following:

- (a) Brand name.
- (b) Preparation of surface, including cleaning agents and primers, if required.
- (c) Method of application.
- (d) Thickness (within the specified limit) and coverage in square feet per gallon.
- (e) Drying rate.
- (f) Finishing method and degree of finish.
- (g) Procedure for application of sealer (method, coverage, dry time).
- (h) Safety precautions.

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3.21 Workmanship. Deck coverings shall be uniform to quality and condition. They shall be clean, smooth, and free from all foreign materials and defects that will impair material use and serviceability.

## 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 (examinations and tests) 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 this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall 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 ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of the manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

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

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

4.3 Qualification tests. Qualification tests shall be conducted at a laboratory satisfactory to NAVSEA. Qualification tests shall consist of the examination of 4.5 and the tests specified in 4.6.

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with 4.4.1 through 4.5 (see 6.3).

4.4.1 Lot. For purposes of sampling, a lot shall consist of not more than 5,000 pounds of unmixed ingredients. When latex, resin emulsion, base material, or aggregate is purchased separately or shipped from different locations to the place of installation, a lot shall consist of not more than 100 gallons offered for delivery at one time.

4.4.2 Sampling for quality conformance inspection. From each lot, a sufficient quantity of unmixed ingredients shall be selected for the single application of 9 square feet in area and 1/4-inch (approximate) thickness.

4.4.3 Quality conformance tests. The samples selected in accordance with 4.4.2 shall be mixed in accordance with the manufacturer's instructions and shall be subjected to the tests in table III.

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TABLE III. Quality conformance.

Characteristics	Requirement	Test
Weight	3.5	4.6.2
Moisture absorption	3.8	4.6.6
Adhesive strength (initial)	3.14	4.6.11
Impact resistance	3.15	4.6.12
Resistance to indentation	3.16	4.6.13

4.4.3.1 Fire test. The fire resistance test (see 4.6.15) shall be conducted as part of the lot acceptance tests (of quality conformance inspection) once for every 50,000 pounds of unmixed ingredients offered for delivery under one or more contracts or orders. The contractor's records shall be used to determine quantities of material delivered (see 6.3).

4.4.3.2 Rejection. If any sample representing a lot is found not to be in conformance with this specification, this shall be cause for rejection of the entire lot. If a sample fails the fire resistance test, this test shall be conducted on every subsequent lot. When four successive lots have been accepted, this additional testing shall be discontinued and lot tests returned to the normal basis of 4.4.3.

4.4.3.3 Small lots. The tests of 4.4.3 shall not be required on any delivery of less than 2,000 pounds of unmixed ingredients. However, deliveries of small quantities that are not represented by tests shall be so identified in the contractor's records and when the accumulated total of such deliveries reaches 2,000 pounds, sample material shall be selected and subjected to the tests of 4.4.3.

4.5 Examination of filled containers. Each sample filled container shall be examined for defects of construction of the container and the closure, for evidence of leakage, and for unsatisfactory markings. Each filled container shall also be weighed to determine the amount of contents.

#### 4.6 Test procedures.

4.6.1 Preparation of specimens. Specimens of the sizes specified in the following tests shall be made by mixing the deck covering in accordance with the manufacturer's instructions. The deck covering shall be troweled on 1/8-inch thick clean steel plates to a thickness of approximately 1/4 inch in one coat. Sample preparation, curing, and testing shall be conducted at room temperature. Samples shall be allowed to cure a minimum of 96 hours, but not longer than 336 hours. Curing shall begin the moment the material has been applied for the preparation of a test specimen. Type I materials shall be ground smooth with a power sander using number 60 paper without water, unless the manufacturer specifies another abrasive paper or procedure. Test specimens shall be finished and sealed in accordance with the manufacturer's instructions. For specimens intended for immersion tests where corrosion of the steel may occur, areas not covered by the deck covering compound may be protected by an anticorrosion coating.

