



# Protective & Marine Coatings

# FAST CLAD™ ER EPOXY TANK LINING

Revised 08/2017 Issue 4

## PRODUCT INFORMATION

### PRODUCT DESCRIPTION

#### Fast Clad ER

A solvent-free epoxy technology offering ultra fast return to service. With superior flexibility, excellent edge retention, film forming and high build properties, this solvent-free epoxy product enables ultra fast return to service in as little as 24 hours.

- One coat protection
- Low VOC
- Dry to walk-on within four hours
- Designed for plural-component application equipment
- Greater than 70% edge retention
- Low Temperature application and cure capabilities to 2°C (See Application Conditions)
- Fast return to service
- Low odour

### PRODUCT CHARACTERISTICS

<b>Finish:</b>	Gloss
<b>Colour:</b>	White, Blue OAP, Black, Haze Grey
<b>Volume Solids:</b>	98%, ± 2%, mixed
<b>Weight Solids:</b>	98%, ± 2%, mixed
<b>VOC:</b>	<85 g/ltr, mixed
<b>Mix Ratio:</b>	1:1 by volume

#### Recommended Spreading Rate per coat:

	Minimum	Maximum
<b>Wet microns</b>	<b>450</b>	<b>550</b>
<b>Dry microns</b>	<b>450</b>	<b>550</b>
<b>Theoretical Coverage m<sup>2</sup>/ltr</b>	<b>2.2</b>	<b>1.8</b>

\*Can be applied up to 1500 microns dft if required.

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

#### Drying Schedule @ 500 microns:

	@ 4.5°C	@ 25°C 50% RH	@ 38°C
<b>To touch:</b>	6 hours	1 hour	35 minutes
<b>To handle:</b>	8-12 hours	3 hours	55 minutes
<b>To recoat:</b>			
<b>minimum:</b>	6 hours	1 hour	35 minutes
<b>maximum:</b>	14 days	14 days	14 days
<b>Foot traffic:</b>	8-12 hours	3 hours	1 hour
<b>Cure to service:</b>	36 hours	24 hours	12 hours
<b>Pot Life:</b>		7 minutes	
<b>Induction-Time:</b>		None required	

<b>Shelf Life:</b>	24 months Store indoors at 4.5°C to 38°C
<b>Flash Point:</b>	110°C, mixed
<b>Thinner:</b>	Not recommended
<b>Cleanser:</b>	No 13

### RECOMMENDED USES

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

- Ballast tank interiors and oil storage tank interiors
- Fuel storage tanks and external pipeline coating
- Primary or Secondary containment
- Acceptable for use with cathodic protection systems
- Where rapid return to service and edge protection film build properties are required
- Meets MIL-PRF-23236 Type VII, Class 5, 7, 5/18, 7/18, 13/18, 17, 17/18 Grade C requirements for single and multi-coat seawater, fuel, bilges, and CHT tanks
- Blue OAP contains fluorescent pigment
- Wind tower gearbox lining and transformer lining up to 60°C (140°F)

### PERFORMANCE CHARACTERISTICS

**Substrate\*:** Steel

**Surface Preparation\*:** SSPC-SP10/NACE 2/Sa2½

**System Tested\*:**

1 ct. Fast Clad ER Epoxy @ 450-550 microns dft

\*unless otherwise noted below

Test Name	Test Method	Results
<b>Abrasion Resistance</b>	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	22.4 mg loss
<b>Adhesion</b>	ASTM D4541	>2000 psi
<b>Cathodic Disbondment</b>	ASTM G8	Passes 30 days @ 1.5 volts (Cu/CuSO <sub>4</sub> ), <10 mm disbondment radius
<b>Corrosion Weathering</b>	ASTM D5894, 4 cycles, 1134 hours	Rating 10 per ASTM D610 for Rusting (field); Rating 10 per ASTM D714 for Blistering (field)
<b>Direct Impact Resistance</b>	ASTM D2794	1.7J
<b>Dry Heat Resistance</b>	ASTM D2485	121°C
<b>Flexibility</b>	ASTM D522	11mm (24-hour cure)
<b>Immersion Elevated Temperature*</b>		Passes 6 months at 96°C in gearbox oil
<b>Moisture Condensation Resistance</b>	ASTM D4585, 38°C, 2000 hours	Rating 10 per ASTM D610 for Rusting (field); Rating 10 per ASTM D714 for Blistering (field)
<b>Pencil Hardness</b>	ASTM D3363	H

\*Report No. IM54.1382-09

**Immersion (ambient temperature) for the following:**

- Ballast tank mix ..... Recommended
- Crude oil ..... Recommended
- Fresh water ..... Recommended
- Petrol ..... Recommended
- Sea water..... Recommended
- Reformulated petrol ..... Recommended
- Kerosene ..... Recommended

Epoxy coatings may darken or yellow after application and curing.



