



1. Product Name

System 14™ Silicone Roof System

2. Manufacturer

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3. Product Description

The System 14™ Silicone Roof System is a high performance single source commercial roofing solution manufactured by West Development Group, LLC. Using silicone over a base of sprayed polyurethane foam (SPF), System 14 delivers a strong, lightweight and self-flashing roofing system that is water repellent and weather resistant, with insulating properties that can generate significant energy savings. It is seamless, monolithic and without joints or mechanical fasteners that can lead to moisture penetration and roof system failure.

The System 14 product line includes environmentally beneficial and cost efficient R2R™ (Roof-to-Roof) products, which utilize recycled EPDM material from old roof tearoffs, creating a fully sustainable product and reducing landfill strain.

Several products combine for System 14:

- 3009-3 Spray Polyurethane Foam - Comprised of high quality base polyols, this SPF insulates the roof deck and provides a substrate for the silicone waterproofing products
- 3009-3 Soy Spray Polyurethane Foam - This SPF creates a substrate with outstanding fire performance and contains soy/sucrose renewable polyols
- HP 465 Silicone Coating - FM and UL rated, HP 465 is a highly reflective white coating that delivers high tensile strength and is available in custom colors
- HSS 535 Solvent-free Silicone Coating - With excellent elongation properties for hail and



System 14™ Silicone Roof System

impact resistance, this environmentally friendly silicone coating can cure in 2 - 6 hours at normal temperatures

- HSS 540 R2R (Roof-to-Roof) Solvent-free Silicone Coating - Blended with recycled EPDM material, this environmentally beneficial coating provides hail and impact resistance, excellent elongation and UV protection
- 6-601 Butter Grade Sealant - This sealant is a tough, flexible membrane that can be applied to 1/4" (6.35 mm) thicknesses and is suited for direct-to-metal (DTM) repair
- 7-701 & 7-702 R2R Silicone Sealants - Offered with a 50 year warranty, 7-701 is a standard sealant available in custom colors; 7-702 sealant uses 20% recycled EPDM material for extra toughness and offers custom flow, sag and cure rates
- 8-801 Self-leveling Sealant - With ultra low modulus and extremely high elongation, this sealant is ideal for joints of dissimilar materials or for fracture repair required for severe hail damage
- 9-901 Silicone Adhesive - An adhesive that improves bonding between organic and inorganic components
- Z-Guard Pedestrian Traffic System - A custom fluid that conforms to any design and can be installed to 1/4" (6.35 mm) thickness; it is available in a safety yellow color

- KGF 1000 Fibered Mastic - A fiber reinforced mastic offering the flexibility of high build application with high adhesion strength
- Silicone Sheet - With excellent tensile strength and elongation, this system compatible flashing material provides secondary waterproofing for difficult details
- Organosil Primer - A versatile primer that allows application of silicone based products to most substrates and improves adhesion of organic products to in-place silicone
- SSG-8600 Glazing - Available in sealant or coating grades, this translucent waterproofing silicone glaze/sealant is for use over a skylight

BASIC USE

The System 14 Silicone Roof System can be installed for replacement roofs, where it can often be applied over an existing built-up roof, and for new roofs. It is suited for flat, pitched, saw-toothed and domed roofs, as well as roofs with unusual slope or irregular configuration.

COMPOSITION & MATERIALS

- 3009-3 Spray Polyurethane Foam - Combines polyols, catalytic agents and 245 FA to produce a rigid polyurethane foam
- 3009-3 Soy Spray Polyurethane Foam - Combines polyols, catalytic agents, 245 FA

and soy/sucrose agricultural polyols to produce a rigid polyurethane foam

- HP 465 Silicone Coating and HSS 535 Solvent-free Silicone Coating - Dispersions of silicone rubber packaged as ready to use material
- HSS 540 R2R (Roof-to-Roof) Solvent-free Silicone Coating - A dispersion of silicone rubber that contains 20% recycled EPDM roof product
- 7-701 Standard Sealant - A dispersion of silicone rubber
- 7-702 R2R Sealant - A dispersion of silicone rubber with 20% recycled EPDM roof product

SIZES, COLORS

HP 465 Silicone Roof Coating

- Sizes - 5 gal (18.9 L) or 55 gal (208.1 L) container
- Color - White, dark gray, light gray, custom

HSS 535 Solvent-free Silicone Roof Coating

- Sizes - 5 gal (18.9 L) or 55 gal (208.1 L) container
- Color - White, dark gray, light gray, custom

HSS 540 R2R Solvent-free Silicone Roof Coating

- Sizes - 5 gal (18.9 L) or 55 gal (208.1 L) container
- Color - Dark or light gray

7-701 Standard Sealant

- Sizes - 2 gal (7.56 L) tub, 10 oz (.29 L) cartridge, 6 oz (.17 L) tube
- Color - Gray, custom

