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PERFORMANCE SPECIFICATION

DECK COVERING MATERIALS, TILE AND SHEET FLOORING

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

1. SCOPE

1.1 Scope. This specification covers tile, carpet, and sheet flooring materials for shipboard use as deck covering systems.

1.2 Classification. Tile, carpet, and sheet flooring materials are of the following types, classes, compositions, applications, and grades as specified (see 6.2).

1.2.1 Types.

a. Type Ia – Solid vinyl floor tile

b. Type Ib – Vinyl composition tile

c. Type II – Wear-resistant, halogen-free floor tile

d. Type III – Unglazed porcelain ceramic tile

e. Type IV – Unglazed quarry ceramic tile

f. Type V – Wool carpet

g. Type VI – Peel and stick nonskid (self-adhering slip-resistant treads)

1.2.2 Classes.

a. Class 1 – For general shipboard use

b. Class 2 – For submarine use

1.2.3 Compositions.

a. Composition A – All components of the qualifying system including adhesives, edging compounds, grouts, and sealer coats have a volatile organic compound (VOC) content not greater than 150 grams per liter (1.25 pounds per gallon)

b. Composition B – All components of the qualifying system including adhesives, edging compounds, grouts, and sealer coats have a VOC content not greater than 250 grams per liter (2.1 pounds per gallon)

c. Composition C – Any component(s) of the qualifying system including adhesives, edging compounds, grouts, and sealer coats has a VOC content not less than 250 grams per liter (2.1 pounds per gallon)

Comments, suggestions, or questions on this document should be addressed to: Commander, Naval Sea Systems Command, ATTN: SEA 05S, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to CommandStandards@navy.mil, with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil.

AMSC N/A FSC 7220

1.2.4 Applications (only applicable to type VI).

a. Application A – For interior use

b. Application B – For exterior use

c. Application C – For wear-resistant use

1.2.5 Grades.

a. Grade A – All liquid system components of the qualifying system have a flash point not less than 38 degrees Celsius (°C) (100 degrees Fahrenheit [°F])

b. Grade B – Any liquid system component of the qualifying system has a flash point not greater than 38 °C (100 °F)

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-5624	-	Turbine Fuel, Aviation, Grades JP-4 and JP-5

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-1623	-	Fire Performance Requirements and Approved Specifications for Interior Finish Materials and Furnishings (Naval Shipboard Use)

FEDERAL STANDARDS

FED-STD-313	-	Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities

(Copies of these documents are available online at https://quicksearch.dla.mil.)

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

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 60, Appendix A-7, Method 24	-	Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings
40 CFR 63, Appendix A, Method 311	-	Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection Into a Gas Chromatograph
40 CFR 82	-	Protection of Stratospheric Ozone
40 CFR 261.24	-	Toxicity Characteristic

(Copies of these documents are available online at www.ecfr.gov.)

NAVAL SEA SYSTEMS COMMAND (NAVSEA) PUBLICATIONS

S9510-AB-ATM-010 - Nuclear Powered Submarine Atmosphere Control Manual; Volume 1

(Copies of the chapter titled "Material Control Program" are available by email request to CommandStandards@navy.mil.)

T9070-AL-DPC-020/077-2 - NAVSEA Hazardous Material Avoidance Process

(Copies of this document are available online via Technical Data Management Information System (TDMIS) at https://mercury.tdmis.navy.mil by searching for the document number without the suffix. Refer questions, inquiries, or problems to: DSN 296-0669, Commercial (805) 228-0669. This document is available for ordering (hard copy) via the Naval Logistics Library (NLL) at https://nll.navsup.navy.mil. For questions regarding the NLL, contact the NLL Customer Service at nllhelpdesk@navy.mil, (866) 817-3130, or (215) 697-2626/DSN 442-2626.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A108/A118/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile

ANSI A137.1 - American National Standard Specifications for Ceramic Tile

ANSI Z400.1/Z129.1 - American National Standard for Hazardous Workplace Chemicals - Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation

(Copies of these documents are available online at https://webstore.ansi.org.)

ASTM INTERNATIONAL

ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

ASTM A794/A794M - Standard Specification for Commercial Steel (CS), Sheet, Carbon (0.16 % Maximum to 0.25 % Maximum), Cold-Rolled

ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus

ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

ASTM D2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine

ASTM D3278 - Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus

ASTM D3654/D3654M - Standard Test Methods for Shear Adhesion of Pressure-Sensitive Tapes

ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser

ASTM D5848 - Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Coverings

ASTM D6450 - Standard Test Method for Flash Point by Continuously Closed Cup (CCCFP) Tester

ASTM D6859	-	Standard Test Method for Pile Thickness of Finished Level Pile Yarn Floor Coverings
ASTM D6862	-	Standard Test Method for 90 Degree Peel Resistance of Adhesives
ASTM E11	-	Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves
ASTM E1252	-	Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis
ASTM F718	-	Standard Specification for Shipbuilders and Marine Paints and Coatings Product/Procedure Data Sheet
ASTM F925	-	Standard Test Method for Resistance to Chemicals of Resilient Flooring
ASTM F1066	-	Standard Specification for Vinyl Composition Floor Tile
ASTM F1265	-	Standard Test Method for Resistance to Impact for Resilient Floor Tile
ASTM F1514	-	Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change
ASTM F1515	-	Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change
ASTM F1700	-	Standard Specification for Solid Vinyl Floor Tile
ASTM F1914	-	Standard Test Methods for Short-Term Indentation and Residual Indentation of Resilient Floor Covering

(Copies of these documents are available online at www.astm.org.)

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 10304-1	-	Water Quality — Determination of Dissolved Anions by Liquid Chromatography of Ions — Part 1: Determination of Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate and Sulfate
ISO/IEC 17025	-	General Requirements for the Competence of Testing and Calibration Laboratories

(Copies of these documents are available online at www.iso.org.)

SAE INTERNATIONAL

SAE J300	-	Engine Oil Viscosity Classification

(Copies of this document are available online at www.sae.org.)

SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC AB 1	-	Mineral and Slag Abrasives

(Copies of this document are available online at www.sspc.org.)

