

Steel Structures Painting Council

PAINTING SYSTEM SPECIFICATION NO. 4.05

Three-Coat Vinyl Painting System with Wash Primer and Vinyl Alkyd Finish Coat (for Atmospheric Exposure)*

1. Scope

1.1 This specification covers a complete vinyl painting system for structural steel.

1.2 This system is suitable for use on parts or structures exposed in Environmental Zones 2A (frequently wet by fresh water) and 2B (frequently wet by salt water).

1.3 The finish paint allows for a choice of colors and gloss.

2. Description

2.1 This painting system consists of surface preparation by commercial blast cleaning or pickling; wash primer; one coat of vinyl red lead primer; and two finish coats of vinyl alkyd paint.

3. Reference Standards

3.1 The standards referenced in this specification are listed in Sections 3.4 and 3.5 and form a part of this specification.

3.2 The latest issue, revision, or amendment of the reference standards in effect on the date of invitation to bid shall govern unless otherwise specified.

3.3 If there is a conflict between the requirements of any of the cited reference standards and this specification, the requirements of this specification shall prevail.

3.4 STEEL STRUCTURES PAINTING COUNCIL (SSPC) SPECIFICATIONS:

PA 1	Shop, Field, and Maintenance Painting
PA 2	Measurement of Dry Paint Thickness with Magnetic Gages
PA Guide 3	A Guide to Safety in Paint Application
PA Guide 4	Guide to Maintenance Repainting with Oil Base or Alkyd Painting Systems
Paint 27*	Basic Zinc Chromate-Vinyl Butyral Wash Primer
SP 5	White Metal Blast Cleaning
SP 6	Commercial Blast Cleaning
SP 8	Pickling
SP 10	Near-White Blast Cleaning

3.5 FEDERAL STANDARDS:

MIL-P-15929**	Primer Coating, Shipboard, Vinyl-Red Lead (for Hot Spray)
MIL-P-15935***	Enamel, Outside, Gray, Vinyl-Alkyd
MIL-P-15936***	Enamel, Exterior, Gray, No. 27 Vinyl-Alkyd
MIL-E-15935***	Enamel, Outside, Gray, Vinyl-Alkyd
MIL-E-15936***	Enamel, Exterior, Gray, No. 27 Vinyl-Alkyd
MIL-E-16188***	Enamel, Exterior, Gray, No. 17 (Vinyl-Alkyd)
MIL-E-16738***	Enamel, Exterior, White, Vinyl-Alkyd

4. Surface Preparation

4.1 SSPC-SP 6, "Commercial Blast Cleaning," or SSPC-SP 8, "Pickling." If specified in the procurement documents, a better degree of cleaning shall be substituted (SSPC-SP 10, "Near-White Blast Cleaning," or SSPC-SP 5, "White Metal Blast Cleaning").

5. Paints

5.1 **WASH PRIMER:** SSPC-Paint 27*, "Basic Zinc Chromate-Vinyl Butyral Wash Primer."

5.2 **PRIMER:** Federal Specification MIL-P-15929**, "Primer Coating, Shipboard, Vinyl-Red Lead."

5.3 **INTERMEDIATE COAT:** Same as the finish paint except tinted to a color contrasting with that of the finish paint.

5.4 **ALTERNATIVE INTERMEDIATE COAT:** If specified in the procurement documents, an intermediate coat complying with Federal Specification MIL-P-15929**, "Primer Coating, Shipboard, Vinyl-Red Lead," shall be applied in place of the standard intermediate coat. If this alternative is selected then the intermediate coat shall be tinted with lampblack dispersed in vinyl or with similar vinyl black paint to a color contrasting with that of the primer.

5.5 **FINISH COAT:** Federal Specification MIL-E-16738***, "Enamel, Exterior, White, Vinyl Alkyd."



Documents

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5.6 ALTERNATIVE FINISH COAT: If specified in the procurement documents, a finish coat complying with Federal Specification MIL-E-15935***, "Enamel, Outside, Gray, Vinyl Alkyd," shall be applied in place of the standard finish coat.

