

REQUIREMENTS FOR PRESERVATION OF SHIP STRUCTURES

1. SCOPE

1.1 Intent. This Standard Specification describes requirements applicable to preservation of Coast Guard ship structures.

1.2 Appendices.

PROCESS STANDARD	APPENDIX
Cutter & Boat Exterior Painting Systems	A
Cutter & Boat Interior Painting Systems	B
Cutter & Boat Authorized Coatings	C
New Construction Requirements	D
Coatings QA Forms (QA-1 thru QA-5)	E

1.3 Acronyms and Term Definitions

- **“AFFF”**: Aqueous film forming foam.
- **“As directed”, “as required”, “as permitted”, “approved”, “acceptance”**: Expressions referring to the direction, requirements, permission, approval, or acceptance by the Contracting Officer or a properly designated Contracting Officer’s Technical Representative.
- **“As shown”, “as indicated”, “as detailed”**: Expressions used to refer to particular specified reference documents/drawings/sketches.
- **“Barge”**: A flat-bottomed vessel built mainly for river and canal transport of heavy goods. CG barges are not self-propelled and need to be pushed by tenders or tugboats.
- **“Boat”**: A Coast Guard ship less than 65 feet in length, with no permanent crew assigned.
- **“CAUTION!”**: Highlights an essential operating or maintenance procedure, practice, condition, statement, etc, which if not strictly observed, could result in damage to, or destruction of, equipment or loss of mission effectiveness.
- **“Certify”**: Produce a printed certificate.
- **“CG”**: Coast Guard.
- **“COC”**: Certificate of compliance.
- **“Coast Guard Inspector/CG Inspector”**: All work items within the contract will be assigned to a Coast Guard Inspector, who is appointed by the Contracting Officer’s Technical Representative. The Contracting Officer’s Technical Representative will identify the inspector to the Contractor and the inspector or an authorized alternate will be the point of contact for that work item. The inspector's duties are to monitor the assigned work items, to keep informed of how work is progressing, and to ensure that the specifications are being followed. The inspector will witness all tests, measurements and inspections as required.
- **“COR”**: Contracting Officer’s Representative – the person delegated by the KO as the on-scene

representative for matters concerning performance of work; this includes correctness, timeliness, and quality of the Contractor's work.

- **“Critical-coated surfaces”**: Areas where premature failure of the coating system cannot be detected by routine observation due to inaccessibility, or areas where restoration of a failed system cannot be undertaken without laying up the ship at an industrial facility or a forward repair site; or areas where restoration of a failed system may subject a vessel to a loss of operational days, in addition to resulting in avoidable repair costs. The following list of “Critical-coated surfaces” will always be treated as critical-coated surfaces as set forth in the applicable sections of this standard. Individual work items may place the critical-coated surface protocols on additional surfaces. The absence of the critical-coated surfaces designation in the individual work items does NOT downgrade, diminish, or relax the critical-coated surface protocols established for the following list:
 - Underwater (u/w) body surfaces, including u/w appendages (rudders, struts, stabilizing fins).
 - Freeboard, superstructure, masts, and stacks.
 - All weather decks, including buoy and helicopter (flight) decks.
 - Stern ramp, wet notch and door (for patrol class boats).
 - All tanks and voids.
 - Bilges.
 - Chain lockers.
 - Sea Bays.
 - Forepeak compartments.
 - Vent plenum ducts and trunks.
 - Shaft alleys.
 - AFFF Stations.
- **“Cutter”**: A Coast Guard ship 65 feet in length or greater, with permanent crew assigned.
- **“Debris”**: Includes combustible and noncombustible wastes, such as ashes, waste materials that result from construction or maintenance and repair work, leaves, and tree trimmings.
- **“DFT”**: Dry film thickness.
- **“EPA”**: Environmental Protection Agency.
- **“Fastener”**: Includes all components for securing. For example, for bolting, the term fastener shall include bolts, nuts, threaded studs, and washers.
- **“FT”**: Foot/Linear foot, or feet/linear feet.
- **“Inspect”**: Examine an object/component or a space for defects, abnormalities, or deviations from a prescribed standard.
- **“KO”**: Contracting Officer - a Federal employee with the authority to enter into, administer and/or terminate contracts; make related determinations and findings; and appoint COR. This individual is also authorized, by virtue of position or by appointment, to perform the functions defined by the Federal Acquisition Regulation and the Homeland Security Acquisition Regulation. The KO will make the final decision in all disputes.

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- **“MDFT”**: Minimum dry film thickness.
- **“NOTE”**: Highlights an essential operating or maintenance procedure, practice, condition or statement.
- **“Open”**: To gain access or enter.
- **“Preserve/Preservation”**: When used in context of painting, refers to surface preparation and paint/coating application.
- **“QA”**: Quality Assurance
- **“QC”**: Quality Control
- **“Repair”**: To correct an identified discrepancy to a given standard of performance.
- **“Residual fluids/Residues”**: Liquid, dirt, and other substance remaining after drainage or removal, such as in a tank after loss of suction by installed equipment.
- **“Restore”**: To bring back to the former, original, or normal condition before alteration or removal.
- **“U/W”**: Underwater
- **“Vessel”**: Vessel is defined as a Coast Guard ships cutter, tender, boat, or barge.
- **“WARNING!”**: Highlights an essential operating or maintenance procedure, practice, condition, statement, etc, which, if not strictly observed, could result in injury to, or death of, personnel or long term health hazards.
- **“WFT”**: Wet film thickness.

2. REFERENCES

COAST GUARD DRAWINGS

None.

COAST GUARD PUBLICATIONS

- Coast Guard Commandant Instruction (COMDTINST) M10360.3 (series), Coatings and Color Manual
- Coast Guard Commandant Instruction (COMDTINST) M9000.6 (series), Naval Engineering Manual
- Surface Forces Logistics Center Corrosion Prevention and Control (CPAC) Program Process Guide, CGTO PG-85-00-60-S (SFLC CPAC Program PG), 16 November 2012

OTHER REFERENCES

- ASTM International (ASTM) A153/A153M, 2009, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware , coatings, zinc, galvanized coatings, steel hardware, zinc coated, steel
- ASTM International (ASTM) A1059/A1059M, 2008, Standard Specification for Zinc Alloy Thermo-Diffusion Coatings (TDC) on Steel Fasteners, Hardware, and Other Products , coatings, zinc, fasteners
- ASTM International (ASTM) B117, 2011, Standard Practice for Operating Salt Spray (Fog) Apparatus
- ASTM International (ASTM) B633, 2011, Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
- ASTM International (ASTM) D522-93a (Reapproved 2008), Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings
- ASTM International (ASTM) D2794, 2010, Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
- ASTM International (ASTM) D4060, 2010, Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
- ASTM International (ASTM) D4285, 2012, Standard Test Method for Indicating Oil or Water in Compressed Air
- ASTM International (ASTM) D4414, 2007, Standard Practice for Measurement of Wet Film Thickness by Notch Gages
- ASTM International (ASTM) D4417, 2011, Standard Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
- ASTM International (ASTM) D4541, 2009, Standard Test Methods for Pull-Off Strength of Coatings Using Portable Adhesion Testers
- ASTM International (ASTM) D5162, 2008, Standard Practice for Discontinuity (Holiday) Testing of Nonconductive Protective Coating on Metallic Substrates
- ASTM International (ASTM) D7091, 2012, Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals
- ASTM International (ASTM) F718, 2011, Standard for Shipbuilders and Marine Paints and Coatings Product/Procedure Data Sheet
- ASTM International (ASTM) G32, 2010, Standard Test Method for Cavitation Erosion Using Vibratory Apparatus
- ASTM International (ASTM) G53, 1996, Standard Practice for Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials

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CID A-A-59316, Feb 1999, Abrasive Materials; For Blasting
FED SPEC TT-P-28H, Jun 2007, Paint, Aluminum, Heat Resisting
FED-STD-595C w/ Change Notice 1, Jul 2008, Colors Use in Government Procurement
International Standard Organization (ISO) 8502-9, 1998, Field Method for the Conductometric Determination of Water-Soluble Salts
MIL-A-22262B w/ Amendment 2, Mar 1996, Abrasive Blasting Media Ship Hull Blast Cleaning
MIL-PRF-9954D, Apr 2009, Glass Beads: For Cleaning and Peening
MIL-PRF-16173E w/ Int. Amendment 1, Sep 2006, Corrosion Prevention Compound, Solvent Cutback, Cold-Application
MIL-PRF-23236D, Sep 2009, Coating Systems for Ship Structures
MIL-PRF-24176C, Oct 2004, Cement, Epoxy, Metal Repair and Hull Smoothing
MIL-PRF-24596B w/ Amendment 1, Feb 2011, Coating Compounds, Nonflaming, Fire-Resistant
MIL-DTL-24607B w/ Amendment 1, Oct 2010, Enamel, Interior, Nonflaming (Dry), Chlorinated Alkyd Resin, Semigloss
MIL-PRF-24635E, Sep 2009, Coating Systems, Weather-Resistant, Exterior Use
MIL-PRF-24647D, w/Int. Amendment 1, Jun 2006, Paint System, Anticorrosive and Antifouling, Ship Hull
MIL-PRF-24667C, May 2008, Coating System, Non-Skid, for Roll, Spray, or Self-Adhering Application
MIL-C-81309F, May 2005, Corrosion Preventive Compounds, Water Displacing, Ultra-Thin Film
MIL-PRF-24712A w/ Amendment 1, Mar 1997, Coatings, Powder
Naval Sea Systems Command Naval Ship's Technical Manual (NSTM) Chapter 634 Vol. 1, Rev. 4, Jan 2009, Deck Coverings, General (S9086-VG-STM-010)
The Society for Protective Coatings (SSPC) Paint Application Specification No. 1 (SSPC-PA 1), 2004, Shop, Field, and Maintenance Painting of Steel
The Society for Protective Coatings (SSPC) Paint Application Specification No. 2 (SSPC-PA 2), 2012, Procedure for Determining Conformance to Dry Coating Thickness Requirements
The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 1 (SSPC-SP 1), 2004, Solvent Cleaning
The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 2 (SSPC-SP 2), 2004, Hand Tool Cleaning
The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 3 (SSPC-SP 3), 2004, Power Tool Cleaning
The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 5/NACE No. 1, 2007, White Metal Blast Cleaning
The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 6/NACE No. 3, 2007, Commercial Blast Cleaning
The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 7/NACE No. 4, 2007, Brush-Off Blast Cleaning
The Society for Protective Coatings (SSPC)/NACE International (NACE), Joint Surface Preparation Standard SSPC-SP 10/NACE No. 2, 2007, Near-White Blast Cleaning

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- The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 11 (SSPC-SP 11), 2007, Power Tool Cleaning to Bare Metal
- The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP 14/NACE No. 8, 2007, Industrial Blast Cleaning
- The Society for Protective Coatings (SSPC) Surface Preparation Specification No.15 (SSPC-SP 15), 2004, Commercial Grade Power Tool Cleaning
- The Society for Protective Coatings (SSPC) Surface Preparation Specification No. 16 (SSPC-SP 16), 2010, Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals
- The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP WJ-1/NACE WJ-1, 2012, Waterjet Cleaning of Metals – Clean to Bare Substrate
- The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP WJ-2/NACE WJ-2, 2012, Waterjet Cleaning of Metals – Very Thorough Cleaning
- The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP WJ-3/NACE WJ-3, 2012, Waterjet Cleaning of Metals – Thorough Cleaning
- The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Surface Preparation Standard SSPC-SP WJ-4/NACE WJ-4, 2012, Waterjet Cleaning of Metals – Light Cleaning
- The Society for Protective Coatings (SSPC) VIS 1, 2002, Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning
- The Society for Protective Coatings (SSPC) VIS 3, 2004, Guide and Reference Photographs for Steel Surfaces Prepared by Power and Hand Tool Cleaning
- The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Standard VIS 4 /NACE VIS 7, 2001, Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting
- The Society for Protective Coatings (SSPC)/NACE International (NACE) Joint Standard VIS 5 /NACE VIS 9, 2001, Guide and Reference Photographs for Steel Surfaces Prepared by Wet Abrasive Blast Cleaning (SSPC-SP 6/NACE No. 3) and Near-White Blast Cleaning (SSPC-SP 10/NACE No. 2).
- The Society for Protective Coatings (SSPC) QP 1, 2004, Standard Procedure for Evaluating Painting Contractors (Field Application to Complex Industrial Structures)

3. REQUIREMENTS

3.1 Preservation requirements - general. The Contractor shall abide by the requirements, contained herein, in addition to all other requirements that are specified in individual work items in the specification package, for all work involving surface preparation and coating application

3.1.1 Authorized coating systems. When guidance for surface preparation and coating application tasks is not provided in a work item, standard specification, or any other forms of contract document, the Contractor shall select applicable surface preparation methods and coating systems for exterior and interior shipboard surfaces in accordance with Appendix A (Cutter and Boat Exterior Painting Systems)

and Appendix B (Cutter and Boat Interior Painting Systems), respectively. In addition, select “Option I” systems, as applicable, from the above-mentioned appendices, unless otherwise designated by the KO.

3.1.1.1 Brand name and color compliance. Ensure that all contractor-furnished coatings and selected colors, are in conformance with Appendix C (Authorized Coatings for Use on Cutters and Boats) and the Coatings and Color Manual, COMDTINST M10360.3 (series) – Chapter 5, Cutter and Boat Colors Exterior and Interior, respectively, unless a waiver has been granted (in writing) by the KO, or otherwise expressly specified in a work item.

NOTE

The new construction requirements for prevention of corrosion and coatings preservation on CG vessels can be found in Appendix D.

3.1.1.2 Material receipt conformance. Ensure that all procured coating-related materials are delivered to the job site in original and unopened containers, with the following information/documentation:

- Product manufacturer’s name.
- Product’s name or number.
- Batch number.
- Date of manufacture.
- Shelf life.
- Product data sheets or ASTM F718 sheet.
- MSDS.
- Certificate of Compliance (COC).

3.1.1.3 Document submission.

3.1.1.3.1 For all work involving coatings preservation, ensure the following documentation, broken out by work item, is submitted to the COR at the Arrival Conference for each coating system intended to be applied:

- Brand name.
- Color.
- Intended mil thickness.
- Time between coats.
- Intended final cure time prior to immersion or full duty rating, as applicable.

3.1.1.3.2 For all work involving coatings preservation, submit all product data sheets, MSDS, and COC to the COR, prior to commencement of work.

3.1.1.3.3 For preservation of “Critical-coated surfaces”, submit the completed QA inspection forms (QA-1 through QA-5) provided in Appendix E, as specified in SFLC Std Spec 0000.

3.1.1.4 Material storage, handling, mixing, and application. Observe all coating manufacturers’ recommended procedures, as well as the good painting practice recommendations outlined in SSPC-PA 1, for all aspects involving storage, handling, mixing, and application of paint materials.

3.1.2 Personnel health and safety compliance. In addition to the safety requirements specified in

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paragraph 3.3.1 (Personnel safety and property protection - general) of SFLC Standard Specification 0000, observe all personnel safety protective measures applicable to surface preparation and application of marine coatings, as specified in the coating manufacturer's product data sheets and MSDS.

3.1.3 Substrate contamination prevention. Take extreme care to prevent contamination of prepared surfaces by materials, personnel, and equipment. The Contractor shall provide any required material and equipment (such as disposable boot covers, disposable coveralls, and disposable gloves) to CG personnel conducting coating preservation inspections to safeguard the substrate from contamination.

3.1.4 Ambient condition parameters. Ensure that the following ambient condition parameters are strictly adhered to, as applicable, unless otherwise allowed by particular coating system manufacturers:

- Coating materials must be maintained at a temperature range of 65 to 85°F, at all times.
- Work surface and surrounding temperature must be between 50 and 90°F, for water-thinned coatings, and 35 and 95°F for other coatings.
- Coatings must not be applied when the temperature is expected to drop below freezing or below the minimum cure temperature of the applied coating before the coatings cure.
- Relative humidity must be less than or equal to 50 percent for confined spaces such as forepeak compartments, tanks, and voids; and not more than 85 percent for all other open areas.
- Coatings shall only be applied only when surfaces are completely dry, and surface temperature is at least 5°F above the dew point.

NOTE

Some authorized coatings – for example, the Bilge Epoxy Coating Systems listed in Appendix C - have no dew point restrictions, consequently they may be applied at relative humidity between 10 and 100 percent.

3.1.5 Tenting and ambient condition control.

3.1.5.1 When the ambient condition parameters necessary for full paint cure or to meet environmental conditions, as required in paragraph 3.1.4 (Ambient condition parameters), cannot be met, provide the following, at no additional cost to the Government:

- Suitable tenting, as applicable, for exterior surface preservation.
- Suitable ambient condition control equipment, which may include, but not be limited to the below-listed, to create and maintain ambient conditions recommended by the coating system's manufacturer, and facilitate successful coating application and curing.
- AC system.
- Heaters.
- Blowers.
- Dehumidifiers.

3.1.5.2 Submit an ambient condition control plan to the COR within 24 hours prior to initiating ambient condition control process

3.1.6 Pre-surface preparation requirements. Prior to beginning all surface preparation procedures,

accomplish the following tasks:

3.1.6.1 Compressed air cleanliness check. Check the cleanliness and suitability of the compressed air for all blasting operations, in accordance with ASTM D4285, at the following instances, and when requested by the Coast Guard Inspector:

- Prior to the start of blasting operations.
- When blasting operations have been suspended for a period of time that would permit a temperature change of the compressed air and drier systems.
- When an equipment malfunction or improper performance is suspected.

3.1.6.2 Coupon test. In order to ensure production of required surface profile, the Contractor shall accomplish the following tasks whenever abrasive blasting is required in a work item:

3.1.6.2.1 Conduct a performance test on all abrasive blasting operations on a Contractor-provided test coupon, prior to starting abrasive blasting operations on the vessel. Use a new metal plate, of the same metal type and material properties as the area to be blasted, steel or aluminum plate, as applicable. For steel plates, the new plate shall have the mill scale intact and the plate will be in a Rust Grade “A” condition, per the SSPC-VIS 1 visual standard cards. No existing anchor profile, other than the surface irregularities from the manufacturing process are permitted on the test coupon. The test coupon shall be flat, with nothing welded to the side used for the anchor profile test, no thinner than a 1/8-inch plate and measuring no smaller than 1-foot by 1-foot. The test coupon shall be affixed so as to not permit excessive movement during the performance test.

CAUTION!

Do not affix the coupon to the vessel nor shall the blast media from the performance test strike the vessel during the test.

3.1.6.2.2 Ensure that the abrasive blasting operation test on the test coupon is with the very same setup that will be used to blast the vessel. The setup shall include, but no be limited to:

- The abrasive media to be used (material and media size)
- Nozzle size and type (straight bore, high velocity nozzle, angle nozzle...)
- Delivery rate and pressure settings.

3.1.6.2.3 Blast a one-square area on one side of the test coupon to the abrasive surface preparation standard specified in the applicable work item and perform an anchor profile test of the blasted surface in accordance with ASTM D4417, method A or C. Notify the COR in advance of the abrasive blasting operation test, to permit the witnessing of the test by appropriate Coast Guard personnel. Submit a CFR documenting the results of the abrasive blasting operation test. CFR shall include at a minimum, the following:

- Area of the vessel for which the verified setup is applicable.
- The abrasive media use.
- The nozzle size and type
- The delivery rate and pressure
- The test coupon starting properties (material type and surface conditions).
- The resultant anchor profile readings from the test.

NOTES

- 1. Ultra-high pressure waterjetting does not create an anchor profile and is exempt from the anchor profile test coupon check.**
- 2. The reverse side of the test coupon may be used for the subsequent test, provided that the conditions in paragraph 3.1.6.2 (Coupon test) are met.**

3.1.6.2.4 Repeat the abrasive blasting operation test in the following instances:

- The setup, as defined in paragraph 3.1.6.2.2, is changed
- The resultant anchor profile readings observed on the vessel are outside the specified anchor profile range
- Media is changed from MIL-A-22262 to CID A-A-59316 or vice versa
- The supplier of the abrasive blasting media changes, regardless if the new source for the media has the same specifications
- When directed by the COR

NOTE

A performance test of the abrasive blasting operations on a test coupon and measuring the anchor profile prior to performing the operation on the cutter, in order to confirmed that the anchor profile range that the operation is going to produce. An abrasive blasting operation test is prudent, as there are enough variables in the equipment setup and media properties that the resulting anchor profiles from one contractor to the next vary significantly.

3.1.6.3 Weld splatter removal. Remove all existing weld splatter, using a chipping hammer, spud bar, scraper, or grinder, as applicable.

3.1.6.4 Surface contaminant removal. Perform a low-pressure (maximum 5,000 psi) fresh water wash down of the surfaces, to remove all existing surface contaminants such as sea salts, grease and oil (hydrocarbons), loose rust, mud and marine growth, as applicable, and achieve the cleanliness requirements of SSPC-SP 1. (Do not exceed 2400 psi for Foul Release Coatings.) Use vacuum to remove standing water followed by an adequate period of time to allow the surface to dry prior to surface preparation. When fresh water wash is not possible or practical, remove surface contaminants by one or a combination of solvent cleaning methods in accordance with SSPC-SP 1.

3.1.7 Substrate profile measurements - during and post-surface preparation.

3.1.7.1 During surface preparation by abrasive blasting or waterjetting operations, spot check the existing anchor profile per 500-square feet, in order to 'project' the need to manage the excessive anchor inspect for both excessive and insufficient anchor profiles . When the Contractor elects to prepare a substrate by waterjetting, the Contractor shall inspect the substrate for areas of insufficient or excessive anchor profile, both visually and in accordance with ASTM D4417, Method A or C. Submit a CFR detailing the location, square footage, measured anchor profiles, and the anchor profile range required for the applicable coating system.

3.1.7.2 After completion of surface preparation, measure the profile of the resultant bare surfaces, in accordance with ASTM D4417, Method A or C.

3.1.8 Additional post-surface preparation requirements.

3.1.8.1 Surface cleanliness evaluation – visual standards. In the presence of the CG Inspector, verify the resultant surface cleanliness level, in accordance with the texts of the specified surface preparation standard in conjunction with associated visual/pictorial guide, as listed in Table AI (Surface Preparation Visual Guides).

