ArmorSeal Heavy Duty Floor Coatings

ARMORSEAL HS POLYURETHANE FLOOR ENAMEL

PART A B65-220 **SERIES**
PART B B65V220 **HARDENER**

Revised: March 24, 2022

PRODUCT INFORMATION

8.46

PRODUCT DESCRIPTION

ARMORSEAL HS POLYURETHANE FLOOR ENAMEL is a heavy duty, two component, exterior/interior, high solids, polyester-aliphatic urethane industrial floor coating. Provides a high gloss, excellent chemical resistance, color retention, and chalk resistance.

- Outstanding resistance a wide range of chemical, weather, and mechanical conditions
- Abrasion and impact resistant
- Superior exterior color and gloss retention
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Gloss
Color:	Wide range of colors available
Volume Solids:	71% ± 2%, mixed, may vary by color
Weight Solids:	90% ± 2%, mixed, may vary by color
VOC (EPA Method 24):	<250 g/L; 2.1 lb/gal, mixed
Mix Ratio:	2:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**3.0** (75)	**4.5** (112)
Dry mils (microns)	**2.0** (50)	**3.0** (75)
~Coverage sq ft/gal (m^2/L)	**380** (9.3)	**570** (14.0)
Theoretical coverage **sq ft/gal** (m^2/L) @ 1 mil / 25 microns dft	**1136** (27.8)	

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 3.0 mils wet (75 microns):

	@ 50°F/10°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To touch:	16 hours	2 hours	30 minutes
To handle:	24 hours	10 hours	2 hours
foot traffic:	24 hours	12 hours	8 hours
heavy traffic:	5 days	72 hours	48 hours
To recoat:			
minimum:	24 hours	12 hours	2 hours
maximum:	3 days	48 hours	24 hours
To cure:	7 days	7 days	5 days
Pot Life:	5 hours	4 hours	45 minutes
Sweat-in-Time:		None required	

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Shelf Life:	Part A: 36 months, unopened Part B: 24 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C)
Flash Point:	102°F (39°C), TCC, mixed
Reducer*:	VOC Restricted Areas (<250 g/L): Reduction not recommended
Clean Up:	Reducer R6K30 or R7K225

*Other areas (<340 g/L): Reducer R6K30 or R7K225 up to 5% by volume. Choose a reducer that is compliant in your area. Confirm compliance with state and local air quality rules before use.

RECOMMENDED USES

- For industrial, commercial, or marine floor use where a heavy duty polyurethane floor coating is required
- For use over prepared concrete and steel
- Resists splash, spillage, and fumes of dilute acids, alkalies, solvents, and fuels
- Exterior floors (helipads)
- Auto service centers, computer rooms
- Airport hangars (skydrol resistance)
- Suitable for use in USDA inspected facilities.

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	63 mg loss (average of 5 trials)
Adhesion, steel (epoxy primer)	ASTM D3359 Method B; ASTM D4541	5B, 100% Retention (ASTM D3359); 1200 psi (ASTM D4541)
Adhesion, concrete (epoxy primer)	ASTM D4541	350 psi, 100% concrete failure
Direct Impact Resistance	ASTM D2794	100 in. lb.
Dry Heat Resistance	ASTM D2485	200°F (93°C), 250°F (121°C) intermittent
Exterior Durability	2 years at 45° South	Excellent, 87% gloss retention
Flexibility	ASTM D522, 180° bend, 1/4" mandrel	Passes
Humidity Resistance	ASTM D4585, 100°F (38°C), 2000 hours	No blistering, cracking, softening or delamination
Pencil Hardness	ASTM D3363	H
Salt Fog Resistance, with primer	ASTM B117, 1000 hours	Rating 10 per ASTM D610 for rusting, less than 1/16" creepage at scribe. No blistering, cracking, softening, or delamination of the film.
Slip Resistance, Floors	ASTM C1028**, .60 Minimum Static Co-efficient of Friction	Passes wet and dry without SharkGrip Additive, and dry with SharkGrip Additive

**Test method withdrawn in 2014 without replacement

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Concrete/Wood:			
1 ct.	ArmorSeal 1000HS (reduced 1 pt/gal with R7K54)		
2 cts.	ArmorSeal HS Polyurethane Floor Enamel	2.0-3.0	(50-75)
Steel:			
1 ct.	Recoatable Epoxy Primer	4.0-5.0	(100-125)
2 cts.	ArmorSeal HS Polyurethane Floor Enamel	2.0-3.0	(50-75)
Painted Surfaces in Sound Condition:			
1-2 cts.	ArmorSeal HS Polyurethane Floor Enamel	2.0-3.0	(50-75)

The systems listed above are representative of the product's use, other systems may be appropriate.

