Application guide

Henry® Pro-Grade® Silicone Roof Coating System

This application guide provides instructions for successfully applying a Henry® Pro-Grade® Silicone roof coating system on metal, aged single-ply (TPO, PVC, EPDM and Hypalon®), asphalt roofs (roll roofing, modified bitumen and built-up roofing) and previously coated roofs. A Pro-Grade® Silicone roof coating system is a roof restoration system providing a cost-effective alternative to a full replacement. When installed according to these instructions, it is designed to provide a waterproof, fluid applied roofing system, supported by a variety of warranty offerings. This application guide is not intended to be used for applications on shingles, coal tar substrates, gravel covered roofs, cold storage or cryogenic structures, and Kynar® or Hylar® coated metal roofs. Metal roofs must be greater than 28 gauge (0.015").

PC Primer coat BC Base coat TC Top coat S Sealant RC Reinforced coating

Coverage rates

Coating assembly configuration			Granulated cap sheet	Smooth cap sheet/BUR (non-aggregate)	Single ply (TPO/PVC/ EPDM/Hypalon®)	Metal*
10-year Pro-Grade® Silicone roof coating system options						
Option #1	PC	Pro-Grade® 294	1.25 gal./sq. (11 mil DFT)	1.00 gal./sq. (9 mil DFT)	n/a	n/a
	BC	Pro-Grade® 988 or Pro-Grade® 986	1.00 gal./sq. (15 mil DFT)	0.75 gal./sq. (11 mil DFT)	0.75 gal./sq. (11 mil DFT)	0.75 gal./sq. (11 mil DFT)
	TC	Pro-Grade® 988	1.00 gal./sq. (15 mil DFT)	0.75 gal./sq. (11 mil DFT)	0.75 gal./sq. (11 mil DFT)	0.75 gal./sq. (11 mil DFT)
Option #2	BC	Pro-Grade® 294	1.25 gal./sq. (11 mil DFT)	1.00 gal./sq. (9 mil DFT)	n/a	n/a
	TC	Pro-Grade® 988	2.25 gal./sq. (33 mil DFT)	1.50 gal./sq. (22 mil DFT)	1.50 gal./sq. (22 mil DFT)	1.50 gal./sq. (22 mil DFT)
15-year Pro-Grade® Silicone roof coating system options						
Option #1	PC	Pro-Grade® 294	1.25 gal./sq. (11 mil DFT)	1.00 gal./sq. (9 mil DFT)	n/a	n/a
	BC	Pro-Grade® 988 or Pro-Grade® 986	1.50 gal./sq. (22 mil DFT)	1.00 gal./sq. (15 mil DFT)	1.00 gal./sq. (15 mil DFT)	1.00 gal./sq. (15 mil DFT)
	TC	Pro-Grade® 988	1.00 gal./sq. (15 mil DFT)	1.00 gal./sq. (15 mil DFT)	1.00 gal./sq. (15 mil DFT)	1.00 gal./sq. (15 mil DFT)
Option #2	BC	Pro-Grade® 294	1.25 gal./sq. (11 mil DFT)	1.00 gal./sq. (9 mil DFT)	n/a	n/a
	TC	Pro-Grade® 988	2.75 gal./sq. (41 mil DFT)	2.00 gal./sq. (30 mil DFT)	2.00 gal./sq. (30 mil DFT)	2.00 gal./sq. (30 mil DFT)
20-year Pro-Grade® Silicone roof coating system options						
Option #1	PC	Pro-Grade® 294	1.25 gal./sq. (11 mil DFT)	1.00 gal./sq. (9 mil DFT)	n/a	n/a
	BC	Pro-Grade® 988 or Pro-Grade® 986	1.50 gal./sq. (22 mil DFT)	1.50 gal./sq. (22 mil DFT)	1.50 gal./sq. (22 mil DFT)	1.50 gal./sq. (22 mil DFT)
	TC	Pro-Grade® 988	1.50 gal./sq. (22 mil DFT)	1.00 gal./sq. (15 mil DFT)	1.00 gal./sq. (15 mil DFT)	1.00 gal./sq. (15 mil DFT)
Option #2	BC	Pro-Grade® 294	1.25 gal./sq. (11 mil DFT)	1.00 gal./sq. (9 mil DFT)	n/a	n/a
	TC	Pro-Grade® 988	3.25 gal./sq. (48 mil DFT)	2.50 gal./sq. (37 mil DFT)	2.50 gal./sq. (37 mil DFT)	2.50 gal./sq. (37 mil DFT)

