



Unisil HS Roof Coating

Technical Data Sheet



PRODUCT DESCRIPTION

United Coatings™ Unisil HS Roof Coating is a high-solids, moisture-cure silicone coating that provides superior weatherproofing, ultraviolet resistance, biological resistance, and fire retardancy over polyurethane foam insulation and other appropriate substrates. The pure silicone polymers are naturally fire retardant to provide long-term fire resistance, while the tight surface finish effectively resists the attachment of algae, mildew, and mold organisms.

PACKAGING & SHELF LIFE

5-gallon (18.9 liter) pail
50-gallon (189 liter) drum

Shelf Life: 18 months from date of manufacture in unopened containers, if stored properly in a clean and well-ventilated area at 40°F – 90°F (4°C – 32.2°C). Storage outside this temperature range may shorten shelf life. Keep containers covered when not in use. Do not allow coating to freeze.

BASIC USES & ADVANTAGES

United Coatings™ Unisil HS Roof Coating is designed to be applied over SPF insulated concrete, metal, and ambient and hot tanks. It is built for protecting a wide range of substrates from the effects of moisture intrusion and weathering, and is particularly effective as a protective coating over polyurethane foam on new or existing roofs.

Unisil HS Roof Coating is a single-component elastomer that exhibits a rapid cure when exposed to ambient conditions.

Advantages:

- Long-term elastomeric properties from sub-zero temperatures to high heat
- Resistance to weathering – No deleterious effects on coating after 5,000 hours of continuous exposure
- Low VOC

PHYSICAL PROPERTIES

UNISIL HS ROOF COATING	
Solids by Weight	96% (±2) [ASTM D1644]
Solids by Volume	96% (±2) [ASTM D2697]
Flash Point (COC)	290°F (143°C) [ASTM D92]
Dry Time to Walk On	2 – 4 hours @ 75°F (24°C), 50% R.H.
Tensile Strength	330 psi (2.3 MPa) (±25) [ASTM D2370]
Elongation	200% (±10) [ASTM D2370]
Hardness	45–55 Shore A [ASTM C661]
Permeance	5.9 US Perms @ 30 mils (762 microns) [ASTM E96, Procedure B]
VOC	<50 g/L [ASTM D3960]
Specific Gravity	1.29 @ 77°F (25°C) [ASTM D1875]
Flexibility After Weathering	After 5,000 hours exposure in the QUV Accelerated Weathering Cabinet, Unisil HS Roof Coating retains its ability to withstand multiple 1" (25.4 mm) mandrel bends at 2°F (-17°C) without cracking. [ASTM D4338]
Solar Reflective Index (SRI)	110 - Unisil HS White [ASTM E1980]
Emissivity	0.89 - Unisil HS White [ASTM C1371]

Application Temperature	40°F – 105°F (5°C – 40°C) (air, surface)
Dry Time (Touch) (Light rain & foot traffic)	White @ 5 hours @ 70°F (21°C) 50% R.H. @ 16 wet mils (0.41 mm)
Water Absorption	0.1% weight gain after 2 weeks immersion at 75°F (24°C) [ASTM C1371 / ASTM D471]
Temperature Limits for Normal Service Conditions	-80°F to 350°F (-62°C to 177°C) Max 185°F (85°C) continuous temperature
High-Temperature Stability	Tested in thermostatically controlled heat chamber. Will not age, harden, or slump at temperatures up to 350°F (177°C). [ASTM D794]
Low-Temperature Flexibility	Capable of withstanding 180° bends over a 1" (25 mm) mandrel @ 2°F (-17°C). [ASTM C734]
Resistance to Freeze-Thaw	Test panels exposed to freeze-thaw cycles under complete immersion in deionized water. Cycles consisted of 16 hours at 0°F (-18°C) and 8 hours at 70°F (21°C). After 4 complete cycles, the physical integrity of the coating remained unaffected. There was no loss of adhesion and no blistering or softening.
Standard Colors	White, Light Gray, Gray, Light Tan, and Tan.

APPLICATION INFORMATION

Substrate Preparation: Surfaces to be coated shall be completely dry and free of any degraded foam, grease, oil, dirt, or other contaminants that could interfere with proper adhesion. Any physical damage shall be repaired before coating application commences.

Mixing: Mix containers with an air-driven power mixer, taking care not to incorporate air into the product. Use immediately to avoid reacting in the container with trace amounts of moisture. Containers that have been stored for any length of time may develop a skin/film on top of the coating; this should be removed prior to mixing.

Application: United Coatings™ Unisil HS Roof Coating is best suited for airless sprayer equipment. Apply evenly at a rate of 1 gal/100 ft² (4.1 L/10 m²) per coat. Each coat shall be applied in a direction perpendicular to the previous coat. Edges of flat roof areas shall be pre-coated in a "picture frame" configuration.

