



Protective & Marine Coatings

NOVA-PLATE™ 325 EPOXY TANK LINING

Revised 01/2016 Issue 2

PRODUCT INFORMATION

PRODUCT DESCRIPTION

NOVA-PLATE 325 is an amine cured, glass & ceramic filled tank lining that utilises 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 VOC
- Low odour
- Extremely high film build
- Resists thermal cracking
- Excellent chemical resistance
- High temperature immersion resistance
- Plural-component application
- Norsok System 7C Approval

PRODUCT CHARACTERISTICS

Finish:	Gloss
Colour:	White
Volume Solids:	98%, ± 2%, mixed
Weight Solids:	98%, ± 2%, mixed
VOC:	91.2g/ltr, mixed
Mix Ratio:	2:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet microns (mils)	500 (20)	1000 (40)
Dry microns (mils)	500 (20)	1000 (40)
Theoretical Coverage m ² /ltr (sqft/gal)	1.96 (78)	0.98 (39)

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

Drying Schedule @ 750 microns (30.0mils):

	@ 10°C(50°F)	@ 25°C(77°F) 50% RH	@ 32°C(90°F)
To touch:	6.5 hours	2.5 hours	1.5 hours
To handle:	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:	14 days	24 hours*	24 hours*

*24 hour return to service for high temperature and high pressure applications. 48 hour return to service for all other immersion.
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
Induction Time:	None required		

Shelf Life:	24 months Store indoors at 4.5°C (40°F) to 38°C (100°F)
Flash Point:	94°C (201°F), PMCC, mixed
Thinner:	Not recommended
Clean up:	No 13

RECOMMENDED USES

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

- Oil storage tanks up to 149°C (300°F)
- 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 Separators
- Frac tanks with high temperature and high chemical flowback service

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10, NACE2/Sa2½

System Tested*:

1 ct. Nova-Plate 325 @ 750 microns (30.0 mils) dft
*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	22.4 mg loss
Adhesion	ASTM D4541	>2000 psi
Autoclave	NACE TM0185, 149°C (300°F) @ 2000 pse for 4 days	No effect
Cathodic Disbondment	ASTM G8 ASTM G42 85°C (185°F)	0mm 10mm
Dry Heat Resistance	ASTM D2485	232°C (450°F)
Flexibility	NACE RP0394	1.25%
Immersion in Ethanol	NACE TM0174 49°C (120°F) for 6 months	No effect
Immersion (in Sweet & Sour Crude)	NACE TM0174 149°C (300°F) for 6 months	No effect
Immersion in Fresh Water of Sea Water	ASTM D6943, 99°C (210°F) 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
- Petrol Recommended
- Sea water..... Recommended
- Reformulated petrol Recommended
- Kerosene Recommended
- Ethanol .. Recommended
- Methanol Not Recommended

Epoxy coatings may darken or yellow after application and curing.



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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.

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/NACE 2/Sa2½
50-100 micron (2-4mils) profile

Concrete & Masonry:
Secondary Containment: SSPC-SP13/NACE2/6-4.3.1 or 4.3.2,
or ICRI No. 310.sR, CSP2-3

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 Pitted & Rusted	C St 2 D St 2	C St 2 D St 2	SP 2 SP 2	- -
Power Tool Cleaning	Rusted Pitted & Rusted	C St 3 D St 3	C St 3 D St 3	SP 3 SP 3	- -

APPLICATION CONDITIONS

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

Relative Humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:

Base: 18ltr in 20ltr pail, 3ltr in 5ltr can
Hardener: 9ltr in 12ltr pail, 1.5ltr in 2.5ltr can
Weight: 1.4 Kg/L, (10.8±0.3 lbs/gal) mixed



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APPLICATION BULLETIN

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-SP10/NACE 2, Sa2½ or SSPC-SP12/NACE 5. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (50-100 microns / 2-4 mils). Apply Nova-Plate 325 to any bare steel the same day as it is blasted or before flash rusing occurs.

Concrete (Secondary Containment only):

For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310. 2R, SCP 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 D1869 Standard Test Method for Measuring Moisture Vapour 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	Swedish Std. SIS055900	SSPC	NACE
White Metal	Sa 3	Sa 3	SP 5	1
Near White Metal	Sa 2.5	Sa 2.5	SP 6	2
Commercial Blast	Sa 2	Sa 2	SP 7	3
Brush-Off Blast	Sa 1	Sa 1	SP 8	4
Hand Tool Cleaning	C St 2	C St 2	SP 9	-
Pitted & Rusted	D St 2	D St 2	SP 10	-
Rusted	C St 3	C St 3	SP 11	-
Power Tool Cleaning	D St 3	D St 3	SP 12	-

APPLICATION CONDITIONS

Temperature:

Air & surface: 10°C (50°F) minimum,
43°C (110°F) 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 cleanser. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

ThinnerNot recommended

Clean UpNo 13

Plural Component Equipment

Pump.....WIWA DUOMIX 2:1, Graco Extreme Mix, Graco XM, or Graco XP

Pressure.....4000 psi

Hose.....3/8" ID

Tip0.021" - .025"

Pump heater setting.....43°C - 54°C (110°F - 130°F) do not exceed 60°C (140°F)

Material temperature at

gun tip43°C-54°C (110°F-130°F)
(vary as needed)

BrushFor stripe coating and repair only

Brush.....Nylon/Polyester or Natural Bristle

RollerFor stripe coating and repair only

Cover3/8" woven with solvent resistant core

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



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APPLICATION BULLETIN

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 Base with one part by volume of Hardener. 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 microns (mils)	500 (20)	1000 (40)
Dry microns (mils)	500 (20)	1000 (40)
Theoretical Coverage m ² /ltr (sqft/gal)	1.92 (78)	0.96 (39)

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

Drying Schedule @ 750 microns (30.0mils):

	@ 10°C(50°F)	@ 25°C(77°F) 50% RH	@ 32°C(90°F)
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maximum:	21 days	21 days	9 days
Cure to service:	14 days	24 hours*	24 hours*

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

**24 hour return to service for high temperature and high pressure applications. 48 hour return to service for all other immersion.*

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

Pot Life:	40 minutes	20 minutes	15 minutes
Induction 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 Cleanser No. 13. Clean tools immediately after use with Cleanser No. 13.

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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 thinning 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 mixed 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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