UNIFIED ABRASIVES MANUFACTURERS' ASSOCIATION (UAMA)

UAMA B74.12	-	American National Standard Specification for the Size of Abrasive Grain - Grinding Wheels, Polishing and General Industrial Uses

(Copies of this document are available online at https://uama.org/publications.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, 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 coverings furnished under this specification shall be products that are authorized by the qualifying activity for listing on the applicable qualified products list before contract award (see 4.2 and 6.3).

3.2 Material. Deck coverings furnished under this specification shall comply with all Navy occupational health and safety regulations and have the characteristics specified herein.

3.2.1 Fire performance. When tested in accordance with 4.5, the deck covering system shall conform to the applicable requirements in MIL-STD-1623.

3.2.2 Off-gassing (class 2 only). The class 2 deck covering system, including all components to be installed as part of the system, shall be evaluated for off-gassing in accordance with the requirements of 4.6. Based on the circumstances of use and the chemical nature of the class 2 deck covering system, the Navy will determine whether off-gas testing is required or if an administrative assessment is acceptable. In order to be considered acceptable for use in submarines, the class 2 deck covering system shall be assigned to either the “Permitted” or “Limited” category (see 4.6 and 6.8).

3.2.3 Toxicity. When evaluated in accordance with 4.7, the deck covering system shall pose no serious or high risk to the health of personnel or the environment when used for its intended purpose (see 4.7 and 6.9).

3.2.4 Prohibited materials. The deck covering system shall not contain any chemicals categorized as “prohibited” in accordance with T9070-AL-DPC-020/077-2.

3.2.5 Metals content. When tested in accordance with 4.9, the maximum allowable amount of each soluble metal and the total metal content in each system component of the deck covering system shall not exceed the values listed in table I. Total metal content may be submitted in place of soluble metal content so long as the value is lower than what is listed in the soluble metal column.

TABLE I. Metals content.

Metal and its compounds in each deck covering dry film	Soluble metal, maximum (milligrams per liter)	Total metal content, maximum (weight percentage [%WT])
Antimony	15	0.015
Arsenic	5	0.005
Barium (excluding barite)	100	0.10
Beryllium	0.75	0.0002
Cadmium	1	0.0005
Chromium (VI)	1	0.001
Chromium or chromium (III)	560	0.56
Cobalt	50	0.005
Copper	25	0.01
Fluoride salts	180	0.18
Lead	5	0.005
Mercury	0.2	0.0002
Molybdenum	350	0.35
Nickel	20	0.02
Selenium	1	0.002
Silver	5	0.001
Tantalum	100	0.100
Thallium	7	0.007
Tungsten	100	0.100
Vanadium	24	0.01
Zinc	250	0.25

3.2.6 Hazardous air pollution substance (HAPs) content. When evaluated in accordance with 4.10, the content of the hazardous solvents in the deck covering system shall be not greater than the percent by weight values in table II. Within these limitations and the requirement that the finished deck covering meet all requirements herein, selection of solvent shall be at the manufacturer's discretion. Based on the circumstances of use and the chemical nature of the deck covering system materials, the qualifying activity will determine whether testing is required or if an administrative assessment is acceptable.

TABLE II. HAPs content.

Hazardous solvent in deck covering system or its components	Maximum (%WT)
Benzene	0.05
Chlorinated solvent(s), total	0.05
Ethyl benzene	0.05
Methyl-, ethyl-, and butyl- mono-ethers of ethylene glycol or the acetates thereof, total (also known as methyl-, ethyl-, and butyl- cellosolve acetates)	0.05
Methyl ethyl ketone	0.05
Methyl isobutyl ketone	0.05
Solvents containing fluorine in accordance with 40 CFR 82	0.01
Toluene	0.05
Xylene (all forms), total	0.1

3.2.7 VOC content.

3.2.7.1 Composition A. When tested in accordance with 4.11, the VOC content of each component of the composition A deck covering system shall be not greater than 150 grams per liter (1.25 pounds per gallon).

3.2.7.2 Composition B. When tested in accordance with 4.11, the VOC content of each component of the composition B deck covering system shall be not greater than 250 grams per liter (2.1 pounds per gallon).

3.2.7.3 Composition C. When tested in accordance with 4.11, the VOC content of any component of the composition C deck covering system shall be not less than 250 grams per liter (2.1 pounds per gallon).

3.2.8 Flash point.

3.2.8.1 Grade A. When tested in accordance with 4.12, all liquid system components of the grade A system shall have a flash point not less than 38 °C (100 °F).

3.2.8.2 Grade B. When tested in accordance with 4.12, any liquid system component of the grade B system shall have a flash point not greater than 38 °C (100 °F).

3.2.9 Safety data sheet and ASTM F718 data sheet. When specified (see 6.2), a completed safety data sheet (SDS) shall be provided in accordance with ANSI Z400.1/Z129.1 or FED-STD-313. When specified (see 6.2), an ASTM F718 data sheet for the coating shall be provided.

3.3 Identification (ID) characteristics. Values for ID characteristics shall be those established for the product at the time submitted for qualification testing. The purpose of these values is to serve as a basis for determining that the deck covering or deck covering component being offered is essentially the same as that which was approved under qualification testing. Unless otherwise specified herein, ID characteristics for all types, classes, compositions, applications, and grades shall be conducted at 16 to 27 °C (60 to 80 °F) and below 85 percent relative humidity. The manufacturer shall provide ASTM methods, other consensus standards, or a copy of unique test methodology or any other necessary information on methodology used to determine reported ID characteristics.

a. Color and pattern
b. Unit of issue
c. Product dimensions
d. Weight per coverage area
e. System components and product names (e.g., adhesive, grout, sealer, edging compound, tile, sheet)

f. Composition of solid components (e.g., wool, vinyl, ceramic, polymeric)

g. Chemical nature of adhesive, grout, edging compound, and sealant components (e.g., epoxy, polyurethane, latex)

h. Shelf life of qualified system or system components

i. Pot life of adhesive, grout, edging compound, and sealant components (if applicable)

j. Application method(s) of adhesive, grout, edging compound, and sealant components

k. Mix ratios of adhesive, grout, edging compound, and sealant components, or mixing instructions (if applicable)

l. Percent nonvolatile vehicle of adhesive, grout, edging compound, and sealant components

m. Percent volatiles of adhesive, grout, edging compound, and sealant components

n. Viscosity of all liquid components

o. Coverage

p. Soil retardant treatment method (type V only)

3.4 Requirements for types Ia, Ib, and II.

3.4.1 Abrasion resistance. When tested in accordance with 4.15.1, the average weight loss for type Ia and Ib tiles shall be not greater than 0.16 gram (0.006 ounce). When tested in accordance with 4.15.1, the average weight loss for type II tiles shall be not greater than 0.03 gram (0.001 ounce).