TABLE 1 - SURFACE PREPARATION VISUAL GUIDES

SURFACE PREPARATION STANDARD	VISUAL GUIDE
Dry-abrasive blast cleaning: <ul style="list-style-type: none"> • SSPC-SP 5/NACE No. 1 • SSPC-SP 6/NACE No. 3 • SSPC-SP 7/NACE No. 4 • SSPC-SP 10/NACE No. 2 • SSPC-SP 14/NACE No. 8 	SSPC-VIS 1
Wet-abrasive blast cleaning: <ul style="list-style-type: none"> • SSPC-SP 6/NACE No. 3 • SSPC-SP 10/NACE No. 2 	SSPC-VIS 5/NACE VIS 9
Hand Tool Cleaning: SSPC-SP 2. Power Tool Cleaning: <ul style="list-style-type: none"> • SSPC-SP 3 • SSPC-SP 11 • SSPC-SP 15 	SSPC-VIS 3
Waterjetting: <ul style="list-style-type: none"> SSPC-SP WJ-1/NACE WJ-1 SSPC-SP WJ-2/NACE WJ-2 SSPC-SP WJ-3/NACE WJ-3 	SSPC-VIS 4/NACE VIS 7 (Still applicable, although it needs to be revised for latest waterjetting standards)

3.1.8.2 Debris removal and disposal. Completely remove all dust and residues from the prepared surfaces by vacuuming. Do not brush or blow down the surfaces to remove dust and residues. Dispose of generated wastes in accordance with all applicable Federal, state, and local regulations.

3.1.8.3 Surface profile measurements. Measure the profile of the resultant bare surfaces, in accordance with ASTM D4417, Method A or C.

3.1.8.4 Soluble salt conductivity measurements. Measure and document conductivity due to soluble salts, randomly over the prepared surfaces (take 5 measurements every 1,000 square feet or five total measurements for surfaces less than 1,000 square feet), using a suitable surface contamination analysis equipment, in accordance with ISO 8502-9.

3.1.8.5 Soluble salt removal. If salt conductivity measurements exceed the respective values in Table II (Soluble Salt Maximum Conductivity Threshold), accomplish the following:

- For surfaces prepared by abrasive-blasting, wash the affected areas with fresh water, with a maximum of 5,000 psi.
- Remove all standing water, dry, and retest the affected areas. Repeat water-wash and retest until satisfactory levels are obtained.

NOTE

De-ionized water shall be used in cases where available fresh water has excessive chloride/chlorine content. A CFR will need to be submitted and approved, prior to using said water.

- For surfaces prepared by waterjetting, resume waterjetting of affected areas. Remove all standing water, dry, and retest the affected areas. Resume waterjetting and retest until satisfactory levels are obtained.
- For power tool-cleaned surfaces, circle affected areas and perform spot solvent cleaning (Super High Flash Naphtha) followed by retest. Repeat spot solvent cleaning and retest until satisfactory results are obtained.
- For power tool-cleaned surfaces not practical for spot cleaning method, water wash said surfaces with copious amounts of fresh water, using hand scrub brush. Remove all standing water and dry the affected areas. Remove all flash rusting, if any, caused by the water wash by disk sanding affected areas with a #36 disk. Perform an SSPC-SP 1 solvent wipe on all sanded areas and retest. Repeat necessary steps until satisfactory levels are obtained.
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TABLE 2 -SOLUBLE SALT MAXIMUM CONDUCTIVITY THRESHOLD

SURFACES	CONDUCTIVITY (microsiemens/cm)
Submerged	30
Non-Submerged	70

3.1.8.6 Hydrocarbon substance removal. Remove all grease and oil surface contaminants by one or a combination of solvent cleaning methods in accordance with SSPC-SP 1.

NOTE

An ultraviolet light source may be used to detect the presence of hydrocarbons; however, for proper detection, artificial lights must be off for interior spaces, and the inspection must be conducted during darkness for surfaces exposed to sunlight. When hydrocarbons are present, the hydrocarbons will fluoresce as bright green, lime green, or blue/violet on the surface.

3.1.8.7 Flash rusting/surface oxidation limitations. Limit surfaces being preserved in size to an area that can be prepared and coated before flash rusting/surface oxidation occurs. If flash rusting or oxidation does occur before primer coat application, ensure the following:

- For surfaces prepared by waterjetting, the rust must be tight and adherent, and not exceed the “WJ-2/L” (Very Thorough or Substantial Cleaning, Light Flash Rusting) or “WJ-2/M” (Very Thorough or Substantial Cleaning, Moderate Flash Rusting) requirement as specified in Appendix A or B, in accordance with SSPC VIS 4/NACE No.7.
- For surfaces prepared by methods other than waterjetting, the rust or oxidation must be completely removed by abrasive-sweeping or mechanical cleaning.

3.1.9 Use of contrasting colors. Ensure that all coats in multi-coat systems, including stripe coats, are applied in contrasting colors.

3.1.10 Coating inspection. Inspect each applied paint coat to ensure that there are no misses, skips, runs, sags, overspray, underspray, dryspray, or other visible paint defects that will affect the performance of the

coating system. Repair all defects.

3.1.11 Stripe coat application.

3.1.11.1 After each primer coat has sufficiently cured for overcoating, apply an un-thinned coat of the same primer coating over all weld seams, edges, and other surfaces with complex geometric shapes – including, but not limited to the following, as applicable:

- Features in freeboard, superstructure, underwater body, and main deck surfaces:
 - Bulwarks.
 - Ladder rungs.
 - Port lights.
 - Doubler plates.
 - Hawse piping.
 - Spray rails.
 - Rub rails.
 - Chocks and cleats.
 - Deck machinery and fittings.
 - Hull markings (i.e. draft marking, emblem locators...).
 - Vents and overboard discharges.
 - Stiffeners, supports, and brackets.
 - Detacouples.
- Foot/hand holds (including inaccessible areas, such as back side of piping, under side of I-beams), and other mounting hardware (non-flat surface).

3.1.11.2 Apply stripe coating at three to four mils WFT, ensuring that the coating encompasses all edges, as well as at least one-inch border outside each edge, and is neat in appearance. Minimize extra thickness applied to edges, as well as streaks and drops of paint.

3.1.11.3 For multi-coat systems with inorganic zinc as the primer coat, apply the stripe coat following the mist coat application, using the same coating used for the mist coat.

3.1.12 Antifouling Coating Freeboard/U/W Body Interface. In order to prevent corrosion and coating delamination at the freeboard-U/W body interface, ensure the following measures are taken when both the freeboard and underwater body surfaces are being 100% preserved (see Figure 1):

3.1.12.1 Extend the Freeboard Anticorrosive System downward by approximately 3-4 inches beyond the top of the boot-topping or the water line (which ever term is applicable to the specified interface between the underwater body and freeboard). The Freeboard Anticorrosive System (FB AC SYS) would consist of: 1) single coat of Zinc-Rich Primer, 2) one coat of Zinc-Rich Primer and one coat of Epoxy Primer/Midcoat, or 3) two coats of Epoxy Primer/Midcoat depending on the specified topside coating system.

3.1.12.2 Apply the first coat of the Underwater Body/Boot-top Anticorrosive Epoxy (UWB AC1) over the FB AC SYS so that it overlaps by approximately 3-4 inches.

3.1.12.3 Apply the Freeboard Topcoat System over the UWB AC1 so that it overlaps by approximately

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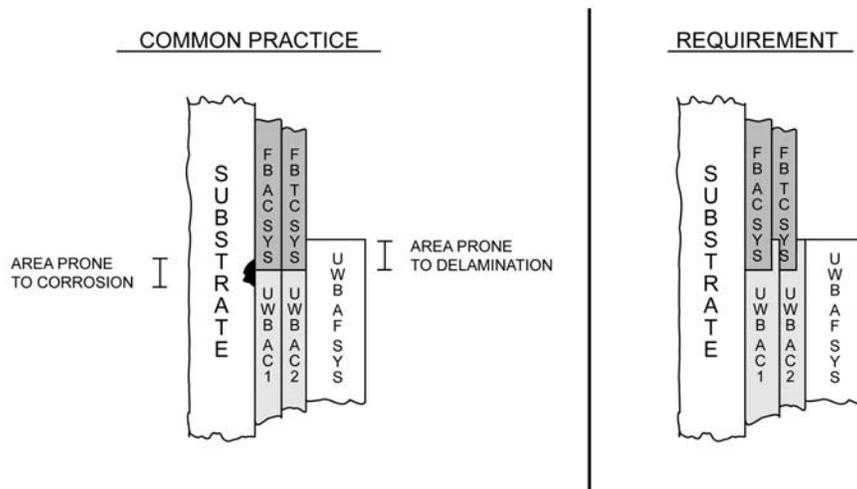
3-4 inches. The Freeboard Topcoat System (FB TC SYS) would consist of one or two coats of Polysiloxane or Silicone Alkyd depending on the specified topside coating system.

3.1.12.4 Apply the second coat of the Underwater Body/Boot-top Anticorrosive Epoxy (UWB AC2) over the FB TC SYS so that it ends at the specified top of the boot-topping or the water line (which ever term is applicable to the specified interface between the underwater body and freeboard).

3.1.12.5 Apply the Underwater Body/Boot-top Antifouling Coating System over the UWB AC2 so that it ends at the specified top of the boot-topping or the water line (which ever term is applicable to the specified interface between the underwater body and freeboard). The Underwater Body/Boot-top Antifouling Coating System (UWB AF SYS) consists of one or more coats of antifouling coating as required by the specified antifouling coating system. No antifouling coatings shall be applied in between the freeboard or underwater body anticorrosive coatings.

FIGURE 1

BOOT-TOP ANTI-FOULANT SYSTEM INTERFACE WITH FREEBOARD COATING SYSTEM



3.1.13 Touch-ups and minor coating repairs. When performing touch-ups or minor coating repairs, adhere to the following guidelines:

- Each area identified for touch-up preservation shall include the area itself and all attached framing, stiffeners, brackets, mounting plates/frames, pad eyes, ducting, piping, equipment support, etc., as applicable, up to a minimum of three inches adjacent to the area to be painted.
- The total area designated shall account for the three-inch boundary segment wherein the repair is faired into the surrounding intact coating system.

3.1.13.1 Prepare surfaces in which mechanical damage extends into the substrate to bare metal in accordance with SSPC-SP 11 providing a minimum 1.0 mil anchor pattern using suitable tools listed in SSPC-SP 11. Feather surrounding intact coating into the prepared areas, to create a smooth transition. Intact coatings are considered adherent if they cannot be removed by lifting with a dull putty knife. Roughen all painted surfaces, to provide a suitable surface profile.

3.1.13.2 Abrade areas where primer coat is exposed with 100-grit paper, and feather back to firm edge of existing topcoat finish.

3.1.13.3 Perform solvent cleaning of all surfaces, in accordance with SSPC-SP 1.

3.1.13.4 Hand brush, or in larger areas airless-spray apply applicable coatings, to match existing adjacent areas.

3.1.13.5 Substitute epoxy or organic zinc primers for inorganic zinc primers, when applicable, for steel surfaces.

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3.1.14 Overcoating cautions. Strictly abide by coating system manufacturer’s recommendations, to ensure proper inter-coat adhesion, when performing overcoating, to ensure the following:

- Overcoating window is not exceeded.
- Undercoating system is properly prepared, when overcoating window is exceeded.
- Rules for tie-coat application or tacky undercoating are followed, when overcoating an existing coating with a top-coating of different chemistry (e.g.: overcoating inorganic zinc with epoxy, or overcoating epoxy with antifouling top-coating).

3.1.15 Coating system tests. In addition to the coating inspection requirements specified in paragraph 3.1.10 (Coating inspection), test each applied coat at random locations, using the test methods specified in Table 3 - Coating Test Methods.

TABLE 3 - COATING TEST METHODS

TEST	INSTRUMENT	SPECIAL INSTRUCTIONS
Wet Film Thickness (WFT)	Conventional Notch Type/with “teeth” WFT gage	Refer to ASTM D4414.
Dry Film Thickness (DFT)	Magnetic or Eddy Current Gauge	Refer to SSPC-PA 2 for ferrous and non-ferrous metal base; or ASTM D 7091 for non-ferrous metal base.
*Pinhole/Holiday Detection	Low Voltage Holiday Detector	Refer to ASTM D5162.
**Pull-off Strength of Coatings	Portable Adhesion Testers	Refer to ASTM D4541.

*Primer coat only (except for inorganic zinc primer coat), for “critical-coated surfaces”.

**Primer and second coats for all tank and void coatings conforming to MIL-PRF-23236, and primer coats only for all other “critical-coated surfaces”.

3.1.16 Ventilation requirements for confined spaces. During preservation of confined spaces (confined spaces such as Forepeak Compartments, voids, tanks...), ensure that the ventilation equipment, as required in paragraph 3.3.1.1 (Temporary ventilation) of SFLC Standard Specification 0000 are in place and operating prior to the start of surface preparation, to create one complete air change every four hours. Use “net exhaust” (negative pressure mode) ventilation when the ventilation trunk(s) run through interior compartments intended for normal human occupation such as berthing areas, passageways, and workspaces. In addition, ensure the following:

- Ventilation system remains in place and energized during the application of the coating system, from the initial coating application through the final coating application and cure.
- Ventilation ductwork shall be placed at the bottom most location where vapors will accumulate in pockets and a complete exhaust of solvent vapors is achieved.

CAUTION!

Failure to maintain proper ventilation in enclosed spaces during preservation may result in solvent entrapment, which then may lead to delay in coating final cure or outright failure of coating to cure.

3.1.17 Critical drying time requirements. Ensure that all coating system cure times (including for touch-up preservation) are in accordance with manufacturer's recommendation for intended service.

3.1.17.1 Potable and feed water tank systems. For potable and feed water tanks, ensure that the coating manufacturer’s technical guidance is followed - to include but not limited to: ventilation requirements,

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application temperatures, thru coat times, final cure times, and hold time before placing tank into immersion service. If ventilation requirements are not provided by the coating manufacturer, the ventilation requirements in paragraph 3.1.16 (Ventilation requirements for confined spaces) shall be the minimum requirements. The Contractor shall maintain and record tank temperatures during the application of the coating system from initial coat to the final cure, applying heat as required. Ensure that ventilation is maintained from final cure thru the minimum hold time before placing the tank back in service. For touch-up preservation, abide by the coating manufacturer's recommendations or observe the following curing requirements – whichever is more stringent:

- 24 hours between coats and 24 hours (@ 77 degrees F), if the largest single touch-up area is less than one square foot, and the cumulative total touch-up area is less than four square feet.
- 24 hours between coats and 48 hours (@ 77 degrees F), if the largest single area is between one and two square feet, and the cumulative total touch-up area is less than ten square feet.
- 24 hours between coats and minimum seven full days (@ 77 degrees F), if any single area is greater than two square feet.

3.1.17.2 Underwater body antifouling systems. For underwater body antifouling systems, ensure that the paint manufacturer's minimum curing time is met before the vessel is re-floated.

CAUTIONS

1. Hard cure times or cure time prior to immersion for any “critical coated system” shall be met as published on the Product Data Sheets available online. No early undocking or relaxation of these published requirements is permitted without prior approval from the KO. Coating system manufacturer’s Sales or Technical Representatives may not relax these requirements. Painting and curing of all tank coating systems (except for tanks that are inboard and not touching the skin of the vessel (side and/or bottom) shall occur while the cutter is out of the water.

2. CAPAC systems shall not be energized until full cure of all underwater paint systems has occurred.

3.2 Preservation Plan. The Contractor shall submit a “Preservation Plan” (PP) to the COR at the arrival conference, to allow for review of all work items pertaining to the preservation of the vessel. At a minimum, PP shall include the following and be broken down by work item:

- Coatings to be applied – listed by manufacturer and product identification numbers
- Target wet and dry film thickness values
- Authorized reducers/solvents – including maximum percent by volume for reducers/solvents
- Colors by FED-STD-595 color number
- Application method for each coat
- Application pressure and nozzle size requirements listed on the manufacturer’s product data sheet(s)
- Minimum recoat windows for applying subsequent coats, maximum recoat windows to apply subsequent coats adjusted for anticipated temperatures
- Any special instructions or environmental limits listed by the coating manufacturer
- Intended final cure times prior to immersion or full duty rating (as applicable).

3.3 Alternative/Optional Coating Systems. The Contractor shall be aware that the below-listed alternative/optional coating systems are authorized for use on cutters and boats. The Contractor may, via

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submission of a CFR, propose the use of these systems as a substitute or supplement for standard systems, as applicable, when there is a cost-savings or performance benefit.

- Powder coatings.
- Corrosion inhibitive thermoplastics.
- Thermo-diffusion zinc coatings.

3.3.1 Powder Coatings. If a Change Request for the use of powder coating has been authorized and released, or is required in a work item, the Contractor shall accomplish the following:

3.3.1.1 Surface preparation. Abrasive-blast the designated equipment or component(s) to a “White Metal Blast Cleaning” standard, to provide an anchor profile of 1.5-2.5 mils, in accordance with SSPC-SP 5/NACE No.1.

3.3.1.2 Coating application. Coat the prepared surfaces with a suitable powder coating, in accordance with manufacturer’s instructions. Select the applicable system, as per the following recommendations:

- MIL-PRF-24712, Type IV (Polyester TGIC) coatings - for exterior applications.
- MIL-PRF-24712, Type I (Epoxy) coatings - for dry interior applications.
- MIL-PRF-23236, Type VIII coatings - for wet or immersion interior applications.

NOTES

1. Powder coating is authorized for use on exterior topside or interior applications where traditional liquid applied coating systems are difficult to maintain due to a severely corrosive environment, high wear, or abrasion. It should be noted that powder coatings are subject to chipping damage from mechanical impact. It can be difficult to repair this damage with traditional liquid coatings and achieve satisfactory cosmetic results. Powder coatings are usually applied by electrostatic spray or fluidized bed. The final step in the process involves heating in an oven at temperatures that vary, but generally range from 225°F to 350°F. The need for an oven limits the application to items that can be removed from the cutter or boat, withstand the high cure temperatures, and sizes that can be fitted in the available oven.

2. Table 4 below provides a sample list of items that are candidates for the application of powder coatings.

TABLE 4 - CANDIDATE POWDER COATING APPLICATIONS

Anchors	Fire Hose Racks, Fire Extinguisher Holders	Overhead Panels
Battle Helmets	First Aid Boxes	Pad-eyes
Boat Booms	Foundations: AFFF/PKP	Perforated Plates for Hull Openings and Tank Entries
Brackets	Fuel Oil Spill Kit Boxes	Piping, Interior/Exterior
Bunks and Fixtures	Furniture: File Cabinets	Sea Chest Strainers
Chains: Safety, Anchor/Links	Gun Mounts and Hardware	Sea Transfer Equipment
Chocks	Hand Railings	Ship’s Communication Speaker Boxes
Control Panels	Hatches	Signaling Equipment
Damage Control Equipment:	Head Facilities: Medicine	Signs: Refueling, Damage

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Flashlight Holders, Battle Lanterns	Cabinets, Towel Racks, Partitions, Doors, Blow Dryers	Control, Medical, Directional
Deck Gratings *	Instrument Consoles	Sound Powered Telephone Receiver Holders
Deck Hardware: Refueling Gear, Portable Booms, Underway Replenishment Equipment	Junction Boxes	Spare Parts Stored In Free Floods
Deck Light Covers and Deflectors	Ladders: Interior/Exterior, Railing and Related Hardware	Stanchions
Diesel Motor Covers	Lantern Mounts	Stretchers, Strokes
Doors: Watertight and Partition	Light Fixtures: Interior/Exterior	Swimmer's Safety Line Reels and Bases
Drip Pans	Line Reels and Cable Reels	Tank Covers
Electrical Cabinets	Lockers: Ammunition, Pyrotechnic, Clothing	Tool Boxes
Electrical Motor Housings	Lube Oil Strainers	Ventilation: Fixed Sectional and Screens
Exterior Turnbuckles (Lifeline)	Mess Deck Furniture	Weapons Handling Equipment
Fasteners	Metal Shoring	

*Note: A non-ferrous, inert abrasive should be added to the powder coating for deck gratings to provide slip resistance.

3.3.2 Corrosion Inhibitive Thermoplastics. If a Change Request for the use of powder coating has been authorized and released, or is required in a work item, the Contractor shall coat designated equipment or component(s) with suitable Corrosion Inhibitive Thermoplastics, in accordance with Appendix C of this Standard Specification, in accordance with the system manufacturer's recommendations.

NOTE

Corrosion Inhibitive Thermoplastics are coatings impregnated with corrosion resistant oils that become sprayable liquids at higher temperatures (approximately greater than 300 deg F) and then set at ambient temperatures. Corrosion Inhibitive Thermoplastics are authorized for any topside applications such as flanges or valves where there is a requirement for easy removal and access. Adhesion of the Corrosion Inhibitive Thermoplastics is dependent on attaching to physical features, i.e., the underside of bolt heads or wrapping around a flange, rather than bonding to the surface because of the impregnating oils. Use the same color for the Corrosion Inhibitive Thermoplastic as the area that it is protecting with the exception of white where a spar color should be used instead. Authorization is limited to exterior use.

3.3.3 Thermo-Diffusion Zinc Coatings. If a Change Request for the use of powder coating has been authorized and released, or is required in a work item, the Contractor shall coat designated equipment or component(s) with a suitable thermo-diffusion zinc coating, conforming to ASTM A1059.

NOTE

Thermo-diffusion zinc coatings (Standard Specification for Zinc Alloy Thermo-Diffusion Coatings on Steel Fasteners, Hardware, and Other Products – ASTM A1059/A1059M) are authorized as a substitute for electrodeposited and hot-dip galvanized zinc coatings (Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel – ASTM B633 and Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware – ASTM A153/A153M, respectively.) Items with the applied thermo-diffusion zinc coating have been shown to provide a longer service life than electrodeposited or hot-dip galvanized parts which will reduce life-cycle costs. Thermo-diffusion zinc coatings shall not be used to replace inherently corrosion-resistant alloys, such as stainless steel or monel. This authorization is limited to application on steels having a base-metal strength <150 ksi. The thermo-diffusion zinc coating process can only be used for higher strength metals such as Grade-8 steel with specific approval from Commandant (CG-45). The thermo-diffusion zinc coating shall not be applied to items that will be welded after the coating is applied. Because the thermo-diffusion zinc coating process involves heating of parts to 700 degrees F, all non-metallic materials (e.g., gaskets, O-rings, etc.) must be removed before coating. Consideration must be given to impact on fit when thermo-diffusion zinc coatings are applied.

