



# Unisil HS Roof Coating

Product Data Sheet



## PRODUCT DESCRIPTION

**Unisil HS** Roof Coating is an ultra-high volume solids, solvent free, pure elastomeric 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 surface finish resists the attachment of algae, mildew and mold organisms.

## WARRANTY

See applicable warranties and guarantees for complete coverage and restrictions.

## PACKAGING & SHELF LIFE

- 1 gallon (3.8 liter) bucket
- 5 gallon (19 liter) pail
- 50 gallon (189 liter) drum

Shelf life 12 months if unopened containers stored between 40°F and 90°F (4°C and 32°C).

## BASIC USES

Designed for protecting a wide range of substrates from the effects of moisture intrusion and weathering, Unisil HS Roof Coating is particularly effective as a protective coating over polyurethane foam on new or existing roofs. It provides a barrier to the effects of degradation caused by normal weathering, aging and ultraviolet exposure. Unisil HS Roof Coating is a single component elastomer that exhibits a rapid cure when exposed to ambient conditions. Long term elastomeric properties

are retained under all types of weather conditions, from sub-zero temperatures to high heat in excess of 250°F (121°C).

A test area should be applied to existing silicones to ensure adequate adhesion on recoats. Surface should be washed using a chemical cleaner, such as United Cleaning Concentrate (UCC), rinsed thoroughly, and allowed to dry.

## 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 @ 30mils (762 microns) [ASTM E96, Procedure B]
Resistance to Accelerated Weathering	After 5,000 hours of continuous exposure, Unisil HS Roof Coating had no deleterious effects, no surface checking or cracking, no delamination and no color fade. [ASTM D6694]
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" (2.5 cm) 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]

VOC	<50 g/L [ASTM D3960]
Specific Gravity	1.29 @ 77°F (25°C) [ASTM D1875]
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" (2.5 cm) 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	Available in white, light gray, dark gray, 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 to 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:** 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. 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 ½" (12.7 mm) minimum inside diameter hose. Apply at a rate of 100 ft<sup>2</sup>/gallon (2.5m<sup>2</sup>/L) per coat. Minimum of 2 coats. Each coat must be dry and cured before an additional coat is applied. All surfaces must be uniformly coated and free from voids, pinholes, or blisters.

Apply in two coats at a minimum total rate of 1-2 gallons per 100 ft<sup>2</sup> (.4-.8 l/m<sup>2</sup>). Consult GAF's product specifications for specific film thickness requirements to qualify for GAF's product warranty.

GAF Liquid-Applied

January 2016, supercedes February 2015

For technical, system, and warranty information, visit [gaf.com](http://gaf.com) or call 1-800-766-3411.

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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-790 Class "A" coating over various polyurethane foam substrates. Refer to UL Building Materials Directory for foam manufacturers and types, foam thicknesses and densities, inclines, and of rated roof systems.
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, LEED, CA Title 24, ENERGY STAR®	Unisil HS Roof Coating White meets Cool Roof Rating Council (CRRC) and EPA guidelines for ENERGY STAR® compliance. Use of this product will help save energy and reduce electrical costs. Unisil HS Roof Coating also meets California Title 24 and LEED requirements.
ICC-ESL for Fluid-Applied Roofing	ICC-ES Listing

## LIMITATIONS & PRECAUTIONS

**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, lighted smoking materials,

or 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

Avoid breathing of vapor or spray mist. For exterior applications, approved MSHA/NIOSH chemical cartridge respirator must be worn by applicator and personnel in vicinity of application. Check filters frequently to ensure proper protection. If used indoors, provide mechanical exhaust ventilation. **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. 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 mineral spirits or biodegradable turpentine solvent. 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.