SURFACE PREPARATION

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.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:
* Iron & Steel: SSPC-SP6/NACE 3
* Concrete: SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3

* Primer required

Surface Preparation Standards

Condition of Surface		ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast		Sa 2	Sa 2	SP 6	3
Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

TINTING

Tint Part A with Maxitoner Colorant at 100% tint strength (white tint base and ultradeep tint base only). Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

APPLICATION CONDITIONS

Temperature:	40°F (4.5°C) minimum, 100°F (38°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point
Relative humidity:	75% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:	
Part A:	1 gal (3.78L) and 5 gal (18.9L)
Part B:	1 gal (3.78L) and 5 gal (18.9L)
Weight:	10.45 ± 0.2 lb/gal ; 1.25 Kg/L mixed, may vary with color

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

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WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

DISCLAIMER

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APPLICATION BULLETIN

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SURFACE PREPARATIONS

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.

Iron & Steel
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (1-2 mils / 25-50 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs. Primer Required.

Concrete and Masonry
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required.

Follow the standard methods listed below when applicable:
ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

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 products 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.

Surface Preparation Standards

	Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast		Sa 2	Sa 2	SP 6	3
Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:	40°F (4.5°C) minimum, 100°F (38°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point
Relative humidity:	75% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reducer* ..... VOC Restricted Areas (<250 g/L): Reduction not recommended
Clean Up ..... Reducer R6K30 or R7K225

*Other areas (<340 g/L): Reducer R6K30 or R7K225 up to 5% by volume. Choose a reducer that is compliant in your area. Confirm compliance with state and local air quality rules before use.

Airless Spray
Pressure ..... 2400 - 3000 psi
Hose ..... 3/8" ID
Tip ..... .013" - .017"
Filter ..... 60 mesh
Reduction ..... Not recommended

Conventional Spray
Gun ..... Binks 95
Cap 63P
Tip 66
Atomization Pressure ..... 50 - 60 psi
Fluid Pressure ..... 20 - 30 psi
Reduction ..... Not recommended

Brush
Brush ..... Natural Bristle
Reduction ..... Not recommended

Roller
Cover ..... 1/4" woven with solvent resistant core
Reduction ..... Not recommended

If specific application equipment is not listed above, equivalent equipment may be substituted.

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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine two parts by volume of Part A with one part by volume of Part B. Thoroughly agitate the mixture with power agitation. Allow the material to sweat-in as indicated. Re-stir before using.
If reducer is used, add only after both components have been thoroughly mixed.
If an anti-slip finish is desired, the additive is mixed into the final coat just prior to application. (EXCEPTION: If anti-slip is desired with Clear finish, it should be hand broadcast). A 3/4" pile roller is recommended for the final coat when anti-slip aggregate is used.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**3.0** (75)	**4.5** (112)
Dry mils (microns)	**2.0** (50)	**3.0** (75)
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NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

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To recoat:			
minimum:	24 hours	12 hours	2 hours
maximum:	3 days	48 hours	24 hours
To cure:	7 days	7 days	5 days
If maximum recoat time is exceeded, abrade surface before recoating.			
Drying time is temperature, humidity, and film thickness dependent.			
Pot Life:	5 hours	4 hours	45 minutes
Sweat-in-Time:		None required	

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer R6K30 or R7K225. Clean tools immediately after use with Reducer R6K30 or R7K225. Follow manufacturer's safety recommendations when using any solvent.

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PERFORMANCE TIPS

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Excessive reduction of material can affect film build, appearance, adhesion and potentially cause color float.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer R6K30 or R7K225.

Mixed coating is sensitive to water. Use water traps in all air lines. Moisture contact can reduce pot life and affect gloss and color.

Additive of anti-slip aggregate produces only a light nonslip texture. Product should not be used in place of a nonskid finish when safety is a concern.

Material cannot be sprayed if anti-slip aggregate is used.

Shot blasted floors will require a high build primer.

When rolling this product, always maintain a wet edge to avoid roller marks. Roll as close to any cut-in areas as possible to eliminate visual imperfections. Roller application must be from a roller tray, not by pouring the material onto the surface.

Coated surfaces may discolor under tires due to tire plasticizer migration.

Refer to Product Information sheet for additional performance characteristics and properties.

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