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09 67 00 - FLUID APPLIED FLOORING FOR CONCRETE

THE SHERWIN-WILLIAMS COMPANY

INDUSTRIAL INTERIOR SPECIFICATION GUIDE

This Painting Schedule is furnished as a guide for specifying industrial floor systems, and is not all-inclusive of available Sherwin-Williams' products. It is written in the CSI format and can be included in its entirety in a master specification, one should review the contents and edit to suit the particular needs of a given project and its respective location.

The schedule is arranged by Light, Moderate, and Severe Conditions, for Industrial environments. This guide offers various acrylic, epoxy, water-based epoxy, urethane, and water-based urethane floor coatings. For light residential floor applications, refer to section 09 91 00 Painting Schedule Guide.

Local and National V.O.C. (Volatile Organic Compound) regulations have been taken into consideration, but because these regulations vary greatly around the country and are subject to change, we suggest that verifying product selections meet the requirements of the area in which they are to be used. It is always recommended that you consult with a Sherwin-Williams Company Representative or call our Sherwin-Williams Architectural Services Department before finalizing the selection. If the project is located within the OTC, CARB, SCAQMD or other VOC regulated regions; one must comply with the regulations regarding VOCs.

If you need more specific information on a particular product, refer to the current Sherwin-Williams' Painting Systems Catalog, the www.sherwin-williams.com, Website or call our Architectural Services Department toll free.

**The Sherwin-Williams Company
Architectural Services Department
1-800-321-8194 (Telephone)
216-566-1392 (Fax)**

SECTION 09 67 00

09 67 00 FLUID APPLIED FLOORING FOR CONCRETE



SHERWIN-WILLIAMS®

Part 1 GENERAL

1.1 SECTION INCLUDES

- A. Fluid-applied flooring for Concrete

1.2 RELATED SECTIONS

- A. Section 03 35 00 - Concrete Finishes
- B. Section 03 01 00 - Maintenance of Concrete
- C. Section 09 60 00 - Floor Treatments
- D. Section 09 96 00 - High-Performance Coatings

1.3 REFERENCES

- A. SSPC-SP 1 - Solvent Cleaning
- B. SSPC-SP 2 - Hand Tool Cleaning
- C. SSPC-SP 3 - Power Tool Cleaning
- D. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete
- E. ASTM F1869 - Moisture Test by use of Calcium Chloride
- F. ASTM D4258 - Standard Practice for Cleaning Concrete
- G. ASTM D4259 - Standard Practice for Abrading Concrete
- H. ASTM D4260 - Standard Practice for Etching Concrete
- I. ASTM D4263 - Plastic Sheet Method for Checking Moisture in Concrete
- J. ICRI # 03732

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00, Submittal Procedures.
- B. Product Data: Manufacturer's data sheets on each paint and coating product should include:
 - 1 Product characteristics
 - 2 Surface preparation instructions and recommendations
 - 3 Primer requirements and finish specification
 - 4 Storage and handling requirements and recommendations
 - 5 Application methods
 - 6 Cleanup information
- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.
- D. Coating Maintenance Manual: upon conclusion of the project, the Contractor or paint manufacture/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 MOCK-UP

Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of painting on the project.

- A. Finish surfaces for verification of products, colors, & sheens
- B. Finish area designated by Architect
- C. Provide samples that designate prime & finish coats
- D. Do not proceed with remaining work until the Architect approves the mock-up samples

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
 - 1 Product name, and type (description)
 - 2 Application & use instructions
 - 3 Surface preparation
 - 4 VOC content
 - 5 Environmental handling
 - 6 Batch date
 - 7 Color number
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
- C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

Part 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer:
The Sherwin-Williams Company
101 Prospect Avenue NW
Cleveland, OH 44115
Tel: (800) 321-8194
Fax: (216) 566-1392
www.sherwin-williams.com
- B. Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 Product Requirements.
When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

2.2 APPLICATION/SCOPE

- A. Use this article to define the scope of painting if not fully defined in a Finish Schedule or on the drawings. This article must be carefully edited to reflect the surfaces actually found on the project. In some cases, it may be enough to use the first paragraph that says, in effect, "paint everything" along with a list of items not to paint, without exhaustively defining all the different surfaces and items that must be painted.
- B. If the project involves repainting some but not all existing painted surfaces, be sure to indicate the extent of the repainting.
- C. The descriptions of each system can also be used to further refine the definition of what is to be coated.
- D. Surfaces to Be Coated:

Concrete Floors: Light Industrial Duty
Concrete Floors: Moderate Duty
Concrete Floors: Severe Duty

2.3 SCHEDULE INDEX

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C Concrete Floors: Severe Industrial Duty	Pages 8-9
1. Epoxy Primer / Self-Leveling Epoxy System	
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4. Moisture Cure Urethane System	
5. Epoxy / H.S Polyurethane	

Index of Data pages

[DATAPAGES AND MSDS SHEETS: \(To open any of the Data page Files, please click here\)](#)

Refer to the current MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.

