Protective & Marine Coatings

NOVA-PLATE 325
HIGH TEMPERATURE HIGH PRESSURE RESISTANT TANK LINING

PART A	B62W325	WHITE
PART B	B62V325	CLEAR HARDENER

Revised: October 17, 2018

PRODUCT INFORMATION

TRM.39

PRODUCT DESCRIPTION

NOVA-PLATE 325 is an amine cured, glass & ceramic filled tank lining that utilizes advanced novolac technology. It is engineered to protect cargo and steel tank and vessel interiors from aggressive chemicals stored and processed at high temperatures and high pressures. It provides quick return to service, high film build and can be used in applications where conventional, high-solids epoxies are not recommended.

- One coat protection
- Low odor
- Extremely high film build
- Resists thermal cracking
- Excellent chemical resistance
- High temperature immersion resistance
- Plural-component application

PRODUCT CHARACTERISTICS

Finish: Gloss

Color: White

Volume Solids: 100%, mixed

Weight Solids: 100%, mixed

VOC EPA Method 24: <100 g/L; 0.94 lb/gal, mixed

Mix Ratio: 2:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**20.0** (500)	**40.0** (1000)
Dry mils (microns)	**20.0** (500)	**40.0** (1000)
~Coverage sq ft/gal (m^2/L)	**40** (1.0)	**80** (2.0)
Theoretical coverage sq ft/gal (m^2/L) @ 1 mil / 25 microns dft	**1604** (39.4)	

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

Drying Schedule @ 30.0 mils (750 microns):

	@ 50ºF / 10ºC	@ 77°F/25°C *50% RH*	@ 90ºF / 32ºC
To touch:	6.5 hours	2.5 hours	1.5 hours
Dry hard:	26 hours	7 hours	5 hours
To recoat:			
minimum:	6.5 hours	2.5 hours	1.5 hours
maximum:	21 days	21 days	9 days
Cure to service:	5 days	24 hours	24 hours

If maximum recoat time is exceeded, mechanically abrade film prior to applying additional coat.

Drying time is temperature, humidity, and film thickness dependent.

Pot Life:	40 minutes	20 minutes	15 minutes
Sweat-in-Time:		None required	

Shelf Life:	24 months Store indoors at 40°F (4.5°C) to 100°F (38°C)
Flash Point:	201°F (94°C), PMCC, mixed
Reducer:	Not recommended
Clean Up: In California:	MEK (R6K10) or Reducer R7K104 R7K111 or Acetone

RECOMMENDED USES

For use over prepared steel or masonry surfaces in industrial and marine exposures such as:

- Oil storage tanks up to 300°F (149°C)
- Secondary containment
- Acceptable for use with cathodic protection systems
- Ethanol storage tanks
- Suitable for use in the Mining & Minerals Industry
- Oilfield Heater/Treaters
- Oil/Water Seperators
- Frac tanks with high temperature and high chemical flowback service
- Internal & external pipeline coating
- Meets the requirements of the API 652 guideline as a thick film reinforced lining when applied in accordance with API 653 inspections.

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10

System Tested*:

1 ct. Nova-Plate 325 @ 30.0 mils (750 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	50 mg loss
Adhesion	ASTM D4541	>2000 psi
Autoclave	NACE TM0185, 300°F (149°C) @ 2000 psi for 4 days	No effect
Cathodic Disbondment	ASTM G8	0 mm
	ASTM G42 185°F (85°C)	10 mm
Dry Heat Resistance	ASTM D2485	450°F (232°C)
Flexibility	NACE RP0394	1.25%
Immersion (in Ethanol)	NACE TM0174, 120°F (49°C) for 6 months	No effect
Immersion (in Sweet & Sour Crude)	NACE TM0174, 300°F (149°C) for 12 months	No effect
Immersion in Fresh Water or Sea Water	ASTM D6943 210ºF(99ºC) for 6 months	No effect
Shore D Hardness	ASTM D2240	80 minimum

Report No. IM54-1476.10

Immersion (ambient temperature) for the following:

- 37% HCl.....Recommended
- Crude oil.....Recommended
- Fresh water.....Recommended
- Gasoline.....Recommended
- Sea water.....Recommended
- Reformulated gasoline.....Recommended
- Kerosene.....Recommended
- Ethanol.....Recommended
- Methanol.....Not Recommended

Epoxy coatings may darken or yellow after application and curing.

