ISSUED March 2012

09 67 00 – CARB FLUID APPLIED FLOORING FOR CONCRETE

THE SHERWIN-WILLIAMS COMPANY

INDUSTRIAL INTERIOR SPECIFICATION GUIDE

This Painting Schedule is furnished as a guide for specifying interior floor systems, and is not all-inclusive of available Sherwin-Williams' products. It is written in the SSPC 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 acrylics, epoxies, water-based epoxies, urethanes, and water-based urethane coatings.

CARB (California Air Resource Board) VOC (Volatile Organic Compound) regulations have been taken into consideration, but we suggest that you verify your product selections to meet the requirements of the area in which they are to be used. If the project is located within the OTC, CARB, SCAQMD or other VOC regulated regions; one must comply with the regulations regarding VOCs. All the Sherwin-Williams coatings in this specification are CARB compliant products as packaged.

If you need more specific information on a particular product, refer to the current Sherwin-Williams Painting Systems Catalog or the www.sherwin-williams.com Web site 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

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. EPA-Method 24

K. ICRI # 03732

L. CARB (California Air Resources Board)

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 Cautions

C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.

D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

E. Submit CARB compliant products only.

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: for two component products, provide mixed VOC in g/L
5 Environmental issues
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 INDUSTRIAL MAINTENANCE COATINGS are coatings, including primers, sealers, undercoaters, intermediate coatings and topcoats, formulated for or applied to substrates, including floors, that are exposed to one or more of the following extreme environmental conditions:
(A) immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposure of interior surfaces to moisture condensation;
(B) acute or chronic exposure to corrosive, caustic or acidic agents, or similar chemicals, chemical fumes, chemical mixtures, or solutions;
(C) repeated exposure to temperatures in excess of 250 degrees Fahrenheit;
(D) repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial solvents, cleaners, or scouring agents; or
(E) exterior exposure of metal structures.

E Surfaces to Be Coated:

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

2.3 SCHEDULE INDEX

Index of Data pages

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

For a comprehensive list of acceptable products please click the link below that takes you to the LEED® & VOC Coatings Reference Guide.

swgreenspecs.com

*** Refer to the current MSDS/EDS for exact VOCs. VOCs may vary by base. Some colors may not be zero VOC after tinting with conventional colorants**

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

2.3 SCHEDULE: CONCRETE FLOOR

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)

B Moderate Industrial Duty: (Is Generally Considered For Wheeled Vehicles, Frequent Cleaning/Rinsing, Occasional Spills, And Moderate Abrasion)

1 Epoxy Primer / Self-Leveling Epoxy System

1st Coat: ArmorSeal® 33 Epoxy Primer/Sealer, B58AQ33 Series
(7.0 - 8.0 mils dry)

2nd Coat: ArmorSeal® 650 SL/RC Self-Leveling Epoxy, B58Q650 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.)

1 Epoxy Primer / Self-Leveling Epoxy System

1st Coat: ArmorSeal® 33 Epoxy Primer/Sealer, B58AQ33 Series
(7.0 - 8.0 mils dry)

2nd Coat: ArmorSeal® 650 SL/RC Self-Leveling Epoxy, B58Q650 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)

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 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.

3.2 SURFACE PREPARATION

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

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.

3.3 INSTALLATION

A Apply all coatings and materials with 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 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 SECTION03232012

TABLE 1

VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS

Note: Limits are expressed in grams of VOC per liter of coating thinned to the manufacturers maximum recommendation (as indicated on the label or lid of the coating container), excluding the volume of any water, exempt compounds, or **colorant added to tint bases.**

CARB VOC Rules	**updated 1/1/12** This information is only a guide and is not all-inclusive of all VOC regulations	
CARB COATING CATEGORY	**CARB VOC CONTENT LIMIT:** BUTTE, COLUSA, MONTEREY, SACRAMENTO SAN BENITO, SAN DIEGO, SAN LUIS OBISPO SANTA BARBARA, SANTA CRUZ, SHASTA SUTTER, TEHAMA, YOLO, YUBA COUNTIES	**CARB VOC EFFECTIVE 1/1/2011:** ALAMEDA, CONTRA COSTA, FRESNO, IMPERIAL KERN, KINGS, MADERA, MARIN, MERCED, NAPA, PLACER, SAN FRANCISCO, SAN JOAQUIN, SAN MATEO, SANTA CLARA, SOLANO, SONOMA, STANISLAUS, TULARE, VENTURA COUNTIES
Flat Coatings	**100 g/L**	**50 g/L**
Non-Flat Coatings	**150 g/L**	**100 g/L**
Non-Flat – High Gloss Coatings	**250 g/L**	**150 g/L**
Concrete & Masonry Sealer	**N/A**	**100 g/L**
Dry Fog Coatings	**400 g/L**	**150 g/L**
Faux Finishing Coatings	**350 g/L**	**350 g/L**
Floor Coatings	**250 g/L**	**100 g/L**
High-Temperature Coatings	**420 g/L**	**420 g/L**
Industrial Maintenance Coatings	**250 g/L**	**250 g/L**
Low-Solids Coatings	**120 g/L * (1)**	**120 g/L * (1)**
Multi-Color Coatings	**250 g/L**	**250 g/L**
Pre-Treatment Wash Primers	**420 g/L**	**420 g/L**
Primers, Sealers, and Undercoaters	**200 g/L**	**100 g/L**
Quick-Dry Enamels : see Flat , Non-Flat, High Gloss choices	**250 g/L**	**N/A**
Quick-Dry Primers, Sealers and Undercoaters : see other choices	**200 g/L**	**N/A**
Rust Preventive Coatings	**400 g/L**	**250 g/L 1/1/2012**
Shellacs: Clear	**730 g/L**	**730 g/L**
Shellacs: Opaque	**550 g/L**	**550 g/L**
Specialty Primers, Sealers, and Undercoaters	**350 g/L**	**100 g/L 1/1/2012**
Stains	**250 g/L**	**250 g/L**
Traffic Marking Coatings	**150 g/L**	**100 g/L**
Varnishes: see Wood Coatings	**350 g/L**	**N/A**
Waterproofing Sealers: see other choices	**250 g/L**	**N/A**
Waterproofing Concrete/Masonry Sealers: see Concrete & Masonry Sealers	**400 g/L**	**N/A**
Wood Coatings	**N/A**	**275 g/L**
Wood Preservatives	**350 g/L**	**350 g/L**

*Low Solids Coatings: Units are grams of VOC per liter of coating, including water and exempt compound


California Air Districts
Siskiyou
Modoc
Shasta
Lassen
North Coast Unified
Tehama
Mendocino
Glenn
Butte
Northern Sierra
Colusa
Feather River
Placer
Lake
Sacramento Metro
Yolo Solano
El Dorado
Amador
Northern Sonoma
Calaveras
Tuolumne
San Francisco Bay Area
Mariposa
Great Basin Unified
San Joaquin Valley Unified
Monterey Bay Unified
San Luis Obispo
Kern
Mojave Desert
Santa Barbara
Antelope Valley
Ventura
South Coast
San Diego
Imperial