EDIT THIS SCHEDULE TO SELECT PRODUCT, DESIRED FINISH AND V.O.C. NEEDS

2.3 SCHEDULE

A Light Industrial Duty: (Is Generally Considered For Industrial Foot Traffic & handcarts)

1 Acrylic Primer / Acrylic System

1st Coat: ArmorSeal® Tread-Plex® Primer, B90W110

(1.5 - 2.0 mils dry)

2nd Coat: ArmorSeal Tread-Plex, B90 Series

(1.5 - 2.0 mils dry per coat)

3rd Coat: ArmorSeal Tread-Plex, B90 Series

(1.5 - 2.0 mils dry per coat) (optional)

Alternate

1st Coat: ArmorSeal Tread-Plex, B90 Series

(1.5 - 2.0 mils dry)

2nd Coat: ArmorSeal Tread-Plex, B90 Series

(1.5 - 2.0 mils dry per coat)

3rd Coat: ArmorSeal Tread-Plex, B90 Series

(1.5 - 2.0 mils dry per coat) (optional)

2 Water Based Epoxy Primer / Water Based Epoxy System

1st Coat: ArmorSeal Floor-Plex® 7100 Primer, B70W410

(1.5 - 2.0 mils dry)

2nd Coat: ArmorSeal Floor-Plex 7100 Water Based Epoxy, B70-400 Series

(1.5 - 2.0 mils dry per coat)

3rd Coat: ArmorSeal Floor-Plex 7100 Water Based Epoxy, B70-400 Series

(1.5 - 2.0 mils dry per coat) (optional)

Alternate

1st Coat: ArmorSeal Water Based Epoxy Primer/Sealer Clear, B70VQ10

(2.0 – 3.0 mils dry per coat)

2nd Coat: ArmorSeal Floor-Plex 7100 Water Based Epoxy, B70-400

(1.5 - 2.0 mils dry per coat)

3rd Coat: ArmorSeal Floor-Plex 7100 Water Based Epoxy, B70-400

(1.5 - 2.0 mils dry per coat)(optional)

3 Water Based Epoxy Primer / Water Based Urethane System

1st Coat: ArmorSeal Floor-Plex 7100 Primer, B70W410

(1.5 - 2.0 mils dry)

2nd Coat: ArmorSeal 1K Water Based Urethane Floor Enamel, B65-775 Series

(2.0 - 4.0 mils dry per coat)

3rd Coat: ArmorSeal 1K Water Based Urethane Floor Enamel, B65-775 Series

(2.0 - 4.0 mils dry per coat) (optional)

4 Epoxy System

1st Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series

(3.0 - 5.0 mils dry per coat)

2nd Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series

(3.0 - 5.0 mils dry per coat)

3rd Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series (optional)

(3.0 - 5.0 mils dry per coat)