APPENDIX A

CUTTER & BOAT EXTERIOR PAINTING SYSTEMS

A1. SCOPE

A1.1 Intent. This standard specification describes the required coatings for various exterior areas and components of Coast Guard cutters and boats.

A2. REQUIREMENTS

A2.1 Vessel Coating Systems - Exterior. This appendix presents the required coatings for various exterior areas and components of Coast Guard cutters and boats. The coating systems for each area are presented in tabular form. The tables include the surface preparation, primer, intermediate coats if any, and topcoat. The various coatings used for a particular application should be regarded as a system. The coating system shall be obtained from a single manufacturer to ensure that the individual components are compatible and to maximize performance. Thickness references apply to the dried film and are abbreviated as DFT (dry film thickness). References are by paragraph heading and include:

1. Accommodation Ladders, Wood. (See Wood, Exterior)
2. Anchors/Anchor Chains.
3. Antenna Hardware, Radio and Radar, DF Loops.
4. Bilge Keel. (See Underwater Body/Boot-Top).
5. Boat Hooks. (See Wood, Exterior).
6. Boatswain's Chairs. (See Wood, Exterior).
7. Boot-Top. (See Underwater Body/Boot-Top).
8. Collars, Small Boat Foam-filled.
9. Electric Cables, Armored, Exterior.
10. Fittings.
11. Flight Deck.
12. Freeboard/Superstructure/Mast.
 - a. Freeboard/Superstructure/Mast, Steel.
 - b. Freeboard/Superstructure/Mast, Aluminum or Galvanized Steel.
 - c. Freeboard/Superstructure/Mast, Aluminum, Unpainted.
 - d. Freeboard/Superstructure, Fiber Glass.
13. Gangplanks, Wood. (See Wood, Exterior).
14. Gratings, Wood. (See Wood, Exterior).
15. Inaccessible Areas.
 - a. Inaccessible Areas, Steel.
 - b. Inaccessible Areas, Galvanized Steel or Aluminum.
16. Ladders, Wooden. (See Wood, Exterior).
17. Machinery, Deck.
18. Masts. (See Freeboard/Superstructure/Mast).
19. Metal Repair and Hull Smoothing.
20. Piping, Exterior.
21. Propellers. (See Underwater Body/Boot-Top).
22. Propeller Shafts. (See Underwater Body/Boot-Top).

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23. Railing, Wood. (See Wood, Exterior).
24. Rudders. (See Underwater Body/Boot-Top).
25. Sea Chests and Gratings. (See Underwater Body/Boot-Top).
26. Skegs. (See Underwater Body/Boot-Top).
27. Smoke Stacks.
28. Spuds.
29. Strongbacks, Wood. (See Wood, Exterior).
30. Superstructure. (See Freeboard/Superstructure/Mast).
31. Transducer Hull Rings.
32. Underwater Body/Boot-top.
 - a. U/W Body and Boot-Top, Steel Hulls (Up to 7 Years), in Salt Water.
 - b. U/W Body and Boot-Top, Steel Hulls (Up to 12 Years), in Salt Water
 - c. U/W Body and Boot-Top, Steel Hulls, in Fresh Water
 - d. U/W Body and Boot-Top, Icebreaker >235'
 - e. U/W Body and Boot-Top, Icebreaker <235', in Salt Water
 - f. U/W Body and Boot-Top, Icebreaker <235' in Fresh Water
 - g. U/W Body and Boot-Top, Aluminum Hulls.
 - h. U/W Body and Boot-Top, Aluminum Hulls, High Speed (>30 knots).
 - i. U/W Body and Boot-Top, Aluminum Hulls (in waters with limited fouling).
 - j. U/W Body and Boot-Top, Fiber Glass Hulls (Up to 7 yrs) in Salt Water.
 - k. U/W Body and Boot-Top, Fiber Glass Hulls (Up to 12 yrs) in Salt Water.
 - l. U/W Body Appendages: High Turbulent Areas.
 - m. U/W Body Propellers.
 - n. U/W Body Shafts.
 - o. U/W Body Sea Chest, Icebreaker in Fresh Water.
 - p. U/W Body Zincs.
 - q. U/W Body Dielectric Shield for ICCP Systems.
33. Weather Decks.
 - a. Weather Deck Non-Skid, Broadcast Grit for Steel.
 - b. Weather Deck Non-Skid, Broadcast Grit for Aluminum.
 - c. Weather Deck Non-Skid, MIL-SPEC Coating for Steel or Aluminum.
 - d. Weather Deck Slip Resistant Sheets.
 - e. Weather Deck, Buoy Tender Working Deck.
34. Wood, Exterior.
35. Zinc (or other Sacrificial) Anodes. (See Underwater Body/Boot-Top).

WARNING!

Personnel involved in the removal and application of paints, primers, varnishes, or similar treatments, or the preparation of surfaces for the application of paint or paint products, shall be familiar with the safety requirements specified in paragraph 3.3.1 (Personnel safety and property protection – general) of SFLC Standard Specification 0000 and observe all personnel safety protective measures applicable to surface preparation and application of marine coatings, as specified in the coating manufacturer’s product data sheets and MSDS.

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
ANCHOR/ANCHOR CHAIN					
		SSPC-SP 6/NACE NO. 3 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) Polysiloxane 2) Polysiloxane 3) Polysiloxane	Mist Coat 5.0-6.0 5.0-6.0	1
ANTENNA HARDWARE, RADIO AND RADAR, DF LOOPS					
		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) [metal hardware only]	1) High Build Epoxy 2) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 2.0-3.0	2
COLLARS, SMALL BOAT FOAM-FILLED					
		See Notes	1) Polysiloxane 2) Minimum additional coats as needed to provide consistent color coverage	5.0-6.0 -	44
ELECTRIC CABLES, ARMORED, EXTERIOR					
	I	Clean with Adhesion Promoter/Cleaner. Break gloss with sandpaper as required.	1) Polysiloxane 2) Polysiloxane	5.0-6.0 2.0-3.0	2, 3, 39
	II	Same as Option I	1) High Build Epoxy (dip the cable) 2) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 2.0-3.0	
FITTINGS					
Bulkhead and deck fittings, including pad eyes, links, chain stoppers. . .		Use the same surface preparation as used for surfaces on which fittings are attached.	Use the same coating system as for surfaces on which fittings are attached [for deck fittings: omit non-skid aggregate and select top color coat as per Coatings and Color Manual, COMDTINST M10360.3 (series).]		
FLIGHT DECK					
		SSPC-SP 10/NACE NO. 2 using AA-1043 Steel Shot or grit conforming to MIL-A-22262 / (3.0-4.5) - or - SSPC-SP WJ-2(L)/NACE WJ-2(L)	1) MIL-PRF-24667 Type I, V, or VIII, Comp. G Primer 2) MIL-PRF-24667 Type I, V, or VIII, Comp. G Primer 2) MIL-PRF-24667 Type I, V, or VIII, Comp. G Non-skid	Follow Manuf. Instructions	4, 5, 46
FREEBOARD/SUPERSTRUCTURE/MAST					

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
Freeboard/ Superstructure, Steel	I	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5) - or - SSPC-SP WJ-2(M)/NACE WJ-2(M)	1) Zinc Rich Primer-Polysiloxane System 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) Polysiloxane	3.0-4.0 5.0-6.0 5.0-6.0	2, 6, 7, 8, 9, 10, 16, 39
	II	Same as Option I	1) Zinc Rich Primer-Polysiloxane System 2) Polysiloxane 3) Polysiloxane	3.0-4.0 1.0-2.0 5.0-6.0	
	III	Same as Option I	1) Epoxy Primer/Mid-Coat - Polysiloxane Sys 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) Polysiloxane	5.0-6.0 5.0-6.0 5.0-6.0	
	IV	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc 2) High Build Epoxy 3) High Build Epoxy 4) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	3.0-4.0 Mist Coat 5.0-6.0 2.0-3.0	
	V	Same as Option I	1) High Build Epoxy 2) High Build Epoxy 3) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 5.0-6.0 2.0-3.0	
Freeboard/ Superstructure, Steel – Prone to Mechanical Damage or High Wear		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc 2) Polysiloxane 3) Polysiloxane	3.0-4.0 Mist Coat 5.0-6.0	2, 6, 7, 8, 9, 10, 16
Freeboard/ Superstructure, Aluminum or Galvanized Steel	I	Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.5-2.5) - or - SSPC-SP WJ-2/NACE WJ-2	1) Polysiloxane 2) Polysiloxane	1.0-2.0 5.0-6.0	16, 39, 52
	II	Same as Option I	1) Epoxy Primer/Mid-Coat - Polysiloxane Sys 2) Polysiloxane	5.0-6.0 5.0-6.0	
	III	Same as Option I	1) High Build Epoxy	5.0-6.0 2.0-3.0	

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
			2) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1		
Freeboard/ Superstructure, Aluminum, Unpainted		Blast with glass bead: 1) conforming to MIL-PRF-9954-MIL 8, 2) No. AGB-18 (U.S. sieve size 70-100) as designated by AMS 2431A, or 3) commercial equivalent	-	-	16, 36, 37, 39, 45
Freeboard/ Superstructure, Fiber Glass (Fiber Reinforced Plastic [FRP]/Fiber Reinforced Epoxy/ Fiber Reinforced Polyester)	I	Sand lightly with 120 grit paper to break the glaze and roughen the surface then wash with Adhesion Promoter/Cleaner. On new material, remove mold release by washing with cleaner before sanding and clean again.	1) Polysiloxane 2) Polysiloxane	Mist Coat 3.0-4.0	2, 8, 16, 39
	II	Same as Option I	1) High Build Epoxy 2) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	Mist Coat 2.0-3.0	
INACCESSIBLE AREAS					
Inaccessible Areas, Steel	I	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc	3.0-4.0	6, 9
	II	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	
	III	Brush blast with grit conforming to MIL-A-22262 or mechanical tools	1) MIL- PRF -16173 Solvent Cutback Corrosion Preventive Compound, Class II, Grade 3 (1 coat)	-	
Inaccessible Areas, Galvanized Steel or Aluminum		Roughen by brush blasting with clean fine aluminum oxide, garnet or equivalent inert material, or mechanical tools	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	11
MACHINERY, DECK					
	I	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5) - or - SSPC-SP WJ-2(M)/NACE WJ-2(M)	1) Zinc Rich Primer-Polysiloxane System 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) Polysiloxane	3.0-4.0 5.0-6.0 5.0-6.0	2, 6, 7, 8, 9, 10, 12, 39
	II	Same as Option I	1) Zinc Rich Primer-Polysiloxane System 2) Polysiloxane 3) Polysiloxane	3.0-4.0 1.0-2.0 5.0-6.0	

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
	III	Same as Option I	1) Epoxy Primer/Mid-Coat - Polysiloxane Sys 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) Polysiloxane	5.0-6.0 5.0-6.0 5.0-6.0	
	IV	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc 2) High Build Epoxy 3) High Build Epoxy 4) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	3.0-4.0 Mist Coat 5.0-6.0 2.0-3.0	
	V	Same as Option I	1) High Build Epoxy 2) High Build Epoxy 3) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 5.0-6.0 2.0-3.0	
METAL REPAIR AND HULL SMOOTHING					
		<u>Steel</u> : SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5) <u>Aluminum</u> : Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.5-2.5)	1) MIL-PRF-24176 Cement, Epoxy, Metal Repair and Hull Smoothing	Follow Manuf. Instructions	38, 49, 52
PIPING, EXTERIOR					
	I	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) Polysiloxane 2) Polysiloxane	5.0-6.0 5.0-6.0	2, 39
	II	Same as Option I	1) High Build Epoxy 2) High Build Epoxy 3) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 5.0-6.0 2.0-3.0	
SMOKE STACK					
Smoke Stack Casing, Steel Exterior		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc 2) High Build Epoxy 3) High Build Epoxy 4) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	3.0-4.0 Mist Coat 5.0-6.0 2.0-3.0	2, 6, 8, 9, 10, 47
Smoke Stack Casing, Steel Interior		SSPC-SP 6/NACE NO. 3 using grit conforming to MIL-A-22262 / (1.0-2.0)	1) Fed Spec TT-P-28 Heat Resisting Aluminum Paint	1.0-2.0	

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
(containing uninsulated exhaust piping)			2) Fed Spec TT-P-28 Heat Resisting Aluminum Paint	1.0-2.0	
Smoke Stack Casing, Steel Interior (containing insulated exhaust piping)		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) High Build Epoxy 2) High Build Epoxy 3) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 5.0-6.0 2.0-3.0	2
Smoke Stack Exterior Within Casing		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	
SPUDS					
Spuds		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) High Build Epoxy 2) High Build Epoxy 3) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 5.0-6.0 2.0-3.0	2, 13
Spud Wells		SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) - or - SSPC-SP WJ-2(M)/NACE WJ-2(M) - or - SSPC-SP 11 (1.0)	1) Bilge Epoxy Coating System Primer 2) Bilge Epoxy Coating System Topcoat	6.0 – 7.0 6.0 – 7.0	50
TRANSDUCER HULL RINGS					
Exterior surfaces		Same surface preparation as the rest of the Underwater Body Surfaces	Use the same coating system as the rest of the Underwater Body Surfaces		14, 48, 51
UNDERWATER (U/W) BODY/BOOT-TOP					
U/W Body and Boot-Top, Steel Hulls (Up to 7 Years), in Salt Water		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) - or - SSPC-SP WJ-2(M)/NACE WJ-2(M)	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 2) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 3) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 4) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 5) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B (Boot-Top only)	5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0	15, 16, 18, 19, 40, 48
U/W Body and Boot-Top, Steel Hulls (Up		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B	5.0-6.0	15, 16, 18, 19,

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
to 12 Years), in Salt Water		- or - SSPC-SP WJ-2(M)/NACE WJ-2(M)	2) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 3) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 4) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 5) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 6) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B (Boot-Top only) 7) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B (Boot-Top only)	5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0	40, 48
U/W Body and Boot-Top, Steel Hulls, in Fresh Water		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) - or - SSPC-SP WJ-2(M)/NACE WJ-2(M)	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 2) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B	5.0-6.0 5.0-6.0	16, 18, 20, 48
U/W Body and Boot-Top, Icebreaker > 235'		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (3.5-5.5)	1) Anti-Abrasion Coating, Icebreaker, >235'	20-30	16, 18, 21, 48
U/W Body and Boot-Top, Icebreaker <235', in Salt Water		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) - or - SSPC-SP WJ-2(L)/NACE WJ-2(L)	1) Anti-Abrasion Coating, Icebreaker, <235' 2) Anti-Abrasion Coating, Icebreaker, <235' 3) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 4) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B	9.0-10.0 9.0-10.0 5.0-6.0 5.0-6.0	16, 18, 22, 48
U/W Body and Boot-Top, Icebreaker <235', in Fresh Water (Excluding Sea Chests)		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) - or - SSPC-SP WJ-2(L)/NACE WJ-2(L)	1) Anti-Abrasion Coating, Icebreaker, <235' 2) Anti-Abrasion Coating, Icebreaker, <235'	9.0-10.0 9.0-10.0	16, 18, 48
U/W Body and Boot-Top, Aluminum Hull (<30 knots)	I	Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.5-2.5)	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade B 2) MIL-PRF-24647 Anticorrosive Epoxy, Grade B	5.0-6.0 5.0-6.0	16, 18, 22, 23, 48, 52

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
	II	- or - SSPC-SP WJ-2/NACE WJ-2 Same as Option I	3) MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 4) MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 5) MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 1) Fouling Release Coating System	5.0-6.0 5.0-6.0 5.0-6.0 Follow Manuf. Instructions	
U/W Body and Boot-Top, Aluminum Hull, High Speed (>30 knots)	I	Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.5-2.5) - or - SSPC-SP WJ-2/NACE WJ-2	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 2) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 3) MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 4) MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4 5) MIL-PRF-24647 Non-copper Ablative, Type I, Class 2, Applications 1 & 4	5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0	16, 18, 22, 23, 24, 48, 52
	II	Same as Option I	1) Fouling Release Coating System	Follow Manuf. Instructions	
U/W Body and Boot-Top, Aluminum Hull (in waters with limited fouling)		Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.5-2.5) - or - SSPC-SP WJ-2/NACE WJ-2	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 2) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B	5.0-6.0 5.0-6.0	16, 18, 22, 41, 48, 52
U/W Body and Boot-Top, Fiber Glass Hulls (Up to 7 yrs) in Salt Water		Roughen surface with 120 grit paper and wash with Adhesion Promoter/Cleaner. On new surfaces, remove mold release with a cleaner, sand and clean again.	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 2) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A 3) MIL-PRF-24647 Copper Ablative, Type II,	5.0-6.0 5.0-6.0 5.0-6.0	16, 18, 22, 25, 26, 48

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
			Class 1, Grade A or B 4) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B (Boot-Top only)	5.0-6.0	
U/W Body and Boot-Top, Fiber Glass Hulls (Up to 12 yrs) in Salt Water		Roughen surface with 120 grit paper and wash with Adhesion Promoter/Cleaner. On new surfaces, remove mold release with a cleaner, sand and clean again.	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 2) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 3) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 4) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 5) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B (Boot-Top only) 6) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B (Boot-Top only)	5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0 5.0-6.0	16, 18, 22, 25, 26, 48
U/W Body Appendages: High Turbulent Areas (i.e. Rudders, Struts, Fins for 110 WPBs and 179 WPCs)		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) - or - SSPC-SP WJ-2(L)/NACE WJ-2(L)	1) High Turbulence Coating 2) High Turbulence Coating 3) Follow with same number coats of antifoulant used for the rest of the underwater body	10.0-11.0 10.0-11.0 -	40, 48
U/W Body Propellers		<u>Cast Steel and Cast Iron:</u> <u>All Other Materials:</u>	- Treat the same as Underwater Body Appendages - Clean and polish bright. - Do not paint		48
U/W Body Shafts		<u>Corrosion Resistant Materials (such as Monel, Aquamet, and FRP wrap):</u> Clean and polish metallic surfaces bright. <u>All Other Materials:</u> Use same surface preparation method as the rest of the underwater body	- Do not paint - Apply same antifouling coating system as the rest of the underwater body		48
U/W Body Sea Chest, Icebreaker in Fresh Water		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc	3.0-4.0	9, 48

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
U/W Body Sea Chest, Sea Chest Strainer Plates, Grid Cooler Hull Recesses in Fresh Water (for WLR River Tenders and Barges)		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) MIL-PRF-24647 Anticorrosive Epoxy, Grade A or B 2) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B 3) MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A or B	Mist Coat 4.0-5.0 4.0-5.0	8, 16, 18, 25, 26, 48
U/W Body Zincs (or other sacrificial anodes)			- Do not paint -		27, 48
U/W Body Dielectric Shield for ICCP Systems		SSPC-SP 5/NACE NO. 1 using grit conforming to MIL-A-22262 / (2.5-3.5)	1) Dielectric Shield Fairing Compound	Varies	42, 48
WEATHER DECKS					
Weather Deck Non-Skid, Broadcast Grit for Steel	I	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5) - or - SSPC-SP WJ-2(L)/NACE WJ-2(L)	1) Zinc Rich Primer-Polysiloxane System 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) #8-16 Garnet or inert grit conforming to MIL-A-22262 4) Polysiloxane	3.0-4.0 5.0-6.0 -	6, 7, 8, 9, 10, 28, 39
	II	Same as Option I	1) Epoxy Primer/Mid-Coat - Polysiloxane Sys 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) #8-16 Garnet or inert grit conforming to MIL-A-22262 4) Polysiloxane	5.0-6.0 5.0-6.0 -	
	III	SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc 2) High Build Epoxy 3) High Build Epoxy 4) #8-16 Garnet or inert grit conforming to MIL-A-22262 5) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	3.0-4.0 Mist Coat 5.0-6.0 -	
	IV	Same as Option I	1) High Build Epoxy 2) High Build Epoxy 3) #8-16 Garnet or inert grit conforming to MIL-A-22262	5.0-6.0 5.0-6.0 -	

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
			4) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	2.0-3.0	
Weather Deck Non-Skid, Broadcast Grit for Aluminum	I	Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.5-2.5) - or - SSPC-SP WJ-2/NACE WJ-2	1) Epoxy Primer/Mid-Coat - Polysiloxane Sys 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) #8-16 Garnet or inert grit conforming to MIL-A-22262 4) Polysiloxane	5.0-6.0 5.0-6.0 - 2.0-3.0	28, 39, 52
	II	Same as Option I	1) High Build Epoxy 2) High Build Epoxy 3) #8-16 Garnet or inert grit conforming to MIL-A-22262 4) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 5.0-6.0 - 2.0-3.0	
Weather Deck Non-Skid, MIL-SPEC Coating for Steel or Aluminum		<u>Steel</u> : SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 /(1.5-3.5) - or - SSPC-SP WJ-2(L)/NACE WJ-2(L) <u>Aluminum</u> : Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.5-2.5) - or - SSPC-SP WJ-2/NACE WJ-2	1) MIL-PRF-24667 Type I, III, V, or VIII Comp. G Primer 2) MIL-PRF-24667 Type I, V, or VIII Comp. G Primer (Not for Type III) 2a) MIL-PRF-24667 Type III Intermediate Membrane (Only for Type III) 3) MIL-PRF-24667 Type I, III, V, or VIII Comp. G Non-skid	Follow Manuf. Instructions	29, 30, 31, 52

