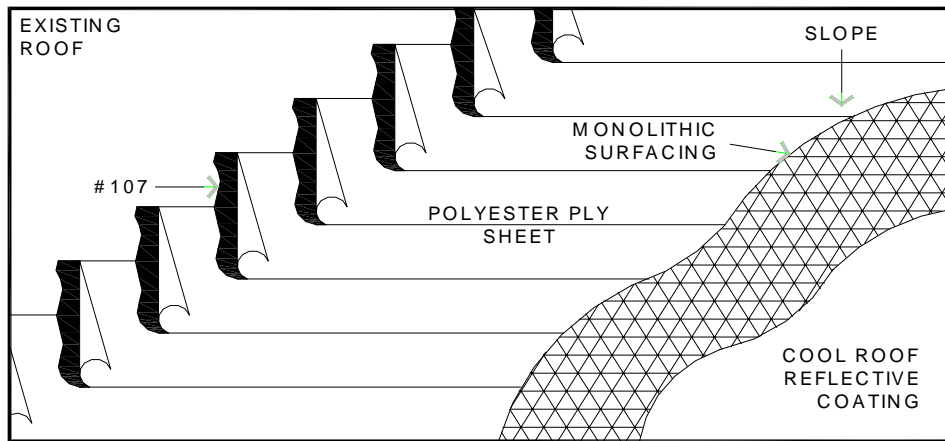


# Henry

#1 CHOICE OF PROFESSIONALS®

## GUIDE SPECIFICATION HENRY SPECIFICATION H2-PE-MR

2-PLY



### GUIDE SPEC H2-PE-M R

The enclosed guide specification, general requirements and details are broadly written to serve as guidelines to knowledgeable design professionals in roof maintenance, restoration and introduce HENRY products and systems.

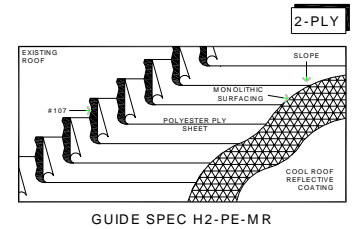
Final repair and maintenance specifications must be customized for each building – each of which can be unique. This specification is not specific to any individual building and should not be the final basis of design or construction of any project.

#### HENRY System & Dry Weights per 100 ft<sup>2</sup>

Existing Roof	To Be Determined
HE107 Asphalt Emulsion	16 – 24 lbs
HE196 Polyester Fabric	3 lbs
HE107 Asphalt Emulsion	16 lbs
HE196 Polyester Fabric	3 lbs
HE107 Asphalt Emulsion	36 lbs
HE189 Chopped Fiberglass Roving	3 lbs
HE280 DC Cool Roof Reflective Coating	14 lbs
Approximate Total Weight	91-99 lbs

# MONOLITHIC™ SURFACED POLYESTER REINFORCED MAINTENANCE SYSTEM H2-PE-MR Over existing Granulated and Smooth Surface Roof

Approximate dry total weight of one ply application: 91 - 99 lbs



## PART 1 – GENERAL

### 1.01 GENERAL

The HENRY Monolithic™ Maintenance Roofing System can be applied over Granulated or Smooth Built-Up Roofing (BUR) or Modified Bitumen (MB). This specification addresses unique aspects for this type of installation. Unless otherwise specified in this section, the HENRY General Requirements for Roof Maintenance and Restoration Systems shall be apply.

### 1.02 SUBSTRATE CONDITIONS

- A. The HENRY MONOLITHIC™ Roofing System is to be applied over smooth, dry, sound, asphaltic BUR or MB only. Roof must have positive drainage. Do not apply on coal tar substrates or roofs that have been covered with gravel. Smooth BUR or MB surface must be older than 90 days. Do not apply HENRY MONOLITHIC™ products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of HENRY MONOLITHIC™ products before application on any smooth BUR or MB roof. HENRY Coatings will not adhere to any existing silicone-based coatings.
- C. **The substrate surface must be free of ponding water, ice, snow, splits, oils, grease and debris.**
- D. The HENRY MONOLITHIC™ Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by HENRY must be used.

