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SPEC NOTE: **HRS (Henry Restoration System) Henry Pro-Grade® 280 Elastomeric White Roof Coating for Existing Metal Roofs.** This specification is ideally suited for the protection and maintenance of existing previously coated and non-coated metal roofing including steel, aged galvanized steel, aluminum, and copper to extend the life of the roofing assembly. Although prepared in CSI three (3) part format, this specification should be adapted to suit the requirements of the individual project and be included as a separate section under Division 07 - Thermal and Moisture Protection.

SPEC NOTE: This specification is not intended for application over Kynar® or Hylar® coated metal roofs.

SPEC NOTE: This document is intended as a reference for the recommended installation procedures of the products/assembly described below. Although this specification section follows the recommendations of the Construction Specifications Institute (CSI), Manual of Practice including MasterFormat, SectionFormat, and PageFormat; It is the discretion of the project specification author to use the information within as a whole, or in part, to set a minimum standard of performance for specified products/assembly on a project specific basis. Areas noted “[project specific]” are intentionally omitted and shall be updated and coordinated by the project specification author.

SPEC NOTE: This document includes Henry notes for information purposes and to assist the architect/specification writer in making appropriate decisions. A Henry “SPEC NOTE” will always immediately precede the text to which it is referring. The section serves as a guideline only and should be edited with deletions and additions to meet specific project requirements.

SPEC NOTE: If existing roof membrane is previously coated contact Henry technical services at (800) 486-1278.

SPEC NOTE: Delete “SPEC NOTE” sections in the final copy of the specification.

SPEC NOTE: Use extreme caution when applying and walking on coated surfaces. Coated surfaces are extremely slippery and can create a fall hazard resulting in injury or death.

SPEC NOTE: Coverage rates indicated in guide specifications DO NOT include material calculations for waste.

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**SECTION 07 01 60**

**MAINTENANCE OF FLASHING AND SHEET METAL**

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SPEC NOTE: This guide specification has been written in accordance with the Construction Specifications Institute (CSI) Manual of Practice and use of General Contractor/installing Subcontractor identified accordingly. Modify Sections as required for projects where no General Contractor is allocated.

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1. **GENERAL**
	1. GENERAL REQUIREMENTS
		1. The General Conditions, Supplementary Conditions, Instructions to Bidders, and Division 01- General Requirements shall be read in conjunction with and govern this section.
		2. The Specification shall be read as a whole by all parties concerned. Each Section may contain more or less than the complete Work of any trade. The Contractor is solely responsible to make clear to the installing Subcontractor the extent of their Work.
	2. SUMMARY
		1. This Section includes requirements for supplying labor, materials, tools, and equipment to complete the Work as shown on the Drawings Architectural Division as specified herein including, but not limited to, the following:
			1. Cleaner
			2. Rust Inhibitive Primer (optional)
			3. Sealant
			4. Roof Coating

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SPEC NOTE: Edit Paragraph below to suit project requirements: Add Sections as applicable.

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* 1. RELATED REQUIREMENTS

* + 1. DIVISION 07 – Thermal and Moisture Protection Section 07 01 50.16 – Roof Maintenance Program
		2. DIVISION 07 – Thermal and Moisture Protection Section 07 01 50.19 – Preparation for Re-Roofing
		3. DIVISION 07 – Thermal and Moisture Protection Section 07 01 50.23 – Roof Removal
		4. DIVISION 07 – Thermal and Moisture Protection Section 07 01 50.81 – Roof Replacement
		5. DIVISION 07 – Thermal and Moisture Protection Section 07 01 50.91 – Roofing Restoration
		6. DIVISION 07 – Thermal and Moisture Protection Section 07 01 60 – Maintenance of Flashing and Sheet Metal
		7. DIVISION 07 – Thermal and Moisture Protection Section 07 01 90 – Maintenance of Joint Protection

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SPEC NOTE: Projects not referencing LEED delete Sections “1.03. H” and “1.05.G” as stated below.