The best adhesion of subsequent layers will occur when the initial layer of silicone is dry enough to walk on. Silicones are moisture-cured, therefore increased humidity will shorten dry times and low humidity will extend dry times. Regardless of conditions, the period of time between coats must not exceed 24 hours.

GAF Liquid-Applied

December 2016, supercedes January 2016

For technical, system, and warranty information, visit gaf.com or call 1-800-766-3411.

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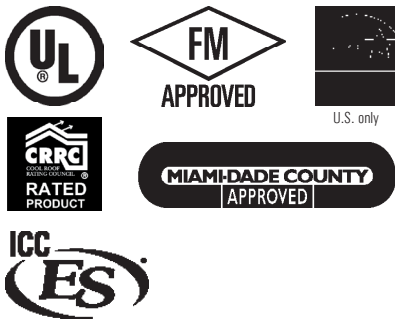
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PERFORMANCE PROPERTIES

ASTM D6694-08	Meets the requirements contained in ASTM D6694 "Standard Specification for Liquid-Applied Silicone Coating Used in Spray Polyurethane Foam Roofing Systems."
UL 790 Class A Fire Testing	UL Rated.
Building Code Acceptance	Accepted by all major model building code authorities for Class "A" construction, including: the Uniform Building Code (UBC), Building Officials and Code Administrators (BOCA), and Southern Building Code Authority (SBCA). Also Miami-Dade County Product Control approved.
CRRC, CA Title 24, ENERGY STAR [®] Certified (U.S. only)	CRRC Rated Rated by the Cool Roof Rating Council (CRRC) for use in Title 24 Projects ENERGY STAR [®] Certified (U.S. only)
ICC-ESL for Liquid-Applied Roofing	ICC-ES Listing



APPLICATION INSTRUCTIONS, CONT'D

Spray Application: Apply product with an airless sprayer, covering the surface at an even rate. Use an airless spray pump with a 3 gallon-per-minute (11 L/minute) output and 3,500 psi (24,138 kPa) pressure capability, fed with 5:1 transfer pumps. Use a reversible, self-cleaning tip with orifice size 0.030" (0.76 mm) and a fan angle of 50°. Filter screens should be 30 mesh or larger. Use a 1/2" (12.7 mm) minimum inside diameter hose. Minimum of 1 coat. Apply subsequent coats of **United Coatings[™] Unisil HS**

Roof Coating as soon as the previous coat is completely dry and within 24 hours to avoid inter-coat delamination. All surfaces must be uniformly coated and free from voids, pinholes, or blisters.

For Application Questions: Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards: ASTM D1644, ASTM D2697, ASTM D92, ASTM D2370, FM 4470

LIMITATIONS & PRECAUTIONS

United Coatings[™] Unisil HS Roof Coating is affected by moisture and must be protected from moisture contamination. Keep all containers tightly closed during storage. Containers are factory sealed with an inert gas to prevent contamination. After opening, if all material is not to be used, containers must be purged with nitrogen or dry air and tightly sealed to protect from moisture contamination. Remove any skin prior to mixing the material. Keep cleaning solvents away from all sources of heat, sparks, flame, light-

ed smoking materials, and any other ignition source. Use explosion-proof mixing equipment that has been grounded and bonded. If used in cryogenic storage or cold-temperature storage applications, a vapor barrier must be applied prior to **Unisil HS Roof Coating**. Not recommended for immersion conditions. **Unisil HS Roof Coating** is slippery when wet, as are loose roofing granules. Exercise caution when walking on a roof under these conditions.

SAFETY & HANDLING

If used indoors, provide mechanical exhaust ventilation. **United Coatings[™] Unisil HS Roof Coating** is not recommended for interior application. Avoid contact with eyes and contact with skin. Adequate precautions must be taken when applying **Unisil HS Roof Coating** to occupied buildings to ensure that air conditioners and ventilation units are turned off and covered to prevent solvent vapors from entering the building. Windows should also be kept closed. Signs should be posted around the area to advise building occupants or visitors of the spray activity.

If personal exposure concentrations cannot be maintained below the appropriate OSHA/NIOSH exposure limits using engineering controls or natural ventilation, an approved respirator may be appropriate based on employer-determined exposure levels.

For additional information, refer to OSHA guidelines and product Safety Data Sheet (SDS).

CLEAN-UP

Clean equipment and overspray with water before curing. If coating has hardened, clean with Naptha. Clean hands with soap and water or waterless hand cleaner.

GAF

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See applicable warranties and guarantees for complete coverage and restrictions.