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
Weather Deck Slip Resistant Sheets (Peel 'n' Stick)	I	Steel: SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5) - or - SSPC-SP WJ-2(L)/NACE WJ-2(L)	1) Zinc Rich Primer-Polysiloxane System 2) Polysiloxane 3) Polysiloxane 4) MIL-PRF-24667 Type XI, Comp. PS Non-skid 5) Edge Sealing Compound	3.0-4.0 Mist Coat 5.0-6.0 - -	6, 7, 8, 32
	II	Same as Option I	1) Zinc Rich Primer-Polysiloxane System 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) Polysiloxane 4) MIL-PRF-24667 Type XI, Comp. PS Non-skid 5) Edge Sealing Compound	3.0-4.0 5.0-6.0 5.0-6.0 - -	
	III	Same as Option I	1) Epoxy Primer/Mid-Coat - Polysiloxane Sys 2) Epoxy Primer/Mid-Coat - Polysiloxane Sys 3) Polysiloxane 4) MIL-PRF-24667 Type XI, Comp. PS Non-skid 5) Edge Sealing Compound	5.0-6.0 5.0-6.0 5.0-6.0 - -	
		Aluminum: Blast with glass bead: 1) conforming to MIL-PRF-9954-MIL 8, 2) No. AGB-18 (U.S. sieve size 70-100) as designated by AMS 2431A, or 3) commercial equivalent	1) Slip Resistant Sheet 2) Edge Sealing Compound	- -	36, 37
	Fiber Reinforced Plastic: Sand lightly with 120 grit paper to break the glaze and roughen the surface then wash with Adhesion Promoter/Cleaner. On new material, remove mold release by washing with cleaner before sanding and clean again.	1) Polysiloxane 2) Polysiloxane 3) Slip Resistant Sheet 4) Edge Sealing Compound	Mist Coat 3.0-4.0 - -	2, 8	
Weather Deck, Buoy Tender Working and Construction Decks		SSPC-SP 10/NACE NO. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc <u>Safety Markings on Inorganic Zinc Buoy Deck:</u> 1) Polysiloxane 2) Polysiloxane - or - 1) High Build Epoxy	3.0-4.0 Mist Coat 5.0-6.0 Mist Coat	7, 8, 33, 43

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Exterior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
			2) High Build Epoxy 3) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 2.0-3.0	
WOOD, EXTERIOR					
Wood, Exterior (i.e., Accommodation Ladder, Boat Hooks, Boatswain's Chairs, Gangplanks and Brows, Gratings, Ladders, Railings, and Strongbacks)		Sand with 80 grit (or coarser) sand paper	1) Synthetic Wood Finish - follow manufacturer's instructions - or - 1) CID A-A-1800Spar Varnish 2) CID A-A-1800 Spar Varnish 3) CID A-A-1800 Spar Varnish 4) CID A-A-1800 Spar Varnish 5) CID A-A-1800 Spar Varnish	- 1.0-2.0 1.0-2.0 1.0-2.0 1.0-2.0 1.0-2.0	34, 35

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NOTES

1. Do not paint galvanized or stainless steel anchor, chain, or ground tackle.
2. An extra coat of the topcoat may be required, particularly when brushing or rolling, to achieve proper dry film thickness or to get complete color coverage of the primer underneath.
3. Initially dip armored electric cables in the epoxy primer. After pulling the cables, touch up the primer and follow with topcoat. Do not paint identification labels.
4. Apply in accordance with NSTM Ch. 634 for Navy Certification. All flight decks shall be applied and maintained in accordance with NSTM Ch. 634. Color coating flight decks for other than required markings is not authorized. Flight decks shall not be applied by ships work force. However, ships force may make repairs to flight decks and apply flight deck nonskid to any other portion of the weather deck as necessary for personnel safety. Nonskid material is rolled on over primer within 48 hours for best adhesion. On WMEC 210's the flight deck material shall be extended forward to frame 98 for added personnel safety.
5. Power tool cleaning to bare metal (SSPC-SP 11) may be used in areas that cannot be accessed by abrasive blasting or waterjetting.
6. Inorganic zinc paints cause metal fume fever when cut or burned with a torch.
7. Do not apply inorganic zinc to water-jetted surfaces.
8. A mist coat is 1.0-2.0 mils (wet film thickness) of paint applied to promote adhesion or compatibility between unlike materials for spray applications only.
9. Water-based inorganic zinc may only be applied when ambient air and substrate temperature are above 50 degrees F, in order for the water to evaporate completely and form a continuous coating. Water based coatings will not dry at relative humidity above 80 percent.
10. An Organic Zinc coating may be used to replace inorganic zinc for repair/maintenance of inorganic zinc systems.
11. All inaccessible voids that bear against the shell shall be welded tight, tested for tightness, and treated by filling and draining with a rust preventive compound conforming to MIL-PRF-16173, Class II, Grade 3. These include rudders, skegs, sealed void spaces at the stem and voids in the bilges or voids constantly exposed to salt water. Inaccessible voids on steel weather decks shall be prime coated wherever possible before welding of the closure plate and shall be tested for tightness. No further treatment is required. Examples are masts, yards, booms, davits, boxed-in foundations and boxed-in bulwark structures.
12. Coat the working surfaces of machinery or the surfaces of winch and capstan drums that contact line with an Inorganic Zinc (3.0-4.0 mils), Solvent Cutback Corrosion Preventative Compound, MIL-PRF-16173, Class II, Grade 3, or Thin Film Corrosion Preventative Compound, MIL-C-81309 Type II, Class I.
13. Refer to the Coatings and Color Manual, COMDTINST M10360.3 (series) for painting of safety markings. Apply one coat of MIL-PRF-24635 Silicone Alkyd at 3 mils DFT for color warning bands.
14. Transducer diaphragms are fouling resistant and should only be painted when it is determined, in conjunction with the servicing electronics facility, that the protection of antifouling paint is required.
15. These antifoulant systems are modifications of requirements in MIL-PRF-24647 to provide up to 7 or 12 year systems with periodic touch up on a 2-5 year dry-dock cycle. The second coat of anticorrosive epoxy and the antifoulant are applied over the previous coat of epoxy while still tacky, which is defined as that curing (drying) stage when a fingertip pressed lightly against the film leaves only a slight impression and none of the film sticks to the finger. Cutters and boats painted with ablative paint should be washed with high pressure water (do not exceed 5000 psi) immediately after being removed from the water to prevent fouling from drying on the paint. When dry-docking for repainting, the defective areas shall be prepared to an SSPC-SP 10/NACE No. 2 or SSPC-SP WJ-2/NACE WJ-2 finish and touched up with epoxy. The entire hull should never be taken down to bare metal unless the entire bottom coat has failed or failure is inevitable in the immediate future.
16. Apply one coat of polysiloxane or MIL-PRF-24635 Silicone Alkyd at 3 mils DFT for the draft marks.
17. Not used.
18. For coating purposes, the bilge keel, sea chest, gratings, and skegs are treated as part of the underwater body.

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19. Ablative Paint is required on all steel cutters and boats which use antifoulant unless specifically excluded by the SFLC ESD. These coatings have a proven record of cost reduction by extending dry-dock intervals, reducing fuel consumption and reducing painting costs. Life span for these coatings is up to 7-12 years with periodic touch up on a 2-5 year basis. Areas where the primer is worn through on the rudders, stabilizing fins, bow, and above the props should be reprimed. When preparing these surfaces, it is a good idea to clean chloride ions out of the corrosion with a high pressure water blast or steam cleaning before grit blasting. Ablative antifoulant paint wears away differentially on the hull and it is color coded to show the high wear areas which will be at the bow, stern, and boot top areas. When repainting, use the original manufacturer's product to make repairs. Ablative paint should be built back up to the original 10 or 15 mil overall thickness below the boot-top and 15 or 25 mils on the boot-top. Adding 10 mils of paint over the entire hull at each dry docking will result in excessive film thickness. Ablative paint is applied directly to the epoxy primer while it is still tacky. There is no intermediate coat between the epoxy primer and the ablative paint. Intermediate coats will accomplish nothing and increase the probability that the ablative paint will delaminate.
20. Sea chest, sea chest strainer plates, grid cooler hull recesses for WLR cutters and barges will be coated with a MIL-PRF-24647 Copper Ablative, Type II, Class 1, Grade A/Epoxy coating system for zebra mussel control.
21. Fill deep pitting with manufacturers filling compound prior to coating.
22. Total removal of antifouling coatings is not required. Total dry film thickness encountered during removal may exceed specified thicknesses.
23. When applying a foul release coating system, contact the manufacturer for application instructions and require the manufacturer's technical representative to be present while the coating is applied. The final coat shall have an almost gloss or wet sheen finish. Areas with a flat finish must be repainted to a wet sheen finish. Fouling release coatings must not be scraped or cleaned with a stiff brush. Once scratched, the topcoat must be reapplied to prevent fouling adhesion.
24. The final coat of antifoulant on high speed (>30 knots) aluminum craft shall be allowed to cure for at least 48 hours before putting the vessel back in the water. Follow the coating manufacturer's instructions if more than 48 hours are required depending on temperature and humidity.
25. Blistered material should be removed, flushed clean with water, thoroughly dried out, and built back up with a high solids epoxy chemically resistant filler. Avoid introducing dirt or abrasive blasting grit in to the fiberglass as this may stimulate additional blisters. Structurally damaged areas should be reinforced with a high solids chemically resistant epoxy resin. To retard blistering, wash the hull with Adhesion Promoter/Cleaner. Topcoat to 15 mils DFT with high solids epoxy tank coating which is chemically resistant. Epoxy resin should contain no water soluble components.
26. Apply the first coat of ablative antifouling paint while the epoxy is still tacky.
27. Do not paint zinc (or other sacrificial anodes). Paint areas beneath all sacrificial anodes the same as the underwater body.
28. For broadcast grit non-skid systems, spread #8-16 Garnet or MIL-A-22262 Inert Abrasive Grit over the last epoxy coat when wet. Let it dry for 8 hours and sweep off the excess. Then apply polysiloxane or MIL-PRF-24635 Silicone Alkyd Enamel topcoat. Apply as little topcoat as possible to still achieve complete color coverage. A thin coat of deck gray High Build Epoxy may be applied to the broadcast grit prior to the topcoat to aid in getting better color coverage.
29. Units may opt to apply a coat of inorganic or organic zinc primer on steel decks (not aluminum) prior to applying this system. If inorganic zinc is preferred, it must be covered with a mist coat, 1.0-2.0 (wet film thickness) of high build epoxy prior to applying the full high build epoxy primer coat. Do not apply inorganic or organic zinc to flight decks.
30. Two-part polyurethane primers, membranes, color toppings, and non-skid are not allowed, even if listed on QPL-24667.
31. Type III non-skid deck coverings with an intermediate underlayment coat should only be used on decks that undergo a great deal of flexing or uneven decks where flatness is required.
32. MIL-PRF-24667 Type XI Comp PS Slip Resistant Sheets (Peel 'n' Stick) have been authorized for all cutters and boats. Installation drawings are available for the 41 UTB, 47 MLB, and 87 WPB (41UT-1901-2, 47B MLB-634-010, and 87-WPB-634-1, respectively). Use the following guidance when installation drawings are not available: 1) Slip resistant sheet material shall be applied to within

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- approximately 2 inches of deck fittings and protrusions and to within approximately 5 inches from coaming and deck edges; 2) No more than approximately 3 inches shall separate adjacent pieces on all work and traffic areas; 3) Avoid applying slip resistant sheet material over raised weld seams.
33. The safety markings are alternating yellow and black stripes at 45 degrees to the bulwark for a distance of two feet.
 34. Do not paint since paint will prevent the detection of cracks and splits.
 35. The commercial equivalent to A-A-1800 Spar Varnish may be used.
 36. If the surface to be glass bead blasted has been previously painted, the paint may be removed by waterjetting or brushblasting with a very fine aluminum oxide, garnet, or equivalent inert material.
 37. The satin aluminum finish shall be defined as having: 1) a surface profile which does not exceed 2.5 mils as measured by TESTEX Press-O-Film Replica Tape (X-Coarse 1.5-4.5 mils) and 2) spherically shaped indentations with a diameter less than or equal to 0.2 mm as measured by an optical comparator such as a Fowler 7X comparator with a #7 reticle.
 38. Grit blasting is the best method to prepare the surface; however, it may not be possible to grit blast due to configuration or other restraints. Review manufacturer's instructions to determine other acceptable surface preparation methods.
 39. The Polysiloxane System shall be used for all new construction unless lower gloss is required. The silicone alkyd system should only be selected if low gloss is required, for maintaining an existing silicone alkyd system, or as a lower cost option when superior performance is not a requirement.
 40. A High Turbulence Coating that is capable of being applied underwater shall be used for any temporary repairs to the underwater body or appendages where bare metal has been exposed. These coatings are not antifoulants and should be removed and replaced with the standard underwater body coating system at the next drydock.
 41. The underwater body of an aluminum hull boat in fresh water is not required to be painted if fouling has not been an issue in the operating area. In this case, the boot-top of an aluminum hull boat would not require paint if the freeboard is not painted. If the freeboard is painted, then the boot-top above the waterline should be painted with the polysiloxane or silicone alkyd system.
 42. Refer to the specific class installation drawings/tech pub for installation of the dielectric shield. Older drawings/tech pubs may refer to coal tar epoxy for the outer area of the shield which is no longer authorized. Use the Dielectric Shield Fairing Compound instead of coal tar epoxy. If specific class installation drawings/tech pubs do not exist or are no longer applicable, then perform the following:
 - Surface Preparation – Clean the area where the dielectric shield is currently installed (6 feet around the anode casing to SSPC-SP 5/NACE No.1 “White Metal Blast Cleaning”. Ensure that the anode casing is properly prepared and cleaned well so that the Dielectric Shield Fairing Compound will adhere to the casing sides and edges.
 - Fairing Application (Trowelable) – Apply the Dielectric Shield Fairing Compound at a minimum thickness of 120 mils in the area up to two feet around the anode casing. At a distance of about 10 inches from the anode casing, fair the Dielectric Shield Fairing Compound up to the outer edge of the anode casing, bonding to the anode case. Apply the Dielectric Shield Fairing Compound at a minimum thickness of 22 mils in the area from 2 feet to the outer perimeter of 6 feet from the anode casing.
 - Fairing Application (Sprayable) – Apply the first coat of Dielectric Shield Fairing Compound at 10 mils minimum thickness of 10 mils from the anode to a distance of 7 feet. Apply the second coat of Dielectric Shield Fairing Compound at a minimum thickness of 30 mils from the anode to a distance of 6.5 feet. Apply the third coat of Dielectric Shield Fairing Compound at a minimum thickness of 30 mils from the anode to a distance of 6 feet. The outer edges of each applied coat should be tapered so that there is not a sharp edge. Once the anode is in place, fair the trowelable Dielectric Shield Fairing Compound, from a distance of 10 inches out from the anode, up to the outer edge of the anode casing, bonding to the anode case.
 43. If a closed loop grit blast unit is used to prepare the working deck surfaces, non-working areas of the buoy deck may be waterjetted [SSPC-SP WJ-2(L)/NACE WJ-2(L)] or power tool cleaned (SSPC-SP 11) and coated with one coat each of an Organic Zinc (3.0-4.0 mils DFT)/High Build Epoxy (5.0-6.0 mils DFT). The color of the High Build Epoxy shall match the color of the Inorganic Zinc applied to the working areas.
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44. Prior to applying the Polysiloxane coating, clean the collar surface with an Adhesion Promoter/Cleaner such as PPG Prep 88 and then pressure wash with water. Do not allow the Adhesion Promoter/Cleaner to dry on the surface. Do not disturb the collar surface by sanding, grinding, or abrading before painting unless your servicing health and safety staff confirm that the collar does not contain lead.
45. The area underneath tightly fitted appendages such as rubrails or collars shall be painted with two coats of a High Build Epoxy, (black/Fed-Std-595C # 17038) at 5 mils DFT for each coat.
46. Only non-polyurethane MIL-PRF24667 Type I or VIII, Comp. G Non-skids that are Low-Solar-Absorbing (LSA) shall be applied on flight decks.
47. Polysiloxane may be used as the topcoat instead of MIL-PRF-24635 Silicone Alkyd.
48. Applicable to all underwater body coating systems and associated appendages: Total dry film thickness encountered during removal may exceed specified thickness.
49. Roughening of the Metal Repair and Hull Smoothing Compound may be required before painting with the normal coating system. See manufacturer's instructions.
50. Stripe coat is required on all edges, welds, corners, crevices, etc. after the initial primer coat.
51. Coating shall be applied after the capastic fairing compound is renewed.
52. For aluminum surfaces, remove all oil, grease, dirt, metal oxides (corrosion products) and other foreign material by cleaning per SSPC-SP 1 prior to blast cleaning and following blast cleaning immediately prior to coating. The end result of abrasive blasting will be a surface cleanliness similar to that of SSPC-SP 10 for steel with all coating removed.

APPENDIX B

CUTTER AND BOAT INTERIOR PAINTING SYSTEMS

B1. SCOPE

B1.1 Vessel Coating Systems - Interior. This appendix presents the required coatings for various interior areas and components of Coast Guard cutters and boats. The coating systems for each area are presented in tabular form. The tables include the surface preparation, primer, intermediate coat if any, and topcoat. The various coatings used for a particular application should be regarded as a system. The coating system shall be obtained from a single manufacturer to ensure that the individual components are compatible and maximize performance. The thickness references apply to the dried film and are abbreviated as DFT (dry film thickness). Subject matter in this chapter is listed alphabetically. References are by paragraph heading and include:

1. Bilges, Cofferdams, Foundations, and Forepeaks.
2. Bulkheads.
 - a. Bulkheads and Overheads, Uninsulated Aluminum.
 - b. Bulkheads and Overheads, Uninsulated Steel.
 - c. Bulkheads and Overheads, Uninsulated Metal (wet areas).
 - d. Bulkheads and Overheads, Uninsulated Steel (appearance not a factor).
 - e. Bulkheads and Overheads, Uninsulated Aluminum (appearance not a factor).
3. Chain Lockers.
4. Condensation, Space Subjected to.
5. Deckplates.
 - a. Deckplates, Steel.
 - b. Deckplates, Stainless Steel/Aluminum.
6. Decks, Metal Interior and Non-skid Areas.
 - a. Steel and Aluminum Decks (prep for deck covering).
 - b. Steel and Aluminum Decks (wet areas).
 - c. Steel and Aluminum Decks (dry areas).
 - d. Metal Decks, Non-Skid Tread.
7. Door, Joiner.
8. Electric Cable, Armored.
9. Electronics Equipment.
10. Furniture and Galley Equipment.
11. Inaccessible Areas.
 - a. Inaccessible Areas, Steel.
 - b. Inaccessible Areas, Galvanized Steel and Aluminum.
12. Insulation Surfaces.
13. Ladders, Stainless Steel, Galvanized Steel and Aluminum.
14. Machinery, Interior.
 - a. Machinery, Operating Temperatures Under 200°F.
 - b. Machinery, Operating Temperatures Over 200°F.
15. Piping, Interior.
 - a. Piping, Insulated and Uninsulated, Under 200°F.
 - b. Piping, Uninsulated, Over 200°F.
16. Plastic Surfaces.
17. Tanks and Voids.
 - a. Tanks and Voids, General.

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- b. Ballast Tanks.
 - c. Fuel/JP-5 Tanks, Service, Storage, Overflow, Drain.
 - d. Grey Water, Sewage, and CHT Tanks.
 - e. Lube Oil and Fuel Tanks, Unballasted with water extraction systems.
 - f. Potable Water Tank.
18. Transducer Hull Rings.
19. Wood, Interior.
- a. Wood, Painted Interior.
 - b. Wood, Stained and Varnished Interior.

WARNING!

Personnel involved in the removal and application of paints, primers, varnishes, or similar treatments, or the preparation of surfaces for the application of paint or paint products, shall be familiar with the safety requirements specified in paragraph 3.3.1 (Personnel safety and property protection – general) of SFLC Standard Specification 0000 and observe all personnel safety protective measures applicable to surface preparation and application of marine coatings, as specified in the coating manufacturer’s product data sheets and MSDS.

