



Protective & Marine Coatings

HEAT-FLEX® HI-TEMP 1200 COATING UNDER INSULATION

B59A225
B59A226

GRAY
DARK GRAY

Revised: July 14, 2014

PRODUCT INFORMATION

7.10

PRODUCT DESCRIPTION

HEAT-FLEX® HI-TEMP 1200 is the next generation single-component inert multipolymeric matrix coating that outperforms alternatives in combating corrosion under insulation (CUI) and in high heat applications.

- Resists corrosion under insulation
- Resists stress corrosion cracking
- Application surface temperatures from ambient to 500°F (260°C)
- Operating surface temperatures cryogenic to 1200°F (649°C)
- Self priming, single component
- No maximum recoat time

PRODUCT CHARACTERISTICS

Finish:	Low Sheen
Color:	Gray and Dark Gray
Volume Solids:	57% ± 2% (calculated)
Weight Solids:	81% ± 2%
VOC (EPA Method 24):	<375 g/L; 3.2 lb/gal

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	8.0 (200)	10.0 (250)
Dry mils (microns)	5.0 (125)	6.0 (150)
~Coverage sq ft/gal (m ² /L)	152 (3.7)	182 (4.5)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	912 (22.3)	

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

Drying Schedule @ 8.0 mils wet (200 microns):

	@ 50°F/10°C	@ 77°F/25°C	@ 120°F/49°C
		50% RH	
To touch:	30 minutes	20 minutes	10 minutes
To handle:	90 minutes	60 minutes	30 minutes
To recoat:	3 hours	2 hours	1 hour
To ship:	24 hours*	24 hours	24 hours
Full cure	at 350°F/177°C is 30 minutes		

*Higher film build effects cure speed and increases ship time at lower temperatures.

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

Shelf Life:	12 months, unopened at 77°F (25°C) Store indoors at 40°F (4.5°C) to 100°F (31°C)
Flash Point:	87°F (31°C) SETA
Reducer:	Not normally recommended*
Clean Up:	Xylene, R2K4

*Please see Performance Tips section

RECOMMENDED USES

- Direct to steel or stainless steel
- As a coating under insulation
- Cyclic service up to 1200°F (649°C)
- Acceptable for use on cryogenic equipment
- For use over properly prepared steel surfaces, either insulated or uninsulated:
 - Power Plants
 - Refineries
 - Chemical Facilities
 - Offshore/Marine
 - Pulp & Paper

PERFORMANCE CHARACTERISTICS

Substrate: Carbon Steel / Stainless Steel, 304, 316

Surface Preparation: SSPC-SP10

System Tested:

2 cts. Heat-Flex Hi-Temp 1200 @ 5-6 mils (125-150 microns) dft/ct.

Test Name	Test Method	Results
Abrasion Resistance	ASTM D968, Falling Sand	16.4 L/mil*
Abrasion Resistance	ASTM D4060, Milligram Loss	189
Adhesion	ASTM D6677	Rating 10
Blocking Resistance	ASTM D4946	Rating 10
Boiling Water	Dry 1000°F/537°C Wet 210°F/99°C 16 weeks, 80 cycles	No adhesion loss
Corrosion Under Insulation (Carbon Steel)	Dry 350°F/177°C Wet 150°F/66°C 12 weeks, 6 cycles (calcium silicate and mineral wool)	Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting
Corrosion Weathering (Carbon Steel)	ASTM D5894, 8 cycles, 2,688 hours	Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting
Direct Impact Resistance	ASTM D2794	80 in lb
Dry Heat Resistance	ASTM D2485	1200°F (649°C)
Exterior Durability (Carbon Steel)	1 year at 45° South	In-Process
Flexibility	ASTM D522, 180° bend, 1¼" mandrel	Passes
Pencil Hardness	ASTM D3363	2H
Salt Fog Resistance (Carbon Steel)	ASTM B117, 1,848 hours	Rating 10 per ASTM D714 for blistering; Rating 8 per ASTM D610 for rusting

*Falling sand is very practical for indication of coating abrasion in the field.



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RECOMMENDED SYSTEMS

Dry Film Thickness / ct.
Mils (Microns)

Carbon Steel or Stainless Steel - Atmospheric:

Ambient or Hot Steel up to 500°F/260°C* :

2 cts. Heat-Flex Hi-Temp 1200** 5.0-6.0 (125-150)

or

1 ct. Heat-Flex Hi-Temp 1200 5.0-6.0 (125-150)

1 ct. Heat-Flex Hi-Temp 1000HA*** 2.0-2.5 (50-62)

Carbon Steel or Stainless Steel - Insulated Service:

Ambient or Hot Steel up to 500°F/260°C* :

2 cts. Heat-Flex Hi-Temp 1200 5.0-6.0 (125-150)

Carbon Steel or Stainless Steel - Atmospheric:

Ambient up to 120°F/49°C* :

2 cts. Heat-Flex Hi-Temp 1200 5.0-6.0 (125-150)

or

1 ct. Heat-Flex Hi-Temp 1200 5.0-6.0 (125-150)

1 ct. Heat-Flex Hi-Temp 500*** 2.0-2.5 (50-62)

or

1 ct. Heat-Flex Hi-Temp 1200 5.0-6.0 (125-150)

1 ct. Heat-Flex Hi-Temp 1000*** 1.5-2.0 (37-50)

*During application to hot steel, apply coating in several thin passes to allow solvent to escape and to prevent blistering. Allow at least 15-20 minutes between each coat.

