



Protective & Marine Coatings

HEAT-FLEX® 3500 THERMAL INSULATIVE COATING

B59W-350
B59A-350

WHITE
SLATE GRAY

Revised: November 20, 2023

PRODUCT INFORMATION

7.20

PRODUCT DESCRIPTION

HEAT-FLEX HI-TEMP 3500 is a multi-purpose, single component water-based, acrylic, spray applied insulative coating. It contains an engineered composite of ceramic and silica microspheres to optimize thermal insulative properties.

- Single component
- Designed to be applied to hot substrates up to 350°F (177°C)
- Suitable to insulate substrates operating from -80°F up to 350°F (-62°C - 177°C)
- Easy airless spray application
- Very fast dry with minimal overspray risk
- Low odor
- Easy to repair
- Flexible to perform under cyclic thermal shock conditions
- Eliminates hidden CUI commonly found under conventional insulation and cladding

PRODUCT CHARACTERISTICS

Generic type: Acrylic
Color: White, Slate Gray
Finish: Low Sheen
Volume solids: 83% ± 2%
VOC: <11 g/L; 0.09 lb/gal

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	18.0 (457)	24.4 (610)
Dry mils (microns)	15.2 (381)	20.3 (508)
~Coverage sq ft/gal (m ² /L)	74 (1.8)	55 (1.35)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1,327 (32.6)	

Drying Schedule @ 77°F/25°C and 50% RH:

To touch: 15 minutes
To recoat: 2 hours*
To handle: 12 hours

*Estimate @ 20 mils (500 microns) DFT. Actual recoat times vary due to several variables including film thickness, relative humidity and air movement.

Refer to application information for further details.

Shelf Life: 24 months, unopened
Store indoors at 50°F (10°C) to 100°F (38°C).
Protect from freezing and direct sunlight!
Flash Point: None
Reducer: Not recommended
Clean Up: Water

RECOMMENDED USES

- Personnel Protective Coating (PPC) for improved plant safety through burn prevention
- Thermal insulation for hot or cold process energy conservation
- Prevent condensation on cold surfaces
- Minimize radiant solar heat of containers and personnel enclosures
- For application to properly prepared and primed carbon steel and non-ferrous metal surfaces including:
 - Tanks
 - Piping
 - Vessels
 - Furnaces
 - Stacks
 - Containers
 - Personnel Enclosure
 - Oil & Gas Facilities
 - Power Plants
 - Pulp & Paper
 - Offshore / Marine
 - Chemical Plants

Not recommended for:

- Immersion service
- Surfaces operating above 350°F (177°C)

PERFORMANCE CHARACTERISTICS

System tested, unless otherwise noted:

1 ct Heat-Flex 1200, 4 cts Heat-Flex 3500, 1 ct Shercryl HPA

Test	Test Method	Results
Adhesion* *No topcoat	ASTM D6677	minimum rating 6
Cohesive Strength* *No topcoat	ASTM D4541	120-240 psi** **cohesive strength is directly related to film thickness. Max. value is for 20 mils (500 microns)
Corrosion Weathering	ASTM D 5894 9 cycles, 3024 hrs.	Rating 10 per ASTM D714 for blisters Rating 9 per ASTM D610 for rusting Rating 10 per ASTM D1654 for scribe creepage
Flame Spread / Smoke Development* *Heat-Flex 3500 only tested	ASTM E-84	Class A
Flexibility* *1 ct Heat-Flex 3500 only tested	ASTM D 522 Method B 3/8" mandrel	Pass
Personnel Protection	ASTM C1055/C1057 ISO 13732 substrate temperature of 300°F	Pass, OSHA requirements with thermesthesiometer simulated skin temperatures below 140°F @ 5 second exposure
Thermal Cycling	ASTM D6994-09, 10 cycles, 240 hrs, each cycle includes water immersion, 10°F Freezer, and 120°F ambient temperature exposures	Rating 10 per ASTM D714 for blisters Rating 9 per ASTM D610 for rusting No loss of adhesion to primer
Thermal Conductivity* *4 cts Heat-Flex 3500 only tested	ASTM C-335	.056 BTU/hr/ft ² /°F (.097 w/mk)