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RECOMMENDED SYSTEMS

	Dry Film Thickness / ct. Mils	(Microns)
Steel, immersion:		
1 ct. Nova-Plate 325	20.0-40.0	(500-1000)
Steel, non-pressurized immersion		
with hold primer		
1 ct. Macropoxy 240	1.0-1.5	(25-40)
(As required for blast hold primer)		
1 ct. Nova-Plate 325	20.0-40.0	(500-1000)
Steel, non-pressurized immersion		
Where brush applied Novolac Epoxy stripe coat required		
1 ct. Epo-Phen FF	2.0-3.0	(50-75)
1 ct. Nova-Plate 325	20.0-40.0	(500-1000)
Concrete/Masonry:		
1 ct. Corobond 100	4.0-6.0	(100-150)
Apply primer to achieve uniform hiding, appearance, and complete wetting of the concrete surface. Coating will be partially absorbed into the concrete. Roll out any puddles.		
1 ct. Nova-Plate 325	20.0-40.0	(500-1000)

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

DISCLAIMER

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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:
Immersion: SSPC-SP10/NACE2, 2-4 mil (50-100 micron) profile
Concrete & Masonry:
Secondary Containment: SSPC-SP13/NACE 6-4.3.1 or 4.3.2, or ICRI No. 310.2R, CSP2-3

Surface Preparation Standards

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

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:
Air & surface: 50°F (10°C) minimum, 110°F (43°C) maximum

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:
Part A: 5 gallon (18.9L) containers and 50 gallon (189L) drums
Part B: 5 gallon (18.9L) containers and 50 gallon (189L) drums

Weight: 10.80, ± 0.3 lb/gal ; 1.29 Kg/L, mixed

SAFETY PRECAUTIONS

Refer to the MSDS 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.

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APPLICATION BULLETIN

TRM.39

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 (immersion service)
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2, or SSPC-SP12/NACE No. 5. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-4 mils / 50-100 microns). Apply Nova-Plate 325 to any bare steel the same day as it is blasted or before flash rusting occurs.

Concrete:
For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310.2R, CSP 2-3.

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.

Surface Preparation Standards

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

APPLICATION CONDITIONS

Temperature:
Air & surface: 50°F (10°C) minimum, 110°F (43°C) maximum

Relative humidity: 85% 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.

Reduction .....Not recommended

Clean Up .....MEK (R6K10) or R7K104
VOC Restricted Areas....R7K111 or Acetone

Plural Component Equipment
Pump.....WIWA DUOMIX 2:1, Graco Extreme Mix, Graco XM, or Graco XP
Pressure.....4000 psi
Hose.....3/8" ID
Tip .....021" - .025"
Pump heater setting.....110°F-130°F, (43°C-54°C) do not exceed 140°F (60°C)
Material temperature at gun tip .....110°F-130°F, (43°C-54°C) (vary as needed)

Brush .....For stripe coating and repair only
Brush.....Nylon/Polyester or Natural Bristle

Roller .....For stripe coating and repair only
Cover .....3/8" woven with solvent resistant core

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.

Mixing Instructions: Mix contents of each component thoroughly using low speed power agitation. Make certain no pigment remains on the bottom or the sides 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.
To ensure that no unmixed material remains on the sides or bottom of the cans after mixing, visually observe the container by pouring the material into a separate container.

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

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**20.0** (500)	**40.0** (1000)
Dry mils (microns)	**20.0** (500)	**40.0** (1000)
~Coverage sq ft/gal (m^2/L)	**40** (1.0)	**80** (2.0)
Theoretical coverage sq ft/gal (m^2/L) @ 1 mil / 25 microns dft	**1604** (39.4)	

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

Drying Schedule @ 30.0 mils (750 microns):

	@ 50ºF / 10ºC	@ 77°F/25°C *50% RH*	@ 90ºF / 32ºC
To touch:	6.5 hours	2.5 hours	1.5 hours
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To recoat:			
minimum:	6.5 hours	7.5 hours	1.5 hours
maximum:	21 days	21 days	9 days
Cure to service:	5 days	24 hours	24 hours
Pot Life:	40 minutes	20 minutes	15 minutes
Sweat-in-Time:		None required	

If maximum recoat time is exceeded, mechanically abrade film prior to applying additional coat.

Drying time is temperature, humidity, and film thickness dependent.

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 MEK, R6K10. Clean tools immediately after use with MEK, R6K10. In California, use R7K111 or Acetone for clean up. Follow manufacturer's safety recommendations when using any solvent.

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PERFORMANCE TIPS

Repair of Pitted Tank Bottoms
Extensive, deep pitting:
Options:
Option 1... Apply a full wet coat, by spray application, of Nova-Plate 325. If necessary, follow with rubber squeegee to work material into and fill the pitted areas. After recommended drying time, apply a full coat of Nova-Plate 325 at recommended film thickness.
Option 2... Weld new steel plates, or use puddle welds, as required to repair pitted areas. Coat areas as recommended.
Shallow pitting, isolated areas: Same as number 1 above.

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

No reduction of material is recommended as this can affect film build, appearance, and adhesion.

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

Do not mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

Remove and solvent clean tip housing every 20-30 minutes.

For Immersion Service: (if required) Holiday test in accordance with ASTM D5162 for steel, or ASTM D4787 for concrete.

Final cure must be confirmed in accordance with ASTM D5402, "Assessing the Solvent Resistance of Organic Coatings Using Solvent Rubs". Test shall consist of 50 double rubs with MEK. Test shall confirm no loss of DFT, and no coating residue on rubbing cloth.

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

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