3.4.2 Slip resistance. When tested in accordance with 4.15.2, the static coefficient of friction (SCOF) shall be not less than 0.60 for dry surfaces.

3.4.3 Industry testing for solid vinyl tile (type Ia only). When tested in accordance with 4.15.3, the deck covering shall conform to the requirements of ASTM F1700, class III.

3.4.4 Industry testing for vinyl composition tile (type Ib only). When tested in accordance with 4.15.4, the deck covering shall conform to all of the requirements of ASTM F1066, class 2.

3.4.5 Chemical resistance for wear-resistant deck tile (type II). When tested in accordance with 4.15.5, the deck tile system shall show no blistering or wrinkling and no more than a slight whitening or softening upon removal of the fluid wetted sponges. After 2 hours of air drying, the portion of the panel that was covered by fluid wetted sponges shall be indistinguishable, with regard to color and gloss, from the unexposed areas of the tile system.

3.4.6 Impact resistance for wear-resistant deck tile (type II). When tested in accordance with 4.15.6, the deck tile system shall show no visible signs of chipping, cracking, or detachment from the steel plate.

3.4.7 Resistance to heat and light for wear-resistant deck tile (type II). When tested in accordance with 4.15.7, the exposed surface of the deck tile system shall show no appreciable change in color, delamination, checking, or cracking. The measured color change shall be not greater than 5ΔE.

3.4.8 Resistance to indentation (type II). When tested in accordance with 4.15.8, the average initial indentation shall be not greater than 10 percent, and the maximum initial indentation of any single specimen shall be not greater than 12 percent. The average residual indentation at the end of the 60-minute recovery period shall be not greater than 8 percent, and the maximum residual indentation of any single specimen shall be not greater than 10 percent.

3.4.9 Halogen content (type II). When tested in accordance with 4.15.9, the materials used in wear-resistant deck tiles shall have not more than 0.2 percent by weight halogen content.

3.5 Requirements for types III and IV.

3.5.1 Stain resistance. When tested in accordance with 4.16.1, the tile shall meet the class A stain resistance requirements as in accordance with ANSI A137.1.

3.5.2 Deep abrasion. When tested in accordance with 4.16.1, the tile shall meet the class P2 deep abrasion requirements as in accordance with ANSI A137.1.

3.5.3 Slip resistance. When tested in accordance with 4.16.2, the SCOF shall be not less than 0.70 for dry surfaces and not less than 0.60 for wet surfaces.

3.5.4 Industry testing for porcelain tile, unglazed (type III only). When tested in accordance with 4.16.1, the tile shall meet the requirements of porcelain tile in accordance with ANSI A137.1.

3.5.5 Industry testing for quarry tile, unglazed (type IV only). When tested in accordance with 4.16.1, the tile shall meet the requirements of quarry tile in accordance with ANSI A137.1.

3.5.6 Industry testing for adhesives, grouts, edging compounds, and sealants. When tested in accordance with 4.16.3, all tile adhesives, grouts, edging compounds, and sealants qualified as part of the deck covering system shall meet the A118.3 requirements specified in ANSI A108/A118/A136.1.

3.6 Requirements for type V.

3.6.1 Material. When visually examined (see 4.13 and 4.17.1), the wool carpet shall be woven through the back and treated by the manufacturer with soil retardant 3M Scotchgard™ Carpet Protector or equal.

3.6.2 Pile weight. When tested in accordance with 4.17.2, the carpet pile weight shall be not less than 1.43 kilograms per square meter (42.2 ounces per square yard).

3.6.3 Pile thickness. When tested in accordance with 4.17.3, the carpet pile thickness shall be not less than 4.83 millimeters (0.19 inch) and not greater than 22.1 millimeters (0.87 inch).

3.6.4 Pile density. When calculated in accordance with 4.17.4, the carpet pile density shall be not less than 136 kilograms per cubic meter (3,700 ounces per cubic yard).

3.7 Requirements for type VI.

3.7.1 Material. When tested in accordance with 4.18.1, the peel and stick nonskid system shall consist of a fabric, film, metal, or composite backing having a uniform closed coat of abrasive particles or a uniform coat of thermal spray nonskid on the front surface and a pressure-sensitive adhesive on the back with a protective cover to prevent contamination of the adhesive by foreign matter prior to application.

3.7.2 Abrasive. When tested in accordance with 4.18.2, the abrasive particles shall be aluminum oxide, silicon carbide, or other non-ferrous abrasive material with a Mohs hardness of not less than 6.

3.7.3 Adhesive. When tested in accordance with 4.18.3, the adhesive shall be able to adhere immediately to smooth, clean, dry deck surfaces without wrinkling, curling, breaking, or lifting.

3.7.4 Color. When visually examined (see 4.13), the color shall be black or deck gray (see 3.3a), or as specified (see 6.2).

3.7.5 Slip resistance. When tested in accordance with 4.18.4, the SCOF shall be not less than 0.90 for dry surfaces and not less than 0.85 for wet surfaces.

3.7.6 Adhesion.

3.7.6.1 Shear strength. When tested in accordance with 4.18.5.1, the deck covering shall support a weight of not less than 4.5 kilograms (10 pounds) for a period of not less than 1 minute.

3.7.6.2 Strip strength. When tested in accordance with 4.18.5.2, the adhesive strength shall be not less than 13 kilograms (30 pounds).