5.7 ALTERNATIVE FINISH COAT: If specified in the procurement documents, a finish coat complying with Federal Specification MIL-E-15936***, "Enamel, Exterior, Gray No. 27, Vinyl Alkyd," shall be applied in place of the standard finish coat.

5.8 ALTERNATIVE FINISH COAT: If specified in the procurement documents, a finish coat complying with Federal Specification MIL-E-16188***, "Enamel, Exterior, Gray No. 17, Vinyl Alkyd," shall be applied in place of the standard finish coat.

5.9 ALTERNATIVE FINISH COAT: If specified in the procurement documents, a finish coat complying with Federal Specification MIL-E-24292***, "Enamel, Exterior, Dark Gray, Vinyl Alkyd," shall be applied in place of the standard finish coat.

5.10 ALTERNATIVE FINISH COAT: If specified in the procurement documents, a finish coat complying with Federal Specification MIL-E-24306***, "Enamel, Exterior, Black, Vinyl Alkyd," shall be applied in place of the standard finish coat.

6. Paint Application

6.1 PAINT APPLICATION: Follow requirements of SSPC-PA 1, "Shop, Field, and Maintenance Painting."

6.2 TOUCH-UP PAINTING: In accordance with specification SSPC-PA 1, "Shop, Field, and Maintenance Painting" and in particular with the Section thereof entitled "Field Painting."

6.3 MAINTENANCE PAINTING: For maintenance painting procedures, see SSPC-PA Guide 4, "Guide to Maintenance Repainting with Oil Base and Alkyd Painting Systems."

6.4 NUMBER OF COATS: Minimum of three in addition to the wash primer.

6.5 DRY FILM THICKNESS OF PAINT SYSTEM: Not less than the following as measured in accordance with SSPC-PA 2, "Measurement of Dry Paint Thickness with Magnetic Gages": wash primer 0.3 mils (8 microns); primer 1.5 mils (38 microns); for the three-coat painting system 4.0 mils (100 microns).

7. Inspection

7.1 All work and materials supplied under this specification shall be subject to timely inspection by the purchaser or his authorized representative. The contractor shall correct such work or replace such material as is found defective under this specification. In case of dispute

the arbitration or settlement procedure established in the procurement documents, if any, shall be followed. If no arbitration or settlement procedure is established, the procedure specified by the American Arbitration Association shall be used.

7.2 Samples of paints used under this painting system should be supplied upon request along with the supplier's name and identification for the materials.

7.3 Unless otherwise specified, the methods of sampling and testing should be in accordance with Federal Test Method Standard No. 141, or applicable methods of the American Society for Testing and Materials.

7.4 The procurement documents covering work or purchase should establish the responsibility for samples, testing, and any required affidavit certifying full compliance with the specification.

8. Safety

8.1 All safety requirements stated in this specification and its component parts apply in addition to any applicable federal, state, and local rules and requirements. They also shall be in accord with instructions of the paint manufacturer and requirements of insurance underwriters.

8.2 Paints are hazardous because of their flammability and potential toxicity. Proper safety precautions shall be observed to protect against these recognized hazards. Safe handling practices are required and should include, but not be limited to, the provisions of SSPC-PA Guide 3, "A Guide to Safety in Paint Application."

8.3 The paints specified herein may not comply with some air pollution regulations because of their hydrocarbon solvent content.

9. Notes****

9.1 While every precaution is taken to insure that all information furnished in SSPC specifications is as accurate, complete, and useful as possible, the SSPC cannot assume responsibility or incur any obligation resulting from the use of any materials, paints, or methods specified therein, or of the specification itself.

9.2 This painting system is intended primarily for structural steel exposed to condensation, severe weather, mild chemical atmospheres, for galvanized steel, ships, boottopping, or topsides.

*These Painting Systems and Paints include lead or chromate containing pigments. Users are urged to follow all health, safety and environmental requirements in applying, handling or disposing of these materials.

**MIL-P-15929 has been cancelled. (SSPC has copies of the cancelled specification.) GSA recommends the replacement specification of MIL-P-15930.

***The following specifications have also been cancelled: MIL-E-15935, -15936, -16188, -16738, -24292 and -24306.

****Notes are not requirements of this specification.