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RECOMMENDED SYSTEMS

	Dry Film Thickness / ct. Mils	(Microns)
Atmospheric, up to 350°F (177°C), Continuous; 400°F (204°C) Intermittent:		
Steel:		
1 ct. Heat-Flex 1200	5.0-6.0	(125-150)
2-10 cts. Heat-Flex 3500*	15.0-20.0	(375-500)
1 ct. Sher-Cryl HPA	2.0-4.0	(50-100)
1 ct. Zinc Clad II or II Plus	2.0-4.0	(50-100)
2-10 cts. Heat-Flex 3500*	15.0-20.0	(375-500)
1 ct. Sher-Cryl HPA	2.0-4.0	(50-100)
Stainless Steel:		
1 ct. Heat-Flex 1200	5.0-6.0	(125-150)
2-10 cts. Heat-Flex 3500*	15.0-20.0	(375-500)
1 ct. Sher-Cryl HPA	2.0-4.0	(50-100)
1 ct. Macropoxy 267	4.0-6.0	(100-150)
2-10 cts. Heat-Flex 3500*	15.0-20.0	(375-500)
1 ct. Sher-Cryl HPA	2.0-4.0	(50-100)
1 ct. Epo-Phen FF	7.0-9.0	(175-225)
2-10 cts. Heat-Flex 3500*	15.0-20.0	(375-500)
1 ct. Sher-Cryl HPA	2.0-4.0	(50-100)
1 ct. Phenicon HS	5.0-7.0	(125-175)
2-10 cts. Heat-Flex 3500*	15.0-20.0	(375-500)
1 ct. Sher-Cryl HPA	2.0-4.0	(50-100)
2-10 cts. Heat-Flex 3500*	15.0-20.0	(375-500)
1 ct. Sher-Cryl HPA	2.0-4.0	(50-100)

*As required to achieve desired insulative properties.

SURFACE PREP

Carbon Steel:

Refer to specific primer data page for recommended surface preparation.

Stainless Steel/Non-Ferrous

Under non corrosive environments, prepare substrate to SSPC-SP1. Do not use chlorinated solvents for cleaning. For use in corrosive environments, abrasive blast clean to SSPC-SP16 to achieve a profile of 1-2 mils (25-50 microns) using a chloride free non-metallic abrasive. An optional primer can be used if required.

TINTING

Do not tint.

APPLICATION CONDITIONS

Surface Temperature:	50°F (10°C) minimum, 350°F (177°C) maximum
Air & material:	50°F (10°C) minimum, 120°F (49°C) maximum
Relative humidity:	85% maximum

ORDERING INFORMATION

Weight per gallon:	6.00 lbs/gal (0.72kg/L)
Packaging:	5 gallon (18.9 L) pails

APPLICATION EQUIPMENT

Reducer/Clean Up.....Water

Airless Spray

Pump	35:1 to 50:1, capable of 2@GPM or more, no higher pressure pumps should be used
Gun.....	high flow or mastic
Pressure	1800-2500 psi
Hose	3/8" for 50' or less, 1/2" or greater for distances over 50'
Tip.....	.027" - .035"
Filter.....	Remove all

Brush, small areas and touch-up only

Brush

APPLICATION PROCEDURES

Prepare surface and apply primer per product data sheet.

Excessive mixing and/or atomization may negatively affect performance properties.

Mixing Instructions: Mix with 1/2" reversible drill and steel drywall mud paddle. Operate drill in reverse position and slowly mix only to point that pail is homogeneous. Do not allow mix blade to contact bottom or sides of pail. DO NOT MECHANICALLY SHAKE PAILS! Material that's been stored for extended periods of time may exhibit a solid "crust" when the pail is opened. This can be reincorporated into the coating by breaking the crust apart and slowly mixing in per the normal process.

Pump, hose, and gun should be thoroughly flushed and primed with clean water prior to loading product. Pump pressure should be set at minimum pressure required to create a fan pattern. Excessive mixing and/or atomization may negatively affect performance properties.

Coating is considered acceptable for recoat when a firm thumb rotation does not damage film.

When applying to hot surfaces, apply in multiple thin coats to allow water evaporation prior to applying additional thickness.

SAFETY PRECAUTIONS

Refer to the SDS 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.

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.

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