Gray HereShield (WB-506)

Our 50 years of coating history speaks for itself.

In 1964, Heresite was the first company to apply coatings to aluminum-finned, copper-tubed heat exchangers. The Heresite coating became then and remains a standard in the industrial coatings industry. We provide the highest quality protective coatings for air conditioning and refrigeration systems that operate in moderate to severely corrosive environments, including both coastal and/or industrial applications.

New formulation for an easy-to-apply, air-dry water-based, acrylic coating

Heresite's HereShield is formulated as a low-VOC direct to metal coating. It exhibits excellent corrosion resistance, UV resistance and weathering qualities, along with good adhesion to ferrous and non-ferrous metals without complex pretreatment or primers.

Heresite's HereShield air-dry coating is designed for spray application. Some of its outstanding properties are excellent durability, excellent salt fog performance, good adhesion, good film building characteristics, and flexibility.

This single-component coating is typically applied on the internal and external surfaces of HVAC-R heat exchangers and related equipment. It is suitable for use on a variety of heat exchanger types, including RTPF and MCHX.

HereShield Typical Properties

Salt Spray: ASTM B117: 15,000 hours

(Modified) ISO 12944-9 (formerly ISO 20340) Cyclic Offshore Testing:
25 weeks (4,200 hours)

QUV Resistance: ASTM D4587: 2,000 hours

UV-C Resistance: 1,500 hours

Humidity: ASTM D4585: 5,000 hours

Dry Film Thickness (DFT): 0.8-1.2 mils (20-30 microns)

Bend Test: ASTM D522: 1/8-inch (3.0 mm) mandrel with no cracks or delamination

Crosshatch Adhesion: ASTM D3359: 5B

Pencil Hardness: ASTM D3363: 2B

Impact Resistance: ASTM D2794-93:
Direct - 50 inch-pounds (0.58 kilograms/meter)
Indirect - 50 inch-pounds (0.58 kilograms/meter)

Heat Transfer Reduction: <1% as applied for heat transfer components (i.e. at recommended dry film thickness)

Dry Heat Resistance: Withstands 200°F (93°C) with excursions to 250°F (121°C) without damage

Viscosity*: 45 – 65 seconds, Zahn 2 EZ cup
(110 – 170 Centistokes)

Notes

Aluminum panels tested are 3003 H14 Aluminum, mill finish.
Size: 0.025" x 3" x 6" (0.6 x 76 x 152 mm)

Performance properties shown above were achieved after 2 – 3 weeks air dry at ambient temperatures of approximately 68 – 77°F (20 – 25°C).

*See Palmer-Holland or Gardco conversion chart to standardize to viscosity cup used.

Effective date: 7/27/2022

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800-558-7747 or +1 920-684-6646 • sales@Heresite.com • www.Heresite.com

Product Description
Air-Dry Water-Based Acrylic

Recommended Uses
Heresite's HereShield is a direct-to-metal high-performance coating specially formulated for marine / saltwater environments and used principally to protect heat transfer equipment and components.

Chemical Resistance
HereShield is splash resistant to a range of acids and inorganic salts. Please contact Heresite for further information.

Packaging Information
HereShield is available in one-gallon (3.8 liter) and five-gallon (18.9 liter) quantities.

Thinners and Cleanup
No thinning is required for this material. Agitating will cause coating to become thinner in viscosity. If required to thin beyond normal viscosity range, Type IV Deionized water can be used in small amounts (ASTM D1193).

Deionized water can be used to clean up wet coating material, followed by acetone for residual material.

Storage Conditions
Coating should not be stored longer than 2 years from date of manufacture. Coating should be stored in a clean, dry environment at 50–75°F (10-24°C) in original, sealed containers. Keep out of direct sunlight. Avoid excessive heat and keep from freezing. Product may be shipped with freeze indicator, which indicates only that risk temperatures were reached; coating may still be usable. Call Heresite if freeze indicators are activated prior to opening shipment.

Physical Properties
Solids by weight (ASTM D2369)**:** 30% ± 3%

Solids by volume (calculated): 25% ± 3%

Flash Point: 212°F (100°C)

Pot life: N/A

Mixing Ratio by Volume: N/A (1-component coating)

Shelf life: 2 years from date of manufacture

Color: Gray

VOC Content
1.0 lb. / gal. (120 grams / liter) as supplied
(less water and exempt solvents)

Film Thickness
For all surfaces, a typical DFT of 0.8 – 1.2 mils (20 – 30 microns), achieved with 3.0 – 5.0 wet mils (75 – 125 microns)

Coverage
Theoretical coverage is approximately 400 square feet per gallon per 1 dry mil (approximately 10 square meters per 1 liter per 25 microns). Coverage rates are estimates and make no allowance for material loss. Actual rates will vary dependent on application method, surfaces, etc.

Curing/Drying:
Air dry:

Coil should be dry to touch within 5 hours of final application at ambient temperatures of 68-77°F (20-25°C). Warmer temperatures will enhance drying time; cooler temperatures will lengthen the drying time. Coil should be dry to handle after 48 hours at ambient temperatures.

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Surface Preparation

All surfaces must be clean, sound, and free of any oils, dirt, grease, wax, and any other contamination that may interfere with coating adhesion.

In general, for new construction, the surface should be prepared with a neutral (pH of 8-9) solventized heavy duty cleaner followed by a thorough hot water rinse. Cleaners that leave little to no residue on the final surface are best. All surfaces must be dry and free of residue or debris prior to application of coating.