7-702 R2R Standard Sealant

- Sizes - 2 gal (7.56 L) tub, 10 oz (.29 L) cartridge,

TABLE 1 PHYSICAL & TECHNICAL PROPERTIES - SPRAY POLYURETHANE FOAMS

Property	Test Standard	3009-3 SPF	3009-3 SOY SPF
Viscosity	ASTM D1638	650	1300
Specific gravity	ASTM D1638	1.16	1.16
Mixing ratio by volume		1:1 with PMDI	1:1 with PMDI
Spray reactivity, tack-free		7 seconds	7 seconds
Density, lbs/cu.ft.	ASTM D1622	2.8	2.8
Compressive modulus, psi	ASTM D1621	greater than 40	greater than 40
Closed cell content, %	ASTM D6226	greater than 90	greater than 90
Thermal conductivity, BTU/hr ft ² k factor	ASTM C518	0.15 - 0.17	0.15 - 0.17
Humid aging, % volume change 28 days	ASTM D2126	2.5% (±1%)	2.5% (±1%)
Cold aging, % volume change 1 Day 7 Days	ASTM D2126	less than 1 less than 1	less than 1 less than 1
Heat aging, % volume change 1 Day 7 Days 14 Days 28 Days	ASTM D2126	less than 1 less than 2 less than 3 less than 3	less than 1 less than 2 less than 3 less than 3
Tensile strength, psi	ASTM D1623	60 - 70	80 - 90
Flamespread	ASTM E108	Class A	Class A

6 oz (.17 L) tube

- Color - Dark or light gray

8-801 Self-leveling Sealant

- Sizes - 1 gal (3.78 L) bottle, 10 oz (.29 L) cartridge, 6 oz (.17 L) tube
- Color - Black

BENEFITS

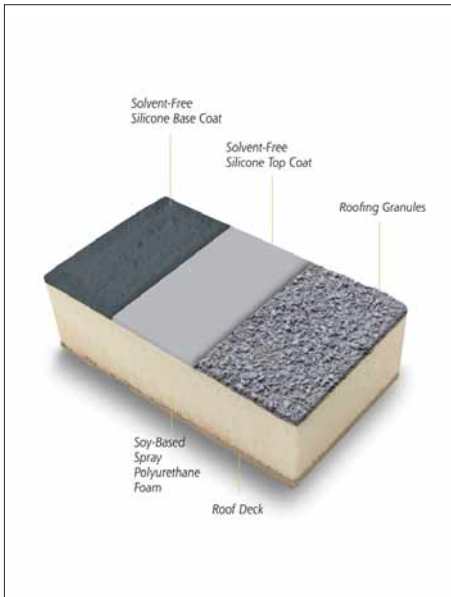
- Forms a fully sustainable, seamless, monolithic, insulated and self-flashing roof system

- Durable, yet flexible to allow for normal structural expansion and contraction
- Resists the penetration of water and vapors and can be applied to eliminate ponding water caused by low areas or sloping roof surfaces
- Robotic roof application equipment allows precise foam application to create an ideal taper for effective drainage

TABLE 2 PHYSICAL & TECHNICAL PROPERTIES - SEALANTS & COATINGS

	WDG 7-701 Sealant	WDG 7-702 R2R Sealant	WDG 8-801 Sealant	HSS 535 Coating	HP 465 Coating	HSS 540 R2R Coating
As supplied:						
Solids content % by weight	--	95	95	95	75	95
% by volume	--	95 (±2)	95 (±2)	95 (±2)	64 (±2)	95 (±2)
Specific gravity @ 77 degrees F (25 degrees C)	--	1.11	1.11	1.2	1.3	1.1
Tack-free time	1 - 2 hr	1 - 2 hr	1 - 2 hr	1 - 2 hr	10 - 20 mins.	1 - 2 hr
Cure time	7 - 14 hr	12 - 18 hr	12 - 18 hr	2 - 6 hr	1 - 3 hr	2 - 6 hr
As cured:						
Hardness, shore A, points	35	25	5	42	60	21
Tensile strength, psi	125	130	50	325	450	200
Elongation, %	275%	275%	650%	175%	125%	150%
Permeability ¹ , perms	--	--	--	4.6	2.9	4.2
Tensile, 100% elongation	--	70	6	50	400	200
Tensile, 200% elongation	--	--	9	--	--	--
Tensile, 300% elongation	--	--	13	--	--	--
Temperature stability, degrees F (degrees C)	-37 to 100 (-35 to 212)	-37 to 100 (-35 to 212)	-37 to 100 (-35 to 212)	-37 to 100 (-35 to 212)	-37 to 100 (-35 to 212)	-37 to 100 (-35 to 212)
Weatherometer QUV 10000 hours,	--	--	--	No degradation	No degradation	No degradation
Volatile Content per ASTM D2369	--	--	--	10.2 grams/liter	331 grams/liter	10 grams/liter
Flamespread per ASTM E108	--	--	--	Class A	Class A	Class A

¹ 20 mil at 100 degrees F (38 degrees C) and 90% relative humidity



System 14™ Silicone Roof System

- Chemically stable and resistant to attack by mildew and fungi
- Resists oxidation, wind, rain, snow and ozone and performs better than organic materials in extreme weather conditions
- Can be applied in a relatively short amount of time with little or no disruption to building operations
- Minor repairs or modifications can often be made by in house maintenance personnel at a minimal cost
- Reflects heat and UV rays, helping to maintain interior building temperatures by preventing heat and air loss from the building interior
- High R-values provide more thermal resistance with less material than other roofing systems

LIMITATIONS

Do not apply the polyurethane foam applications during periods of inclement weather.