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Interior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
BILGES, COFFERDAMS, AND FOREPEAKS					
Bilges, Cofferdams, and Forepeaks, Steel	I	<u>Non-Machinery Spaces:</u> SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) - or - SSPC-SP WJ-2(L)/NACE WJ-2(L) <u>Machinery Spaces:</u> SSPC-SP 11 (1.0) or SSPC-SP WJ-2(L)/NACE WJ-2(L)	1) Bilge Epoxy Coating System Primer 2) Bilge Epoxy Coating System Topcoat	6.0-7.0 6.0-7.0	1, 14, 15
	II	Same as Option I	1) Bilge Epoxy Coating System Primer 2) Bilge Epoxy Coating System Primer	6.0-7.0 6.0-7.0	
	III	Same as Option I	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	
Bilges, Aluminum			Do not paint		18
BULKHEADS					
Bulkheads and Overheads, Uninsulated Aluminum	I	Power tool clean using non-metallic abrasive padding, to remove all coatings and contamination	1) High Build Epoxy 2) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A 3) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A	5.0-6.0 1.0-2.0 1.0-2.0	2, 3, 4
	II	Same as Option I	1) High Build Epoxy 2) DOD-E-24607 Chlorinated Alkyd Fire Retardant 3) DOD-E-24607 Chlorinated Alkyd Fire Retardant	5.0-6.0 1.0-2.0 1.0-2.0	

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Interior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
Bulkheads and Overheads, Uninsulated Steel	I	SSPC-SP 6/NACE No. 3 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) High Build Epoxy 2) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A 3) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A	5.0-6.0 1.0-2.0 1.0-2.0	2, 4
	II	Same as Option I	1) High Build Epoxy 2) DOD-E-24607 Chlorinated Alkyd Fire Retardant 3) DOD-E-24607 Chlorinated Alkyd Fire Retardant	5.0-6.0 1.0-2.0 1.0-2.0	
Bulkheads and Overheads, Uninsulated Metal- (Wet areas such as washrooms, water closets, shower space, food prep areas and exits to weather)		<u>Steel</u> SSPC-SP 11 (1.0) - and - <u>Aluminum</u> : Power tool clean using non-metallic abrasive padding, to remove all coatings and contamination	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	
Bulkheads and Overheads, Uninsulated Steel- (Appearance not a factor, i.e., voids) and Insulated Steel	I	SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc	3.0-4.0	2, 4
	II	SSPC-SP 6/NACE No. 3 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	
Bulkheads and Overheads, Uninsulated Aluminum- (Appearance not a factor) and Insulated Aluminum		Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.0-1.5)	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	2, 20
CHAIN LOCKERS					

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Interior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
		SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc	3.0-4.0	4
CONDENSATION, SPACE SUBJECTED TO					
		SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) High Build Epoxy 2) Ceramic Insulation Coating 3) Ceramic Insulation Coating 4) Ceramic Insulation Coating	5.0-6.0 20.0-22.0 20.0-22.0 20.0-22.0	5
DECKPLATES					
Deckplates, Steel		<u>Underside and edges:</u> SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-2.5) <u>Top (unpainted):</u> Wire Brush	1) Inorganic Zinc 1) Coat with lube oil weekly and wipe off excess	3.0-4.0	4
Deckplates, Stainless Steel/ Aluminum			Do not paint		
DECKS, METAL INTERIOR AND NON-SKID AREAS					
Metal Decks – in preparation for application of deck coverings		<u>Steel:</u> SSPC-SP 11 (1.0) - and - <u>Aluminum:</u> Power tool clean using non-metallic abrasive padding, to remove all coatings and contamination	1) High Build Epoxy	5.0-6.0	
Metal Decks – No application of deck coverings		<u>Steel:</u> SSPC-SP 11 (1.0) - and - <u>Aluminum:</u> Power tool clean using non-metallic abrasive padding, to remove all coatings and contamination	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	16

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Interior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
Metal Decks, Non-Skid Tread			1) MIL-PRF-24667 Type XI, Comp. PS Non-skid	-	17
DOOR, JOINER					
	I	Steel: SSPC-SP 3 - and - <u>Aluminum</u> : Power tool clean using non-metallic abrasive padding, to remove all coatings and contamination	1) High Build Epoxy 2) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A 3) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A	5.0-6.0 1.0-2.0 1.0-2.0	4
	II	Same as Option I	1) High Build Epoxy 2) DOD-E-24607 Chlorinated Alkyd Fire Retardant 3) DOD-E-24607 Chlorinated Alkyd Fire Retardant	5.0-6.0 1.0-2.0 1.0-2.0	
ELECTRIC CABLE, ARMORED					
	I	Clean with Adhesion Promoter/Cleaner. Break gloss with sandpaper as required.	1) High Build Epoxy 2) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A 3) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A	5.0-6.0 1.0-2.0 1.0-2.0	4
	II	Same as Option I	1) High Build Epoxy 2) DOD-E-24607 Chlorinated Alkyd Fire Retardant 3) DOD-E-24607 Chlorinated Alkyd Fire Retardant	5.0-6.0 1.0-2.0 1.0-2.0	
ELECTRONICS EQUIPMENT					
Electronics Equipment					6
FURNITURE AND GALLEY EQUIPMENT					

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Interior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
	I	Steel: SSPC-SP 3 - and - Aluminum: Power tool clean using non-metallic abrasive padding, to remove all coatings and contamination	1) High Build Epoxy 2) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A 3) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A	5.0-6.0 1.0-2.0 1.0-2.0	4, 7
	II	Same as Option I	1) High Build Epoxy 2) DOD-E-24607 Chlorinated Alkyd Fire Retardant 3) DOD-E-24607 Chlorinated Alkyd Fire Retardant	5.0-6.0 1.0-2.0 1.0-2.0	
INACCESSIBLE AREAS					
Inaccessible Areas, Steel	I	SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-2.5)	1) Inorganic Zinc	3.0-4.0	4, 8
	II	Same as Option I	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	
Inaccessible Areas, Galvanized Steel and Aluminum		Roughen mechanically or abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.0-1.5)	1) High Build Epoxy 2) High Build Epoxy	5.0-6.0 5.0-6.0	8, 20
INSULATION SURFACES					
Insulation Surfaces, Fiberglass Sheet/ Closed Cell PVC Foam	I	Clean with Adhesion Promoter/Cleaner. Break gloss with sandpaper as required.	1) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A 2) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A	1.0-2.0 1.0-2.0	4
	II	Same as Option I	1) DOD-E-24607 Chlorinated Alkyd Fire Retardant 2) DOD-E-24607 Chlorinated Alkyd Fire Retardant	1.0-2.0 1.0-2.0	
LADDERS, STAINLESS STEEL, GALVANIZED STEEL AND ALUMINUM					
			Do not paint		

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Interior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
MACHINERY, INTERIOR					
Machinery, Operating Temperatures Under 200°F, Unmachined surfaces		Steel: SSPC-SP 3 - and - Aluminum: Power tool clean using non-metallic abrasive padding, to remove all coatings and contamination	1) High Build Epoxy 2) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 2.0-3.0	9
Machinery, Steel, Operating Temperatures Over 200°F		SSPC-SP 3	1) Fed Spec TT-P-28 Heat Resisting Aluminum Paint 2) Fed Spec TT-P-28 Heat Resisting Aluminum Paint	1.0-2.0 1.0-2.0	9
PIPING, INTERIOR					
Piping, Insulated and Uninsulated, Under 200°F		SSPC-SP 3	1) High Build Epoxy 2) MIL-PRF-24635 Silicone Alkyd, Type II, Cl. 1	5.0-6.0 2.0-3.0	
Piping, Uninsulated, Over 200°F		SSPC-SP 3	1) Fed Spec TT-P-28 Heat Resisting Aluminum Paint 2) Fed Spec TT-P-28 Heat Resisting Aluminum Paint	1.0-2.0 1.0-2.0	
PLASTIC SURFACES					
		Lightly roughen; all extraneous matter shall be removed by washing with Adhesion Promoter /Cleaner. Glazed surfaces shall be sanded to promote adhesion.	1) High Build Epoxy 2) High Build Epoxy	Mist Coat 2.0-3.0	19

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Interior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
TANKS AND VOIDS					
Tanks and Voids, General	I	SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) MIL-PRF-23236 Fuel and/or Seawater Tanks 2) MIL-PRF-23236 Fuel and/or Seawater Tanks	5.0-8.0 5.0-8.0	10, 11, 14
	II	Same as Option I	1) MIL-PRF-23236 Fuel and/or Seawater Tanks, High Solids, Edge-Retentive Primer 2) MIL-PRF-23236 Fuel and/or Seawater Tanks, High Solids, Edge-Retentive Topcoat	Follow Manuf. Instructions	
Ballast Tanks	I	SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) MIL-PRF-23236 Fuel and/or Seawater Tanks 2) MIL-PRF-23236 Fuel and/or Seawater Tanks	5.0-8.0 5.0-8.0	10, 11, 14
	II	Same as Option I	1) MIL-PRF-23236 Ballast Tanks 2) MIL-PRF-23236 Ballast Tanks	5.0-8.0 5.0-8.0	
	III	Same as Option I	1) MIL-PRF-23236 Ballast Tanks, High Solids, Edge-Retentive Primer 2) MIL-PRF-23236 Ballast Tanks, High Solids, Edge-Retentive Topcoat	Follow Manuf. Instructions	
Fuel/JP-5 Tanks, Service, Storage, Overflow, Drain	I	SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) MIL-PRF-23236 Fuel and/or Seawater Tanks 2) MIL-PRF-23236 Fuel and/or Seawater Tanks	5.0-8.0 5.0-8.0	10, 11, 14
	II	Same as Option I	1) MIL-PRF-23236 Fuel and/or Seawater Tanks, High Solids, Edge-Retentive Primer 2) MIL-PRF-23236 Fuel and/or Seawater Tanks, High Solids, Edge-Retentive Topcoat	Follow Manuf. Instructions	
Grey Water, Sewage, and CHT Tanks	I	SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-3.5)	1) MIL-PRF-23236 Fuel and/or Seawater Tanks 2) MIL-PRF-23236 Fuel and/or Seawater Tanks	5.0-8.0 5.0-8.0	10, 11, 14
	II	Same as Option I	-or- 1) MIL-PRF-23236 Grey Water, Sewage, and CHT Tanks High Solids, Edge-Retentive 2) MIL-PRF-23236 Grey Water, Sewage, and CHT Tanks High Solids, Edge-Retentive	Follow Manuf. Instructions	

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Interior Surfaces To Be Preserved	Option	Surface Preparation / (Anchor Profile In Mils)	Coating System	DFT (Mils)	Notes
Lube Oil and Fuel Tanks, Unballasted with Water Extraction Systems		For new construction, remove mill scale with steel shot	Apply a heavy coat of lube oil		
Tanks, Potable Water		<u>Steel</u> : SSPC-SP 10/NACE No. 2 using grit conforming to MIL-A-22262 / (1.5-3.5) <u>Aluminum</u> : Abrasive blast to bare metal with clean, fine aluminum oxide, garnet or equivalent inert material conforming to CID A-A-59316, Type I & IV / (1.5-2.5)	1) MIL-PRF-23236 Potable Water Tank Primer 2) MIL-PRF-23236 Potable Water Tank Topcoat	4.0-8.0 10.0-12.0	12, 13, 20
TRANSDUCER HULL RINGS					
Interior Surfaces		Same surface preparation as the Bilge	Use the same coating system as the Bilge		
WOOD, INTERIOR					
Wood, Painted Interior	I	Remove any loose paint by scraping, sanding, or milling the surface. Apply commercial wood paste filler as necessary to fill dents, holes, and cracks. Allow 18 hrs for drying.	1) High Build Epoxy 2) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A 3) MIL-PRF-24596 Water Based Fire Retardant, Class 1, Grade A	5.0-6.0 1.0-2.0 1.0-2.0	
	II	Same as Option I	1) High Build Epoxy 2) DOD-E-24607 Chlorinated Alkyd Fire Retardant 3) DOD-E-24607 Chlorinated Alkyd Fire Retardant	5.0-6.0 1.0-2.0 1.0-2.0	
Wood, Stained and Varnished Interior		Remove varnish as necessary by scraping or sanding. Sand surface smooth, wipe clean.	1) Fed Spec TT-S-711 Interior Wood Stain 2) CID A-A-1800 Spar Varnish 3) CID A-A-1800 Spar Varnish 4) CID A-A-1800 Spar Varnish	- 1.0-2.0 1.0-2.0 1.0-2.0	

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NOTES

1. Bilges susceptible to ballast damage shall be coated with 20 mils of Amerlock 400 or other equivalent Anti-Abrasion coating.
2. Intumescent coatings are no longer considered to be an acceptable substitute for currently used fire insulation. They are no longer required to be used on either insulated or uninsulated sides of fire zone bulkheads. Insulated sides of firezone bulkheads shall continue to be protected by fire insulation as directed by the Naval Engineering Manual, COMDTINST M9000.6 (series). All other areas previously specified to be coated with intumescent paint shall no longer require intumescent paint. These areas shall be coated to match their surrounding areas when re-coating is required. Intumescent paint must be removed in any area where it is incompatible with newly applied coatings.
3. Paint aluminum only as required to prevent corrosion. Always prime aluminum before painting to avoid paint failure.
4. Water-based coatings may only be applied when ambient air and substrate temperature are above 50 degrees F., in order for the water to evaporate completely and form a continuous coating. Water-based coatings will not dry at relative humidity above 80 percent.
5. These coating systems shall not be used to replace thermal or anti-sweat insulation on any piping systems.
6. In general, electronics equipment shall not be painted in the field. Minor touch ups of exposed surfaces may be made using the instructions provided in the equipment technical or service manual. Paint of original matching color shall be used. Information on the proper paint and color can be obtained from the manufacturer. In cases where the equipment requires complete repainting, arrangements shall be made with the servicing Logistic Center Electronics Support Unit.
7. Corrosion resistant steel furniture and galley equipment, decorative plastic surfaces such as those on table tops, porcelain surfaces and interior bright aluminum furniture and galley equipment are not to be painted.
8. All inaccessible voids that bear against the shell shall be welded tight, tested for tightness, and treated by filling and draining with a rust preventive compound conforming to MIL-PRF-16173, Class II, Grade 3. These include rudders, skegs, sealed void spaces at the stem and voids in the bilges or voids constantly exposed to salt water.
9. Working metal surfaces shall not be painted. They shall be coated with a Solvent Cutback Corrosion Preventive Compound, MIL-PRF-16173, Class II, Grade 3, or Thin Film Corrosion Preventive Compound, MIL-C-81309, Type II, Class 1.
10. Drying times between coats and final system cure for specified tank coatings other than potable water tanks shall be in accordance with manufacturer's recommendations.
11. Use a coating system qualified to MIL-PRF-23236 Grade A when storing, applying, and curing at a temperature range of 20 to 50 degrees F. Use a coating system qualified to MIL-PRF-23236 Grade B when storing, applying, and curing at a temperature range of 51 to 100 degrees F.
12. All potable water tank coatings must be qualified to MIL-PRF-23236, Class 9.
13. Drying time between coats for potable water tank coatings, including stripe coat, shall be not less than 24 hours at a minimum temperature of 77 degrees F. Final system curing prior to putting tanks back in service shall be not less than 7 days at a minimum temperature of 77 degrees F.
14. Stripe coat is required on all edges, welds, corners, crevices, etc. after the initial primer coat.
15. Option I - Bilge Epoxy Coating System Primer/Topcoat is the best performing system and shall be used for all new construction. Due to a short pot life, optimal application of the Bilge Epoxy Coating System Topcoat is done using plural component spray equipment and is not recommended for application outside of an industrial level activity. Option II with two coats of Bilge Epoxy Coating System Primer should be used at unit and intermediate maintenance level activities where plural component spray equipment is not available. Use

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Option III with two coats of High Build Epoxy when moisture tolerance is not required and High Build Epoxy systems have performed adequately in the past.

16. Steel decks subject to abuse like cargo holds may be coated with inorganic zinc (see Note 4) as specified for chain lockers.
17. Self-adhesive MIL-PRF-24667 Type XI, Comp PS Peel'n'Stick can be placed on all clean deck surfaces that have already been prepared, painted, or had deck coverings applied in accordance with their usage to provide slip resistance as needed for interior spaces. Persistent corrosion in a particular area of an aluminum bilge may dictate the need for a protective High Build Epoxy coating to be applied to that local area.
18. Painting plastic surfaces is highly discouraged, but after it is done once, it must be maintained.
19. For aluminum surfaces, remove all oil, grease, dirt, metal oxides (corrosion products) and other foreign material by cleaning per SSPC-SP 1 prior to blast cleaning and following blast cleaning immediately prior to coating. The end result of abrasive blasting will be a surface cleanliness similar to that of SSPC-SP 10 for steel with all coating removed.

APPENDIX C

CUTTER AND BOAT AUTHORIZED COATINGS

C1 Paint and Coating Approval Procedures.

C1.1 Ships operated by the United States Coast Guard may experience operating conditions significantly more demanding than those seen by their Navy or commercial counterparts. Coatings that perform suitably in those applications may fail prematurely in CG service, leading to excessive recoating and maintenance costs. For these reasons, the CG has established its own list of approved coatings, and this list is included in Section 5 of this Appendix C. The CG accepts military specification (mil spec) and Qualified Products List (QPL) coatings for those applications and areas where their past performance has been acceptable. However, constant advances in coating technology create new, high-performance coatings that are likely to produce significant performance enhancement and/or cost savings. Therefore the CG has also approved commercial coatings for those applications and areas where Mil-Spec/QPL coatings have not performed well, and has placed them on the list of approved coatings.

C1.2 All requests from manufacturers for coating approvals shall be directed to the Office of Naval Engineering (CG-45) for approval. The address is:

Commandant (CG-45)
United States Coast Guard
2100 Second Street SW
Washington, DC 20593

C1.3 Requests for approval shall be for complete systems, from the first coating on the substrate to the topcoat. If the requesting manufacturer does not produce all of the required components for a system, acceptable products from other manufacturers should be listed. Requests from manufacturers for coating approvals shall be submitted in writing and shall include:

1. A point of contact within the company, including title, street address, phone, fax, and e-mail.
2. A brief description of the system, e.g., the intended use of the coating system, the number of separate coatings, and for each coating its name, chemical type, requirements for surface preparation, mixing, application, and thickness, and the minimum and maximum times for drying, intervals between coats, and recoating.
3. A Product Data Sheet for each of the coatings in the coating system.
4. A Material Safety Data Sheet for each of the coatings in the coating system.
5. Other federal approvals of the system or its components, such as mil spec. QPL, U. S. Maritime Administration (MARAD), or Military Sealift Command (MSC).
6. Additional relevant information, such as state and local approvals and certifications, and results of laboratory and accelerated tests.

C1.4 The following are requirements for all coatings in CG service:

1. EPA registration for antifouling coatings.
2. Volatile Organic Content (VOC) limits of 400 grams/Liter for antifouling coatings and 340 g/L for all other coatings.
3. Listing on the Qualified Products List (QPL) for MIL-PRF-23236, Class 9 for potable water tank coatings.

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- C1.5 The following are banned from CG service.
1. Coatings containing lead or other hazardous heavy metals. (Lead-free is defined in 16 CFR 1303-Ban of Lead-Containing Paint and Certain Consumer Products Bearing Lead-Containing Paint as 0.06% or less lead by weight in the dry paint film.)
 2. Coatings containing coal-tar derivatives.
 3. Coatings containing hexavalent chromium compounds, for example, zinc chromate and other chromates.
 4. Antifouling coatings containing organotin compounds, for example, tributyl tin (TBT).
 5. Coatings containing asbestos.
 6. Coatings containing cadmium.

C1.6 Written notice of product approval will be sent to the manufacturer's point of contact, and to the Coast Guard Product Lines. The product will be added to the list of approved coatings in the next revision of this Standard Specification.

C1.7 Approvals are subject to revocation should it be determined that the coating is not performing satisfactorily.

C1.8 Manufacturers are advised that all laboratory testing shall be the manufacturer's responsibility and cost. The CG reserves the right to send a representative to any test site to inspect test panels, test setups, test equipment, data sheets, etc. at any time during test periods.

C2 Approval for Reformulated Products. When a manufacturer reformulates a product previously approved by the CG, the manufacturer shall submit, in addition to the data stipulated in section C.A.3 above, a letter explaining what has been changed and the reasons for the change. The CG will determine what steps will be necessary to extend approval. A reformulated coating must have a different product name or number than the originally approved product.

C3 Approval for Renamed Products. When a manufacturer renames a product previously approved by the CG, and the change is in name or number only, not composition, the CG will extend approval to the product under its new name, provided that the manufacturer:

1. Submits written notification to the CG of the change in name or number.
2. Warrants that the formulation has not changed.
3. Submits the data required by section C.A.3.

C4 Generic Material Class Performance Requirements.

C4.1 Adhesion Promoter/Cleaner. A water-based alkaline cleaner for use in preparation for painting. It is intended for use on fiberglass and closed-cell polyvinyl chloride (PVC) insulation, painted and plastic surfaces, and bare metal. An equivalent material to the products specified herein shall meet the following criteria:

1. Water-based cleaner.
2. Promotes adhesion between substrate and paint and between coats of paint.
3. Contains no phosphates, halogens, chlorinated solvents or petroleum distillates, and is biodegradable.
4. Leaves no residue when rinsed with fresh water.

C4.2 Anti-Abrasion Coating, Ice Breaker, <235'. A coating with extremely high resistance to abrasion that is intended for use on the bow and forward portions of icebreaker hulls and is suitable for use in salt and fresh water. An equivalent coating to the products specified herein shall meet the following criteria:

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1. Proven record (at least three years) of usage as an underwater coating for non-polar icebreakers.
2. Abrasion resistant, anticorrosive epoxy, with a minimum of 50% solids.
3. Available in a minimum of two colors, one of which must be red.
4. Applicable in a minimum of two coats, with a total thickness of not less than 14 mils mean dry film thickness.
5. Other salient characteristics:
 - a) Abrasion resistance, Taber (ASTM D4060, 1 kg, CS-17 wheel): 50 mg weight loss max.
 - b) Adhesion, Elcometer (ASTM D4541): 1000 psi min

C4.3 Anti-Abrasion Coating, Ice Breaker, >235'. A coating with unusually high resistance to abrasion that is intended for use on the bow and forward portions of polar icebreaker hulls. It will have low adhesion to ice and low frictional resistance. An equivalent coating to the products specified herein shall meet the following criteria:

1. Proven record (at least three years) of usage as an underwater coating for polar icebreakers.
2. Can operate in temperatures as low as -60 degrees F.
3. Abrasion resistant, anticorrosive epoxy, with a minimum of 90% solids.
4. Available in a minimum of two colors, black and red.
5. Applicable in a single coat with a total thickness greater than 30 mils mean dry film thickness.
6. Other salient characteristics:
 - a) Abrasion resistance, Taber (ASTM D4060, 1 kg, CS-17 wheel): 50 mg weight loss max.
 - b) Adhesion, Elcometer (ASTM D4541): 1000 psi min.
 - c) Kinetic friction coefficient with ice less than 0.03 at velocities ranging from 10 to 25 cm/s.

C4.4 Bilge Epoxy Coating System. An anticorrosive epoxy coating system for application in bilges and forepeaks with a primer that can be applied to wet or damp surfaces and an edge retentive topcoat. An equivalent coating system to the products specified herein shall meet the following criteria:

1. Applicable by brush, roller, or spray.
2. No dew point restrictions - applicable at relative humidity of 10% to 100%.
3. It can be applied on waterjetted surfaces with minimum conditions as follow:
 - a) SSPC-SP WJ-3(M)/NACE WJ-3(M)
 - b) SSPC-VIS 4/NACE VIS 7: Moderate Flash Rusting (M)
4. Essentially 100% solids and few or no VOCs.
5. Edge retentive.
6. Non-flammable.
7. Good chemical resistance.
8. Proven record (a minimum of two years) of use as a bilge/forepeak system.

C4.5 Corrosion Inhibitive Thermoplastic. System designed to provide protection for flanges, valves, bolts, and other topside equipment consisting of spray-applied thermoplastic impregnated with a corrosion inhibitive oil. The thermoplastic encapsulating the topside equipment shall be hot-melt sprayed at 300-350 °F at a minimum 80 mil thickness. The applied thermoplastic coating shall be easily removable by cutting and/or peeling away. Removed material should be recyclable. Other salient characteristics include:

1. ASTM B117 – no blisters, no rust, no delamination after 3000 hours.
2. Suitable for service from -76 °F to 190 °F.

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3. ASTM G53 – full film integrity after 1⁰⁰⁰ hours of UVB
4. Non-hazardous for transport purposes.

C4.6 **Fouling Release System.** A nontoxic coating for boat hulls that resists attachment of fouling. The coating has a low-energy surface, and its primary mechanism for releasing fouling does not rely on dissolving, polishing, eroding, or reducing in thickness. An equivalent coating to the products specified herein shall meet the following criteria:

1. The coating, applied and cured as directed by the manufacturer, shall be allowed to foul for 30 days in subtropical waters. When exposed to flowing seawater at 18 knots for 30 minutes, the coating shall release at least 80% of the settled fouling. The area covered by residual fouling shall be measured and recorded. This cycle shall be repeated six times. At the conclusion of each cleaning, the area covered by residual fouling shall not be greater than at any previous cleaning.
2. Have received EPA concurrence that registration is not required.
3. Easily cleaned by low pressure washing (<1000 psi) or by light wiping with sponges or soft cloth.