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* + 1. DIVISION [project specific] - LEED Requirements Section [project specific] – [project specific].
	1. ALTERNATES
		1. Submit requests for alternates in accordance with Section [project specific].
		2. Roof coatings must meet the following criteria:
			1. Miami-Dade product approval and Notice of Acceptance (NOA) are not considered acceptable substitutions.
		3. Alternate submission format to include:
			1. Online certification listings:
				1. FM Approval
				2. Miami-Dade County Product Control
				3. UL Approval
			2. Evidence that alternate materials meet or exceed performance characteristics of product requirements and documentation from an approved independent testing laboratory certifying that the performance of the system including auxiliary components exceed the requirements of the local building code.
			3. Product Data:
				1. Roof Coating Manufacturer’s guide specification.
				2. Roof Coating Manufacturer’s complete set of technical data sheets for assembly.
				3. Energy Star listing.
			4. Certificates:
				1. Product certification that the assembly components are supplied and warranted by single source Roof Coating Manufacturer.
				2. Statement that installing Subcontractor is authorized by Roof Coating Manufacturer to complete Work as specified.
				3. LEED:

Health Declaration Product (HPD) Certificate

* + - 1. Warranty:
				1. Complete set of warranty verification documents as required by the Roof Coating Manufacturer.
			2. References clearly indicating that the Roof Coating Manufacturer has successfully completed projects of similar scope and nature on an annual basis for a minimum of five (5) years.
		1. Submit requests for alternates to this specification a minimum of ten (10) working days prior to bid date. Include a list of twenty-five (25) projects executed over the past five (5) years.
		2. Acceptable alternates will be confirmed by addendum. Substitute materials not approved in writing prior to tender closing shall not be permitted for use on this project.
	1. REFERENCES
		1. American Society for Testing and Materials (ASTM):
			1. ASTM C794 – 10: Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
			2. ASTM D471: Water Absorption
			3. ASTM D1549: Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer
			4. ASTM D3359: Standard Test Methods for Measuring Adhesion by Tape Test
			5. ASTM D6083: Standard Specification for Liquid Applied Acrylic Coating Used in Roofing
			6. ASTM E96: Water Vapor Transmission of Materials
			7. ASTM E1980: Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces Miami-Dade County Product Control NOA (Notice of Acceptance)
		2. California Energy Commission Title 24 Section 118(i)3
		3. Cool Roof Rating Council
		4. Factory Mutual (FM):
			1. Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction (Class Number 4470)
		5. Miami-Dade County Product Control
			1. Miami-Dade County Approved; Notice of Acceptance (NOA)
		6. Underwriters Laboratories (UL):
			1. UL Inc.: Class A Classification for use in roof coverings
		7. US Green Building Council (USGBC), Leadership in Energy and Environmental Design (LEED)
	2. ADMINISTRATIVE REQUIREMENTS
		1. Pre-installation meetings:
			1. When required, and with prior notice, a Roof Coating Manufacturer representative will meet with the necessary parties at the jobsite to review and discuss project conditions as it relates to the integrity of the assembly.
	3. SUBMITTALS
		1. Provide the following requested information in accordance with Section [project specific] Submittal Procedures.
		2. Action Submittals:
			1. Product Data:
				1. Roof Coating Manufacturer’s guide specification.
				2. Roof Coating Manufacturer’s complete set of technical data sheets for assembly.
			2. Certificates:
				1. Product certification that the assembly components are supplied and warranted by single source Roof Coating Manufacturer.
				2. Statement that installing Subcontractor is authorized by Roof Coating Manufacturer to complete Work as specified.
				3. LEED:

Health Declaration Product (HPD) Certificate

* + - 1. Warranty:
				1. Complete set of warranty verification documents as required by the Roof Coating Manufacturer.
	1. QUALITY ASSURANCE
		1. Single Source Responsibility:
			1. Obtain roof coating and auxiliary materials including primary roof coating, fabric reinforcement, sealants, primers, and adhesives from a single Roof Coating Manufacturer regularly engaged in the manufacturing and supply of the specified products.
			2. Contactor to verify product compliance with federal, state, and local regulations controlling use of Volatile Organic Compounds (VOC).
		2. Manufacturer Qualifications:
			1. Roof Coating Manufacturer shall demonstrate qualifications to supply materials of this section by certifying the following:
				1. Roof Coating Manufacturer must not issue warranties for terms longer than they have been manufacturing and supplying specified products for similar scope of Work.
		3. Installer Qualifications:
			1. Installing Subcontractor must be authorized to install Roof Coating Manufacturer’s roof coating.
			2. Perform Work in accordance with the Roof Coating Manufacturer’s published literature and as specified in this section.
			3. Maintain one (1) copy of the Roof Coating Manufacturer’s instructions on site.
			4. At all times during the execution of the Work allow access to site by the Roof Coating Manufacturer representative.
			5. If meeting with the Roof Coating Manufacturer during project construction, contact the Roof Coating Manufacturer a minimum of two weeks prior to schedule meeting.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Delivery of Materials:
			1. Materials shall be delivered to the jobsite in undamaged and clearly marked containers indicating the name of the Roof Coating Manufacturer and product.
		2. Storage of Materials:
			1. Store materials as recommended by the Roof Coating Manufacturer and conforming to applicable safety regulatory agencies. Refer to all applicable data including, but not limited to, MSDS sheets, Product Data sheets, product labels, and specific instructions for personal protection.
			2. Keep solvents away from open flame or excessive heat.
			3. Roof coating should be stored in closed containers.
			4. Refer to Roof Coating Manufacturer’s published literature.
		3. Handling:
			1. Provide adequate ventilation for protection from hazardous fumes.
			2. Protect areas not included in scope of work from overspray.
			3. Refer to Roof Coating Manufacturer’s published literature.
	3. SITE CONDITIONS
		1. Environmental Requirements:
			1. No Work shall be performed during rain or inclement weather.
			2. No Work shall be performed on frost covered or wet surfaces.
		2. Protection:
			1. It is the responsibility of the installing Subcontractor to protect all surfaces not included in scope of Work from overspray including, but not limited to, windows, doors, adjacent areas, and vehicles.
			2. Protective coverings shall be secured against wind and shall be vented if used in conjunction with applications preventing collection and moisture.
			3. Installing Subcontractor to post signs noting potential overspray hazard within 400ft (122 M) of applications.
			4. All air intake ventilation equipment shall be turned off to prevent fumes from entering building.
			5. No smoking signs must be posted as mandated by local fire ordinances.
		3. Ensure all preparation Work is completed prior to installing roof coating.
		4. All equipment shall be grounded during operations.
	4. WARRANTY

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SPEC NOTE: Metal roofing assemblies equal to or lighter than 28 gauge (0.015 inches) may be ineligible for Gold Seal Warranty issuance. Contact Henry prior to roof coating application.

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* + 1. Warranty Submittals to Roof Coating Manufacturer:
			1. Contact Henry sales representative for a complete list of required documents and procedures prior to material purchase. Warranties submitted without required documents and procedures completed may result in delay or rejection of warranty request.

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SPEC NOTE: Contact the local Henry representative to obtain a current sample warranty for further clarification.

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* + 1. Warranty Terms:
			1. Installing Contractor:
				1. Installing Subcontractor must warranty the installation; provide material and labor costs for repair in the event of a leak as a result of faulty workmanship for a period of two (2) years from the date of installation completion.
			2. Manufacturer's Single Source Warranty; choose from the following:
				1. Warranty terms vary and are based on cured roof coating thickness; choose from the following:

Refer to Section 3.03.G. Application of Roof Coating

* + - * 1. Manufacturer’s Single Source Material Plus Warranty:

Installing Subcontractor must be a Material Plus Authorized Subcontractor.

Manufacturer must warranty the products; provide material and labor costs for repair for a period of [Ten (10), Twelve (12)] years from the date of installation completion as a result of any of the following:

Manufacturing product defect

* + - * 1. Manufacturer’s Single Source Gold Seal Warranty:

Installing Subcontractor must be a Gold Seal Authorized Subcontractor.