### 1.03 WARRANTY

- A. Provide HENRY 10 year Limited Roof System Warranty or a Henry 5 + 5 Renewable Roof System Warranty per the requirement of the Building Owner and/or Project Architect for the HENRY MONOLITHIC™ products installed in accordance with these specifications. Determination of the appropriateness of the HENRY Roof Coating System for any given smooth BUR or MB roof must be obtained from the HENRY Technical Service Department.
- B. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options. See warranty and guarantee for complete coverage and restrictions.

### 1.04 REQUIREMENTS

- A. Project notification and registration.
- B. Moisture scans to be conducted by an independent source. All wet areas must be removed and replaced.

## **PART 2 – PRODUCTS**

### **2.01 ACCEPTABLE MANUFACTURERS**

A. HENRY Company

### **2.02 MATERIALS – GENERAL – PHYSICAL PROPERTIES**

**Note Drying Times:** Listed drying times for various HENRY products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures and/or very thick product application to prevent improper curing and/or product “wash-off”.

#### **A. HE107 - ASPHALT EMULSION**

**HE107 – Asphalt Emulsion** is a premium, versatile coating for the protection of roofing materials, metal, and masonry surfaces. Solvent free, it is made from asphalt emulsified with bentonite clay and water. **HE107 - ASPHALT EMULSION** is cold- applied, non-flammable while wet, corrosion-resistant, and waterproof when dry. **HE107 - ASPHALT EMULSION** does not crack, "alligator," run, or sag under extreme weather conditions. Resists most corrosive fumes and spray.

#### **PHYSICAL PROPERTIES**

<b>Appearance</b>	Black liquid
<b>Consistency @ 77° F</b>	Thixotropic liquid
<b>Maximum VOS</b>	0 calculated
<b>Application Temperature</b>	50° F and rising
<b>Flammability</b>	Non-flammable when wet
<b>Solids By Volume</b>	40 - 50%
<b>Base</b>	Asphalt, bentonite clay emulsion
<b>Flash Point</b>	>212° F
<b>Solids By Weight</b>	47 - 53% (ASTM D-2939)
<b>Brookfield Viscosity</b>	8000-15,000 cPs (ASTM D-2196)
<b>Freezability</b>	Keep from freezing
<b>Weight Per Gallon</b>	8.5 - 9.1 lbs/gal
<b>Color</b>	Black
<b>Maximum VOC</b>	0 calculated

Manufactured to exceed the requirements of ASTM D-1227-95, Type III, Class I.

#### **Dade County**

**Underwriters Laboratory** listed for Class A and B fire rated roof coverings.

**Factory Mutual Global** approved. Subject to the conditions of approval as a roof coating when installed as described in the current edition of the FMRC approval guide.

REFER TO THE LATEST HENRY DATA SHEET INSTRUCTIONS AT [www.henry.com](http://www.henry.com)

#### **B. HE196 – (TIETEX) T326 POLYESTER**

**HE196 - (TIETEX® T326) POLYESTER** is a stitch-bonded, high performance fabric for use in cold applied built-up roofing and roof maintenance systems. It is white to off white with lay lines for one and two ply roof systems. It is ideal as the reinforcing component in cold process roofing and repair using either water-based asphalt or acrylic emulsions, or solvent type coatings or mastics.

In properties required for roofing systems - tear strength, puncture resistance, and tensile strength combined with elongation. HE196 – (TIETEX® T326) POLYESTER has been shown in tests with asphalt emulsion and cutbacks to be far superior to conventional roofing felts weighing five to seven times as much as HE196 – (TIETEX® T326) POLYESTER.

**HE196 – (TIETEX® T326) POLYESTER** is polyester that will readily conform to irregular surfaces and standing seam metal roof decks. It is also much easier to handle and apply properly than other soft polyester sheets.