C4.7 **High Build Epoxy.** A two-component epoxy coating intended for general use as an all-purpose high-performance coating that is qualified for use under MIL-PRF-23236 or as an anticorrosive under MIL-PRF-24647. All colors are authorized for general use.

C4.8 **High Turbulence Coating.** A coating that resists removal under turbulent conditions which is used as a topcoat to protect against cavitation erosion on appendages of the underwater body of ships, especially structures aft of the propeller such as the rudder, struts and fins. An equivalent coating to the products specified herein shall meet the following criteria:

1. Proven record (a minimum of three years) of use as a coating system for high turbulent/cavitation-prone surfaces.
2. Other salient characteristics:
 - a) Maximum rate of cavitation erosion (modified ASTM G32): 40 micrometers/hour
 - b) Nominal incubation time (modified ASTM G32): 30 minutes minimum

C4.9 **Inorganic Zinc.** A self-curing, inorganic zinc-rich primer for use on properly prepared steel surfaces. This high-solids, VOC-compliant, inorganic zinc-rich primer protects steel galvanically and halts sub-film corrosion. When damaged, it continues to protect the underlying steel by cathodic protection. It will withstand severe weather conditions and aggressive exposures. This primer may be top-coated or used without topcoat, for instance, on buoy decks. An equivalent coating to the products specified herein shall meet the following criteria:

1. Although optimal relative humidity may be higher, the coating must be able to cure at a relative humidity down to 50%.
2. Other salient characteristics:
 - a) Color: Gray (Green-Gray is acceptable)
 - b) Metallic zinc content: 80% minimum by weight in dry film
 - c) Adhesion (ASTM D4541): 1000 psi min
 - d) Flexibility: No cracks when bent 180° over a 1-inch mandrel
 - e) Impact resistance (ASTM D2794): 60 inch-pounds min.

C4.10 **Organic Zinc.** An epoxy-type anticorrosive primer for use on properly-prepared steel surfaces exposed to severe industrial or marine environments. This primer must be top-coated to attain maximum protective qualities. An equivalent coating to the products specified herein shall meet the following criteria:

1. Applicable by brush, roller, or spray.

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2. Other salient characteristics:
 - a) Metallic zinc content: 80 % by weight minimum in dry film
 - b) Adhesion (ASTM D4541): 1000 psi min.
 - c) Flexibility: No cracks when bent 180° over a 1-inch mandrel
 - d) Impact resistance (ASTM D2794): 60 inch-pounds min.
 - e) Surface tolerance: Manufacturer will warrant performance on surfaces cleaned by water-jet to WJ-2 and NV-2 standards

C4.11 Polysiloxane System. Topside coating system featuring a durable polysiloxane coating with superior gloss and color retention that is used as the topcoat for exterior applications. On steel, the polysiloxane system consists of the polysiloxane topcoat that is applied to a zinc rich primer, or a zinc rich primer with an epoxy mid-coat, or an epoxy primer, or direct to metal. A coating equivalent to the polysiloxane topcoat products specified herein shall meet the following criteria:

1. It can be applied to bare or primed steel, galvanized steel, aluminum, epoxy primer, glass reinforced plastic, organic zinc primer, and inorganic zinc silicate primer.
2. Primer must be able to be applied to a waterjetted surface.
3. Can be applied by brush, roller, or spray.
4. Other salient characteristics:
 - a) Elongation (ASTM D522): 10 % minimum
 - b) Impact resistance (ASTM D2794): 80 inch-pounds min.
 - c) Adhesion (Elcometer, ASTM D4541): 1600 psi min.
 - d) Taber Abrasion (ASTM D4060, CS-17 wheel, 1 kg load, 1000 cycles): 90 mg max.
 - e) 60° Gloss retention (2000 hrs QUV): 10 gloss units max. Color change (1000 hours QUV): 3 CIELAB units max.

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C5 CG Approved Coatings/Materials.

C5.1. Generic Categories.

General Material Class	Coating	Fed-Std-595 Color
ADHESION PROMOTER/CLEANER (Use following or similar material.)		
	PPG Prep 88	-
ANTI-ABRASION COATING, ICEBREAKER, <235'		
	PPG Amerlock 400	Gray / Red
	PPG Amercoat 238	Black / Red
	International Intershield 803	Gray / Red
ANTI-ABRASION COATING, ICEBREAKER >235'		
	International Intershield 163 Inerta 160 (ERA163/ERA 160)	Black / CG Red
BILGE EPOXY COATING SYSTEM		
Primer	Sherwin-Williams Euronavy ES301K (Temp. >59 deg F) - or - Sherwin-Williams Euronavy ES301L (Temp. from 41-59 deg F)	Light Gray, Dark Gray, Red Oxide, Light Green (White can only be used as topcoat, not as a primer)
Topcoat	Sherwin-Williams Euronavy ES301S (Not recommended for application by unit level activities due to short pot life.)	Light Grey, Red Oxide
Primer/Topcoat	International Interbond 998	Off-White, Haze Gray, Terracotta Red
CERAMIC INSULATION COATING		
	Mascoat Delta T	White
	Temp-Coat Brand Temp-Coat	White
CORROSION INHIBITIVE THERMOPLASTIC		
	A & E Systems Enviropeel	Various
DIELECTRIC SHIELD FAIRING COMPOUND		
	International Interline 624 (Sprayable)	Buff/Gray/White
	Sherwin-Williams Novaplate UHS Primer/Intermediate (Sprayable)	Buff/Blue OAP
	Siemens Capastic (Trowelable)	Olive Green
	Somay Hycote 461 (Underwater repair only)	Black
FOULING RELEASE SYSTEM		
	International Intersleek System	
	Intergard 264 (FPL 274-FPA 327 / FPJ 034-FPA 327)	Red / Gray
	Intersleek 731 Tie Coat (BXA730/BXA731)	Light Pink
	Intersleek 970 Finish (FXA 979)	Black

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General Material Class	Coating	Fed-Std-595 Color
HIGH BUILD EPOXY (General purpose epoxies from MIL-PRF-24647 and MIL-PRF-23236)		
	PPG Amercoat 235	Various
	PPG Amercoat 236	Various
	PPG Amercoat 240	Various
	PPG Amercoat 385	Various
	Hempel Hempadur 4514U	Various
	Hempel Hempadur 45150	Various
	International Intergard (264) FP Series	Various
	International Intertuf (262) KH Series	Various
	NCP NBR 235	Various
	Sherwin-Williams Seaguard 5000 HS	Various
	Sherwin-Williams Duraplate 235 B67-235 Series/B67V235	Various
HIGH TURBULENCE COATING		
	PPG Amercoat 238	Black / Red
	PPG Amerlock 400	Black / Red
	Hempel Hempadur MultiStrength 35530	Black / Red
	Somay Hycote 151 Epoxy (Can be applied underwater)	Black / Red
	Somay Hycote 165 Epoxy	Black / Red
	International Interzone 1000	Black / Red
	Jotun Marathon	Black / Red
INORGANIC ZINC		
	PPG Dimetcote 9H	Green
	Hempel Galvosil 15680-19830	Gray
	International Interzinc 22HS (QH5067H) [Do not use Reddish Gray (QH5055H)]	Gray
	Sherwin-Williams Zinc Clad II Plus B69VZ12/ B69VZ13/B69D11	Gray-Green
ORGANIC ZINC		
	PPG Amercoat 68HS	Red-Gray
	Hempel Hempadur 17360-19830	Red-Gray
	International Interzinc 75V (EPA075V)	Red
	Jotun Barrier MZ-4 / V13F4	Yellow-Green
	Sherwin-Williams Zinc Clad IV	Gray-Green
	PPG/Sigma Sigmacover Zinc Primer II 7402	Red-Brown
POLYSILOXANE SYSTEM		
Zinc Rich Primer		
	Hempel Hempadur Zinc 17360	Red-Gray
	PPG Dimetcote 302H	Green
	Sherwin-Williams Fast Clad Zinc HS	Gray-Green
Epoxy Primer/Mid-Coat		
	Hempel Mastic 45880/45881	Various
	PPG Amercoat 240	Various

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General Material Class	Coating	Fed-Std-595 Color
	PPG Amerlock 2 (Temp. <90 deg F)	Various
	PPG Amerlock 400 (Temp. >90 deg F)	Various
	Sherwin-Williams 5000 HS	Various
Polysiloxane		
	Hempel Hempaxane Classic 55000	Various
	PPG PSX-700FD(Faster Dry Cure - Temp.<90 deg F)	Various
	PPG PSX-700 (Standard Cure - Temp. >90 deg F)	Various
	Sherwin-Williams Polysiloxane XLE-80/XLE-80 HAPS Free	Various
	Milspray Repair Kits (aerosol/roller/brush) containing PPG PSX-700	Various
SYNTHETIC WOOD FINISH (Use following or similar material.)		
	Akzo Nobel Sikkens Cetol Marine	Satin
	Akzo Nobel Sikkens Cetol Marine Gloss	Gloss Overcoat
	Flood Deks Olje #1	Matte
	Flood Deks Olje #2	Gloss Overcoat

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C5.2. Military/Federal Specification. Although National Stock Numbers are provided for convenience, any products that are listed on the Qualified Products List (QPL) for a given military/federal specification may be used. If there is no QPL for a given military/federal specification, any product certified as meeting all requirements of that specification may be used.

Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
FED SPEC TT-P-28 ALUMINUM HEAT RESISTING PAINT					
	NCP N6974	Aluminum	-	-	-
	PPG Amercoat 5412	Aluminum	-	-	-
	Randolph CH101340	Aluminum	-	-	-
	Randolph E-7808	Aluminum	-	-	-
	Sherwin-Williams N43S00150	Aluminum	-	-	-
FED SPEC TT-S-711 STAIN, OIL TYPE, WOOD, INTERIOR (Cancelled, but still available through GSA or use commercial equivalent)					
		Cherry	8010-00-165-4422	1.0 qt	QT
		Dark Mahogany	8010-00-281-2075	1.0 gal	GL
		Dark Oak	8010-00-165-8628	1.0 qt	QT
		Dark Oak	8010-00-281-2072	1.0 gal	GL
		Dark Walnut	8010-00-281-2076	1.0 gal	GL
		Light Oak	8010-00-597-8226	1.0 qt	QT
		Light Oak	8010-00-166-0746	1.0 gal	GL
		Light Walnut	8010-00-281-2074	1.0 gal	GL
		Mahogany	8010-00-161-7264	1.0 pt	PT
		Mahogany	8010-00-165-8627	1.0 qt	QT
		Maple	8010-00-281-2077	1.0 qt	QT
		Maple	8010-00-598-7669	1.0 gal	GL
		Red Mahogany	8010-00-281-2071	1.0 gal	GL
		Walnut	8010-00-597-8225	1.0 gal	GL
CID A-A-1800 SPAR VARNISH OIL (Cancelled, but still available through GSA or use commercial equivalent)					
		-	8010-00-597-7856	1.0 gal	GL
MIL-PRF-16173 CORROSION PREVENTION COMPOUNDS, SOLVENT CUTBACK, COLD APPLICATION, THIN FILM					
	Daubert Nox-Rust 503 DHS	-	-	-	-
	Daubert Tectyl 894	-	-	-1	-
	Esgard PL-3	-	-	-	-
	F & L Tectyl 894	-	-	-1	-
MIL-PRF-23236 COATING SYSTEMS, FOR SHIP STRUCTURES					
Fuel and/or Seawater Tanks (applied at temperatures > 50°F) (Type V or VI/Class 5/Grade C)					
	PPG Amercoat 236	-	-	-	-
	International Intergard 264 (FP Series/FPA327)	-	-	-	-
	International Interline 604 (THA660 Series/THA 665)	-	-	-	-
	Sherwin-Williams Tankguard	-	-	-	-

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	N11-100 Series				
	Sherwin-Williams Seaguard 5000HS (N11-350 Series/N11V350)	-	-	-	-
<u>Fuel and/or Seawater Tanks (applied at temperatures 32 °F to 50 °F) (Type V or VI/Class 5/Grade B)</u>					
	International Intergard 264(FP Series/FCA321)	-	-	-	-
<u>Ballast Tanks (applied at temperatures > 50°F) (Type V or VI/Class 7/Grade C)</u>					
	PPG Amercoat 235	-	-	-	-
	PPG Amercoat 240	-	-	-	-
	PPG Amercoat 385	-	-	-	-
	International Intergard 403 (KB 400 Series/KB 403)	-	-	-	-
	International Intertuf 262 (KHA Series/KHA 062)	-	-	-	-
	NCP NBR 235	-	-	-	-
	Sherwin-Williams Duraplate 235/Duraplate UHS	-	-	-	-
<u>Ballast Tanks (applied at temperatures 32 °F to 50 °F) (Type V or VI/Class 7/Grade B)</u>					
	PPG Amercoat 235	-	-	-	-
	International Intertuf 262 (KHA Series/KHA414)	-	-	-	-
<u>Fuel and/or Seawater Tanks, High Solids, Edge-Retentive (applied at temperatures > 50°F) (Type VII/Class 5 /Grade C)</u>					
	PPG Amercoat 133	Various	-	-	-
	PPG Amercoat 240	Various	-	-	-
	International Interbond 998 (KRA Series)	Various	-	-	-
	International Interline 624 Primer: THA626/THA627 Topcoat: THA 620 Series/THA627	Buff Various	- -	- -	- -
	International Interline 783 Primer: THA787/THA785 Topcoat: THA783/THA785 THA782/THA785	Pink Gray Buff	- - -	- - -	- - -
	Sherwin-Williams Primer: Dura-Plate UHS B62H210/B62V210 Dura-Plate UHS B62L210/B62V210 Sherwin-Williams Topcoat: Dura-Plate UHS B62W210/ B62V210 Dura-Plate UHS	Buff Blue White Green	- - - -	- - - -	- - - -

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	B62W210/ B62G210 Dura-Plate UHS B62W210/B62A210	Light Gray	-	-	-
	Sherwin-Williams FastClad ER Primer: B62L230/B62V230 Topcoat: B62W230/B62V230 B62W230/B62G230 B62W230/B62A230	Blue White Green Light Gray	- - - -	- - - -	- - - -
	Sherwin-Williams Primer: Nova-Plate UHS B62H220/B62V220 Nova-Plate UHS B62L220/B62V220 Sherwin-Williams Stripecoat/Topcoat: Nova-Plate UHS B62A220/B62V220 Nova-Plate UHS B62W220/ B62V220 Nova-Plate UHS B62W220/ B62G220	Buff Light Blue Gray White Green	- - - - -	- - - - -	- - - - -
	Sherwin-Williams Primer: Nova-Plate UHS B62H220/B62V221 Nova-Plate UHS B62L220/B62V221 Sherwin-Williams Stripecoat/Topcoat: Nova-Plate UHS B62A220/B62V221 Nova-Plate UHS B62W220/ B62V221 Nova-Plate UHS B62W220/ B62G221	Buff Light Blue Gray White Green	- - - - -	- - - - -	- - - - -
	PPG/Sigma Primer/Stripecoat/Topcoat: Edgeguard 5427 Edgeguard 5428 Edgeguard 5428-5000	Cream White Gray	- - -	- - -	- - -
	Warren T-301-01/Safe-T Plus	Various	-	-	-
Ballast Tanks, High Solids, Edge-Retentive (applied at temperatures > 50°F) (Type VII/Class 7/Grade C)					
	International Primer: Intergard 143 (THA 141/THA 148) International	Pink	-	-	-

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	Stripecoat/Topcoat: Intergard 143 (THA 143/THA 148) Intergard 143 (THA 144/THA 148)	Buff Gray	- -	- -	- -
	PPG Primer: Amercoat 133 PPG Stripecoat/Topcoat: Amercoat 333	Off-white/Red Gray/Buff/ Pastel Green	- -	- -	- -
	Sherwin-Williams Euronavy Primer: ES301K Topcoat: ES301S	Red/Haze Gray/ Green White/Gray/ Red/Haze Gray	- -	- -	- -
	PPG/Sigma Primer: Sigmaguard BT Primer 5404 Sigmaguard BT Primer 5404 PPG/Sigma Stripecoat/Topcoat: Sigma Sigmaguard BT 5411-5000 Sigma Sigmaguard BT 5411-5000 Sigma Sigmaguard BT 5411-S674 Sigma Sigmaguard BT 5411-S674 Sigma Sigmaguard BT 5411-7000 Sigma Sigmaguard BT 5411-7000	Amber Amber Gray Gray Aqua Green Aqua Green White White	8010-01-470-7107 8010-01-470-7113 8010-01-470-8105 8010-01-470-7126 8010-01-470-8108 8010-01-470-8110 8010-01-470-7129 8010-01-470-7124	1.0 gal 5.0 gal 1.0 gal 5.0 gal 1.0 gal 5.0 gal 1.0 gal 5.0 gal	KT KT KT KT KT KT KT KT
<u>Ballast Tanks, High Solids, Edge-Retentive (applied at temperatures 32-49°F) (Type VII/Class 7/Grade B)</u>					
	Sherwin-Williams Euronavy Primer: ES301L Topcoat: ES301S	Red/Haze Gray/ Green White/Red/Gray /Haze Gray	- -	- -	- -
<u>Grey Water, Sewage, and CHT Tanks High Solids, Edge-Retentive (applied at temperatures > 50°F) (Type VII/Class 13/Grade C)</u>					
	International Interline 624 Primer: THA626/THA627 Topcoat: THA 620 Series/ THA627	Buff Various	- -	- -	- -
	International Interline 783 Primer: THA787/THA785 Topcoat:	Pink	-	-	-

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	THA783/THA785 THA782/THA785	Gray Buff	- -	- -	- -
	Sherwin-Williams Primer: Nova-Plate UHS B62H220/B62V220 Nova-Plate UHS B62L220/B62V220 Sherwin-Williams Stripecoat/Topcoat: Nova-Plate UHS B62A220/B62V220 Nova-Plate UHS B62W220/ B62V220 Nova-Plate UHS B62W220/ B62GV220	Buff Light Blue Gray White Green	- - - - -	- - - - -	- - - - -
	Sherwin-Williams Primer: Nova-Plate UHS B62H220/B62V221 Nova-Plate UHS B62L220/B62V221 Sherwin-Williams Stripecoat/Topcoat: Nova-Plate UHS B62A220/B62V221 Nova-Plate UHS B62W220/ B62V221 Nova-Plate UHS B62W220/ B62G221	Buff Light Blue Gray White Green	- - - - -	- - - - -	- - - - -
	PPG/Sigma Primer/Stripecoat/Topcoat: Edgeguard 5427 Edgeguard 5428 Edgeguard 5428-5000	Cream White Gray	- - -	- - -	- - -
	Warren T-301-03/Safe-T Plus	Various	-	-	-
Potable Water Tank (applied at temperatures > 50°F) (Type VII, Class 9, Grade C)					
	PPG Primer: Amercoat 133 Topcoat: Amercoat 333	Primer: White/ Tank Primer Green Topcoat: Off-white, Buff			
	PPG Primer: Sigmaguard CSF 85 Topcoat: Sigmaguard CSF 85	Blue/ White Blue/ White			
	Sherwin-Williams Primer: Dura-Plate UHS B62H210/B62V210 Dura-Plate UHS B62L210/B62V210 Topcoat: Dura-Plate UHS	Buff Blue White			

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	B62W210/ B62V210 Dura-Plate UHS B62W210/ B62G210	Green			
MIL-PRF-24176 CEMENT, EPOXY, METAL REPAIR & HULL SMOOTHING					
	3M Scotchkote Epoxy Ceramic Rebuild EG 513	Gray	-	-	-
	3M Scotchkote Epoxy Metal Repair EG 503	Gray	-	-	-
	Abbey Epi-Seal 486		-	-	-
	Belzona 1311 Ceramic R- Metal	Gray	-	-	-
	Belzona 1111 Super Metal	Gray	-	-	-
	Belzona 1211 E-Metal	Gray	-	-	-
	Enecon Epoxit 6003/403	Gray	-	-	-
	Enecon Metalclad Duralloy	Gray	-	-	-
	Enecon Metalclad CeramAlloy CP	Gray	-	-	-
	Flamemaster CS 2725	Gray	-	-	-
	International Intergard 822 (EAA 200/EAA 201)	Red	-	-	-
	ITW GP119K Repair Compound	Blue	-	-	-
	United Resin Epoxy Metal Repair Compound	Black	-	-	-
MIL-PRF-24596 NONFLAMING FIRE-PROTECTIVE COATING COMPOUNDS					
	Rosewood	22519	8010-01-208-5832	1.0 gal	GL
	Rosewood	22519	8010-01-208-1774	5.0 gal	CN
	Beach Sand	22563	8010-01-206-4712	1.0 gal	GL
	Beach Sand	22563	8010-01-208-7772	5.0 gal	CN
	Sun Glow	23697	8010-01-209-1153	1.0 gal	GL
	Sun Glow	23697	8010-01-208-7774	5.0 gal	CN
	Clipper Blue	24516	8010-01-208-1775	1.0 gal	GL
	Clipper Blue	24516	8010-01-208-7773	5.0 gal	CN
	Pastel Green	24585	8010-01-208-1779	1.0 gal	GL
	Pastel Green	24585	8010-01-208-1780	5.0 gal	CN
	Pastel Blue	25526	8010-01-208-7776	1.0 gal	GL
	Pastel Blue	25526	8010-01-209-1155	5.0 gal	CN
	Bulkhead Gray	26307	8010-01-208-1781	1.0 gal	GL
	Bulkhead Gray	26307	8010-01-208-7778	5.0 gal	CN
	Yellow Gray	26400	8010-01-208-1777	1.0 gal	GL
	Yellow Gray	26400	8010-01-208-7775	5.0 gal	CN
	Pearl Gray	26493	8010-01-208-1782	1.0 gal	GL
	Pearl Gray	26493	8010-01-209-3195	5.0 gal	CN
	Green Gray	26496	8010-01-209-1154	1.0 gal	GL
	Green Gray	26496	8010-01-208-1776	5.0 gal	CN
	Soft White	27880	8010-01-208-1778	1.0 gal	GL
	Soft White	27880	8010-01-208-7777	5.0 gal	CN