**Apply Heat-Flex 1200 with a mist coat followed immediately by full coat. Cure 24 hours at ambient or 1-2 hours at 250°F / 121°C prior to topcoating.

***Apply mist coat and allow 10 minute flash off and follow with a full coat.

Do not exceed maximum recommended DFT. May affect adhesion.

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

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

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: Preferred: SSPC-SP6, 1.5-2.5 mil (40-63 micron) profile

Acceptable: SSPC-SP11, 1.0-2.5 mil (25-63 micron) profile
Or SSPC-SP12/NACE No. 5 - WJ-2/L with existing surface profile

Stainless Steel: SSPC-SP1, Do not use chlorinated solvents for cleaning

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	4
Brush-Off Blast	C St 1	C St 1	SP 7	-
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:
surface 50°F (10°C) minimum, 500°F (260°C) maximum
air and material 50°F (10°C) minimum, 120°F (49°C) maximum
Relative humidity: At least 5°F (2.8°C) above dew point
85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging: 1 gallon (3.78L) in a gallon (3.78L) container and 3 gallons (11.34L) in a 5 gallon (18.9L) container.

Weight: 16.1 ± 0.3 lb/gal ; 1.93 Kg/L

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

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

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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. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (1.5-2.5 mils / 40-63 microns maximum). If SSPC-SP6/NACE 3 is not possible, Power Tool Cleaning to Bare Metal per SSPC-SP11 is also acceptable (1.0-2.5 mil / 25-63 micron profile maximum). Hand Tool Cleaning per SSPC SP 2 or Power Tool Cleaning per SSPC SP 3 are acceptable* preparation methods when SSPC SP 6 or SSPC SP 11 are not possible. SSPC-SP12 NACE No. 5 can also be utilized, though not the preferred method. All surfaces to be coated shall be cleaned in accordance with WJ-2/L standards. Pre-existing profile should be approximately 1.5 mils (37 microns). Remove all weld spatter and round all sharp edges. Coat any bare steel the same day as it is cleaned or before flash rusting occurs. On stainless steel, clean per SSPC-SP1. Aluminum Oxide grit is also acceptable for use. Do not use chlorinated solvents for cleaning stainless steel. Product performance is relative to the surface preparation achieved.

*Where SSPC SP 2 or SP 3 are used the Dry Temperature Resistance is recommended to a maximum 1000°F, continuous and peak.

APPLICATION CONDITIONS

Temperature:
 surface 50°F (10°C) minimum, 500°F (260°C) maximum
 air and material 50°F (10°C) minimum, 120°F (49°C) maximum
 At least 5°F (2.8°C) above dew point
 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 Xylene, R2K4

Airless Spray

Unit..... 30:1 Pump
 Pressure..... 2700 - 3000 psi
 Hose..... 3/8" ID
 Tip017-.019
 Filter 60 mesh
 Reduction..... Not recommended

Conventional Spray

Gun Graco 700N
 Fluid Tip045" - .055"
 Air Nozzle..... 20 cfm
 Atomization Pressure..... 50 psi
 Fluid Pressure..... 20 - 30 psi
 Reduction..... Not recommended

Brush

Brush..... China bristle
 Reduction..... Not recommended

Roller

Cover 1/2" woven with solvent resistant core,
 Reduction..... Not recommended

*Please see Performance Tips section

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

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 10	3
Brush-Off Blast	Sa 1	Sa 1	SP 10	4
Hand Tool Cleaning	St 2	St 2	SP 3	-
Pitted & Rusted	St 2	St 2	SP 3	-
Rusted	St 3	St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted St 3	Pitted & Rusted St 3	SP 3	-



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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Mix paint thoroughly with low speed power agitation before use. Obtain a uniform consistency. Additional mixing during application may be necessary due to heavy consistency. Do not incorporate air.

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

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	8.0 (200)	10.0 (250)
Dry mils (microns)	5.0 (125)	6.0 (150)
~Coverage sq ft/gal (m ² /L)	152 (3.7)	182 (4.5)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	912 (22.3)	

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

Drying Schedule @ 8.0 mils wet (200 microns):

	@ 50°F/10°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	30 minutes	20 minutes	10 minutes
To handle:	90 minutes	60 minutes	30 minutes
To recoat:	3 hours	2 hours	1 hour
To ship:	24 hours*	24 hours	24 hours
Full Cure	at 350°F/177°C is 30 minutes		

*Higher film build effects cure speed and increases ship time at lower temperatures.

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 Xylene, R2K4. Clean tools immediately after use with mineral spirits. 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 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 it can affect film build, appearance, and adhesion.

***If reduction is required for application to hot steel, use MAK, R6K30 up to a maximum of 5% by volume.**

During application to hot steel, apply coating in several thin passes to allow solvent to escape and to prevent blistering. Allow at least 15-20 minutes between each coat. If blistering does occur, brush out immediately with a china bristle brush.

Always test adhesion by applying a test patch of 2-3 square feet. Allow one week to dry before checking adhesion.

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

Minor color change may be exhibited in exposed service, but will not affect performance.

Topcoating: If applying a topcoat, apply a mist coat of the topcoat. Allow 10 minutes flash off and follow with a full coat.

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

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