Ancillary components for all warranted assemblies

Application			Product name	Product description	Coverage rate
Option #1	S	Penetrations, flashings and seams	Pro-Grade® 923	Butter grade sealant	80 linear feet per 2 gallon pail applied at 1/8" thick
			Pro-Grade® 957	Fiber grade silicone sealant	80 linear feet per 2 gallon pail applied at 1/8" thick
Option #2	RC	Penetrations, flashings and seams	Pro-Grade® 988 or Pro-Grade® 986	Silicone roof coating	350 linear feet per 5 gallon pail
			296 ElastoTape Repair Fabric	Repair fabric	150 linear feet per 4" X 150'-0" roll
			195 Polyester Fabric	Reinforcement fabric	300 linear feet per 6" x 300'-0" roll
**Optional primer			Pro-Grade® 941	Optional primer for metal and single ply roofs	500 square feet per gallon unit
Fastener head encapsulation			Pro-Grade® 928	Fastener sealer for metal roofs/pitch pocket sealer	100 fasteners per 10.1 fl. oz. cartridge
Punctures			Pro-Grade® 920	Standard grade silicone sealant	100 punctures per 10.1 fl. oz. cartridge

* For slopes greater than 3:12 contact Henry® Technical Support or your local Henry® sales representative. Include a stretch factor increase of 15 to 30% when calculating metal roof surface area.
** Optional primer required where adhesion test results indicate adhesion is less than two (2) pounds per lineal inch.
DFT = Dry Film Thickness (minimum requirement)

Warranty: Henry® Pro-Grade® Silicone roof coating system warranty durations are based on overall coating thicknesses. See coverage rate chart for requirements. Coverage rates do not take into account material loss due to spraying, surface texture, waste, etc. Coverage rates are applicable for previously coated and non-coated roofs.

Safety statements: Use caution when applying and walking on coated surfaces. Coated surfaces can be extremely slippery and can create a fall hazard resulting in injury or death. All air intake ventilation equipment should be turned off to prevent fumes from entering building.

STEP 1: Substrate examination

I. Suitability of substrate:

A. Substrate, insulation and all surfaces must be sound, dry, clean and free of oil, grease, rust, dirt, excess mortar, frost, laitance, loose and flaking particles or contaminants.

B. Ensure skylights, scuppers, gutters, penetrations and structures are firmly secured, watertight and in good working condition.

C. Ensure fasteners are secure and tight; replace loose fasteners with larger diameter fastener.

D. Repair or replace defective existing roofing:

1. Metal:
   a. Replace damaged, weakened or corroded metal panels, fascia, gutters, vents, ridge caps or flashings compromising structural integrity.
   b. Remove rust with wire brush, sandblast or mechanical abrasion until substrate is smooth and free of loose rust.
   c. Remove old and damaged mastic repairs at laps, seams and metal fasteners.
2. Modified Bitumen/Smooth BUR:
   a. Remove and replace wet insulation and/or defective materials with like-materials and tie into existing roofing in accordance with NRCA standard roofing practices.
   b. Coat seams with Pro-Grade® 923 or Pro-Grade® 957 at 1/8" thick (125 wet mils) extending 3" on each side of seam.
3. Single ply:
   a. To remove wet insulation and/or defective materials, cut membrane on three sides; fold back and replace with like-materials.
   b. Fold single ply roofing back into place and patch using like materials or appropriate seam repair tape.

E. All areas must promote positive drainage. Contact Henry® Product Support or your sales representative for ponding area repair procedures.

