

RENEW DECK COVERING SYSTEMS

1. SCOPE

1.1 Scope. This standard specification describes the requirements for the Contractor to renew deck covering systems onboard Coast Guard vessels.

1.2 Index of appendices. The following appendices are part of this document:

DECK COVERING SYSTEM	APPENDIX
Requirements Cosmetic Polymeric Epoxy Resin Deck Covering Systems	A
Requirements Ceramic Tile Deck Covering Systems	B
Requirements Resilient Roll or Sheet and Fire-Retardant Tile Deck Covering Systems	C
Requirements For Carpeting	D

2. APPLICABLE DOCUMENTS

MIL-A-21016F, Adhesive, Resilient Deck Covering, Revision F, 21 May 1990

MIL-A-24456, Adhesive For Plastic Vibration-Damping Tile, Amendment 3, 15 Jun 1979

MIL-A-46106B, Adhesive-Sealant, Silicone, RTV, One-Component, Revision B, Amendment 3, 26 Jan 1992

MIL-C-18255E, Caulking Compound, Synthetic Rubber Base, Wooden Deck Seam Application, Amendment 1, 20 Dec 1989

MIL-D-24613(2), Deck Covering Materials, Interior, Cosmetic Polymeric, Notice 1, 26 Dec 1990

MIL-DTL-15562G, Matting or Sheet, Floor Covering Insulating For High Voltage requirements, 31 May 1996

MIL-PRF-3135G, Deck Covering Underlay Materials, Revision G, Amendment 4, 14 Nov 1986

MIL-PRF-17951E(2), Deck Covering, Lightweight, Nonslip Abrasive Particle Coated Fabric, Film, or Composite, and Sealing Compound, Revision E, Amendment 2, 17 Sep 1992

MIL-PRF-23236B(2), Paint Coating Systems, Fuel and Salt Water Ballast Tanks (Metric), 30 Apr 1990

MIL-PRF-24647B, Paint System, Anti-Corrosive and antifouling, Ship Hull, Revision B, Amendment 1, 9 Aug 1994

Title 29, Code of Federal Regulations (CFR), Section 1915 Subpart C (Surface Preparation and Preservation) and Subpart I (Personnel Protective Equipment), 1 Jul 2000 Edition

American National Standards Institute (ANSI), A108.6, Installation of Ceramic Tile With Chemical Resistant, Water Cleanable Tile-Setting and Grout Epoxy, 1999

American National Standards Institute (ANSI), A118.3, Chemical Resistant Tile Setting Epoxy Adhesive, 1999

American National Standards Institute (ANSI), A137.1, Standard Specification For Ceramic Tile, 1988

American Society For Testing and Materials (ASTM) E648, Standard Test Method For Critical Radiant Flux of Floor-Covering Systems Using Radiant Heat Energy Source, 2000

American Society For Testing and Materials (ASTM) E662, Standard Test Method For Specific Optical Density of Smoke Generated by Solid Materials, 1997

American Society For Testing and Materials (ASTM) F718, Standard For Shipbuilders And Marine Paints And Coatings Product/ Procedure Data Sheet, 1999

American Society For Testing and Materials (ASTM) F1066, Tile, Floor, Vinyl Composition, 10 Mar 1999

American Society For Testing and Materials (ASTM) F1303, Standard Specification For Sheet Vinyl Floor Covering With Backing, 1999

American Society For Testing and Materials (ASTM) F1344, Standard Specification for Rubber Floor Tile, 2000

American Society For Testing and Materials (ASTM) F1700, Solid Vinyl Floor Tile, 1999

Society of Automotive Engineers (SAE) Aerospace Material Specification AMS-S-8802, Sealing Compound, Temperature-Resistant, Integral Fuel Tanks And Fuel Cell Cavities, High-Adhesion, 1999

The Society for Protective Coatings (SSPC), Surface Preparation Specification No.11 (SSPC-SP 11), Power Tool Cleaning to Bare Metal, 01 Sep 2000

3. REQUIREMENTS

3.1 General. The Contractor shall accomplish installation of the particular deck covering system(s) designated in the work item, as specified herein.

3.1.1 Extent of coverage. Install covering over entire deck surfaces, from bulkhead to bulkhead (butted against permanently installed fixtures and furniture), with the exception of areas under enclosed built-in furniture or under equipment with enclosed foundations, unless otherwise specified in the work item.

3.1.2 Material receipt inspection. Ensure that all deck covering products are delivered to the job site in original, unopened containers with the following information:

- Product name/No.
- Manufacturer.
- Batch No.
- Date of manufacture.
- Shelf life.
- Product data/ASTM F718 sheet.
- Material safety data sheet (MSDS).
- Certificate of compliance (COC).