3.7.7 Chemical resistance. When tested in accordance with 4.18.6, the deck covering shall show no softening, warping, swelling, blistering, peeling, raised areas, discoloration, or bleaching.

3.7.8 Salt spray (fog) resistance. When tested in accordance with 4.18.7, the deck covering shall not exhibit rust staining, spot rusting, peeling at corners or edges, blisters, wrinkling, or any other signs of loss of adhesion.

3.7.9 Aggregate size (application A and B only).

3.7.9.1 Application A. When tested in accordance with 4.18.8, the abrasive shall be not larger than size 59 grit as specified in UAMA B74.12.

3.7.9.2 Application B. When tested in accordance with 4.18.8, the abrasive shall be not smaller than size 60 grit as specified in UAMA B74.12.

3.7.10 Abrasion resistance (application C only). When tested in accordance with 4.18.9, the average weight loss shall be not greater than 0.1 gram (0.004 ounce).

3.7.11 Thickness. When tested in accordance with 4.18.10, the average thickness of the deck covering shall be not greater than 3 millimeters (0.12 inch).

4. VERIFICATION

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

a. Qualification inspection (see 4.2).

b. Conformance inspection (see 4.3).

4.2 Qualification inspection. Qualification inspection shall consist of all the tests specified in table III and all requirements listed in section 3.

4.2.1 Change approval. Changes in material, production processes, or production equipment used in the manufacture of qualified deck covering materials may require requalification. Unless otherwise specified by the qualifying activity, changes require written approval by NAVSEA.

4.3 Conformance inspection. When specified (see 6.2), conformance inspection shall consist of the conformance tests specified in table III. At a minimum, conformance inspections shall be performed on the first lot and every 4,536 kilograms (10,000 pounds) thereafter.

4.3.1 Lot. A lot shall consist of an individual system component of the same type, class, composition, application, and grade from a single uniform batch or single uniform blend of batches offered for delivery at one time.

4.4 Standard laboratory conditions. Unless otherwise specified herein, all physical tests including preparation, application, and testing on deck coverings shall be performed at 16 to 27 °C (60 to 80 °F) and below 85 percent relative humidity.

TABLE III. Test procedures.

Type	Characteristic	Requirement paragraph	Test paragraph	Applicable standard	Conformance test
All	Fire performance	3.2.1	4.5	---	No
	Off-gassing (class 2 only)	3.2.2	4.6	---	No
	Toxicity	3.2.3	4.7	---	No
	Prohibited materials	3.2.4	4.8	---	No
	Metals content	3.2.5	4.9	---	No
	HAPs content	3.2.6	4.10	ASTM E1252 40 CFR 63, Appendix A, Method 311 (EPA Test Method 311)	No
	VOC content	3.2.7	4.11	40 CFR 60, Appendix A-7, Method 24	Yes
	Flash point	3.2.8	4.12	ASTM D3278/ ASTM D6450	Yes
	Safety data sheet and ASTM F718 data sheet	3.2.9	--	ANSI Z400.1/Z129.1 FED-STD-313 ASTM F718	No
	ID characteristics	3.3	4.13	---	No
Types Ia and Ib	Abrasion resistance	3.4.1	4.15.1	ASTM D4060	No
	Slip resistance	3.4.2	4.15.2	ASTM D2047	Yes
	Industry testing for solid vinyl tile (type Ia only)	3.4.3	4.15.3	ASTM F1700	No
	Industry testing for vinyl composition tile (type Ib only)	3.4.4	4.15.4	ASTM F1066	No
Type II	Abrasion resistance	3.4.1	4.15.1	ASTM D4060	No
	Slip resistance	3.4.2	4.15.2	ASTM D2047	Yes
	Chemical resistance for wear-resistant deck tile	3.4.5	4.15.5	ASTM F925	No
	Impact resistance for wear-resistant deck tile	3.4.6	4.15.6	ASTM F1265	No
	Resistance to heat and light for wear-resistant deck tile	3.4.7	4.15.7	ASTM F1514 and F1515	No
	Resistance to indentation (type II only)	3.4.8	4.15.8	ASTM F1914	No
	Halogen content	3.4.9	4.15.9	ISO 10304-1	No

TABLE III. Test procedures – Continued.

Types III and IV	Stain resistance	3.5.1	4.16.1	ANSI A137.1	No
	Deep abrasion	3.5.2	4.16.1	ANSI A137.1	No
	Slip resistance	3.5.3	4.16.2	ASTM D2047	Yes
	Industry testing for porcelain tile, unglazed (type III only)	3.5.4	4.16.1	ANSI A137.1	No
	Industry testing for quarry tile, unglazed (type IV only)	3.5.5	4.16.1	ANSI A137.1	No
	Industry testing for adhesives, grouts, and sealants	3.5.6	4.16.3	ANSI A108 /A118/A136.1	No
Type V	Material	3.6.1	4.13 & 4.17.1	---	Yes
	Pile weight	3.6.2	4.17.2	ASTM D5848	Yes
	Pile thickness	3.6.3	4.17.3	ASTM D6859	No
	Pile density	3.6.4	4.17.4	---	No
Type VI	Material	3.7.1	4.18.1	---	Yes
	Abrasive	3.7.2	4.18.2	---	No
	Adhesive	3.7.3	4.18.3	---	Yes
	Color	3.7.4	4.13	---	Yes
	Slip resistance	3.7.5	4.18.4	ASTM D2047	Yes
	Adhesion - shear strength	3.7.6.1	4.18.5.1	ASTM D3654/D3654M	No
	Adhesion - strip strength	3.7.6.2	4.18.5.2	ASTM D6862	No
	Chemical resistance	3.7.7	4.18.6	ASTM F925	No
	Salt spray (fog) resistance	3.7.8	4.18.7	ASTM B117	No
	Aggregate size (applications A and B only)	3.7.9	4.18.8	UAMA B74.12/ ASTM C136/C136M	No
	Abrasion resistance (application C only)	3.7.10	4.18.9	ASTM D4060	No
	Thickness	3.7.11	4.18.10	---	Yes

4.5 Fire performance. The as-applied deck covering system shall be tested in accordance with MIL-STD-1623 on 0.64 centimeter (¼ inch) thick steel or aluminum panels, or fiber-cement board having a density of 1,442±160 kilograms per cubic meter (90±10 pounds per cubic foot) in accordance with 4.5.1. The results shall conform to the requirements of 3.2.1.