II. Adhesion tests: (For instructions see link): www.us.henry.com/silicone-adhesion-instructions

A. Granulated modified bitumen: not required

B. Adhesion test requirements:

1. Conduct at least two tests in the field of existing roof membrane, one every 10,000 sq. ft., plus any area of worn roofing, such as cracked or abraded surfaces.
2. Any change in roof substrate
3. Existing roof areas installed in phases
4. Shaded areas
5. Areas indicating ponding water

C. Verify minimum 2.0 pli adhesion strength for each test for warranty eligibility.

D. Adhesion test results less than 2.0 pli:

1. Apply Pro-Grade® 941 primer and retest. Contact Henry® Product Support or your sales representative if results are less than 2.0 pli.

III. Moisture survey:

A. The installing contractor must verify the existing roofing assembly is dry and leak free prior to installation for warranty eligibility.

B. Evaluate existing roof assembly for moisture, including saturated insulation, roof deck, roof components and defective roofing. Repair and replace in accordance with this application guide.

C. Do not install roof coating over saturated insulation or substrates.

D. Moisture survey includes a visual inspection and one or more of the following:

1. Infrared thermography
2. Nuclear scan
3. Electric capacitance/impedance testing
4. Roof core cut samples

IV. Weather considerations:

A. Substrate temperature must be above 35 °F (2 °C) and rising, 6 °F (3 °C) above dew point, and remain dry 15 minutes after application.

STEP 2: Substrate preparation

I. Clean:

A. Confirm local water run-off ordinances and restrictions prior to cleaning roof.

B. Surface cleaning:

1. Carefully pressure wash all roof surfaces with greater than 2,000 psi pressure to remove loose granules, debris, rust, scale, dirt, dust, chalking, peeling or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces.
2. Remove grease, oils or contaminates which may interfere with adhesion using warm water and mild detergent.
3. Treat areas of algae, mildew or fungus with a solution of household bleach and water.
4. Rinse roof to ensure removal of all detergent or anything else that could affect adhesion.

II. Primers:

A. Single-ply membrane or metal roof:

1. Apply Pro-Grade® 941 where adhesion test results were less than 2.0 pli.
2. Rust primer: Install a commercial grade rust-inhibitive primer per primer manufacturer recommendations.

B. Asphaltic membranes, asphaltic coatings and/or asphaltic mastics:

1. Apply Pro-Grade® 294 as a bleed-blocker prior to installing Pro-Grade® 988 and silicone accessories.

III. Flashing and details:

A. Complete detailing and flashings prior to roof coating installation.

B. Mix Pro-Grade® 988 with drill and mixer blade prior to use until consistent viscosity is achieved.

C. Refer to chart below for pre-treatment of secure and intact seams.

D. Metal seams:

1. Completely remove existing seam coatings, mastics and sealants.
2. Horizontal laps, un-crimped vertical seams and ridge cap seams:
   a. Apply foot pressure to under lapping panel next to horizontal lap or vertical seam and stitch-fasten gaps opening more than 1/8" wide on metal panel lap to ensure a continuous substrate and eliminate gaps.

E. MB/BUR and single-ply seams:

1. Defective, loose or torn seams:
   a. Apply Pro-Grade® 923 or Pro-Grade® 957 generously under loose or torn seams, splits, cracks, blisters and cracked metal edging using a stiff brush or putty knife.
   b. Firmly press loose roof membrane into sealant.
   c. Apply sealant at 1/8" thick (125 wet mils) over top, extending 2" on each side of defect until fully coated.