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4.6.2 Weight. The deck covering shall be applied to three 6-inch square, 1/8-inch thick mild steel plates that have been previously measured and weighed. When the material has dried for 96 hours, the three test specimens and the steel plates shall each be weighed to the nearest 0.1 gram. The length and width shall be measured to the nearest 0.1 inch and the thickness to the nearest 0.001 inch. The weight of the material shall be computed based on the difference between the weight of the covered steel plate and the uncovered steel plate. The final weight shall be the average of the three specimens. The thickness shall be determined by measuring the steel plates with and without the covering by means of a dial thickness gauge and a template at 16 equally distributed points on the specimen. The difference in thickness between the steel plate and the covered steel plate shall be averaged to determine the thickness of the material. The weight of the deck covering for a thickness of 1/4-inch shall then be computed.

4.6.3 Resistance to elevated temperature. Resistance of the material to elevated temperature shall be determined as follows:

4.6.3.1 Flow or slip. A 6-inch long by 2-inch wide specimen of the material prepared as specified in 4.6.1 shall be scribed with a line parallel to and approximately 1 inch from a 2-inch edge used as a reference. The distance between this line and the edge of the steel plate shall be measured to the nearest 0.01 inch. The specimen shall then be suspended vertically from the end opposite the reference end and in an oven maintained at a constant temperature of 158 degrees Fahrenheit (°F) for 5 hours. When the specimen has cooled to room temperature, the distance between the reference edge and line shall be measured again. The difference between the two measurements is called the flow or slip.

4.6.3.2 Softening. The deck covering shall be examined by touch immediately after the specimen has been removed from the oven to determine whether the material has softened under heat. There shall be no fingerprint impressions after sample is pressed with fingertips.

4.6.4 Nonslip properties. Two 2- by 4-inch specimens prepared as specified in 4.6.1 shall be used to determine the friction factors of the deck covering against leather and rubber respectively. The leather shall be oak-tanned sole leather that has been sanded smooth with 80 grit garnet paper. The rubber shall be a vulcanized compound, with a hardness range of  $70 \pm 5$  durometer A. Tests shall be made with the contact surfaces under three separate conditions: (1) dry, (2) wetted with a solution of 4 percent sodium chloride salt in water, (3) SAE 10W oil. A load of 33 pounds shall be applied uniformly over the specimen. The determination of static and sliding friction may be made by the inclined plane method or by determining the pull on a spring balance required to start the test piece from rest and then to maintain a constant velocity. The friction factor shall be the average of four readings for each of the three surface conditions.

4.6.5 Moisture absorption. Three 2-inch square by 1/4-inch thick specimens shall be prepared by applying the deck covering to oiled surfaces of the steel plate, so that upon drying the specimens will not adhere to the plates. Each specimen without a steel backing shall be tested in accordance with ASTM C 642.



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4.6.6 Resistance to moisture and temperature changes. Two 2- by 6-inch specimens prepared as specified in 4.6.1 shall be immersed in a solution of 4 percent sodium chloride in water under a pressure of 8 pounds per square inch ( $\text{lb/in}^2$ ) for 48 hours. Immediately after immersion, the specimens shall be subjected to two complete cycles of alternate exposure to a temperature of  $0 \pm 5^\circ\text{F}$  for 24 hours, followed by a temperature of  $120 \pm 5^\circ\text{F}$  for 24 hours. The specimens shall then be examined for evidence of cracking or other failure. A portion of the deck covering shall be carefully removed from the plate to observe any signs of rusting or corrosion under the deck covering.

4.6.7 Oil resistance. Three 2-inch square by 1/4-inch thick specimens shall be prepared as specified in 4.6.1. The immersion medium shall be medium number 3 (high swelling) petroleum base oil as listed in accordance with method 6001 of FED-STD-601. Change in weight shall be determined in accordance with method 6251 of FED-STD-601, except that the immersion time shall be 24 hours. The change in volume shall be determined in accordance with method 6211 of FED-STD-601, except that the immersion time shall be 24 hours.