Heresite recommends DuJel 870 heavy duty cleaner from DuBois Chemicals for metal preparation prior to HereShield application. This cleaner is available from Heresite and is intended to be used as described above and in the DuJel 870 TDS (also available from Heresite).

Because each situation is unique and has multiple variables (type and degree of contamination, etc.), the end user must validate the recommended cleaning regimen, ensuring that acceptable appearance and adhesion are achieved.

Previously Painted Metal Surfaces:

Remove all loose coatings, rust, and corrosion by scraping, sanding, or sand blasting. In cases where there is a large amount of contamination, a commercial blast is acceptable in accordance with NACE #3, SSPC-SP-6 or Sa2 specifications.

Thinning

No thinning is required for this material. Agitating will cause coating to become thinner in viscosity. If required to thin beyond normal viscosity range, Type IV Deionized water can be used in small amounts (ASTM D1193).

Application

Application is specific to heat transfer components. For other parts, please contact Heresite.

Spray Application for Heat Transfer Equipment:

1. Consult SDS prior to use.
2. Do not apply if temperature is less than 5°F (3°C) above dew point, or if temperature is below 45°F (7°C).
3. Use standard production type spray equipment (conventional, HVLP, etc.). Starting recommendations can be found below:

Gun	Fluid	Air
Binks #2100	66-SS	66-SSx21MD-2
Graco Air Pro HVLP 0.055 tip		

4. Agitate coating briefly with an appropriately sized stirring knife or spatula until no settle is seen at the base of the agitating utensil and the surface looks homogenous. A slow speed paddle/power mixer may be used in larger storage vessels or as needed. Over-agitation may result in generation of foam. Draw material from the bottom of the coating containment vessel.
5. NON-DEDICATED EQUIPMENT: There is special processing required to use water-based coatings in solvent-based equipment. This process ensures no residual solvent interferes with HereShield. When finished spraying water-based coating, reverse steps (flush with water, then intermediate solvent, then acetone) to revert to solvent-based equipment. Skip to Step 6 if using dedicated and clean water-based equipment.
   a. Clean the spray gun thoroughly with acetone or solvent compatible with previous coating (anywhere the coating touches).
   b. Flush the equipment with at least a pint of either EB solvent (Butyl Cellosolve) or IPA (isopropyl alcohol) until the lines run clear.
   c. Wipe down the spray equipment to remove some of the solvent.
   d. Flush the lines with at least a pint (0.475 liters) of deionized water.
   e. The spray gun is now set up to spray HereShield.
6. For full penetration of the internal coil by spray only, please refer to Application Guide for spray penetration technique.
7. Air supply must be uncontaminated. Adjust air pressure to approximately 50 PSI (3.5 bar) at the gun and provide approximately 50 PSI (3.5 bar) at pressure pot. Adjust spray gun by first opening liquid valve and then adjust air valve to give approximately an 8"–12" fan (20-30 centimeters), holding gun perpendicular to the surface at a distance of 12" (30 centimeters).
8. Apply a mist bonding pass.

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9. Allow to flash off between passes for approximately one minute, but do not allow film to dry completely.
10. Coils shall be coated on both sides of fins (outside and inside)
11. Moving spray gun slowly — each coat consists of 3 spray passes: (1) straight into fins; (2) on 70-degree angle to right; (3) on 70-degree angle to left — on both sides of coil. These three spray passes are considered ONE coat — make sure to allow 15 minutes dry time between passes to avoid runs/sags.
12. HereShield may be recoated with itself after 30 minutes.
13. When finished, clean equipment with deionized water until water runs clear. If reverting to solvent-based spray, perform Step 5c, then 5b, then 5a.
14. Allow HereShield to air-dry for a minimum of 24 hours of before assembly.
    a. Check dry by twisting thumb while applying pressure to paint. If HereShield appears to move under pressure, let dry further and recheck. HereShield is dry enough if you do not leave a thumbprint in the paint.
    b. Temperature and humidity can dramatically impact drying times.

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Chemical Resistance for Splash

Solvents:	Rating	Acid:	Rating	Miscellaneous:	Rating
MEK	VG	Sulfuric Acid 5%	E	Bleach- 5% sodium hypochlorite	E
Mineral Spirits	E	Sulfuric Acid 10%	VG	Pool Shock 12.5% sodium hypochlorite	VG
WD-40	E	Citric Acid 50%	E	Water	E
Propylene Glyol	E	Hydrochloric Acid 5%	VG	Windex w/ ammonia	E
Acetone	VG	Hydrochloric Acid 10%	G	Sodium Tetraborate 10% solution	G
Ethanol 40%	VG			Wasp and Hornet Killer Spray (aerosol)	E
PM Solvent	G	**Salts and Bases:**	**Rating**	Hydrogen Peroxide 3%	E
Isopropyl Alcohol	VG	Sodium Hydroxide 10%	E		
Xylene	G	Sodium Hydroxide 50%	E		
Oils:	**Rating**	Ammonium Hydroxide 28%	E		
Dirty Motor Oil	E	Sodium Chloride 15% solution	E		
Motorcraft Brake Fluid	G				
10W30 motor oil	E				

Rating: E – Excellent, VG – Very Good, G – Good
The ratings in the above table are indicative of general resistance to periodic chemical splash and spillage.

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