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	Class 1, Grade A, Application A & B (Water-based): Hempel 515US Hempel 595US International Intercryl 451 NCP Mil-PRF-24596B Latex Enamel NoFire A-18NV PPG Amercoat 601N Sherwin-Williams MIL-PRF-24596B N41-300 Series	Various Various Various Various Various Various Various	- - - - - - -	- - - - - - -	- - - - - - -
	Class 1, Grade C, Application A & B (Solvent-based): International Interlac 537 NCP MIL-PRF-24596B Solvent Based PPG Amercoat 8315C	Various Various Various	- - -	- - -	- - -
DOD-E-24607 NONFLAMING INTERIOR CHLORINATED ALKYD ENAMEL					
	Rosewood	22519	8010-01-344-5086	1.0 gal	GL
	Rosewood	22519	8010-01-344-5097	5.0 gal	CN
	Beach Sand	22563	8010-01-344-5085	1.0 gal	GL
	Beach Sand	22563	8010-01-344-5096	5.0 gal	CN
	Sun Glow	23697	8010-01-344-5088	1.0 gal	GL
	Sun Glow	23697	8010-01-344-5099	5.0 gal	CN
	Clipper Blue	24516	8010-01-344-5087	1.0 gal	GL
	Clipper Blue	24516	8010-01-344-5098	5.0 gal	CN
	Pastel Green	24585	8010-01-344-5090	1.0 gal	GL
	Pastel Green	24585	8010-01-344-5101	5.0 gal	CN
	Pastel Blue	25526	8010-01-344-5095	1.0 gal	GL
	Pastel Blue	25526	8010-01-344-5106	5.0 gal	CN
	Bulkhead Gray	26307	8010-01-344-5091	1.0 gal	GL
	Bulkhead Gray	26307	8010-01-344-5102	5.0 gal	CN
	Yellow Gray	26400	8010-01-344-5093	1.0 gal	GL
	Yellow Gray	26400	8010-01-344-5104	5.0 gal	CN
	Pearl Gray	26493	8010-01-344-5094	1.0 gal	GL
	Pearl Gray	26493	8010-01-344-5105	5.0 gal	CN
	Green Gray	26496	8010-01-344-5092	1.0 gal	GL
	Green Gray	26496	8010-01-344-5103	5.0 gal	CN
	Soft White	27880	8010-01-344-5089	1.0 gal	GL
	Soft White	27880	8010-01-344-5100	5.0 gal	CN
	There is no QPL for DOD-E-24607. Use the following or equivalent:				
	PPG Amercoat 3234	Various	-	-	-
	Crawford TPD-24607	Various	-	-	-
	International Interlac 537	Various	-	-	-
	NCP DOD-E-24607	Various	-	-	-
	Sherwin-Williams DOD-E-24607 N41 Series	Various	-	-	-

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
MIL-PRF-24635 SILICONE ALKYD ENAMEL [Use following NSNs or procure directly from manufacturer listed on most current QPL-24635-(series). Colors without NSNs are available through GSA on demand]					
	Brown, Gloss	10080	(available through GSA on demand)		
	Tan, Gloss	10324	8010-01-433-8367	1.0 qt	QT
	Tan, Gloss	10324	8010-01-433-8365	1.0 gal	GL
	Spar, Gloss	10371	8010-01-396-6804	1.0 qt	QT
	Spar, Gloss	10371	8010-01-360-9307	1.0 gal	GL
	Red, Gloss	11105	8010-01-396-6803	1.0 qt	QT
	Red, Gloss	11105	8010-01-396-6798	1.0 gal	GL
	Red, Gloss	11105	8010-01-349-9006	5.0 gal	CN
	International Orange, Gloss	12197	8010-01-360-9306	1.0 gal	GL
	CG Red, Gloss	12199	8010-01-360-9305	1.0 gal	GL
	Orange, Gloss	12246	8010-01-433-8361	1.0 qt	QT
	Orange, Gloss	12246	8010-01-433-8381	1.0 gal	GL
	Yellow, Gloss	13538	8010-01-396-6805	1.0 gal	GL
	Yellow, Gloss	13538	8010-01-349-9005	5.0 gal	CN
	Yellow, Lusterless	33538	(available through GSA on demand)		
	Chartreuse, Semigloss	23814	(available through GSA on demand)		
	Dark Green, Gloss	14062	8010-01-349-9007	5.0 gal	CN
	Bright Green, Gloss	14260	(available through GSA on demand)		
	Light Green, Gloss	14449	8010-01-433-8370	1.0 qt	QT
	Light Green, Gloss	14449	8010-01-433-8369	1.0 gal	GL
	Dark Blue, Gloss	15044	8010-01-433-8371	1.0 qt	QT
	Dark Blue, Gloss	15044	8010-01-433-8374	1.0 gal	GL
	Blue, Gloss	15123	8010-01-396-6797	1.0 qt	QT
	CG Blue, Gloss	15182	8010-01-396-6796	1.0 qt	QT
	CG Blue, Gloss	15182	8010-01-360-9304	1.0 gal	GL
	Light Blue, Gloss	15200	8010-01-433-8382	1.0 qt	QT
	Light Blue, Gloss	15200	8010-01-433-8373	1.0 gal	GL
	Dark Gray, Gloss	16081	8010-01-433-8384	1.0 qt	QT
	Dark Gray, Gloss	16081	8010-01-433-8379	1.0 gal	GL
	Blue Gray, Gloss	16099	8010-01-360-8068	1.0 gal	GL
	Blue Gray, Gloss	16099	8010-01-374-8954	5.0 gal	CN
	Gray, Gloss	16187	8010-01-356-2940	1.0 gal	GL
	Light Gray, Gloss	16376	8010-01-375-2175	1.0 gal	GL
	Black, Gloss	17038	8010-01-350-5239	1.0 gal	GL
	Black, Gloss	17038	8010-01-344-6695	5.0 gal	CN
	Black, Semigloss	27038	8010-01-344-5320	1.0 gal	GL
	Black, Lusterless	37038	8010-01-356-2938	1.0 gal	GL
	Black, Lusterless	37038	8010-01-344-6703	5.0 gal	CN
	Gold, Gloss	17043	(available through GSA on demand)		
	Dark Purple, Gloss	17100	(available through GSA on demand)		
	Purple, Gloss	17142	8010-01-433-8375	1.0 qt	QT
	Purple, Gloss	17142	8010-01-433-8388	1.0 gal	GL
	White, Semigloss	27886	8010-01-382-1810	1.0 gal	GL
	CG White, Gloss	17925	8010-01-397-3935	1.0 gal	GL

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	PPG Amercoat 5410	Various	-	-	-
	International Interlac 800/Interlac 2	Various	-	-	-
	BLP Mobile Jack Tar Silicone Alkyd Enamel	Various	-	-	-
	NCP Mil-E-24635 Dynaspec 250/Dynaspec 340	Various	-	-	-
	Sherwin-Williams Mil-PRF-24635 N40 Series	Various	-	-	-
	Stic-Kote S-42-635 Series	Various	-	-	-
MIL-PRF-24647 ANTICORROSIVE AND ANTIFOULING SHIP HULL PAINT SYSTEM					
Anticorrosives (Grade A – VOC level does not exceed 340 g/l)					
	PPG Amercoat 235	Gray	8010-01-359-5513	1.0 gal	KT
	PPG Amercoat 235	Gray	8010-01-359-7235	5.0 gal	KT
	PPG Amercoat 235	Red	8010-01-359-7236	1.0 gal	KT
	PPG Amercoat 235	Red	8010-01-316-6741	5.0 gal	KT
	Hempel Hempadur 4514U-11480 Low Temp	Gray	8010-01-419-2432	5.0 gal	KT
	Hempel Hempadur 4514U-50630 Low Temp	Red	8010-01-419-2427	5.0 gal	KT
	International Intertuf 262	Gray	8010-01-421-2963	5.0 gal	KT
	International Intertuf 262	Red	8010-01-421-2964	5.0 gal	KT
	International Intertuf 262LT Low Temp	Gray	8010-01-421-2967	5.0 gal	KT
	International Intertuf 262LT Low Temp	Red	8010-01-421-2966	5.0 gal	KT
Anticorrosives (Grade B – VOC level does not exceed 250 g/l)					
	PPG Amercoat 240	Gray/Red	-	-	-
	Hempel Hempadur 45150-11480	Gray	8010-01-419-2434	5.0 gal	KT
	Hempel Hempadur 45150-50630	Red	8010-01-419-2431	5.0 gal	KT
	International Intergard 264	Light Gray	8010-01-241-9721	5.0 gal	KT
	International Intergard 264	Red	8010-01-268-7583	5.0 gal	KT
	International Intergard 264LT Low Temp	Light Gray	8010-01-241-9723	5.0 gal	KT
	International Intergard 264LT Low Temp	Red	8010-01-268-7584	5.0 gal	KT
	Sherwin-Williams Seaguard 5000 HS	Gray/Red	-	-	-
Antifoulants, Non-copper Ablative (Type I, Class 2, Applications 1 & 4)					
	International Interspeed 5640	Black	8010-01-597-6012	5.0 gal	KT
	International Interspeed 5640	Red	8010-01-597-6011	5.0 gal	KT
	Sherwin-Williams SeaVoyage Copper Free Antifouling Paint (formerly HMF Heavy Metal Free)	Black/Red	-	-	-

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
Antifoulants, Copper Ablative (Type II, Class 1, Grade A or B)					
	PPG ABC #3	Black	8010-01-210-7812	1.0 gal	GL
	PPG ABC #3	Black	8010-01-210-7813	5.0 gal	CN
	PPG ABC #3	Red	8010-01-211-4815	5.0 gal	CN
	Hempel Olympic 76600-19990 (Also Grade B)	Black	8010-01-419-2428	5.0 gal	CN
	Hempel Olympic 76600-51110 (Also Grade B)	Red	8010-01-419-2435	5.0 gal	CN
	International Interspeed 640	Red	8010-01-339-8708	5.0 gal	CN
	International Interspeed 640	Black	8010-01-339-8707	5.0 gal	CN
	Sherwin-Williams Seaguard P30BQ12 (Also Grade B)	Black	8010-01-467-5561	5.0 gal	CN
	Sherwin-Williams Seaguard P30RQ10 (Also Grade B)	Red	8010-01-467-5559	5.0 gal	CN
MIL-PRF-24667 NON-SKID COATING SYSTEM					
Type I, Comp G - High Durability, Rollable Deck Coating					
	<u>Primers:</u>				
	Dark Gray	26008	8010-01-397-3986	1.0 gal	KT
	Dark Gray	26008	8010-01-397-3810	5.0 gal	KT
	Light Buff	22516	8010-01-397-3987	1.0 gal	KT
	Light Buff	22516	8010-01-397-3811	5.0 gal	KT
	AST MS-7CZ	Gray/Light Gray/ Buff			
	PPG Amercoat 137	Dark Gray/Buf			
	International Intershield 456	Orange/Buf			
	<u>Topcoat:</u>	36076	8010-01-397-3802	5.0 gal	KT
	AST MS-400G				
	AST MS-400G LSA (Low Solar Absorbing)				
	AST MS-400-100G (High Solids)				
	AST MS-400-100G LW (High Solids)				
	AST MS-440G				
	AST MS-660G UV/LSA (UV Resistant Epoxy/Low Solar Absorbing)				
	AST MS-4100G Lightweight (High Solids/UV Resistant/Low Solar Absorbing/30% Lighter Weight)				
	PPG Amercoat 138G				
	International Intershield 6GV (High Solids/Low Solar Absorbing)				
Type III, Comp G – Standard Durability, Rollable Resilient Deck Coating					

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	<u>Primer:</u> AST MS-7CZ	Gray/Buff			
	<u>Epoxy Intermediate Membrane:</u> AST MS-1600 Flexible	Dark Gray	-	-	-
	<u>Topcoat:</u> AST MS-660G UV/LSA AST MS-880G	36076			
Type V, Comp G – Extended Durability, Rollable Deck Coating					
	<u>Primer:</u> AST MS-8CZ International Intershield 456	Dark Gray/Buff/ Haze Gray Orange/Buff			
	<u>Topcoat:</u> AST MS-5000G AST MS-5101G International Intershield 6GV	36076			
Type VIII, Comp G – Low Temperature Cure, Rollable Deck Coating					
	<u>Primer:</u> AST MS-11CZ International Intershield 486	Dark Gray/Buff/ Haze Gray Orange/Gray	-	-	-
	<u>Topcoat:</u> AST MS-8000G (High Solids) International Intershield 9L (High Solids/ Low Solar Absorbing)	36076	-	-	-
Types I, III, V, and VIII – Color Toppings					
	<u>Color Toppings:</u> Dark Gray Red White Yellow AST MS-200 AST MS-275 PPG Amercoat 229T International Interlac 800	36076 31136 37875 33538	8010-01-397-3816 8010-01-397-3815 8010-01-397-3812 8010-01-397-3814	5.0 gal 5.0 gal 5.0 gal 5.0 gal	KT KT KT KT
Type XI, Comp PS					
	3M/LAB Safety-Walk 770 (Black 710 is not authorized) Coarse Slip Resistant Surfacing (Peel ‘n’ Stick)	16099 (Dark Gray)	-	-	-
	3M/LAB Safety-Walk Edge Sealing Compound No. 5569	-	-	-	-
MIL-C-81309 CORROSION PREVENTIVE COMPOUND, WATER DISPLACING, ULTRA-THIN FILM					

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Mil-Spec	Coating	Fed-Std-595 Color	National Stock No.	Quantity	U/I
	Type II - Soft Film, Class 1 - Nonpressurized Container	-	8030-00-213-3279	1.0 gal	GL
	Type II - Soft Film, Class 1 - Nonpressurized Container	-	8030-00-262-7358	5.0 gal	CN

C6 Procurement Information.

C6.1. Government Services Administration (GSA). The most convenient methods for ordering coatings and supplies through GSA are found in Chapter 4 Painting Organization and Supervision. Following are GSA resources to place orders or get questions answered:

1. GSA Customer Service is available at 816-926-7315.
2. Access to GSA Advantage! may be obtained at www.gsaadvantage.gov. For questions call the GSA Advantage helpline toll-free at 877-472-3777.
3. For up-to-date Multiple Award Schedule information visit the Schedules E-Library at www.fss.gsa.gov. For ordering assistance or for additional information, contact the GSA, Hardware and Appliances Center Customer Service at 816-926-7315.
4. Fax or mail a MIPR to the address below for a 48 hour turn around. For questions, call GSA.

General Services Administration
Federal Supply Service (6FEI)
1500 East Bannister Road
Kansas City, MO 64131-3087
816-926-6757 / Fax: 816-926-7971

5. To submit a standard MILSTRIP requisition, a Form DD 1348-6 may be faxed or mailed to the above address.

C6.2. Vender Information. The following phone numbers are provided for the vendors listed in CG Approved Coatings or elsewhere in this manual. The Federal Supply Service (FSS) Multiple Award Schedule contract number is provided where available.

3M Safety Walk Coarse Slip Resistant Surfacing (Pre-Cut or Rolls) and Edge Sealer are available from:

Louisiana Association for the Blind
1750 Claiborne Avenue
Shreveport, LA 71103-4189
318-635-6471 / Fax: 318-635-8902
(Mandatory government approved source under the JWOD Program)

A & E Systems LLC
150 Hilden Road, Ste. 301
Ponte Vedra, FL 32081
904-819-8985 / Fax: 904-819-1430

Abbey Products
400 E. Tioga St.
Philadelphia, PA 19134

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215-739-9960

American Safety Technologies
565 Eagle Rock Avenue
Roseland, NJ 07068
973-403-2600 / Fax: 973-403-1108

Belzona Inc.
2000 N. W. 88 Court
Miami, FL 33172
305-594-4994 / Fax: 305-599-1140

BLP Mobile Paint Manufacturing Co.
4775 Hamilton Boulevard
Theodore, Alabama 36582
251-443-6110 / Fax: 251-408-0410

Crawford Laboratories Incorporated
4165 S. Emerald Ave.
Chicago, IL 60609-2646
773-376-7132 / Fax: 773-376-0945

Daubert Chemical Company, Inc.
4700 S. Central Ave.
Chicago, IL 60638
708-496-7350

Enecon Corp.
6 Platinum Court
Medford, NY 11763
516-349-0022 / Fax: 516-349-5522

Esgard, Inc.
515 Debonnaire Road
Scott, LA 70583
337-234-6327

F & L Company, Inc.
1635 W. Gaylord St.
Long Beach, CA 90813
562-432-1301

Flamemaster Corp.
13576 Desmond St.
Pacoima, CA 91331
818-982-1650

The Flood Company
1212 Barlow Road, P.O. Box 2535
Hudson, OH 44236-0035

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330-650-4070 / Fax: 330-650-1453

Hempel Coatings (USA), Inc.
600 Conroe Park North Drive
Conroe, TX 77303
936-523-6000 / Fax: 936-523-6073

International Paint Inc.
Customer Order Service Dept.
6001 Antoine Street
Houston, TX 77091
800-654-7692 / Fax: 713-684-1295

ITW Devcon
30 Endicott Street
Danvers, MA 01923
978-777-1100 / Fax: 978-774-0516

ITW Philadelphia Resins
130 Commerce Drive
Montgomeryville, PA 18936
215-855-8450 / Fax: 215-855-4688

Jotun Paints, Inc.
9203 Highway 23
P.O. Box 159
Belle Chasse, LA 70037
504-394-3538 / Fax: 504-394-3726

Mascoat Products
4310 Campbell Rd
Houston, TX 77041
713.465.0304 / Fax: 713.465.0302

Milspray
1985 Swarthmore Ave., Suite 1
Lakewood, NJ 08701
732-886-2223 / Fax: 732-886-2250

NCP Coatings, Inc.
225 Fort Street
Niles, MI 49120-0307
269-683-3377 / Fax: 269-683-3305

NoFire Technologies, Inc.
5 James St.
South Hackensack, NJ 07606
201-818-1616

PPG Protective & Marine Coatings
11605 Vimy Ridge Road

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Little Rock, AR 72219-2610
501-455-4500 / Fax: 501-407-9948
FSS: GS-10F-8896H expires 31 May 2013

Randolph Products Company
33 Haynes Cir.
Chicopee, MA 01020
616-633-9380

Sherwin-Williams Company, Marine Customer Service
101 Prospect Ave.
655 Guild Hall
Cleveland, OH 44115-1075
877-877-7115 / Fax: 800-792-2776
FSS: GS-10F-0004J expires 31 Jan 2013

Siemens Water Technologies
2 Milltown Ct.
Union NJ 07083
908-851-2277 / Fax: 908-851-6906

Sigma (Acquired by PPG)

Sikkens Wood Finishes
Akzo Nobel Coatings Inc. Customer Service
1845 Maxwell Street
Troy, MI 48084
248-637-0400 / Fax: 248-637-5252

Somay Products, Inc.
4301 N.W. 35th Avenue
Miami, Florida 33142-4382
305-633-6333 / Fax: 305 638-5524

Stic-Adhesive Products Co., Inc.
3950 Medford Street
Los Angeles, CA 90063
323-268-2956

Temp-Coat Brand Products, LLC
301 W. Airline Hwy, Ste. 100
LaPlace, LA 70068
985-651-2911 / Fax: 985-651-2964

United Resin Corp.
4359 Normandy Ct.
Royal Oak, MI 48073
248-549-8200

C6.3. Procurement of Miscellaneous Items.

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A. Military/Federal Specifications can be obtained at no charge online from the following DOD web site: <http://astimage.daps.dla.mil/online/>

1. Registration is required.

B. FED-STD-595C - Colors Used in Government Procurement: The following items are available:

1. Fan Deck of representative colors, 0.5 x 2 inch color chips. The National Stock Number for this is 7690-01-162-2210.
2. Fed-Std-595 Color Book, consisting of an 8.5 x 11 inch compilation of the representative color chips, each 0.5 x 1 inch in size. Individual paint colors are arranged in tabs by color family and in each tab, sequentially from light to dark and according to color chip number. These are formatted in three parallel columns corresponding to flat, semi-gloss and gloss.
3. Individual 3 x 5 inch color reference chips
4. Color set of all 650 color reference chips (3 inch x 5 inch)
5. These items are on sale by GSA at the following address:

GSA Property Management
GSA/CO/3QSCB
490 L'Enfant Plaza East S.W., Suite 8214
Washington, D.C. 20407

6. Surface preparation specifications and visual standards are available from:

The Society for Protective Coatings
40 24th Street, 6th Floor
Pittsburgh, PA 15222-4656
412-281-2331 / Fax: 412-281-9992
www.sspc.org

NACE International
P.O. Box 201009
Houston, TX 77216-1009
281-228-6223 / Fax: 281-228-6329
<http://www.nace.org>

7. Decals (numerals, letters, and Coast Guard emblems) are still available from UNICOR as listed in contract #DTCG23-96-D-ECV058 although the contract has expired:

UNICOR Federal Prison Industries
3150 Horton Road
Fort Worth, TX 76119
800-827-3168/817-413-3206/817-413-3207
www.unicor.gov

8. Decals (numerals, letters, and Coast Guard emblems), and controlled substance contraband seizure logos are available from:
Brace Enterprises

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10250 SE 138 Terrace
Dunnellon, FL 34431
352-489-4442 / Fax: 35-489-4476
www.braceenterprise.com

APPENDIX D

**NEW CONSTRUCTION REQUIREMENTS FOR COATINGS AND
CORROSION CONTROL OF UNITED STATES COAST GUARD
VESSELS**

D1. General. This appendix contains the new construction requirements for prevention of deterioration of United States Coast Guard (USCG) vessels due to corrosion and other related detrimental environmental effects. This standard specification in conjunction with a Ship Specific Performance Specification and new construction guidelines will specify surface preparation, materials to use and the application of preventive measures such as paints, deck coverings and cathodic protection systems. All new construction specifications for USCG vessels must fully comply with the requirements of this Appendix and the coating systems of Appendices A-C.

D1.1 New Construction Materials. All new construction materials (steel, aluminum, plastic and wood) received by the shipbuilder shall be stored in such as manner so as to prevent environmental degradation.

D1.2 Maintaining Fit-for-use Condition of Steel and Aluminum. When received, new steel and aluminum shall be abrasive blasted to a 0.0005 to 0.001 inch (0.5 to 1.0 mil) surface profile and coated with a USCG approved preconstruction primer to a maximum dry film thickness of 0.001 inch (1.0 mil). The preconstruction primer shall maintain the metal in a fit-for-use condition for at least one year. Touch-up of deteriorated preconstruction primer is allowed.

D1.3 Maintaining Fit-for-use Condition of Plastic and Wood. Plastic and wood shall be cleaned of all dirt, grease, oil, preservatives and mold release agents. Plastic and wood shall be stored and maintained in an enclosed climate controlled storage facility where relative humidity is maintained at 50% maximum.