### PHYSICAL PROPERTIES

<b>Appearance</b>	Fabric
<b>Maximum VOC</b>	0 g/l
<b>Tensile Strength Film (Initial)</b>	41 lbs (ASTM D-1682)
<b>Color</b>	White to yellow white
<b>Maximum VOS</b>	0 lbs/gal
<b>Trapezoidal Tear Strength</b>	14.2 lbs (ASTM D-1117)
<b>Elongation (Initial)</b>	25.8% (ASTM D-1682)
<b>Mullen Burst</b>	127 lbs (ASTM D-3786)
<b>Weight Of Fabric</b>	2.9 oz/ sq. yd.

REFER TO THE LATEST HENRY DATA SHEET INSTRUCTIONS AT [www.henry.com](http://www.henry.com)

### C. HE189 – Monolithic™ System Fiberglass Roving

**Henry #189 Fiberglass Roving** is an essential component in the Monolithic™ System for roofing and water-proofing. **HE189 Fiberglass Roving** is continuous filament glass fiber consisting of approximately sixty strands held together loosely in rope form by a special sizing. It is designed for spray application using a glass chopper spray gun to provide reinforcement for asphalt emulsion coating. The emulsion and glass fibers chopped to a typical length of 3/4" are spray applied simultaneously providing a reinforced waterproof monolithic surfacing. When applied at the normal rate of 9 gallons of HE107 Asphalt Emulsion and 3 pounds of glass fiber, the tensile strength of the film is increased four times that of a non-reinforced film. The reinforcement also enables the application of more than double the film thickness without shrinkage cracks.

**Application** The only method of application is through an approved air operated glass chopper spray gun designed to cut the roving into uniform lengths; 3/4" is standard but shorter lengths are recommended on irregular surfaces to minimize exposed fibers. During application, the roving coil should be kept within ten feet from the applicator. It may be carried by the applicator in backpack or in suitable cart tended by an assistant.

<b>Ingredients</b>	Fibrous glass fused in an amorphous vitreous state and surface sizing
<b>Color</b>	White
<b>Film Diameter</b>	6 microns, minimum
<b>Odor</b>	None
<b>Sizes</b>	Cylinder Coil – Approximately 35 lbs. or 50 lbs each
<b>Flash Point</b>	>212 degrees
<b>Maximum VOC</b>	0 g/l

REFER TO THE LATEST HENRY DATA SHEET INSTRUCTIONS AT [www.henry.com](http://www.henry.com)

## D. HE291 - PREMIUM ELASTOMERIC BASE COATING

**VOC Appearance** Liquid

**Maximum** <50 g/l

**Tensile Strength Film (Initial)** 130.5 psi (ASTM D2370)

**Ash** 21.1% (ASTM D1644)

**Maximum VOS** < 0.4 lbs/gal

**Viscosity** 118 KU (ASTM D562)

**Brookfield Viscosity** 15200 cPs (5D @ 20 RPM), (ASTM D2196)

**pH** 8.6 (Beckman pH meter)

**Water Absorption** 1.18 (ASTM D471)

**Color** Gray

**Recovery** 69.4% (ASTM D2370)

**Water By Volume** <42%

**Drying Time @ 50% R.H. 68°F** 2 hrs dry to touch (ASTM D3468)

**Shore A Hardness** 82 (ASTM C661)

**Water By Weight** <33%

**Elongation (Initial)** 352.5% (ASTM D2370)

**Solids By Volume** 61.6% (ASTM D2697)

**Water Resistance** 1.1 (ASTM D471)

**Flash Point** >212° F (ASTM D3278)

**Solids By Weight** 56.8%

**Water Vapor Permeance** 2.7 (ASTM D-96)

**Flexibility (Low Temperature)** Pass 1/8" mandrel @ 5° F (ASTM D734)

**Specific Gravity @ 77° F** 1.26

**Weight Per Gallon** 10.5-11.3 lbs (ASTM D-1475)

**Freezability** Do not freeze

Meets the requirements of ASTM D-6083 with exception of cold bend.