4.5.1 Fire testing provisions. All fire tests specified in this document shall be conducted by an independent testing laboratory that is accredited to ISO/IEC 17025 and is approved by NAVSEA. Accreditation shall be obtained from a recognized accreditation body such as American Association for Laboratory Accreditation (www.A2LA.org) or International Code Council's International Accreditation Services (www.IASonline.org). The scope of accreditation shall include specific flammability and fire tests required for qualification. All other fire test provisions shall be as specified (see 6.2 and 6.6).

4.6 Off-gassing (class 2 only). The class 2 deck covering system, including all components to be installed as part of the system, shall be evaluated for off-gassing in accordance with S9510-AB-ATM-010 chapter titled "Material Control Program" (see 3.2.2 and 6.8). If the Navy determines that off-gas testing is required, testing shall be conducted at a NAVSEA approved test facility (see 3.2.2). The Navy will review the off-gas test results and assign a usage category. Additionally, the Navy will assign a usage category if an administrative review is conducted in lieu of off-gas testing (see 3.2.2).

4.7 Toxicity. A Health Hazard Assessment (HHA) will be conducted to ensure conformance to 3.2.3 as required by the qualifying activity. The Navy and Marine Corps Public Health Center (NMCPHC) will evaluate the deck covering system using data provided by the manufacturer/distributor to the NMCPHC (see 3.2.3 and 6.9).

4.8 Prohibited materials. Prohibited materials shall be verified for conformance to 3.2.4 as required by the qualifying activity.

4.9 Metals content. Soluble and total metal content, except tantalum and tungsten, shall be determined on pulverized cured film of the deck covering system in accordance with 40 CFR 261.24(a), Toxicity Characteristic Leaching Procedure (TCLP). Tantalum and tungsten soluble metal content and total metal content shall be analyzed in accordance with 4.9.1. The calculation of individual hazardous metal contents shall be based on either the manufacturer's testing of batches or the supplier's data for raw materials used in the product. When specified (see 6.2), a formulation value shall be provided that will not be exceeded when the deck covering is tested in accordance with this paragraph. The results shall conform to the requirements of 3.2.5.

4.9.1 Tantalum and tungsten content. The tantalum and tungsten content of the cured deck covering shall be determined using any appropriate spectroscopy test method. The tests shall be conducted in accordance with the instrument manufacturer's directions. Data supporting the test method choice and analytical accuracy shall be established. The results shall conform to the requirements of 3.2.5.

4.10 HAPs content. The HAPs content of the deck covering shall be measured in accordance with 40 CFR 63, appendix A, method 311 (EPA test method 311). Solvent fractions shall be identified in accordance with ASTM E1252 with the results recorded as percent by weight of the total deck covering system. Alternate methods of analysis must be approved by the qualifying activity. When specified (see 6.2), formulation data may be used by manufacturers in lieu of testing to demonstrate compliance with 3.2.6 when approved by the qualifying activity. The formulation data shall have a consistent and quantitatively known relationship to the testing required. Calculation of individual HAPs content can be based on either the manufacturer evaluation of batches or supplier data for raw materials used in the product. The results shall conform to the requirements of 3.2.6.

4.11 VOC content. The VOC content of the deck covering shall be measured in accordance with 40 CFR 60, appendix A-7, method 24. The sample shall be conditioned at 22±1 °C (72±2 °F) for 24 hours prior to conducting the analysis. The results shall conform to the requirements of 3.2.7.

4.12 Flash point. All deck covering liquid components shall be tested in accordance with ASTM D3278, ASTM D6450, or through a method approved by the qualifying activity. The results shall conform to the requirements of 3.2.8.

4.13 ID characteristics. The deck covering system shall be visually examined, and ID characteristics shall be evaluated for conformance to the requirements as specified in 3.3.

4.14 Test panel preparation.

4.14.1 Method 1 (types Ia, Ib, II, and VI). Steel panels conforming to ASTM A794/A794M, or equivalent, approximately 10.2 centimeters by 10.2 centimeters by 3.2 millimeters (4 inches by 4 inches by ⅛ inch) with a 6.4-millimeter (¼-inch) hole in the center (nominal) shall be prepared by power sanding one side of the panels with a flexible, 24- to 60-grit, abrasive sanding disk using such pressure as to create a uniform pattern of scratches on the metal surface. The deck covering system shall be applied in accordance with manufacturer instructions (see 3.2.9). All components of the qualifying system shall be used. Underlayment materials shall not be applied beneath the qualifying system. The system shall be allowed to cure for 48 hours at room temperature (23±2.5 °C [73±5 °F]) before testing is conducted. After the panel has cured, an appropriate drill, burr, or cutting tool that will not damage the surrounding decking system shall be used to remove any components of the decking system covering the 6.4-millimeter (¼-inch) hole to allow finished panels to be mounted on an ASTM D4060 test apparatus.

4.14.2 Method 2 (types Ia, Ib, II, III, and IV). Steel panels conforming to ASTM A794/A794M, or equivalent, approximately 15.2 centimeters by 30.5 centimeters by 3.2 millimeters (6 inches by 12 inches by ⅛ inch) shall be prepared by power sanding one side of the panels with a flexible, 24- to 60-grit, abrasive sanding disk using such pressure as to create a uniform pattern of scratches on the metal surface. The deck covering system shall be applied in accordance with manufacturer instructions (see 3.2.9). All components of the qualifying system shall be used. Underlayment materials shall not be applied beneath the qualifying system.