3.1.3 Document submission. Submit copies of product data sheets, MSDS, and COC to the Contracting Officer's Representative (COR), prior to commencement of work.

3.1.4 Personnel safety and health.

3.1.4.1 Personnel protection. Provide suitable breathing apparatus, eye protectors, protective clothing, and all other necessary protective equipment for contracted personnel, in accordance with 29 CFR 1915, Subparts C and I; strictly adhere to the safety precautions outlined in the material safety data sheets (MSDS) for all materials to be used, to protect personnel

at all times during the performance of work specified herein.

3.1.4.2 Ventilation. Maintain negative mechanical ventilation in continuous operation in the affected spaces during application and curing of applied systems, as applicable, to ensure a minimum of ten air changes per hour. Provide ventilation equipment, as necessary, if vessel's installed systems do not meet the requirements specified above.

3.1.5 Protective measures. Provide suitable covers, to protect and seal all unaffected equipment and adjacent spaces against contamination, during the performance of this work.

3.1.6 System requirement compliance. Comply with the manufacturer's instructions for proper handling, mixing and application of paint, underlay, and deck covering system components.

3.1.7 Ambient condition requirements. Ensure that surface and ambient temperatures and relative humidity are as recommended by the manufacturer of the primer, underlay, and applicable deck covering system, to ensure best mixing and application properties and proper curing.

3.1.8 Work site cleanliness. Take care to prevent job site contamination by materials, equipment, and personnel; provide, when applicable, protective clothing and plastic shoe covers for all Contractor personnel and Coast Guard Inspectors, who must access the work areas, to prevent outside contamination. Upon completion of all work, remove equipment and material from the work site and restore all existing facilities affected by the work to original conditions.

3.1.9 Debris disposal. Dispose of all removed deck covering system debris resulting from decking removals in accordance with all applicable Federal, state, and local regulations.

3.2 New deck covering installation.

3.2.1 Installation over new underlay. If the work item specifies installation of deck covering over new underlay, the Contractor shall accomplish the following:

3.2.1.1 System removal. Completely remove and dispose of the existing deck covering system, including underlay and cove base, as applicable, to expose the metal deck.

3.2.1.2 Surface preparation. Prepare the exposed deck surfaces including all vertical bounding surfaces, in way of base coving removal, as specified in Table I (Cleaning Methods) below.

TABLE I. CLEANING METHODS

DECK MATERIAL	CLEANING REQUIREMENT
Steel	Power tool clean surfaces to "bare metal", in accordance with SSPC-SP 11.
Aluminum	Power tool clean surfaces, using stainless steel pads, stainless steel brushes, or abrasive discs, to remove all existing coating, and provide a good anchor profile for painting.

3.2.1.3 Inspection. Perform a visual inspection of the prepared deck surfaces, and submit a written report of findings to the COR within 24 hours upon completion of inspection.

3.2.1.4 Surface priming. Prime the cleaned surfaces with one coat, 5.0-6.0 mils minimum dry-film thickness (MDFT) of an anti-corrosive epoxy paint conforming to MIL-PRF-24647, or MIL-PRF-23236, Type IV, Class 2.

3.2.1.5 Underlay requirements.

3.2.1.5.1 General. Prepare and apply an underlay material, conforming to MIL-PRF-3135, over the entire primed deck surfaces, in accordance with Table II (Underlay Requirements). Fill in all depressions in the deck; level fair welded seams and deck irregularities and level off underlay to a minimum thickness of 1/8-inch on the deck. Where necessary, slope the underlay within an 18-inch radius of deck drains toward the drains. Within coamings and shower stalls, ensure a minimum underlay thickness of 1/4 inch, with the entire area sloped toward the drain. When installing cosmetic polymeric systems, cove the underlay up to a maximum height of four inches, to form a coved base over all vertical structures, including stiffeners bounding the deck. Sand underlay, if necessary, to provide a smooth finish.

TABLE II. UNDERLAY REQUIREMENTS

DECK COVERING SYSTEM	UNDERLAY MATERIAL (MIL-PRF-3135)
Cosmetic Polymeric Epoxy Resin	Type I, Class 2
Ceramic Tiles	Type I, Class 2
Resilient Roll Or Sheet And Fire-Retardant Tile	Type II, Class 1
Carpeting	Type II, Class 1

3.2.1.5.2 Insulating underlay. If specified in the work item, install the underlay to a thickness of 1/2 to 3/4 inch, in lieu of what is specified in sub-paragraph 3.2.1.5.1 (General) above,

to serve as an insulating underlay over deck surfaces subject to condensation.