4.6.8 Accelerated light and weather aging. Two 6- by 2-inch test specimens shall be prepared as specified in 4.6.1. One specimen shall be exposed to light from a flaming carbon arc such as an Eveready X-1a unit or equal for 200 hours and intermittently sprayed with tap water. The face of the material normally exposed in service shall be directed toward the light source. The light source and weathering unit, the method of calibrating or evaluating the light source, and the evaluation of total exposures to ultraviolet light shall be in accordance with ASTM D 750. The exposed surface of the test specimen shall be examined and compared with the unexposed test specimen with respect to discoloration, cracking, checking, crazing, or other signs of deterioration.

4.6.9 Corrosion resistance. Two 6- by 2-inch specimens prepared as specified in 4.6.1 shall be used. Each specimen shall be immersed in a 10 percent sodium chloride solution for 15 days, during which time a continuous stream of air shall be passed through the solution in order to promote corrosion. The specimen shall then be examined to determine whether the material has softened or detached from the steel backing plates. A portion of the deck covering shall be removed carefully from the steel to observe any sign of rusting or corrosion of the steel plate beneath the deck covering.

4.6.10 Wear resistance. Wear testing shall be conducted in accordance with ASTM D 1242, method A using the machine specified in 4.6.10.1. Test specimens 3 inches long by 2 inches wide shall be prepared so that an area of approximately 6 square inches is presented to the abrasive in the machine specified in 4.6.10.1. The abrasive grit shall be number 80 aluminum oxide. Before wear-testing, the thickness shall be measured at 12 equally distributed points on the specimen by means of a dial thickness gauge and a template. The specimen shall then be subjected to 1,500 revolutions of the wear testing machine, and the thickness measured at the same points previously measured. The differences in thickness shall be averaged to determine the thickness of material worn away by the abrasive.

4.6.10.1 Wear test machine. Wear testing shall be conducted in accordance with ASTM D 1242, method A, using the Navy Type Wear Tester (the Tinius Olsen Wearometer or equivalent.)

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4.6.11 Adhesive strength. Eighteen specimens with a thickness of 1/4-inch and with an area of 4 square inches shall be prepared. These specimens shall be applied to 2 by 6 inches by 1/8-inch thick mild steel plates in such a manner that 1 inch of the steel plate is exposed along the entire length of one end and 3 inches is exposed along the opposite end. Specimens shall be tested by measuring the load required to shear the 2-inch square area of deck covering from the steel plate by means of the shear test jig shown on figure 1. After preparation, all specimens shall be allowed to set for 96 hours. Six specimens shall then be tested to determine the initial adhesive strength. Six specimens shall be tested after aging in an oxygen bomb for 96 hours under a pressure of 300 lb/in<sup>2</sup> and a temperature of 158°F. The remaining six specimens shall be tested after a moisture and temperature cycle as specified in 4.6.6. Specimens shall be tested by compression loading at a rate of 1/4-inch per minute. The load at failure and the average of six readings shall be recorded for computation of the adhesive strength in lb/in<sup>2</sup> for the respective conditions.

4.6.12 Impact resistance. Two 6-inch square specimens shall be prepared as specified in 4.6.1. Each specimen shall be tested separately and held on a solid, horizontal base. A 2-pound solid steel ball shall be dropped vertically from a height of 8 feet onto the deck covering so that the impact will be at the center of the specimen. Each specimen shall be subjected to two impacts of the steel ball.

4.6.13 Resistance to indentation.

4.6.13.1 Specimen. One 6-inch square specimen shall be prepared as specified in 4.6.1.

4.6.13.2 Procedure.

4.6.13.2.1 Indentation. Three indentations shall be made on the deck covering and the results averaged. The center of each indentation shall be not less than 1-1/2 inches from the edge of the specimen and not less than 2-1/2 inches from the center of the adjoining indentation. A load of 2,000 pounds shall be applied on the deck covering for 30 minutes by means of a flat-faced circular indenter. The indenter's flat face shall have an area of 1 square inch and its perimeter shall be rounded to a radius of 1/64-inch.