Manufacturer must warranty the products and installation; provide material and labor costs for repair for a period of [Ten (10), Twelve (12)] years from the date of installation completion as a result of any of the following:

Manufacturing product defect

Faulty workmanship

1. **PRODUCTS**
	1. MANUFACTURERS
		1. Roof coating and auxiliary materials must be obtained as a single-source from the Roof Coating Manufacturer to ensure total system compatibility and integrity.
		2. Acceptable Manufacturers:
			1. Henry Company

999 N. Sepulveda Blvd. Suite 800

El Segundo, CA 90245

(800) 486-1278

[www.henry.com](http://www.henry.com)

* 1. MATERIALS
		1. Primary roof coating shall comply with the following system requirements:
			1. Energy Performance:
				1. Initial Solar Reflectance (ASTM C1549): 88%
				2. Solar Reflective Index (SRI): 111
				3. ENERGY STAR: Certified
			2. FM Approved (Class Number 4470):
				1. Max Roof Slope: 3:12
			3. Florida Product Approval:
				1. Miami-Dade County, Florida NOA
			4. Tested Fire Response Characteristics:
				1. Standard Test Methods for Fire Tests of Roof Coverings (ASTM E 108 or UL 790): Class A
		2. Roof Coating:
			1. Primary Roof Coating (Basis of Design):
				1. Water based acrylic latex elastomeric roof coating; having the following properties:

Basis of design: Pro-Grade® 280 Elastomeric White Roof Coating

Color: White

Elongation, Initial (ASTM D2370): >250%

Fungi Resistance Rating (ASTM G-21): 0

Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 50 g/l max

Solar Reflective Index (SRI) (ASTM E1980): 111

Solar Reflectance (ASTM C-1549):

Initial: 0.88

Three (3) years: 0.73

Solids Content by Volume: >52-56%

Tear Resistance (ASTM D624): > 80 lbf/in

Tensile Strength Film (Initial) (ASTM D2370): >240 psi

Thermal Emittance (ASTM C1549):

Initial: 0.90

Three (3) years: 0.87

Water Vapor Permeance (ASTM E96): <50 perms

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SPEC NOTE: Choose from one of the following base coats and delete section which is not applicable to project.

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* + - 1. Base Coat; choose from one of the following:
				1. Water based acrylic latex elastomeric roof coating; having the following properties:

Basis of design: Pro-Grade® 280 Elastomeric White Roof Coating

Color: White

Elongation, Initial (ASTM D2370): >250%

Fungi Resistance Rating (ASTM G-21): 0

Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 50 g/l max

Solar Reflective Index (SRI) (ASTM E1980): 111

Solar Reflectance (ASTM C-1549):

Initial: 0.88

Three (3) years: 0.73

Solids Content by Volume: >52-56%

Tear Resistance (ASTM D624): > 80 lbf/in

Tensile Strength Film (Initial) (ASTM D2370): >240 psi

Thermal Emittance (ASTM C1549):

Initial: 0.90

Three (3) years: 0.87

Water Vapor Permeance (ASTM E96): <50 perms

* + - * 1. Water based acrylic latex elastomeric roof coating; having the following properties:

Basis of design: Pro-Grade® 294 Base Coat and Sealer

Color: grey

Elongation (Initial) (ASTM D2370): >400%

Flash Point (ASTM D3278): Non-flammable

Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 50 g/l max

Solids Content by Volume: 51-55%

Tensile Strength Film (ASTM D2370): >150 psi

* + 1. Assembly Auxiliary Materials:
			1. Reinforcement Fabric:
				1. Spun-bonded polyester, non-woven mat; having the following physical properties:

Basis of Design Product: HE296 Elasto Tape Repair Fabric

Complies with ASTM D-1688-80, Type III

* + - * 1. Stitch-bonded, high performance fabric reinforcement sheet, having the following properties:

Basis of design: HE195 Polyester Fabric

Color: White to Yellow White

Elongation (Initial) (ASTM D1682): 61-63%

Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 0 g/l max

Maximum VOS: 0 lbs/gal

Mullen Burst (ASTM D3786): 176.8 lbs.

Tensile Strength Film (Initial) (ASTM D1682): 57.1 lbs.