4.14.3 Method 3 (type VI). Stainless steel panels conforming to ASTM A240/A240M, or equivalent, approximately 15.2 centimeters by 30.5 centimeters by 6.4 millimeters (6 inches by 12 inches by ¼ inch) (nominal) shall be prepared by power sanding one side of the panels with a flexible, 24- to 60-grit, abrasive sanding disk using such pressure as to create a uniform pattern of scratches on the metal surface. The buffed plates shall then be cleaned with a solvent and shall be visibly free from all rust, scale, and organic matter. The deck covering system shall be applied in accordance with manufacturer instructions (see 3.2.9). All components of the qualifying system shall be used. The system shall be allowed to cure for 48 hours at room temperature (23±2.5 °C [73±5 °F]) before testing is conducted.

4.14.4 Method 4 (type VI). Stainless steel panels conforming to ASTM A240/A240M, or equivalent, with a test surface not less than 25 centimeters by 20.3 centimeters by 3.2 millimeters (1 inch by 8 inches by ⅛ inch) shall be prepared by power sanding one side of the panels with a flexible, 24- to 60-grit, abrasive sanding disk using such pressure as to create a uniform pattern of scratches on the metal surface. The steel panels shall be of sufficient size to be secured in the test apparatus without contacting the test surface. The 25-centimeter by 20.3-centimeter (1-inch by 8-inch) deck covering system shall be applied to the test surface in accordance with manufacturer instructions (see 3.2.9). All components of the qualifying system shall be used. The system shall be allowed to cure for 48 hours at room temperature (23±2.5 °C [73±5 °F]) before testing is conducted.

4.14.5 Method 5 (type VI). Mild steel panels conforming to ASTM A794/A794M, or equivalent, approximately 15.2 centimeters by 30.5 centimeters by 3.2 millimeters (6 inches by 12 inches by ⅛ inch) shall be prepared by power sanding one side of the panels with a flexible, 24- to 60-grit, abrasive sanding disk using such pressure as to create a uniform pattern of scratches on the metal surface. The deck covering system shall be applied to each panel so as to completely cover the steel plates, and the deck covering system shall be allowed to cure for 96 hours. After curing, any excess covering shall be cleaned from the edge of the panels in accordance with manufacturer instructions (see 3.2.9).

4.14.6 Method 6 (type VI). Mild steel panels conforming to ASTM A794/A794M, or equivalent, approximately 15.2 centimeters by 30.5 centimeters by 3.2 millimeters (6 inches by 12 inches by ⅛ inch) shall be prepared by power sanding one side of the panels with a flexible, 24- to 60-grit, abrasive sanding disk using such pressure as to create a uniform pattern of scratches on the metal surface. The deck covering system shall be applied to each panel so as to completely cover the steel plates. The sides and back of the plates shall be protected with the deck covering system, corrosion prevention film, or other method, and the deck covering system shall be allowed to cure for 96 hours. After curing, any excess covering shall be cleaned from the edge of the panels in accordance with manufacturer instructions (see 3.2.9).

4.14.7 Method 7 (type VI). Steel panels conforming to ASTM A794/A794M, or equivalent, measuring either approximately 10.2 centimeters by 10.2 centimeters by 3.2 millimeters (4 inches by 4 inches by ⅛ inch) or approximately 10.2 centimeters (4 inches) in diameter by 3.2 millimeters (⅛ inch) thick with a 6.4-millimeter (¼-inch) hole in the center (nominal) shall be prepared by power sanding one side of the panels with a flexible, 24- to 60-grit, abrasive sanding disk using such pressure as to create a uniform pattern of scratches on the metal surface. The deck covering system shall be applied to the square or round panels in accordance with manufacturer instructions (see 3.2.9). The system shall be allowed to cure for 48 hours at room temperature (23±2.5 °C [73±5 °F]) before testing is conducted. After the panel has cured, an appropriate drill, burr, or cutting tool that will not damage the surrounding decking system shall be used to remove any components of the decking system covering the 6.4-millimeter (¼-inch) hole to allow finished panels to be mounted on an ASTM D4060 test apparatus. The tare weight of each panel shall be determined to the nearest 0.01 gram (0.00002 pound).

4.14.8 Method 8 (type VI). Stainless steel panels conforming to ASTM A240/A240M, or equivalent, approximately 7.6 centimeters by 15.2 centimeters by 3.2 millimeters (3 inches by 6 inches by ⅛ inch) shall be prepared by power sanding one side of the panels with a flexible, 24- to 60-grit, abrasive sanding disk using such pressure as to create a uniform pattern of scratches on the metal surface. The deck covering system shall be applied in accordance with manufacturer instructions (see 3.2.9). All components of the qualifying system shall be used. The system shall be allowed to cure for 48 hours at room temperature (23±2.5 °C [73±5 °F]) before testing is conducted.

4.15 Test procedures for types Ia, Ib, and II.

4.15.1 Abrasion resistance. Three sample panels shall be prepared in accordance with 4.14.1. Abrasion resistance shall be tested in accordance with ASTM D4060 using a CS 17 wheel and a 1-kilogram (2.2-pound) load for 1,000 cycles. The results shall conform to the requirements of 3.4.1.

4.15.2 Slip resistance. Three sample panels shall be prepared in accordance with 4.14.2. Slip resistance shall be tested in accordance with ASTM D2047 or a method approved by the qualifying activity (see 6.7). The results shall conform to the requirements of 3.4.2.

4.15.3 Industry testing for solid vinyl tile (type Ia only). Sample panels shall be prepared and tested in accordance with ASTM F1700, class III. The results shall conform to the requirements of 3.4.3.

4.15.4 Industry testing for vinyl composition floor tile (type Ib only). Sample panels shall be prepared and tested in accordance with ASTM F1066. The results shall conform to the requirements of 3.4.4.

4.15.5 Chemical resistance for wear-resistant deck tile (type II). Three sample panels shall be prepared in accordance with 4.14.2. Chemical resistance shall be tested in accordance with ASTM F925, spot test, covered procedure, at 23±2.5 °C (73±5 °F) for 24 hours with the reagents listed below (see 4.15.5.a through c). The test shall begin not later than 12 hours from the cure-to-service time specified by the manufacturer's ASTM F718 data sheet (see 3.2.9). Examinations shall be made at the start time, 2 hours, and 12 hours following chemical removal. The results shall conform to the requirements of 3.4.5.

a. Potable water

b. 10W-40 oil (SAE J300)

c. JP-5 jet fuel (MIL-DTL-5624)

4.15.6 Impact resistance for wear-resistant deck tile (type II). Sample panels shall be prepared in accordance with 4.14.2. Impact resistance shall be tested in accordance with ASTM F1265. The results shall conform to the requirements of 3.4.6.