- B Moderate Industrial Duty: (Is Generally Considered For Wheeled Carts, Frequent Cleaning/Rinsing, Occasional Spills, And Moderate Abrasion)**
- 1 Water Based Epoxy Primer / Water Based Epoxy System**
- 1st Coat: ArmorSeal Floor-Plex 7100 Primer, B70W410
(1.5 - 2.0 mils dry)
- 2nd Coat: ArmorSeal Floor-Plex 7100 Water Based Epoxy, B70-400 Series
(1.5 - 2.0 mils dry per coat)
- 3rd Coat: ArmorSeal Floor-Plex 7100 Water Based Epoxy, B70-400 Series
(1.5 - 2.0 mils dry per coat) (optional)
- Alternate**
- 1st Coat: ArmorSeal WB Epoxy Primer/Sealer Clear, B70VQ10
(2.0 - 3.0 mils dry per coat)
- 2nd Coat: ArmorSeal Floor-Plex 7100 Water Based Epoxy, B70-400 Series
(1.5 - 2.0 mils dry per coat)
- 3rd Coat: ArmorSeal Floor-Plex 7100 Water Based Epoxy, B70-400 Series
(1.5 - 2.0 mils dry per coat) (optional)
- 2 Epoxy Primer / Self-Leveling Epoxy System**
- 1st Coat: ArmorSeal 33 Epoxy Primer/Sealer, B58-33 Series
(7.0 - 8.0 mils dry)
- 2nd Coat: ArmorSeal 650 SL/RC Self-Leveling Epoxy, B58-650 Series
(10.0 - 30.0 mils dry per coat)
- 3 Epoxy Primer / Self-Leveling Epoxy Decorative Quartz System**
- 1st Coat: ArmorSeal 33 Epoxy Primer/Sealer, B58-33 Clear
(10.0 mils wft, broadcast to excess with color quartz)
- 2nd Coat: ArmorSeal 33 Epoxy Primer/Sealer, B58-33 Clear
(24.0 mils wft, broadcast to excess with color quartz)
- 3rd Coat: ArmorSeal 650 SL/RC Clear Self-Leveling Epoxy, B58-650 Clear
(15 mils wft)
- 4th Coat: ArmorSeal 650 SL/RC Clear Self-Leveling Epoxy, B58-650 Clear
(8 mils wft)
- 4 Water Based Epoxy Primer / Water Based Urethane System**
- 1st Coat: ArmorSeal Floor-Plex 7100 Primer, B70W410
(1.5 - 2.0 mils dry)
- 2nd Coat: ArmorSeal 1K Water Based Urethane Floor Enamel, B65-775 Series
(2.0 - 4.0 mils dry per coat)
- 3rd Coat: ArmorSeal 1K Water Based Urethane Floor Enamel, B65-775 Series
(2.0 - 4.0 mils dry per coat) (optional)

- B Moderate Industrial Duty: (Is Generally Considered For Wheeled Carts, Frequent Cleaning/Rinsing, Occasional Spills, And Moderate Abrasion)**
- 5 Epoxy System**
- 1st Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series
(3.0 - 5.0 mils dry per coat)
 - 2nd Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series
(3.0 - 5.0 mils dry per coat)
 - 3rd Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series (optional)
(3.0 - 5.0 mils dry per coat)
- 6 Epoxy / Moisture Cure Urethane System**
- 1st Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series
(1.5 - 2.0 mils dry)
 - 2nd Coat: ArmorSeal Rexthane™ I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat)
 - 3rd Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat) (optional)
- Alternate**
- 1st Coat: ArmorSeal Floor-Plex 7100 Primer, B70W410
(1.5 - 2.0 mils dry)
 - 2nd Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat)
 - 3rd Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat) (optional)
- C Severe Industrial Duty: (Is Generally Considered for Heavy Vehicle Traffic, Heavy Abrasion Areas, & Frequent Cleaning/Rinsing.)**
- 1 Epoxy Primer / Self-Leveling Epoxy System**
- 1st Coat: ArmorSeal 33 Epoxy Primer/Sealer, B58-33 Series
(7.0 - 8.0 mils dry)
 - 2nd Coat: ArmorSeal 650 SL/RC Self-Leveling Epoxy, B58-650 Series
(10.0 - 30.0 mils dry per coat)
- 2 Epoxy Primer / Self-Leveling Epoxy Decorative Quartz System**
- 1st Coat: ArmorSeal 33 Epoxy Primer/Sealer, B58-33 Clear
(10.0 mils wft, broadcast to excess with color quartz)
 - 2nd Coat: ArmorSeal 33 Epoxy Primer/Sealer, B58-33 Clear
(24.0 mils wft, broadcast to excess with color quartz)
 - 3rd Coat: ArmorSeal 650 SL/RC Clear Self-Leveling Epoxy, B58-650 Clear
(15 mils wft)
 - 4th Coat: ArmorSeal 650 SL/RC Clear Self-Leveling Epoxy, B58-650 Clear
(8 mils wft)

C Severe Industrial Duty: (Is Generally Considered for Heavy Vehicle Traffic, Heavy Abrasion Areas, & Frequent Cleaning/Rinsing.)

3 Epoxy / Moisture Cure Urethane System

- 1st Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series
(1.5 - 2.0 mils dry)
- 2nd Coat: ArmorSeal Rexthane® I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat)
- 3rd Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat) (optional)

Alternate

- 1st Coat: ArmorSeal Floor-Plex 7100 Primer, B70W410
(1.5 - 2.0 mils dry)
- 2nd Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat)
- 3rd Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat) (optional)

4 Moisture Cure Urethane System

- 1st Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat)
- 2nd Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat)
- 3rd Coat: ArmorSeal Rexthane I MCU, B65-60 Series
(2.0 - 3.0 mils dry per coat) (optional)