Trapezoidal Tear Strength (ASTM D1117): 16.1 lbs.

Weight of Fabric: 3 oz/sq. yd.

* + - 1. Sealer:
				1. Mastic grade rubberized polymer modified sealant; having the following properties:

Basis of design: HE295 Metal Seam Sealer

Color: White

Solids Content by Weight: 52.9%

Drying Time:

To touch: 3 hours

Full cure: 3-4 days

Tensile Strength, die C (ASTM D412): 940 psi

Elongation (ASTM D412): 300%

* + - * 1. Elastomeric polymer latex compound; having the following properties:

Basis of design: HE513 Elasto Flashing Compound

Color: White

Solids:

By Volume: 78.2%

By Weight: 68%

Flash Point (ASTM D3278): >212 degrees F

Tensile Strength Film - Initial (ASTM D2370): 282.2 psi

Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 100 g/L

Maximum VOS: 0.83 lbs/gal

* + 1. Additional Materials:
			1. Cleaner:
				1. Refer to Section 3.02. C Surface Cleaning
			2. Rust Inhibitive Primer (optional):
				1. Contact Henry for a list of recommended products.
1. **EXECUTION**
	1. EXAMINATION
		1. Verify metal gauge thickness is in accordance with Roof Coating Manufacturer warranty requirements. See Section 1.11 Warranty.
		2. The installing contractor shall examine and determine that surfaces and conditions are ready to accept the Work of this section in accordance with the Roof Coating Manufacturer’s published literature. Commencement of Work or any parts thereof shall mean installing Subcontractor acceptance of the substrate.
			1. Do not install roof coating over rusted substrates.
		3. As a requirement for meeting warranty conditions the existing roof system must be tested for leaks. It is the installing Subcontractor’s responsibility to verify the existing metal roofing and assembly are dry and leak free prior to installation of roof coating.
			1. Leak detection survey includes all of the following:
				1. Visual inspection
		4. Verify existing substrate and assembly flashings are dry, leak-free, and in accordance with Roof Coating Manufacturer’s published literature.
		5. Adhesion Test:
			1. Do not perform Work in this section until a field adhesion test has been conducted by the installing Subcontractor in accordance with Section “3.02.D. Adhesion Test”.
		6. Verify skylights, scuppers, gutters, penetrations, and structures located within area of Work are firmly secured and in good working condition prior to installation. Clean, repair, or replace to correct substrate deficiencies as required in accordance with Metal Roofing Manufacturer’s published literature to obtain a continuous and secure substrate in accordance with Roof Coating Manufacturer’s published literature prior to installation of roof coating.
		7. Existing assembly must be continuous and secured prior to application of roof coating.
		8. Verify fastener integrity and retighten or replace as required to obtain secure fastener placement in accordance with Metal Roofing Manufacturer published literature. Stitch-fasten deflected metal panels together to ensure a continuous substrate eliminating gaps. Fasteners requiring replacement must use larger diameter fasteners than existing.
		9. Verify metal seams are tight and flush. Gaps must not be greater than one-quarter (1/4) inch wide. Repair gaps in accordance with Roof Coating Manufacturer published literature.
		10. Do not apply sealants or roof coatings until substrate and environmental conditions are in accordance with Roof Coating Manufacturer’s published literature.
		11. Previously coated areas:
			1. Contact Roof Coating Manufacturer’s technical support or local sales representative for previously coated examination procedures.
	2. PREPARATION
		1. All surfaces must be sound, dry, clean, and free of oil, grease, dirt, excess mortar, frost, laitance, loose and flaking particles, or other contaminants.
		2. Existing metal roof, insulation, and all substrates must be dry and in accordance with Roof Coating Manufacturer’s published literature prior to installation of roof coating.
		3. Surface Cleaning:
			1. Confirm local ordinances and jurisdiction restrictions prior to selecting from the following cleaning methods.
			2. Clean and prepare existing metal roofing taking caution not to inject water into roofing substrate.
			3. Acceptable Methods of Cleaning
				1. Pressure washer with greater than 2000psi.
				2. Air lance with greater than 2000psi.
				3. Etching detergent in conjunction with sprayer:

Allow etching detergent to stand for 5 minutes. Lightly scrub with stiff bristle broom and remove with power washer using 3 to 4ft (0.91 to 1.2m) arc pattern. Recommended equipment:

Hudson type agricultural sprayer with greater than 2000psi

Conventional pressure sprayer with greater than 2000psi

Airless sprayer with greater than 2000psi

* + - * 1. Algae, mildew, or fungus:

Treat with a tri-sodium phosphate (TSP) or equivalent non-filming detergent and water solution.