D2. Corrosion Prevention and Control Plan. The SFLC CPAC Program PG provides guidance for development of a Corrosion Prevention and Control Plan for new acquisition. The corrosion control plan shall take into account currently approved and/or qualified materials, environmental regulations, personnel safety requirements and vessel service life evolution such as docking and upkeep maintenance cycles. The corrosion control plan shall include all QA requirements presented throughout this Appendix.

D3. Environmental Readings.

D3.1 Measure and record ambient and metal surface temperatures, relative humidity, and dew point at a minimum of four-hour intervals during the entire preservation process which shall be recorded from conditions on-site, in close proximity to the structure being coated.

D3.2 Coatings applied to critical areas shall be applied only when the temperature of the prepared substrate is greater than 50 degrees Fahrenheit and a minimum of 5 degrees Fahrenheit above the dew point.

D3.3 Maintain the relative humidity in a tank or void space at a maximum of 50 percent from the start of abrasive blasting to cure of the topcoat.

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D4. Surface Preparation.

D4.1 Accomplish degreasing/cleaning to ensure removal of surface contaminants, such as sea salts, loose rust, mud, marine growth, grease, oil, and other petroleum products.

D4.1.1 Accomplish degreasing/cleaning a maximum of 4 hours prior to surface preparation to ensure removal of surface contaminants.

D4.1.2 If evidence of contamination exists, accomplish degreasing/cleaning a maximum of 4 hours prior to application of each coat of paint to ensure removal of surface contaminants.

D4.2 Prior to application of coatings to all critical surfaces, preconstruction primer shall be removed by dry abrasive blasting methods. The abrasive materials used shall be new and shall be qualified to military specification MIL-A-22262 or an abrasive material approved by the USCG and of sufficient hardness to establish a 0.002 to 0.003 inch (2.0 to 3.0 mils) peak-to-valley anchor tooth profile on the metal. Minimum surface cleanliness condition shall be in accordance with the SSPC-SP 10, near white metal (or equivalent for aluminum).

D4.2.1 Following blasting operations, measure and record surface peak-to-valley profile for all critical areas. Five profile readings shall be taken for the first 1,000 square feet (with a minimum of 5 profile readings taken); for each additional 1,000 square feet, 2 profile readings shall be taken. Each group of profile readings shall average 2 to 4 mils, with no reading less than one mil nor more than 5 mils. If such profile is not present, proper profile must be established. Profile readings shall be taken in accordance with Method C of ASTM D4417, Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel, with the exception of averaging. If surface profile requirements of the manufacturer's instructions are greater than that specified herein, they shall supersede this requirement.

D4.2.2 Following the abrasive blast operation, the blasted surface shall be evaluated for contamination by soluble salts such as chlorides. The evaluation test may either be the cotton ball swab method of collection followed by titration or the Bresle blister patch method of collection. Five determinations shall be conducted every 1,000 square feet. Areas less than 1,000 square feet shall have five determinations made. The maximum allowable soluble salt presence is 3 micrograms per square centimeter or if conductivity of the soluble salt is determined, the maximum allowable conductivity is 30 microsiemens –centimeter for immersion surfaces. The maximum allowable soluble salt presence is 7 micrograms per square centimeter or if conductivity of the soluble salt is determined, the maximum allowable conductivity is 70 microsiemens –centimeter for non-immersion surfaces. If conductivity measurements exceed the respective values, water wash the affected areas with fresh water. Dry the affected areas and remove all standing water. Accomplish surface conductivity checks on affected areas. Repeat step until satisfactory levels are obtained. Evaluation reports are to be maintained by the Shipbuilder QC Department for review by the USCG and the appropriate government representative.

D4.2.3 The first coat of anticorrosive paint shall be applied before the blasted metal surface has deteriorated to less than a SSPC-SP 10 surface condition. Deteriorated surfaces shall be restored to a SSPC-SP 10 surface condition before application of any coating.

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D4.3 For paint application to metal in non-critical areas, the first coat of the paint system may be applied over a sound, clean and intact preconstruction primer. Compatibility between the preconstruction primer and the anticorrosive paint shall be demonstrated to the designated government representative.

D5. Hydrostatic Testing. A hydrostatic test is a test where a component, portion of a system, or entire system is pressurized with a liquid or gas and inspected for leakage and deformation. The hydrostatic test shall be performed after any required cleaning and flushing but prior to any required disinfection. Joints, including new welds and weld repairs, shall be left uninsulated, unpainted, and exposed for examination during the test, unless they have been previously satisfactorily tested to required pressure. Ideally all welding and testing of welds should occur before any coating is applied. This is not always the case. If a coating was applied and then subsequent welding or repair performed requires a hydrostatic test, the coating will be removed and the disturbed area repaired.

D6. Coating Materials.

D6.1 Underwater Hull and Boot-top Areas – Steel, Wood and GRP vessels.

D6.1.1 Underwater hull and boot-top paint systems in accordance with Appendix A shall be applied to abrasive blasted (SSPC-SP 10) metal at the same dry film thickness and the same number of coats as qualified or approved and as listed for a specific service life. Whether qualified to a military specification or approved by the USCG, any antifouling paint used shall be registered by the US Environmental Protection Agency (EPA).

D6.1.2 Clean, dry, oil and grease-free plastic and wood shall be lightly roughened by hand sanding with 120 grit abrasive paper. Care shall be taken to avoid creating uneven rough areas that will act as a “wick” for the first coat of paint. Anticorrosive paint is not required although it may be applied to avoid masking wood or plastic from adjacent metal areas.

D6.2 Underwater Hull and Boot-top Areas – Aluminum vessels. Underwater hull and boot-top paint systems (anticorrosive paint and antifouling paint) shall be non-metallic paints approved by the USCG in accordance with Appendix A, shall be applied to abrasive blasted (SSPC-SP 10 equivalent) aluminum at the same dry film thickness and the same number of coats as approved and as listed for a specific service life. Antifouling paints that contain a biocide compatible with aluminum must be registered with the US EPA.

D6.3 Freeboard and Topsides. Freeboard and topsides coating systems, anticorrosive and cosmetic coatings, are applied to abrasive blasted (SSPC-SP 10 or equivalent for aluminum) metal and will be installed in accordance with Appendix A. The Polysiloxane System as defined in Appendix C shall be applied. Powder coatings conforming to MIL-PRF-24712 or qualified to MIL-PRF-23236 may be applied to specific topside components, subject to USCG approval. An exterior ship color scheme developed by the shipbuilder in accordance with the Coatings and Color Manual, COMDTINST M10360.3 (series) shall be approved by the USCG.

D6.4 Tanks, Bilges, and Floodable Voids. Coatings applied to tanks, bilges and voids shall be “high solids” anticorrosive coating systems installed in accordance with Appendix B. Corrosion monitoring systems will be developed and installed in high use ballast and fuel/compensating fuel tanks.

D6.5 Interior Spaces. Coating systems are to be applied in accordance with Appendix B.

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D6.6 Small Inaccessible Voids and Spaces. Vapor phase inhibitor, NSN 6850-01-413-9361, shall be used as a corrosion control system in these areas. Preservative treatment shall not be required within welded, watertight, airtight, and small inaccessible voids whose boundaries are not exposed to the sea or to standing water.

D7. Coating Application QA Requirements.

D7.1 Film Thickness Measurements. Measure and record Dry Film Thickness (DFT) of each coat applied for the coating systems. DFT readings for each coat shall be taken in accordance with SSPC-PA 2. Wet Film Thickness (WFT) readings are required in lieu of DFT readings for any coat that must be in a tacky state when the next coat is applied. Apply an additional coat of any single coat of a multiple coat system when that coat measures less than its specified DFT. Multiple coats shall be of contrasting color. DFT of each coat, including an additional coat if applied, shall not exceed the specified maximum thickness for each coat.

D7.2 Stripe Coating. Stripe Coating refers to the practice of applying an extra layer of paint on areas such as corners, edges and welds. (It is not to be confused with the method of painting stripes, “striping”, discussed in Appendix C of SFLC Technical Standard 631.) Stripe coating will build up the coating thickness at edges where paint tends to shrink away from the edge surface and fail prematurely. It also fills in surface irregularities such as porosity in welds. Stripe coats shall be applied prior to the application of the primer coat. Stripe coating shall be of a different color or contrasting color than the primer coat. Stripe coating for a single coat system must be done prior to single coat application. Use the same coating for the stripe coat as was used for the primer coat. Stripe coating is a proven method for increasing the useful life of a coating system. It is required for all critical areas.

D7.2.1 For all areas requiring stripe coating, confirm that stripe coat has been applied to all edges, weld seams, welds of attachments and appendages, cutouts, corners, butts, foot/handholds (including inaccessible areas such as back side of piping, under side of I-beams), and other mounting hardware (non-flat surface). Stripe coat these areas after the prime coat has dried. Stripe coating applied shall be neat in appearance, minimizing extra thickness applied to edges as well as streaks and drops of paint. The stripe coat shall encompass all edges as well as at least a one-inch border outside each edge and weld.

D7.2.2 For non-edge retentive coatings, radiusing of edges is recommended to ensure maximum service life. If edges are not radiused, the service life could be substantially reduced.

D7.2.3 Deburring and grinding of weld spatter is recommended to ensure maximum service life. If weld spatter is not removed, the service life of the coating could be substantially reduced.

D7.3 Holiday check. Perform a visual holiday check on each coat of the system. Any holiday found shall be marked and touched up.

D8. Environmental and Personnel Safety.

D8.1 Regulations. In general, the use of the coatings and coating systems specified in this chapter will ensure compliance with all State and Federal air quality regulations regarding control of volatile organic compounds (VOC) and hazardous air pollutants (HAPS) at this time. Additionally, the use of the abrasives and coatings and coating systems in this specification will ensure that the level of hazardous heavy metals will be below that required to be classified as a

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non-hazardous waste. The shipyard is required to comply with all Federal, State and Local regulations concerning air pollution and hazardous waste disposal.

D8.2 Personnel Protective Equipment. The use of the materials cited in this specification will generally result in extremely low level of compounds considered hazardous to human health, it must be recognized that “zero tolerance” for any hazardous material is not possible in the shipyard industrial environment. Therefore, it is required that all painters and abrasive blasters shall comply with the use of personal protective equipment (PPE) as prescribed by the local industrial hygienist and Health Administrations.

D9. Miscellaneous.

D9.1 Miscellaneous Areas and Items. Miscellaneous areas and items not specified in this document shall be preserved on a case basis in accordance with the latest USCG directives.

D9.2 Cathodic Protection.

D9.2.1 Underwater Hull. For vessels where Impressed Current Cathodic Protection is used, cathodic protection of the underwater hull area shall be accomplished by means of a USCG approved Impressed Current Cathodic Protection (ICCP) system that will provide a potential of – 0.85 volts with respect to a silver-silver chloride (Ag/AgCl) reference cell. The ICCP system shall be designed using analytical tools such as Physical Scale and Computer Modeling and layout shall be pre-approved by the USCG prior to procurement and installation. The ICCP system design and layout shall provide a potential of –0.85 volts (Ag/AgCL) for up to 15% of the hull exposed due to paint damage, during import and underway conditions and shall be capable of full automatic operation during this range of conditions. For vessels where sacrificial anode cathodic protection is used, the number and placement of anodes shall be in accordance with Naval Ships Technical Manual Chapter 633. The use of aluminum anodes will require special consideration.

D9.2.2 Tanks, Voids, and Bilges. Where cathodic protection of tanks, voids and wet bilges is implemented, it shall be accomplished by means of zinc anodes conforming to MIL-DTL-18001. The number and placement of anodes shall be in accordance with Naval Ships Technical Manual Chapter 633. The use of aluminum anodes will require special consideration. In general, aluminum anodes may be in oil tanks provided the potential energy of the anode does not exceed 200 ft-lbs where the risk of sparking from a fallen aluminum anode will not have adverse affects on the space protected.

D9.3 Testing.

D9.3.1 General. The shipyard is required to maintain records of paint manufacturer’s test certificates as part of receipt inspections of delivered paints and coatings. It is the shipyard’s responsibility to store paints and coatings in accordance with the manufacturer’s recommendations.

D9.3.2 Paint Inspection. In addition to the shipyard quality control paint inspections, the shipyard is required to arrange for an independent Paint and Coatings Inspector certified as a “Specialist” in accordance with NACE or other recognized standard. The independent Paint and Coatings Inspector is to monitor the coatings and corrosion control process, witness and certify all required Paint Processes and required tests. The Paint and Coatings Inspector is to maintain

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records of all monitoring and test certificates for review by the USCG and/or other government representatives.

D9.3.3 Painting Contractor Certification. An independent Paint and Coatings Inspector is not required if the contractors (prime and sub) performing coatings preservation work in critically coated areas are currently certified under the Society for Protective Coatings SSPC-QP 1 certification program. Details on this program are available at www.sspc.org/certification. Records of all monitoring and test certificates must be maintained for review by the USCG and/or other government representatives.

D9.3.4 Blaster/Applicator Certification. All applicators and pump operators applying coatings via plural component spray equipment are required to have completed the Society for Protective Coatings Marine Plural Component Applicator Certification program (SSPC-C 14). Spray painters shall be certified in accordance with The Society for Protective Coatings Airless Spray Basics (SSPC-C 12) or SSPC-C 14. Blasters shall be certified in accordance with The Society for Protective Coatings Abrasive Blasting Program (SSPC-C 7). Blasters performing Ultra-High Pressure waterjetting shall be certified in accordance with The Society for Protective Coatings Water Jetting Program (SSPC-C 13). Sub contractors must also conform to these requirements. Details on these programs are available at: <http://www.sspc.org/certification/individualcertification.html>.

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APPENDIX E
QA-1 - QUALITY ASSURANCE INSPECTION FORM
(PRESERVATION CHECKLIST)

Vessel Name	Hull #	Work Item #	Work Item Title

Location of Work (incl. frame #'s)	Area (sqft)

CHECKPOINT 1 – COATING SYSTEM COMPLIANCE

Ensure all coatings are in compliance with SFLC Standard Specification 6310, Appendix C.

CHECKPOINT 2 - PAINT STORAGE

Ensure all coatings are kept at a temperature of 65 to 85°F at all times, unless otherwise specified by the coating mfr.

CHECKPOINT 3 - AMBIENT CONDITIONS

Ensure surface and surrounding temperatures are each between 50 and 90°F for water-based coatings, and 35 and 95°F for other coatings, unless otherwise specified by the coating manufacturer(s).

Ensure maximum relative humidity (RH) is as follows, from surface preparations through final curing of topcoat: 50% for tanks, voids, and vent plenum; and 85% for all other areas, unless otherwise specified by manufacturer(s).

Ensure surface temperature is at least 5°F above the dew point, unless otherwise specified by the coating mfr.

CHECKPOINT 4 - PRE-SURFACE PREPARATION

Remove surface contaminants (soluble salts, loose rust, mud, and marine growth) with low pressure fresh water wash down (maximum 5,000 psi). If oil and grease are present, perform solvent cleaning, as per SSPC SP-1.

Verify equipment setup, blast media, and surface preparation methods match designated test coupon.

CHECKPOINT 5 - SURFACE PREPARATION

Verify environmental conditions (see CHECKPOINT 3).

Ensure cleanliness of prepared surface is as per specification (i.e.: SSPC SP-12, SP-11, SP-10...).

Verify surface anchor profile using ASTM D4417-Methods B or C against SFLC Standard Specification 6310 requirements. Conduct profile readings at a minimum of 5 locations for the first 1000-sqft area, and 2 locations for each succeeding 1000-sqft area.

Measure soluble salt conductivity in accordance with SSPC-Guide 15. Conduct 5 measurements per each 1000-sqft area (max. threshold: 70 microsiemens/cm for non-submerged surfaces, 30 microsiemens/cm for submerged surfaces).

CHECKPOINT 6 - PRIMER COAT APPLICATION

Verify environmental conditions (see CHECKPOINT 3).

Verify proper mixing and stand-in (induction) times.

Ensure no paint is applied when the temperature is expected to drop to freezing before the paint has dried.

Ensure surfaces are completely dry, unless otherwise allowed by the coating manufacturer(s).

Verify wet film thickness (WFT) at random, to prevent under or over application. Verify final DFT.

Brush out all runs, sags, drips, and puddles.

Perform visual inspection for holidays and other defects.

CHECKPOINT 7 – STRIPE COAT APPLICATION

Verify environmental conditions (see CHECKPOINT 3).

Ensure overcoating window is as per manufacturer’s instructions.

After primer coat (mist coat after inorganic zinc), brush-apply un-thinned coat of same primer paint over edges, weld seams, cut-outs, and areas of complex geometries @ 3-4 mils wet film thickness (WFT).

CHECKPOINT 8 – TOP COAT APPLICATION

Verify environmental conditions (see CHECKPOINT 3).

Ensure overcoating window is as per manufacturer’s instructions.

Verify proper mixing and stand-in (induction) times, as applicable.

Verify wet film thickness at random, to prevent under or over application.

Brush out all runs, sags, drips, and puddles.

CHECKPOINT 9 – FINAL INSPECTION

Verify final system dry film thickness. Conduct 5 sets of 3 readings for each of the first 3 100-sqft areas, followed by 5 sets of 3 readings for each succeeding 1000-sqft area.

Ensure that system cure is in accordance with manufacturer’s recommendation for intended service.

Ensure potable water tank exhaust ventilation is maintained continuously from and during coating application through final system cure, to exhaust all solvent to the atmosphere and to prevent solvent entrapment.

For immersion coatings (including tank U/W body), record date and time of the following events:
 Final coat application: ____/____; Return to service or removal from environment controls: ____/____

CHECKPOINT 10 – RECORD KEEPING

Complete, sign, and submit all provided QA Inspection Forms.

Name of QP-1/NACE Inspector	Signature	Cert. #	Date / Time

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**QA-3a - QUALITY ASSURANCE INSPECTION FORM
(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-C)**

Vessel Name	Hull #	Work Item #	Work Item Title

Location of Work (Frame References)	Area (sqft)

SURFACE PREPARATION METHOD		PROFILE ACHIEVED (mils)		
		Min	Max	Mean
SSPC-SP-10/NACE No. 2	<input type="checkbox"/>			
SSPC-SP-12/NACE No. 5	<input type="checkbox"/>			
SSPC-SP-3	<input type="checkbox"/>			
SSPC-SP-11	<input type="checkbox"/>			
SSPC-SP-11 (inaccessible area)	<input type="checkbox"/>			
Brush-blasting (non-metallic substrate)	<input type="checkbox"/>			

Abrasive Manufacturer and Sieve Size: _____

Place surface profile replica tapes in the spaces provided below, to serve as permanent QA record. Maintain a separate log for each location. When an area is divided into separate sections, maintain a separate log for each section.		
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading: _____ mils	Reading: _____ mils	Reading: _____ mils
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading: _____ mils	Reading: _____ mils	Reading: _____ mils
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading: _____ mils	Reading: _____ mils	Reading: _____ mils
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading: _____ mils	Reading: _____ mils	Reading: _____ mils
Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here	Place Surface Profile Replica Tape Here
Reading: _____ mils	Reading: _____ mils	Reading: _____ mils
Mean Mil Reading (IAW ASTM D4417-Method C) for above 15 readings: _____		

Name of QP-1/NACE Inspector	Signature	Cert. #	Date / Time

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**QA-3b - QUALITY ASSURANCE INSPECTION FORM
(SURFACE PROFILE LOG FOR PROFILE MEASUREMENTS IAW ASTM D4417-METHOD-B)**

Vessel Name	Hull #	Work Item #	Work Item Title

Location of Work (incl. frame #'s)	Area (sqft)

SURFACE PREPARATION METHOD		PROFILE ACHIEVED (mils)		
		Min	Max	Mean
SSPC-SP-10/NACE No. 2	<input type="checkbox"/>			
SSPC-SP-12/NACE No. 5	<input type="checkbox"/>			
SSPC-SP-3	<input type="checkbox"/>			
SSPC-SP-11	<input type="checkbox"/>			
SSPC-SP-11 (inaccessible area)	<input type="checkbox"/>			
Brush-blasting (non-metallic substrate)	<input type="checkbox"/>			

Abrasive Manufacturer and Sieve Size: _____

Record measurements taken in the spaces provided below, to serve as permanent QA record. Maintain separate log for each location. When an area is divided into separate sections, maintain a separate log for each section.					
Reading:	_____ mils				
Reading:	_____ mils				
Reading:	_____ mils				
Reading:	_____ mils				
Reading:	_____ mils				
Reading:	_____ mils				
Reading:	_____ mils				
Reading:	_____ mils				
Reading:	_____ mils				
Reading:	_____ mils				
Mean Mil Reading (IAW ASTM D4417-Method B) for above 10 readings (by column):					
	_____ mils				

Name of QP-1/NACE Inspector	Signature	Cert. #	Date / Time

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QA-5 - QUALITY ASSURANCE DATA FORM
(COATING THICKNESS)
(Use one sheet for each sequence)

Vessel Name	Hull #	Work Item #	Work Item Title

Coating Mfg	Product Name	Batch #	Induction Time	Coating System Sequence (Primer/Touchup/3 rd Coat, etc.)

DRY FILM THICKNESS (DFT) MEASUREMENTS IAW SSPC-PA 2

SPOT	1	2	3	4	5	AVERAGE VALUE
*BASE METAL READING (BMR)						

*Required, If Magnetic Pull-Off (Type I/Banana) Gauge Is Used.

Location (Frame Reference): _____

SPOT	1	2	3	4	5	Overall Avg. DFT	ADJUSTMENTS	
							Avg. BMR	Deviation
1						Before Adjustments	After Adjustments	
2								
3								
Avg.								

Location (Frame Reference): _____

SPOT	1	2	3	4	5	Overall Avg. DFT	ADJUSTMENTS	
							Avg. BMR	Deviation
1						Before Adjustments	After Adjustments	
2								
3								
Avg.								

Location (Frame Reference): _____

SPOT	1	2	3	4	5	Overall Avg. DFT	ADJUSTMENTS	
							Avg. BMR	Deviation
1						Before Adjustments	After Adjustments	
2								
3								
Avg.								

Application Method (Airless, Conventional Spray, Rolled)	Average DFT

Name of QP-1/NACE Inspector	Signature	Cert. #	Date / Time