4.6.13.2.2 Thickness. Thickness readings shall be taken before and immediately after indentation at the center of each indented area. The initial indentation shall be taken as the difference in percent between the thickness of the deck covering before indentation and immediately after the load has been removed. The percent of indentation is calculated on the basis of the measured specimen thickness. The thickness measurements are made on both sides of the specimen using a micrometer dial gauge with a 4 ounce weight and a 1/4-inch diameter flat foot.

4.6.13.2.3 Special precautions. The surface of the indented specimen shall be kept parallel to the plane of the specimen mounting plate so that it travels perpendicular to that plane. In addition, the specimen mounting plate selected for the indentation test shall be checked for flatness before being used.

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4.6.14 Shock resistance. Three 6-inch square by 1/4-inch thick specimens shall be centrally applied to three 8-inch square by 1/8-inch thick mild steel plates, so that a 1-inch wide portion of the steel plate is exposed along the periphery of the specimen. Each specimen shall be subjected to high impact shock in a testing machine conforming to MIL-S-901. Each specimen shall be centrally secured to the test plate of the testing machine by using eight 1/4-inch diameter machine screws equally located along the periphery of the specimen plate 1/2-inch away from the edge of the specimen steel plate. Each specimen shall then be subjected to a series of shocks consisting of consecutive blows of 100, 200, 400, 700, 1,000, 1,400, and 2,000 foot-pounds to provide an approximately uniform increase of striking velocity. The 2,000-foot-pound blow shall be immediately followed by a second 2,000-foot-pound blow. The specimens shall then be examined for chipping, cracking, or detachment from the steel backing plate.

4.6.15 Fire performance test. The material shall be tested in accordance with MIL-STD-1623.

4.6.17 Serviceability. The deck covering shall be applied in wet places aboard ship for a minimum service period of 6 months.

4.7 Inspection of packaging. Sample packages and packs, and the inspection of the preservation, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified therein.

## 5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisition.)

5.1 Preservation (unit packs). Preservation shall be level A, C, or commercial as specified (see 6.2).

### 5.1.1 Level A.

5.1.1.1 Sealer. The sealer shall be furnished in 1-gallon cans or 5-gallon pails as specified (see 6.2). Can and pails shall conform to 5.1.1.5.1 and 5.1.1.5.2.

5.1.1.2 Accelerator or curing agent. The accelerator or curing agent shall be furnished in 1-ounce high density polyethylene bottles fitted with a phenolic screw cap closure. When the cap is screwed onto the bottle, the rim of the bottle shall seat firmly against the inner bearing of the cap and liner to assure sealing against leakage during handling, shipment, and storage. The polyethylene bottles, in quantity required for each 5 gallons of basic resin, shall be cushioned and sealed within a cellophane bag and placed inside the basic resin container.

5.1.1.3 Latex, resin emulsion, or base material. The latex, resin emulsion, or base material shall be furnished in 5-gallon pails as specified in 5.1.1.5.2.

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5.1.1.4 Dry mix (aggregate). The dry mix shall be furnished in quantities not exceeding 100 pounds net weight in paper shipping sacks as specified in 5.1.1.5.3.

5.1.1.5 Unit packs.

5.1.1.5.1 Cans. One-gallon cans shall conform to type V, class 2 of PPP-C-96 with plan B exterior coating, side seam stripping, and either a wire or bridge type of handle.

5.1.1.5.2 Pails. Five-gallon pails shall conform to type II, class optional, of PPP-P-704. Exterior coating shall be of olive drab color. Unless otherwise specified (see 6.2), pails shall be provided with either a drip basket or auxiliary compartment for containment of the required quantity of accelerator or curing agent unit pack.