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## PRODUCT INFORMATION

### SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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### DISCLAIMER

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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:

<b>Steel:</b>		
Atmospheric:		SSPC-SP6/NACE 3/Sa2 50 micron profile or SSPC-SP/NACE WJ-3/SC-2
Immersion:		SSPC-SP10/NACE2/Sa2½ 50-75 micron profile or SSPC- SP/NACE WJ-2/SC-2

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

### TINTING

Do not tint

### APPLICATION CONDITIONS

Temperature:  
Air & surface: 4.5°C minimum\*, 43°C maximum

\*For application at 2°C to 4.5°C, specific guidelines are required as follows:

- Air & Surface temperature conditions must be expected to remain stable or improve for a period of four hours.
- Environmental controls (dehumidification, heating, forced-air ventilation) are recommended to maintain acceptable application conditions.
- 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.

The material should be 29°C-54°C (vary as needed) at the mixing block for optimal atomization based on tip size and pump pressure.

**Do not heat above 60°C.**

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

### ORDERING INFORMATION

#### Packaging:

Base (Part A):	10ltr in 20ltr pail
Additive (Part B):	10ltr in 12.5ltr pail
Weight:	1.4 Kg/L ± 0.04, 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.

#### Steel (atmospheric service)

Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3, Sa2 or SSPC-SP/NACE WJ. For surfaces prepared by SSPC SP6/NACE 3, first remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2/Sa2½. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile 50-75 microns. For surfaces prepared by SSPC-SP/NACE WJ, all surfaces shall be cleaned in accordance with WJ-3/SC2. Pre-existing profile should be approximately 50 microns. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

#### 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/Sa2½, or SSPC-SP/NACE WJ. For SSPC-SP10/NACE 2/Sa2½, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile 50-75 microns. For SSPC-SP/NACE WJ, all surfaces to be coated shall be cleaned in accordance with WJ-2/SC2 standards.

Pre-existing profile should be approximately 50 microns. Remove all weld spatter. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

#### Surface Preparation Standards

	Condition of Surface	Surface Preparation Standards		SSPC	NACE
		ISO 8501-1 BS7079:A1	Swedish Std. SIS055900		
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	-
	Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning					
	Pitted & Rusted	D St 3	D St 3	SP 3	-

### APPLICATION CONDITIONS

Temperature:  
Air & surface: 4.5°C minimum\*, 43°C maximum

\*For application at 2°C to 4.5°C, specific guidelines are required as follows:

- Air & Surface temperature conditions must be expected to remain stable or improve for a period of four hours.
- Environmental controls (dehumidification, heating, forced-air ventilation) are recommended to maintain acceptable application conditions.
- 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.

The material should be 29°C-54°C (vary as needed) at the mixing block for optimal atomization based on tip size and pump pressure.

**Do not heat above 60°C.**

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.

Thinner .....Not recommended

Cleanser .....No 13

#### Plural Component Equipment

Pump.....WIWA DUOMIX 1:1, Graco Extreme Mix, Graco XM, or Graco XP  
 Pressure.....4000 psi  
 Hose.....3/8" ID  
 Tip ..... .021" - .025"  
 Pump heater setting.....21°C - 27C  
 Material temperature at gun tip .....29°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 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 one part 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 microns	450	550
Dry microns	450	550
Theoretical Coverage m <sup>2</sup> /ltr	2.2	1.8

\*Can be applied up to 1500 microns dft if required.

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

#### Drying Schedule @ 20.0 mils (500 microns):

	@ 4.5°C	@ 25°C 50% RH	@ 38°C
<b>To touch:</b>	6 hours	1 hour	35 minutes
<b>To handle:</b>	8-12 hours	3 hours	55 minutes
<b>To recoat:</b>			
<b>minimum:</b>	6 hours	1 hour	35 minutes
<b>maximum:</b>	14 days	14 days	14 days
<b>Foot traffic:</b>	8-12 hours	3 hours	1 hour
<b>Cure to service:</b>	36 hours	24 hours	12 hours
<b>Pot Life:</b>		7 minutes	
<b>Induction-Time:</b>		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 No. 13. Clean tools immediately after use with No. 13. Follow manufacturer's safety recommendations when using any solvent.

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### PERFORMANCE TIPS

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 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.

Guidance on techniques and required equipment to inspect a coating system incorporating Opti-Check OAP Technology can be found in SSPC-TU 11.

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

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