5 Epoxy /Polyurethane

- 1st Coat: ArmorSeal 1000 HS Epoxy, B67-2000 Series
(1.5 - 2.0 mils dry)
- 2nd Coat: ArmorSeal H.S Polyurethane, B65-220 Series
(2.0 - 3.0 mils dry per coat)
- 3rd Coat: ArmorSeal H.S Polyurethane, B65-220 Series
(2.0 - 3.0 mils dry per coat) (optional)

2.4 MATERIALS - GENERAL REQUIREMENTS

- A Paints and Coatings - General:
 - 1 Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B Primers:
 - 1 Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

2.5 ACCESSORIES:

- A Coating Application Accessories:
 - 1 Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

Part 3 EXECUTION

3.1 EXAMINATION

- A Do not begin application of coatings until substrates have been properly examined and prepared. Notify Architect or Specifier of unsatisfactory conditions before proceeding.
- B If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C Proceed with work only after conditions have been corrected, and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
- D Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

(Specifier Note: Verify the existence of lead based paints on the project. Buildings constructed after 1978 are less likely to contain lead based paints. If lead based paints are suspected on the project, all removal must be done in accordance with the EPA Renovation, Repair and Painting and all applicable state and local regulations. State and local regulations may be more strict than those set under the federal regulations. Verify that Owner has completed a Hazardous Material Assessment Report for the project prior to issuing of Drawings. Concluding that no lead based paints were found on project site, delete paragraph regarding lead based paints.)

3.2 SURFACE PREPARATION

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. Removal must be done in accordance with EPA Renovation, Repair and Painting Rule and all related state and local regulations. Care should be taken to follow all state and local regulations which may be more strict than those set under the federal RRP Rule.

- A Proper product selection, surface preparation, and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.
- B Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface

contamination, and the effect on the substrate will also influence the selection of surface preparation methods.

- C Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.
- D Poured Concrete
 - 1 New
For surface preparation, refer to SSPC-SP13/NACE 6/ICRI # 03732. Surfaces must be clean, dry, sound and offer sufficient profile to achieve adequate adhesion. Minimum substrate cure is 28 days at 75°F. Remove all form release agents, curing compounds, salts, efflorescence, laitance, and other foreign matter by sandblasting, shotblasting, mechanical scarification, or suitable chemical means. Refer to ASTM D4260. Rinse thoroughly to achieve a final pH between 8.0 and 10.0. Allow to dry thoroughly prior to coating.
 - 2 Old
Surface preparation is done in much the same manner as new concrete, however, if the concrete is contaminated with oils, grease, chemicals, etc., they must be removed by cleaning with a strong detergent. Refer to ASTM D4258. Form release agents, hardeners, etc. must be removed by sandblasting, shotblasting, mechanical scarification, or suitable chemical means. If surface deterioration presents an unacceptably rough surface, ArmorSeal 5020 Floor Resurfacer is recommended to patch and resurface damaged concrete.
- E Previously Painted Surfaces
If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, or if this product attacks the previous finish, removal of the previous coating may be necessary. If paint is peeling or badly weathered, clean surface to sound substrate and treat as a new surface as above.
- F Fill all cracks, voids, bug holes and joints with appropriate filler or ArmorSeal Crack Filler, ArmorSeal Joint Sealant, or ArmorSeal Expresspatch.
- G Always follow the ASTM methods listed below:
 - 1 ASTM F1869 Moisture Test by use of Calcium Chloride
 - 2 ASTM D4258 Standard Practice for Cleaning Concrete.
 - 3 ASTM D4259 Standard Practice for Abrading Concrete.
 - 4 ASTM D4260 Standard Practice for Etching Concrete.
 - 5 ASTM D4263 Plastic Sheet Method for Checking Moisture in Concrete.
 - 6 SSPC-SP 13/Nace 6 Surface Preparation of Concrete
 - 7 ICRI # 03732 Surface Preparation of Concrete

3.3 INSTALLATION

- A Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendation.
- B Do not apply to wet or damp surfaces.
 - 1 Wait at least 28 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 28 days.
 - 2 Test new concrete for moisture content.
- C Apply coatings using methods recommended by manufacturer.
- D Uniformly apply coatings without runs, or sags, without brush marks, and with consistent sheen.
- E Apply coatings at spreading rate required to achieve the manufacturer's recommended dry film thickness.

- F Inspection: The coated surface must be inspected and approved by the Architect or Engineer just prior to the application of each coat.

3.4 PROTECTION

- A Protect finished coatings from damage until completion of project.
- B Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

3.5 SCHEDULES

Specifier Note: Cut and paste the coatings system schedule here (specified in section 2.3 SCHEDULE INDEX), otherwise delete this section.

END OF SECTION05162013