Clear water rinse until all cleaning residue is removed.

* + - * 1. All substrate areas must be completely dry prior to primer or coating application.
				2. Refer to Roof Coating Manufacturer’s published literature.
		1. Adhesion Test:
			1. An adhesion test must be completed over all substrates including previously coated and non-coated metal roofs prior to installation of roof coating.
				1. Contact Roof Coating Manufacturer for field adhesion test instructions.
				2. Verification of passing adhesion test results must be recorded and submitted to Roof Coating Manufacturer during warranty application process.
			2. Contact Roof Coating Manufacturer for required warranty compliance procedures.
				1. Adhesion tests are required for all areas including, but are not limited to, the following:

Field of existing roofing membrane:

Minimum number of tests: Two (2)

One (1) test must be completed every 10,000 square feet.

Areas of existing membrane roofing indicating worn substrates require additional testing.

Any change in existing roof membrane substrate

Existing roofing membranes installed in varying phases

Shaded areas

Areas indicating ponding water

Previously coated areas.

* + - * 1. Allow for roof coating to cure for a minimum of 72 hours prior to conducting adhesion test.
				2. Coating adhesion must pass Roof Coating Manufacturer’s minimum of two (2) pounds per lineal inch when conducted in accordance with Roof Coating Manufacturer’s field adhesion test.

Contact Roof Coating Manufacturer where adhesion is less than two (2) pounds per lineal inch.

* + 1. Repair, removal, and replacement of existing metal roofing:
			1. Metal panel deterioration compromising structural integrity including damaged, weakened, or corroded panels, fascia, gutters, vents, ridge caps, and flashings must be replaced. Contact Metal Roofing Manufacturer for repair, removal, and replacement of compromised material.
			2. Remove rust with wire brush, sandblast, or mechanically abrade until substrate is smooth and rust free.
			3. Remove old and damaged mastic repairs at laps, seams, and fasteners.
		2. All areas must promote positive drainage.
			1. Contact Roof Coating Manufacturer’s technical support or local sales representative for ponding area repair procedures.
		3. Previously coated areas:
			1. Contact Roof Coating Manufacturer’s technical support or local sales representative for previously coated preparation procedures.
	1. INSTALLATION
		1. Ensure substrate is ready to receive roof coating in accordance with Roof Coating Manufacturer’s published literature.
		2. Roof coating may settle during storage. Mix roof coating prior to use with drill and mixer blade until consistent viscosity is achieved.
		3. Temperature Limitations:
			1. Substrate temperature must be above 50 degrees F (10 degrees C) and rising and 6 degrees F (3 degrees C) above dew point temperature and rising.
		4. Primer:
			1. No primer required upon confirming Roof Coating Manufacturer minimum adhesion results. Refer to Section “3.02.D Adhesion Test”.
			2. Where adhesion is less than desired contact Roof Coating Manufacturer’s technical support or local sales representative.
		5. Detailing/Flashing:
			1. All detailing and flashings shall be completed prior to installation of roof coating.
			2. All detailing and flashings shall be installed per Roof Coating Manufacturer’s published literature.
			3. Existing assembly must be continuous and secure prior to application of roof coating.
			4. Fasteners:
				1. Completely encapsulate fastener heads with sealer ensuring fastener is sealed to deck.
			5. Metal seams:
				1. Horizontal laps:

Apply foot pressure to under lapping panel next to horizontal lap.

Metal panel laps opening more than one-eighth (1/8) inch wide gap shall be stitch-fastened together in accordance with Metal Roofing Manufacturer published literature at arrangement and rate required to ensure a continuous substrate eliminating gaps.