REFER TO THE LATEST HENRY DATA SHEET INSTRUCTIONS AT [www.henry.com](http://www.henry.com)

## E. HE280DC - WHITE ELASTOMERIC ROOF COATING

**HE280DC** is a premium, water-based acrylic latex coating. Properly applied, it is highly resistant to delamination, chalking, mildew, fungi, and discoloration. **HE280DC - WHITE ELASTOMERIC ROOF COATING** gives the following benefits:

- Reflects up to 88% of sun's heat and U.V.
- Lowers roof and interior temperatures.
- Prolongs roof life.
- Reduces air conditioning costs.

### PHYSICAL PROPERTIES

**Accelerated Weathering 1000 hrs**

Pass - No cracking or checking (ASTM D-4798)

**Fungi resistance, rating**

0 (ASTM G-21)

**Tensile Strength Film (Initial)**

>240 psi (ASTM D-2370)

**Appearance**

Smooth Paint Like

**Maximum VOC**

<50 g/l

**Thermal Emittance**

0.90 (ASTM C-1371)

**Application Temperature**

50° F and rising

**Maximum VOS**

<0.42 lbs/gal

**Viscosity**

115 - 130 KU (ASTM D-562)

**Brookfield Viscosity**

30,000-40,000 cPs (ASTM D-2196)

<b>Near Normal Emittance (LEED)</b>	0.94 (ASTM E-408)
<b>Water Swelling, Mass%</b>	<11.0 (ASTM D-471)
<b>Color</b>	White
<b>pH</b>	>9.0
<b>Water Vapor Permeance</b>	<7.0 (ASTM E-96)
<b>Initial Elongation (Initial)</b>	>250% (ASTM D-2370)
<b>Solar Reflectance</b>	0.88 (ASTM C-1549)
<b>Weight Per Gallon</b>	11.0-11.3 lbs
<b>Elongation after 1000 hr. WOM</b>	>230% (ASTM D-2370)
<b>Solids By Volume</b>	>52.0% (ASTM D-2697)
<b>Wet Adhesion to Concrete Substrate, pli</b>	>5.8 (ASTM D-794/D-903)
<b>Flash Point</b>	Non-Flammable
<b>Solids By Weight</b>	>65.0%
<b>Wet Adhesion to Galvanized Metal, pli</b>	>10.5 (ASTM D-794/D-903)
<b>Flexibility (Low Temperature)</b>	Pass – ½” mandrel @ -15° F
<b>Tear Resistance Flexibility)</b>	>80 lbf/in (ASTM D-624)
<b>Wet Adhesion to SBS Mod. Bitumen, pli</b>	>7.5 (ASTM D-794/D-903)
<b>Freezability</b>	Do not freeze

Manufactured to exceed the requirements of ASTM D- 6083.

**Miami - Dade County Approved**

**Underwriters Laboratory** listed for existing Class A, B or C for fire rated roof coverings systems.

**LEED Qualified (Reflectivity and Emissivity)**

**Florida Product Approval**

**Meet California T-24 Section 118 (i) 3 - California Energy Commission**

**Cool Roof Rating Council Listed**

**Energy Star® Rated**

REFER TO THE LATEST HENRY DATA SHEET INSTRUCTIONS AT [www.henry.com](http://www.henry.com)

**PART 3 – EXECUTION**

**3.01. GENERAL**

HENRY Company’s General Requirements and Product Data are a part of this specification.

**3.02 EXAMINATION AND PREPARATION OF SUBSTRATE**

Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed and unsatisfactory conditions have been corrected in a manner acceptable to HENRY. Notify Owner’s Representative of any corrective action before proceeding with roofing.

- A. Treatment of Damaged/Deteriorated BUR or MB: Any areas where BUR or MB has blistered, buckled and/or become wet must be removed and repaired using similar products manufactured by membrane manufacturer (new BUR or MB repair materials must be allowed to weather at least 90 days before applying HE107 Asphalt Emulsion to these repaired areas). All areas where the BUR or MB surface has significantly craze cracked (i.e., gaps in width and/or depth greater than 1/16”) must be repaired using HE107 Asphalt Emulsion to bring the substrate to a smooth, workable surface. HE107 Asphalt Emulsion can be applied by either squeegee or brush when repairing craze cracks. Allow at least 24 hours drying time before application of other HENRY MONOLITHIC™ products (additional drying time must be allowed when very thick HE107 Asphalt Emulsion applications are required).