5.1.1.5.3 Sacks. Paper shipping sacks shall conform to series-X, level A of UU-S-48. Filling and sack closure shall be in accordance with the appendix of UU-S-48.

5.1.2 Level C. Preservation, quantities, and unit packs shall be as required for level A except as follows:

5.1.2.1 Cans and pails. Exterior coating shall conform to that used in the commercial production of such containers.

5.1.2.2 Sacks. Paper shipping sacks shall conform to series-X, level B sack requirements of UU-S-48.

5.1.3 Commercial. Quantities shall be as specified for level A with unit packaging in accordance with ASTM D 3951.

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

5.2.1 Navy shipboard stowage fire-retardant requirements.

5.2.1.1 Lumber and plywood. Unless otherwise specified (see 6.2), all lumber and plywood including laminated veneer material used in shipping container and pallet construction, members, blocking, bracing, and reinforcing shall be fire-retardant treated material conforming to MIL-L-19140 as follows:

Level A and B	- Type II - weather resistant.
	Category 1 - general use.
Level C	- Type I - non-weather resistant.
	Category 1 - general use.

5.2.1.2 Fiberboard. Fiberboard used in the construction of class-domestic, non-weather resistant fiberboard, and cleated fiberboard boxes shall meet the flammability and smoke requirements of PPP-F-320.

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5.2.2 General requirements for levels A, B and C. Containers selected (see 5.2.3) shall be of minimum weight and cube consistent with the protection required, of uniform size, and contain identical quantities.

5.2.3 Levels A, B and C containers. The deck covering, preserved as specified (see 5.1), shall be packed in exterior shipping containers in accordance with appendix C, table VII of MIL-STD-2073-1, for the level of packing specified (see 5.2). Unless otherwise specified (see 6.2), container selection including container options shall be the contractor's option.

5.2.3.1 Waterproofing. Unless otherwise specified (see 6.2), level A and, when specified (see 6.2), level B shipping containers shall be provided with caseliners, linings, wraps or shrouds in accordance with the waterproofing requirements of MIL-STD-1186.

5.2.3.2 Closure and gross weight.

5.2.3.2.1 Closure. Container closure, reinforcing, or banding shall be in accordance with the applicable container specification or appendix thereto except that weather-resistant fiberboard boxes shall be closed in accordance with method V and reinforced with non-metallic or tape banding and domestic non-weather-resistant fiberboard boxes shall be closed in accordance with method I using pressure sensitive tape.

5.2.3.2.2 Weight. Wood, plywood, and cleated type containers exceeding 200 pounds gross weight shall be modified by the addition of skids in accordance with MIL-STD-2073-1 and the applicable container specification or appendix thereto.

5.2.4 Commercial. The deck coverings, preserved as specified (see 5.1), shall be packed for shipment in accordance with ASTM D 3951 and herein.

5.2.4.1 Container modification. Shipping containers exceeding 200 pounds gross weight shall be provided with a minimum of two, 3- by 4-inch nominal wood skids laid flat, or a skid- or sill-type base which will support the material and facilitate handling by mechanical handling equipment during shipment, stowage and storage.

5.3 Palletized unit loads. When specified (see 6.2), containers shall be palletized in accordance with appendix F of MIL-STD-2073-1.

5.4 Marking.

5.4.1 Levels A, B, C, and commercial. In addition to any special marking required (see 6.2), and interior (unit) packs, shipping containers and palletized unit loads shall be marked for shipment, stowage, and storage in accordance with appendix F of MIL-STD-2073-1 and shall include bar coding.

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## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The deck covering material is intended for use on interior metal decks in sanitary and other wet spaces.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- (a) Title, number, and date of this specification.
- (b) Type and class required (see 1.2).
- (c) Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- (d) Color of deck covering material (see 3.4).
- (e) Level of preservation and packing required (see 5.1 and 5.2).
- (f) Sealer quantity required (see 5.1.1.1).
- (g) When a drip basket or auxiliary compartment is not required (see 5.1.1.5.2).
- (h) When fire-retardant treatment is not required (see 5.2.1.1).
- (i) Container selection, if other than contractor's option (see 5.2.3).
- (j) Waterproofing, when required (see 5.2.3.1).
- (k) When palletizing is required (see 5.3).