4.15.7 Resistance to heat and light for wear-resistant deck tile (type II). Sample panels shall be prepared in accordance with 4.14.2. The heat and light resistance of the deck tile sample panels shall be tested for 2,000 hours in accordance with ASTM F1514 and 2,000 hours in accordance with ASTM F1515. The results shall conform to the requirements of 3.4.7.

4.15.8 Resistance to indentation (type II). A sample panel shall be prepared in accordance with 4.14.2. To determine conformance with indentation and residual indentation, testing shall be in accordance with ASTM F1914. The sample panel shall be tested at room temperature (23±2.5 °C [73±5 °F]) and residual indentation testing shall be performed using a total of 63.5 kilograms (140 pounds) applied to a flat geometry foot for a time of 10±1 minutes, and a recovery time of 60±1 minutes. The flat bottom surface of the indentation tip shall rest completely on the flat surface of the deck tiles. The results shall conform to the requirements of 3.4.8.

4.15.9 Halogen content (type II). The halogen content of the wear-resistant deck tiles (type II) shall be determined through either calorimetric combustion followed by ISO 10304-1 analysis for dissolved halogen anions on the burned residue, or through X-ray fluorescence following an administrative review of the chemical composition of all ingredients, or through a method approved by the qualifying activity. Halogen content shall be determined for one tile. The results shall conform to the requirements of 3.4.9.

4.16 Test procedures for types III and IV.

4.16.1 Industry testing for ceramic tile. Sample panels shall be prepared and tested in accordance with ANSI A137.1. The results shall conform to the requirements of 3.5.1, 3.5.2, and 3.5.4 for type III or 3.5.5 for type IV.

4.16.2 Slip resistance. Three sample panels shall be prepared in accordance with 4.14.2. Slip resistance shall be tested in accordance with ASTM D2047 or a method approved by the qualifying activity (see 6.7). The results shall conform to the requirements of 3.5.3.

4.16.3 Industry testing for adhesives, grouts, edging compound, and sealants. The tile adhesive, grout, edging compound, and sealant shall be tested in accordance with A118.3 of ANSI A108/A118/A136.1. The results shall conform to the requirements of 3.5.6.

4.17 Test procedures for type V.

4.17.1 Material. One sheet of carpet shall be visually examined (without magnification). The results shall conform to the requirements of 3.6.1.

4.17.2 Pile weight. The carpet pile weight shall be tested in accordance with ASTM D5848. The results shall conform to the requirements of 3.6.2.

4.17.3 Pile thickness. The carpet pile thickness shall be tested in accordance with ASTM D6859. The results shall conform to the requirements of 3.6.3.

4.17.4 Pile density. The carpet pile density shall be calculated by multiplying the surface pile weight (see 4.17.2) in kilograms per square meter by 1,000 and dividing by the pile thickness (see 4.17.3) in millimeters. The results shall conform to the requirements of 3.6.4.

4.18 Test procedures for type VI.

4.18.1 Material. One sample sheet shall be visually examined (without magnification). The results shall conform to the requirements of 3.7.1.

4.18.2 Abrasive. Hardness shall be determined in accordance with SSPC-AB 1. The results shall conform to the requirements of 3.7.2.

4.18.3 Adhesive. One stainless steel sample panels shall be prepared in accordance with 4.14.3. The sample panel shall be visually examined (without magnification). The results shall conform to the requirements of 3.7.3.

4.18.4 Slip resistance. Three sample panels shall be prepared in accordance with 4.14.3. Slip resistance shall be tested in accordance with ASTM D2047 or a method approved by the qualifying activity (see 6.7). The results shall conform to the requirements of 3.7.5.

4.18.5 Adhesion.

4.18.5.1 Shear strength. Three stainless steel sample panels shall be prepared and tested in accordance with ASTM D3654/D3654M, procedure A. The results shall conform to the requirements of 3.7.6.1.

4.18.5.2 Strip strength. Four stainless steel sample panels shall be prepared in accordance with 4.14.4. The deck covering shall be tested in accordance with ASTM D6862. The results shall conform to the requirements of 3.7.6.2.

4.18.6 Chemical resistance. Three sample panels shall be prepared in accordance with 4.14.5. Chemical resistance shall be tested in accordance with ASTM F925, spot test, covered procedure, at 23±2.5 °C (73±5 °F) for 24 hours with the reagents listed below (see 4.18.6 a through c). The test shall begin not later than 12 hours from the cure-to-service time specified by the manufacturer's ASTM F718 data sheet (see 3.2.9). Examinations shall be made at the start time, 2 hours, and 12 hours following chemical removal. The results shall conform to the requirements of 3.7.7.

a. Potable water

b. 10W-40 oil (SAE J300)

c. JP-5 jet fuel (MIL-DTL-5624)

4.18.7 Salt spray (fog) resistance. Three sample panels shall be prepared in accordance with 4.14.6. The panels shall be exposed to 3.5 percent salt spray for 14 days in accordance with ASTM B117. Upon removal, the panels shall be washed gently in warm running water (not more than 38 °C [100 °F]) until free from any visible salt deposits and then examined. The results shall conform to the requirements of 3.7.8.

4.18.8 Aggregate size (applications A and B only). The abrasive grains shall be tested in accordance with ASTM C136/C136M utilizing sieves that meet the requirements of ASTM E11. The results shall conform to the requirements of 3.7.9.

4.18.9 Abrasion resistance (application C only). Three sample panels shall be prepared in accordance with 4.14.7. Abrasion resistance shall be tested in accordance with ASTM D4060 using a CS 17 wheel and a 1-kilogram (2.2-pound) load for 1,000 cycles. The results shall conform to the requirements of 3.7.10.