3.2.2 Installation over existing underlay. If the work item specifies installation of deck covering over existing underlay, accomplish the following:

3.2.2.1 System removal. Remove the deck covering system, including cove base, to expose, but not damage the existing underlay.

3.2.2.2 Surface preparation. Sand the exposed underlay, to smooth all existing irregularities.

3.3 New top deck covering installation requirements. After the new underlay has cured, or existing underlay has been prepared, the Contractor shall refer to the applicable appendix(es) herein, to install the deck covering system(s) specified in the work item.

3.4 Deck covering protection. After completing the installation of the deck covering, the Contractor shall close the work area to all traffic for as long as is required to prevent damage to the deck covering during the curing period. Cover the new deck covering with suitable covers for the remainder of the availability, to protect against damage or contamination.

4. QUALITY ASSURANCE

No additional requirements.

5. NOTES

5.1 Color selection. The COR will select colors for all top coatings and deck covering systems.

APPENDIX A

REQUIREMENTS FOR COSMETIC POLYMERIC EPOXY RESIN DECK COVERING SYSTEMS

10. SCOPE

10.1 Scope. This appendix describes the particular requirements for the Contractor to install epoxy resin deck covering systems.

20. REQUIREMENTS

20.1 General. The Contractor shall mix and prepare the epoxy resin deck covering system designated in the work item; trowel-apply the prepared system, to a thickness as specified below in Table AI (Cosmetic Polymeric Epoxy Resin Systems), over the deck underlay.

20.1.1 Cove base. Include a cove base to cover the underlay cove to a maximum height of four inches at all adjacent vertical bounding surfaces, where applicable.

20.1.2 Sealing. Thoroughly seal the deck covering system, in accordance with manufacturer's instructions.

TABLE AI. COSMETIC POLYMERIC EPOXY RESIN SYSTEMS

EPOXY RESIN TYPE AND CLASS (MIL-D-24613)	THICKNESS (Inch)
Type I, Class 1	1/8
Type I, Class 2	1/16
Type I, Class 3	1/4
*Type III (One-Step)	1/8

*Isocyanates-free

30. QUALITY ASSURANCE

No additional requirements.

40. NOTES

40.1 Deck covering class particulars. The below-information is provided as guidance to the units, to facilitate the selection of cosmetic polymeric deck covering materials.

40.1.1 Type I, Class 1. The "Type I, Class 1" deck covering material is an epoxy resin with colored quartz aggregate, typically used in galleys, sculleries, washrooms, laundries, water closets, and shower spaces.

40.1.2 Type I, Class 2. The "Type I, Class 2" deck covering material is an epoxy resin with color flake topping, typically used in passageways, staterooms and cabins, offices, laboratories, Dressing Stations, Crew's Living Spaces, and Laundries.

40.1.3 Type I, Class 3. The "Type I, Class 3" deck covering material is an epoxy resin containing primarily marble chip aggregate, typically used in galleys, sculleries, washrooms, laundries, water closets, and shower spaces.

40.1.4 Type III. The Type III covering material is an epoxy resin with colored quartz aggregate, applied in a single trowelled step; it is typically used in interior passageways, wash, head, shower areas, AFFF stations, galley, laundry, scullery, berthing area, lounges, and offices.

40.2 Over-sealing caution. Units are cautioned that requirements of sealer coats in excess of what is recommended by the manufacturer may reduce effectiveness of the non-slip, and is not in compliance with MIL-D-24613.

APPENDIX B

REQUIREMENTS FOR CERAMIC TILE DECK COVERING SYSTEMS

10. SCOPE

10.1 Scope. This appendix describes the particular requirements for the Contractor to install particular ceramic tile deck covering systems.

20. REQUIREMENTS

20.1 General. The Contractor shall install the type of ceramic tiles designated in the work item, and listed in Table BI (Ceramic Tile Particulars) below, in accordance with ANSI A108.6; secure new tiles with an adhesive conforming to ANSI A118.3, over the deck underlay.

TABLE BI. CERAMIC TILE PARTICULARS

TYPE OF CERAMIC TILE (ANSI A137.1)	TILE SIZE
QUARRY	6" x 6" x 1/2"
*MOSAIC	1" x 1" x 1/4"
PORCELAIN PAVER	6" x 6" x 5/16" or 8" x 8" x 5/16"

*Tiles are mounted in sheets.

20.1.1 Trim units. Where applicable, install 4-inch high base ceramic tile trim units (bullnosed at the top edge and coved at the bottom edge) at all vertical projections through the deck. Install bullnosed trim units around depressions in the deck, and rounded internal and external matching corner units.