6.3 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DID's) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DoD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

<u>Reference paragraph</u>	<u>DID number</u>	<u>DID title</u>	<u>Suggested tailoring</u>
3.2 and 4.4.3.1	DI-E-2121	Certificate of compliance	----
4.4	DI-T-5329	Inspection and test reports	----

The above DID's were those cleared as of the date of this specification. The current issue of DoD 5010-12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

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6.4 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List No. 3134 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362-5101 and information pertaining to qualification of products may be obtained from that activity. Application for qualification tests must be made in accordance with "Provisions Governing Qualification SD-6" (see 6.4.1).

6.4.1 Copies of "Provisions Governing Qualification SD-6" may be obtained upon application to Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

6.5 Acceptance of quality conformance inspection lots.

6.5.1 Filled containers. Samples should be randomly selected in accordance with MIL-STD-105 at inspection level I with an acceptable quality level (AQL) of 2.5 percent for the examination of 4.5. Any container in the sample having one or more defects (or under required fill) will be rejected. If the number of defective containers in any sample exceeds the acceptance number for the appropriate sampling plan as specified in MIL-STD-105, the lot represented by the sample will be rejected.

6.6 Subject term (key word) listing.

Accelerated light  
Corrosion, impact, and shock resistance  
Latex mastic  
Mild steel plates  
Moisture absorption  
Resin emulsion

6.7 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.

Preparing activity:  
Navy - SH  
(Project 5610-N471)

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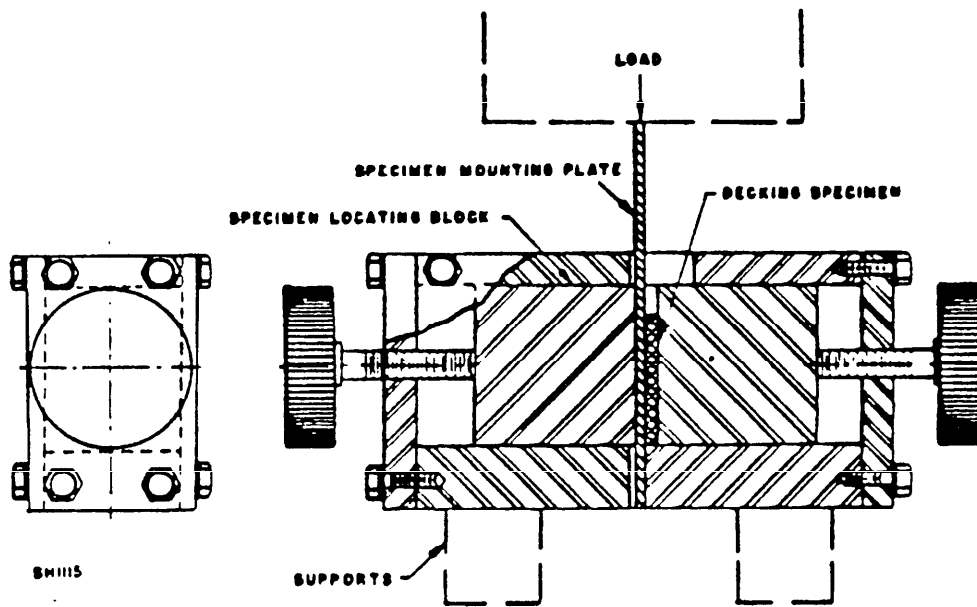


FIGURE 1. Shear test jig for hard-setting deck covering materials.



## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-D-3134J(NAVY)		2. DOCUMENT TITLE DECK COVERING MATERIALS	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
		<input type="checkbox"/> USER	
5. PROBLEM AREAS		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify): _____	
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)	

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)

**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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