4.18.10 Thickness. Thickness shall be determined by measuring the steel plates prepared as specified in 4.14.8, with and without the deck covering, at 16 equally distributed points on the specimen by means of a dial thickness gauge and a template. The difference in thickness of the mounted steel plate and the coated steel plate shall be averaged to determine the thickness of the material. The results shall conform to the requirements of 3.7.11.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

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

6.1 Intended use. Deck coverings covered by this document are intended for use as floor coverings on U.S. Navy ships. Type Ia, Ib, and II deck coverings are intended for use on interior dry walking surfaces. Type III and IV deck coverings are intended for use on interior walking surfaces that may become wet, such as sanitary and food service spaces. Type V wool carpets are intended for use in interior spaces with a cosmetic requirement. Type VI deck coverings are peel and stick nonskid sheets. Type VI, application A deck coverings are intended for use on interior decks and type VI, application B deck coverings are intended for use on exterior non-critical decks. Type VI, application C deck coverings are intended for use on interior or exterior high traffic areas for increased wear resistance. Existing stock of MIL-PRF-24667 type XI manufactured to MIL-PRF-24667C dated 17 September 1992 is acceptable for use until depleted.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification.

b. Type, class, composition, application, and grade (see 1.2).

c. When a safety data sheet (SDS) is required (see 3.2.9 and 6.5).

d. When manufacturer's ASTM F718 data sheet is required (see 3.2.9).

e. ID characteristics (see 3.3).

f. Color requirement for type VI materials (see 3.7.4).

g. When conformance inspection is required (see 4.3).

h. Additional fire testing provisions (see 4.5 and 6.6).

i. Formulation value for metals content, if required (see 4.9).

j. Whether formulation data may be used by manufacturers in lieu of testing to demonstrate HAPs content compliance (see 4.10).

k. Packaging requirements (see 5.1).

6.3 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 QPL No. 32704 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 orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from Commander, Naval Sea Systems Command, ATTN: SEA 05S, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to CommandStandards@navy.mil. An online listing of products qualified to this specification may be found in the Qualified Products Database (QPD) at https://assist.dla.mil.

6.4 Supersession data. This specification supersedes MIL-PRF-32170A dated 13 June 2006 and DDD-C-95 dated 16 April 1965, while ASTM F1700, ASTM F1066, and ANSI A137.1 are incorporated in the specification. The specification also supersedes the type XI peel and nonskid materials from MIL-PRF-24667C dated 22 May 2008 and MIL-PRF-24667C w/Interim Amendment 1 dated 27 March 2018. A cross reference of type designations is listed in table IV.

TABLE IV. Supersession data.

MIL-PRF-32704 type	Superseded or incorporated type
Type Ia and Ib	ASTM F1700/ASTM F1066 1/
Type II	MIL-PRF-32170 2/
Type III	ANSI A137.1 1/
Type IV	ANSI A137.1 1/
Type V	DDD-C-95 2/
Type VI	MIL-PRF-24667 type XI 2/

NOTES:
1/ Incorporated type.
2/ Superseded type.

6.5 Safety data sheet (SDS). When specified (see 6.2), contracting officers will identify those activities requiring copies of completed SDSs prepared in accordance with Appendix D of 29 CFR 1910.1200. In order to obtain the SDS, federal acquisition regulation (FAR) clause 52.223-3 will be in the contract. The contracting activity should be given an SDS at the time of contract award.

6.6 Additional fire testing provisions. NAVSEA reserves the right to witness the tests and perform any of the tests set forth herein where such testing is deemed necessary to assure compliance to prescribed requirements of the qualification tests. American Association for Laboratory Accreditation (www.A2LA.org) or International Code Council's International Accreditation Services (www.IASonline.org) maintain a full list of the approved laboratories that are accredited to ISO/IEC 17025 and provide details on how to obtain and maintain accreditation (see 6.2).

6.7 Alternate slip resistance method. The qualifying activity may allow slip resistance testing to be performed in accordance with ATSM C1028 if requested.

6.8 Material certification. Materials to be installed in submarines are to be controlled to prevent off-gassing, which contaminates the submarine's atmosphere and can result in health hazards to personnel or deleterious effects on machinery. These controls are administered through the Submarine Material Control Program, which is described in the Nuclear Powered Submarine Atmosphere Control Manual, S9510-AB-ATM-010 chapter titled "Material Control Program." Under the Submarine Material Control Program, all materials considered for use on submarines require certification and assignment of a usage category. Under the certification process, candidate materials are selected by Navy activities or contractors, and a request for certification is submitted to Commander, Naval Sea Systems Command, ATTN: SEA 05S, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard, DC 20376-5160 or emailed to CommandStandards@navy.mil. The certification request is accompanied by detailed information, including descriptions of the material, method of application, usage, and storage. A chemical analysis is conducted, which can be accomplished through off-gas testing. If off-gas testing is required, it must be conducted in a Government approved laboratory. Information pertaining to this test requirement may be obtained from Commander, Naval Sea Systems Command, ATTN: SEA 05S, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard, DC 20376-5160 or emailed to CommandStandards@navy.mil. Based on the chemical analysis results, a usage category is assigned to the material defining whether, and to what extent, the material may be used on submarines.

6.9 Toxicity evaluation. The NMCPHC requires sufficient information to permit an HHA of the product. Upon completion of the HHA, a copy will be provided by the NMCPHC to the Government for evaluation. The HHA process is described on the NMCPHC's website, https://www.med.navy.mil/Navy-Marine-Corps-Public-Health-Center/.

6.10 Subject term (key word) listing.

Carpet
Ceramic
Fire performance
Nonskid
Peel and stick
Porcelain
Quarry
Slip-resistant
Vinyl

6.11 Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

CONCLUDING MATERIAL

Custodians:
Army – MI
Navy – SH
Air Force – 03

Review activities:
Army – AV, GL
Navy – CG
DLA – CQ

Civil agency:
GSA – FAS

Preparing activity:
Navy – SH
(Project 7220-2022-001)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.