Brush apply sealer at two (2) gallons per square (32 wet mils) extending three (3) inches each side of seam. Back brush sealer into seams as required.

Center four (4) inch wide strip of **s**pun-bonded polyester fabric over seam and fully embed **s**pun-bonded polyester fabric into sealer ensuring two (2) inches of **s**pun-bonded polyester fabric on each side. Brush **s**pun-bonded polyester fabric for proper adhesion and removal of all voids.

Allow sealer to dry prior to subsequent sealer application.

Brush apply second layer of sealer at two (2) gallons per square (32 wet mils) extending three (3) inches each side of seam ensuring **s**pun-bonded polyester fabric is fully coated and has a smooth and continuous watertight finish.

Allow to cure prior to subsequent installations.

* + - * 1. Ridge cap seams:

Apply foot pressure to under lapping panel next to horizontal lap.

Metal panel seams opening more than one-eighth (1/8) inch wide gap shall be stitch-fastened together in accordance with Metal Roofing Manufacturer published literature at arrangement and rate required to ensure a continuous substrate eliminating gaps.

Brush apply sealer at two (2) gallons per square (32 wet mils) extending three (3) inches each side of seam. Back brush sealer into seams as required.

Center four (4) inch wide strip of **s**pun-bonded polyester fabric over seam and fully embed **s**pun-bonded polyester fabric into sealer ensuring two (2) inches of **s**pun-bonded polyester fabric on each side. Brush **s**pun-bonded polyester fabric for proper adhesion and removal of all voids.

Allow sealer to dry prior to subsequent sealer application.

Brush apply second layer of sealer at two (2) gallons per square (32 wet mils) extending three (3) inches each side of seam ensuring **s**pun-bonded polyester fabric is fully coated and has a smooth and continuous watertight finish.

Allow to cure prior to subsequent installations.

* + - * 1. Crimped standing seams:

No detailing required.

* + - * 1. Un-crimped vertical seams:

Apply foot pressure to under lapping panel next to horizontal lap and detail seam in accordance with minimum gap width requirements; choose from the following methods:

Metal panel seams indicating no signs of opening or gap and providing a continuous watertight transition:

Flow coat and completely encapsulate seam with sealer, via bulk gun or spray rig without tip, with a one-half (1/2) inch bead up seam slope and allow sealer to flow over lap bridging both sides of seam equally. Reinforcement fabric is not required.

Allow to cure prior to subsequent installations.

Metal panel seams opening equal to or less than one-eighth (1/8) inch wide gap:

Brush apply sealer at two (2) gallons per square (32 wet mils) extending three (3) inches each side of seam. Back brush sealer into seams as required.

Center four (4) inch wide strip of **s**pun-bonded polyester fabric over seam and fully embed **s**pun-bonded polyester fabric into sealer ensuring two (2) inches of **s**pun-bonded polyester fabric on each side. Brush **s**pun-bonded polyester fabric for proper adhesion and removal of all voids.

Allow sealer to dry prior to subsequent sealer application.

Brush apply second layer of sealer at two (2) gallons per square (32 wet mils) extending three (3) inches each side of seam ensuring **s**pun-bonded polyester fabric is fully coated and has a smooth and continuous watertight finish.

Allow to cure prior to subsequent installations.

Metal panel seams opening more than one-eighth (1/8) inch wide gap:

Stitch-fasten metal panels together in accordance with Metal Roofing Manufacturer published literature at arrangement and rate required to ensure a continuous substrate eliminating gaps.

Flow coat and completely encapsulate seam with sealer, via bulk gun or spray rig without tip, with a one-half (1/2) inch bead up seam slope and allow sealer to flow over lap bridging both sides of seam equally. Reinforcement fabric is not required.

Allow to cure prior to subsequent installations.