- B. Substrate Cleaning: Roof substrate must be carefully pressure washed with water. Pressure wash to remove all dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas, then pressure wash surface.
- C. Substrate must be clean, completely dry and free of any debris before application of HENRY products.

### 3.03 FLASHINGS

- A. Repair base and wall flashings. See General for Roof Maintenances. Cover with HE107 Asphalt Emulsion and HE196 Polyester Fabric following same procedures as the roof field. Extend polyester 6 inches onto field of roof.
- B. Install Flashing Specifications, #196, #600 or #180 where new flashings are required.

### 3.04 INSTALLATION REQUIREMENTS

- A. Starting at the low edge of the roof, apply a uniform layer of HE107 Asphalt Emulsion using a brush or roofing spray equipment at the rate of 4-5 gallons/100 ft.<sup>2</sup> a minimum of 20" wide across the slope of the existing, prepared roof surface. Immediately embed a half width of HE196 Polyester Fabric into the wet adhesive without wrinkles. Press fabric into the adhesive by a soft push broom or paint roller.
- B. Apply a layer of HE107 over half width of HE196 and a minimum of 20" up the roof slope at the rate of 4-5 gallons per 100 sq ft.
- C. Install full width of HE196 Polyester Fabric overlapping preceding sheet 21"". End laps to be 4". Thoroughly coat side and end laps with adhesive.
- D. At vertical transitions run material to the toe of the cant. Stagger laps with the layer below.
- E. Cut the fabric to fit snugly around pipes and projections.
- F. Install the remaining ply or sheets full width overlapping the preceding sheets 21" in HE107 applied at a rate of 4-5 gallons/100ft<sup>2</sup>. End laps to be 4". Thoroughly coat side and end laps with HE107 Asphalt Emulsion. Offset second ply end laps at least 12" in all directions from the first ply laps. Asphalt Emulsion should thoroughly cover the polyester ply sheet. Allow to dry thoroughly.
- G. Allow the roof system to thoroughly dry before application of surfacing. (5-15 days depending on environmental conditions).

### 3.05 SURFACING - MONOLITHIC

- A. After emulsion has cured so that it can be walked upon, sweep or pressure blow dust and debris from the roof surface to provide a clean surface. Hose and/or scrub off with water any residue accumulation.
- B. Protect adjacent walls not scheduled for emulsion and reflective coating. Protect equipment, roof top units, etc. from overspray.
- C. Cover prepared surfaces with HE107 asphalt emulsion the rate of 9 gallons/100 ft.<sup>2</sup>. Evenly blend emulsion with ¾" HE189 Fiberglass Roving reinforcing, sprayed with equipment approved by Henry Company. Tufting of the glass fibers is not acceptable.
- D. Spray emulsion in a pattern into laps of membrane so that when system is dry, there are no voids or bridging of glass over any seam of the membrane. Finish to be 72 dry mils.
- E. Spray base flashings and other designated surfaces with the Monolithic™ System.

### 3.06 COOL ROOF REFLECTIVE COATING

- A. Allow emulsion surfacing to cure. Clean the surface of dust and debris. Scrub out any pockets of residue.
- B. White Elastomeric Coating
  1. Apply two coats of HE280DC at a rate not less than 1 ¼ gallons/100ft<sup>2</sup> per coat. If low slope or ponded water areas are anticipated, use HE291 Premium Elastomeric Base coat at the rate of 1 ¼ gallons/100ft<sup>2</sup> as the base coat over the Monolithic emulsion surface.

2. The recommended application of HE280DC is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness

**Note:** Repair leaks promptly to avoid adverse effects, including mold growth.

**For specific HENRY MONOLITHIC™ maintenance specification documents, construction details, or application questions, please contact the HENRY Company Technical Service Department 800 486-1278.**

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