Do not apply roofing systems when there is ice, frost, surface moisture or visible dampness present on surfaces to be coated. Prior to applying the coatings, ensure that the surface is dry. Apply materials in accordance with the manufacturer's instructions.

Do not apply the polyurethane foam when the roof deck surface is below 40 degrees F (4 degrees C), as measured by a surface pyrometer.

Do not install when wind conditions exist that may cause overspray on surfaces not intended for coverage or when conditions exist that may prevent the application of the foam or coating with acceptable surface texture.

Do not apply when wind speeds exceed 25 miles per hour; use wind barriers if wind speeds exceed 10 miles per hour.

4. Technical Data

APPLICABLE STANDARDS

ASTM International (ASTM)

- ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
- ASTM C1029 Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation
- ASTM D1621 Standard Test Method for Compressive Properties Of Rigid Cellular Plastics
- ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics
- ASTM D1623 Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
- ASTM D1638 Methods of Testing Urethane Foam Isocyanate Raw Materials
- ASTM D2126 Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
- ASTM D2369 Standard Test Method for Volatile Content of Coatings
- ASTM D2842 Standard Test Method for Water Absorption of Rigid Cellular Plastics
- ASTM D6226 Standard Test Method for Open Cell Content of Rigid Cellular Plastics
- ASTM E108 Standard Test Methods for Fire Tests of Roof Coverings

Underwriters Laboratories, Inc., (UL) - UL 790 Tests for Fire Resistance of Roof Covering Materials

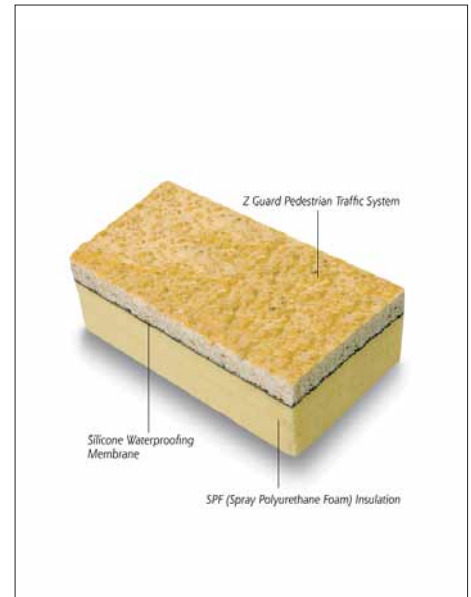
Underwriters' Laboratories of Canada (ULC)

APPROVALS

The following West Development Group products have been listed as Class A per UL and ASTM E108 standards: 3009-3 SPF, 3009-3 Soy SPF, HP 465 Silicone Roof Coating, HSS 535 Solvent-free Silicone Roof Coating, HSS 540 R2R Solvent-free Silicone Roof Coating

PHYSICAL & TECHNICAL PROPERTIES

See Tables 1 and 2.



Z-Guard Pedestrian Traffic System

ENVIRONMENTAL CONSIDERATIONS

System 14 includes environmentally beneficial R2R products, which recycle EPDM material from roof tearoffs to create a fully sustainable product that reduces landfill strain.

5. Installation

PREPARATORY WORK

Deliver materials to the site in the original, tightly sealed containers or unopened packages, clearly labeled with the manufacturer's name, product identification and safety information.

Store materials and containers protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Store all materials in compliance with local fire and safety requirements.

The preparation for the installation of a sprayed in place polyurethane foam roof system varies by roof condition and type of coating to be used over the polyurethane foam. Conduct a roof inspection before beginning installation. Verify that site conditions are acceptable for installation. Do not proceed with installation until unacceptable conditions are corrected.

METHODS

Contact the manufacturer for detailed installation information or to find certified contractors in your area.

BUILDING CODES

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

6. Availability & Cost

Contact the manufacturer for information about cost and availability or visit the website: www.wdgsilicones.com.

7. Warranty

Complete warranty terms and conditions are available from the manufacturer. For details, consult West Development Group, LLC, or visit the www.wdgsilicones.com website.

8. Maintenance

Use only manufacturer-approved products and methods.

9. Technical Services

Contact West Development Group, LLC, or visit the www.wdgsilicones.com website for the following:

- Specifications, conforming to industry standards (Master Specifications, etc.), in electronic format
- Product and life cycle cost documentation
- Test results, codes, standards and conformance to industry standards and guidelines
- CAD details in electronic form
- Test reports of finished roof assemblies by qualified inspectors
- Project case histories and testimonials
- Product binders and other technical materials
- Industry-sponsored training sessions for CEUs
- Contractor training programs at the PRTC
- Lists of certified contractors who have completed the training programs

10. Filing Systems

- Reed First Source®
- MANU-SPEC®
- Additional product information is available from the manufacturer upon request.