Pre-treatment of secure and intact seams*

Flashing options	Modified Bitumen (MB) and Single Ply		Metal	
	10- and 15-year warranties	20-year warranty	Crimped standing vertical seams	Horizontal laps, un-crimped vertical seams and ridge cap seams
Option #1	Apply Pro-Grade® 923 or Pro-Grade® 957 using a stiff brush or sealant knife at 1/8" thick (125 wet mils) extending 3" minimum each side of seam.		No seam pre-treatment required	Apply Pro-Grade® 923 or Pro-Grade® 957 using a stiff brush or putty knife at 1/8" inch thick (125 wet mils) extending 2" minimum each side of seam.
Option #2	Install one layer of coating at 1.5 gallons per square (24 wet mils) extending 3" on each side of seam.	1. Install one layer of roof coating at 2 gallons per square (32 wet mils) extending 4" minimum on each side of seam. 2. Center 6" wide 195 Polyester Fabric over seam and fully embed into roof coating, ensuring 3" of fabric on each side of seam. Brush or roll fabric for proper adhesion and remove all voids. 3. Allow roof coating to dry to touch prior to subsequent layer. 4. Apply a second layer of roof coating at 1 gallon per square (16 wet mils), extending 4" minimum on each side of seam; ensure fabric is fully coated.	No seam pre-treatment required	1. Install one layer of roof coating at 2 gallons per square (32 wet mils), extending 4" minimum on each side of seam. 2. Center 6" wide 195 Polyester Fabric over seam and fully embed into roof coating, ensuring 3" of fabric on each side of seam. Brush or roll fabric for proper adhesion and remove all voids. 3. Allow roof coating to dry to touch prior to subsequent layer. 4. Apply a second layer of roof coating at 1 gallon per square (16 wet mils), extending 4" minimum on each side of seam; ensure fabric is fully coated.

*Built-up roof (BUR) assemblies do not require pre-treatment of secure and intact seams.

Roof curbs, parapets and pipe penetrations for MB/BUR, single ply and metal roofs	
Option #1	Apply Pro-Grade® 923 or Pro-Grade® 957 using a stiff brush or sealant knife at 1/8" thick (125 wet mils) extending 4" minimum onto horizontal and vertical surfaces.
Option #2	1. Install roof coating at 2 gallons per square (32 wet mils), extending 4" minimum onto horizontal and vertical surfaces. 2. Center 6" wide 195 Polyester Fabric at upturn and fully embed into roof coating ensuring 3" of fabric on both horizontal and vertical surfaces. Brush or roll fabric for proper adhesion and remove all voids. 3. Allow roof coating to dry to touch prior to subsequent layer. 4. Apply roof coating at 1 gallon per square (16 wet mils), extending 4" minimum onto horizontal and vertical surfaces; ensuring fabric is fully coated.
Fastener heads for MB/BUR, single ply and metal roofs	
Completely encapsulate fastener heads with Pro-Grade® 928	
Drains for MB/BUR, single ply and metal roofs	
1. Remove strainer, ring and other drain components. 2. Apply Pro-Grade® 923 or Pro-Grade® 957 using a stiff brush or sealant knife at 1/8" thick (125 wet mils) from the drain hole opening, extending 12" minimum continuously around the drain perimeter ensuring a smooth and continuous finish.	

STEP 3: Roof coating application

I. Application of roof coating: Refer to the Coverage Rate Chart for warranted minimum requirements.

A. Mix roof coating with drill and mixer blade prior to use until consistent viscosity is achieved.

B. Clean and prepare substrate in accordance with **Step 2: Substrate preparation** of this application guide.

C. Install Pro-Grade® 988 and Pro-Grade® 986 in accordance with this application guide.

1. Modified Bitumen/BUR, steep-slopes and rough or aged surfaces may require additional coats to obtain a uniform and consistent thickness.

D. Multiple coat systems:

1. Pro-Grade® 988 may be utilized as a base and top coat; Pro-Grade® 986 is intended as a base coat only.
2. Ensure base coat and/or primer coat is fully cured prior to subsequent installation.
3. Ensure cured coating is clean prior to subsequent coating application.
4. Apply subsequent coats perpendicular in fashion to the previous coat.

II. Walkways (optional):

A. Ensure substrate is clean in accordance with **Step 2: Substrate preparation** of this application guide prior to coating application.

B. Apply additional Pro-Grade® 988 at traffic areas at a minimum 1 gallon per square (16 wet mils).

C. Apply granules uniformly into wet roof coating at a rate of 20-30 pounds per square.

D. Allow roof coating to dry.

E. Remove loose particles from roof to avoid clogging drains.