20.1.2 Grouting. After the tiles have been firmly set in place, prepare and apply a grout, conforming to ANSI A118.3, in accordance with manufacturer's instructions, to fill all joints even with the surface of the tiles.

30. QUALITY ASSURANCE

30.1 Surface cleanliness. Upon completion of tile installation and grouting, the Contractor shall ensure that all tile surfaces are clean and free of grout and other debris.

40. NOTES

None.

APPENDIX C

REQUIREMENTS FOR RESILIENT ROLL OR SHEET AND FIRE-RETARDANT TILE DECK COVERING SYSTEMS

10. SCOPE

10.1 Scope. This appendix describes the particular requirements for the Contractor to install resilient roll or sheet and fire-retardant tile deck covering systems.

20. REQUIREMENTS

20.1 General. The Contractor shall install the type of deck covering designated in the work item, and listed in Table CI (Flooring System Particulars), over the deck underlay, secured with a latex adhesive conforming to MIL-A-21016. Use an epoxy adhesive conforming to MIL-A-24456, in wet or damp areas.

TABLE CI. FLOORING SYSTEM PARTICULARS

SYSTEMS	SPECIFICATIONS
Fire-Retardant Plastic Tiles	12" x 12" x 1/8" tiles (ASTM F1066).
Vinyl Tiles	12" x 12" x 1/8" tiles (ASTM F1066, ASTM F1700)
Vinyl Sheet (With Backing)	ASTM F1303, Grade 1
Electrical Grade Sheet (Dielectric)	MIL-DTL-15562, Type I
Rubber Tile Flooring (With Molded Patterns, Studs, Or Raised Profiles)	12" x 12" tiles (Base thickness: 0.140", overall thickness: 0.140"-0.155") (ASTM F1344, Class IA)

20.1.1 Cove base. Install a 4-inch high vinyl cove base molding, or cove up the sheet edges to a maximum height of four inches at all bulkhead boundaries.

20.1.2 Seam sealing.

20.1.2.1 General. Use a beading sealer (MIL-PRF-17951), or silicone sealer (MIL-A-46106, Type I), or polysulfide sealant (SAE AMS-S-8802, class B), to waterproof all seams against bulkheads, stationary furniture, pipes, and other deck fittings.

Where weld lines (beads) prevent deck covering from butting tightly against structure, use caulking compound, MIL-C-18255 in place of tile adhesive; paint the caulking to blend with the deck covering or bulkhead (after the caulking compound has skinned over).

20.1.2.2 Electric shock prevention systems. For electric shock prevention flooring systems, ensure that there are no seams within three feet of electrical hazards. Where this is not possible, do one of the following, in addition to the requirements in 20.1.2.1 (General):

20.1.2.2.1 Seal seams between sheets or mats with a thermoplastic deck covering such as vinyl sheet, fused chemically, or heat welded or heat fused with a special hot air gun; or

20.1.2.2.2 Install a 3-4 inch wide strip of 20 mil thick polyvinyl chloride (PVC) tape, or 1-foot wide strip of the same electrical grade deck covering system under the seams, to prevent a direct path to ground via seams.

20.1.3 Protective edging. Where an exposed edge fails to butt up against a fitting or bulkhead, install a 1-inch x 0.08-inch stainless steel or brass strip, or a vinyl bevel-edged strip, screwed or cemented to the deck to protect the edge.

20.2 Adhesion enhancement. Immediately after the deck covering has been cemented to the deck, the Contractor shall thoroughly roll a 150-pound sectional roller over the deck covering to facilitate adhesion.

30. QUALITY ASSURANCE

No additional requirements.

40. NOTES

None.

APPENDIX D

REQUIREMENTS FOR CARPETING

10. SCOPE

10.1 Scope. This appendix describes the particular requirements for the Contractor to install carpeting.

20. REQUIREMENTS

20.1 New carpeting installation. The Contractor shall install new carpeting meeting the requirements specified in Table DI (Carpeting particulars) below, secured with a latex adhesive, conforming to MIL-A-21016, over deck underlay.

TABLE DI. CARPETING PARTICULARS

MATERIAL	MAXIMUM OPAKE DENSITY	FLAMMABILITY
Wool or velvet, woven through the back	450 (ASTM E662)	≥ 0.45 w/cm ² (ASTM E648)

20.2 Protective edging. The Contractor shall install a bright CRES or aluminum strip where the carpet abuts other deck covering in foot traffic areas.

30. QUALITY ASSURANCE

No additional requirements.

40. NOTES

None.

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