* + - 1. Roof curbs, parapets, and skylights:
				1. Brush apply sealer at two (2) gallons per square (32 wet mils) extending four (4) inches on horizontal surface and a minimum eight (8) inches up vertical surface. Back brush sealer into seams as required.
				2. Center six (6) inch wide strip of **s**titch-bonded polyester fabric at upturn and fully embed stitch-bonded polyester fabric into sealer ensuring three (3) inches of stitch-bonded polyester fabric on both horizontal and vertical surfaces. Brush stitch-bonded polyester fabric for proper adhesion and removal of all voids.
				3. Allow sealer to dry prior to subsequent sealer application.
				4. Brush apply second layer of sealer at two (2) gallons per square (32 wet mils) extending four (4) inches on horizontal surface and a minimum of eight (8) inches up vertical surface ensuring stitch-bonded fabric is fully coated and has a smooth and continuous watertight finish.
			2. Pipe penetrations:
				1. Brush apply sealer at two (2) gallons per square (32 wet mils) extending four (4) inches on horizontal surface and a minimum eight (8) inches up vertical surface. Back brush sealer into seams as required.
				2. Center six (6) inch wide strip of **s**titch-bonded polyester fabric at upturn and fully embed stitch-bonded polyester fabric into sealer ensuring three (3) inches of stitch-bonded polyester fabric on both horizontal and vertical surfaces. Brush stitch-bonded polyester fabric for proper adhesion and removal of all voids.
				3. Allow sealer to dry prior to subsequent sealer application.
				4. Brush apply second layer of sealer at two (2) gallons per square (32 wet mils) extending four (4) inches on horizontal surface and a minimum of eight (8) inches up vertical surface ensuring stitch-bonded fabric is fully coated and has a smooth and continuous watertight finish.
		1. Roof Marking:
			1. Mark desired area in accordance with published literature so that the appropriate amount of roof coating is applied per square. For a two (2) coat application, re-measure prior to installation of second coat to ensure proper millage requirements.
			2. Contact Roof Coating Manufacturer for roof marking instructions.
				1. Coverage rates are theoretical and do not take into account for material loss due to spraying, surface texture, waste, etc.
				2. Install a test patch to determine how much coating per square is required over asphaltic textured surfaces.
				3. Adjust application rates based on test patch results in order to meet specified requirements.
		2. Application of Roof Coating:

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SPEC NOTE: Slopes equal to or greater than 3:12 require a minimum application of two (2) coats; contact Roof Coating Manufacturer’s technical support or local sales representative to determine the proper number of applications.

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* + - 1. Application rates apply to both Material Plus and Gold Seal Warranties.
			2. Ten (10) year Warranty:
				1. Apply base coat at one and a half (1.5) gallons per square [Twenty-four (24) wet mils; Thirteen (13) DFT].
				2. Allow base coat to dry and verify substrate is thoroughly clean and free of debris or contamination prior to subsequent application.
				3. Apply primary roof coating perpendicular to cured base coat at one (1) gallon per square [Sixteen (16) wet mils; Nine (9) DFT].
			3. Twelve (12) year Warranty:
				1. Apply base coat at one and a half (1.5) gallons per square [Twenty-four (24) wet mils; Thirteen (13) DFT].
				2. Allow base coat to dry and verify substrate is thoroughly clean and free of debris or contamination prior to subsequent application.
				3. Apply primary roof coating perpendicular to cured base coat at one and a half (1.5) gallons per square [Twenty-four (24) wet mils; Thirteen (13) DFT].
	1. FIELD QUALITY CONTROL
		1. Limit traffic on roof coated surfaces for a minimum of two (2) days. Damage to surface by other trades shall not be the responsibility of the installing Subcontractor.
		2. Final Observation and Verification:
			1. Final inspection of roof coating membrane assembly shall be carried out by the Owner’s representative, the installing Subcontractor, or Roof Coating Manufacturer as required by warranty.
				1. Gold Seal Warranty requires Manufacturer final observation and verification for warranty issuance.
			2. Contact Roof Coating Manufacturer for warranty issuance requirements.
	2. CLEANING
		1. Promptly as the Work proceeds, and upon completion, clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing Work.
		2. Check area to ensure cleanliness and remove debris, equipment, and excess material from the site.

END OF SECTION