

SOLAR COATING SYSTEMS

2-PLY EMULSION/ACRYLIC SYSTEM

Specification for Built-Up Roofing 07590

Name
Address
City, State, zip

PART 1. GENERAL

1.01 SUMMARY

- A. Furnish and install a seamless, reinforced waterproof spray applied asphalt emulsion and elastomeric acrylic coating system as outlined in this specification, to preserve the membrane and extend the life of the existing built-up roof.
- B. The manufacturer's application instructions for each product used are considered part of these specifications and should be followed at all times.

1.02 QUALITY ASSURANCE

- A. Supplier Qualifications: The Solar Coating Systems Roof renovation system, as supplied by Solar Coating Systems.
- B. Applicator Qualifications: The applicator shall be approved by Solar Coating Systems to apply the system.

1.03 SUBMITTALS

- A. Submit product data sheets and literature verifying physical and performance properties of materials.
- B. Submit material safety data sheets.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Containers and Packaging: Deliver materials in original sealed containers, clearly marked with: manufacturer's logo; full product name; and lot number(s).
- B. Storage and Handling: Store materials between 40°F and 100°F with careful handling to prevent damage to products. If conditions exceed these ranges, special consideration in storage must be taken. Do not store at high temperatures in direct sunlight.
- C. Protection: Protect all materials from freezing and other damage during transit, handling, storage, and installation.

1.05 PROJECT CONDITIONS

- A. This installation guide specification assumes that the deck is sound and in good condition. It also assumes the if the deck is plywood, it has no dry has no dry rot, and is in sound condition, or has been repaired.

- B. The minimum recommendations for material usage are for ideal conditions. The specified rate of application per 100 square feet may vary and need to be increased due to uneven application, rough surface texture, wind conditions while spraying or other variables.
- C. Any wet insulation must be identified and removed. Consult a Solar Coating Systems Technical Consultant regarding the need for moisture surveys and other assessments.
- D. Structural cracks should be referred to the appropriate Solar Coating Systems Technical Consultant.
- E. Do not apply materials unless surface to receive acrylic roofing system is clean, dry and prepared as specified.
- F. Install all material in strict accordance with all published safety, weather, or applicable regulations of the manufacturer and/or local, state, and/or federal agencies which have jurisdiction.
- G. The entire system shall be fully adhered to the surface on which it is applied. Voids left under the system by creating bridges are not acceptable.
- H. Do not proceed with application of coating or sealing materials when temperature is less than 50°F. No coating system shall be applied if weather will not permit it to dry prior to exposure to precipitation or freezing.
- I. Heavy puddles of coating on the roof are not acceptable.
- J. Instructions for use of all roofing materials and application equipment should be read and followed at all times.
- K. As a general principal, to prevent the ponding of water, install additional drains or tapered insulation drainage systems as necessary.

1.06 DETAIL WORK

- A. This specification does not extensively outline procedures for preparation and finishing of drains, vents, ducts, flashings, parapet walls, sheet metal work, etc. This work should be outlined by the contractor before work commences, and shall be performed observing good trade practices.

PART 11. PRODUCTS

2.01 SOLAR COATING ROOFING SYSTEM

- A. The roofing system is a polyester-reinforced emulsion and 100% acrylic, elastomeric, spray-applied SCS Roofing System manufactured by Solar Coating Systems.
- B. The asphalt emulsion shall meet the following physical property requirements:

Properties	Typical Value
Solids by Volume (%)	45-55
Pounds per Gallon	8.5 lbs.
Flexibility(@32°F)	No Cracking
Drying Time (hrs.)	Normally 12 hrs.*
Meets or Exceeds	ASTM D1227-76 Type 1 (Modified) Fed. Spec. SS-R-1781 Type 1 (Modified) Mil. Spec. MIL-R-3472A

C. The reinforcing fabric shall meet the following physical property requirements:

Properties	Test Method	Typical Value
Weight (per sq. yard)	Calculated by formula	2.75-3.0 oz
Bursting Strength (lbs)	ASTM D3786	127-177
Tensile Strength (psi)	ASTM D1682	41-57
Tear Strength (lbs)	ASTM D1117	14.2-16
Elongation (%)	ASTM D1682	25.8-62

D. Physical Properties of Cured Roofing System: The testing of the coating shall be done under ASTM-D6083, “Standard Specification for Liquid Applied Acrylic Coating Used in Roofing”, unless otherwise specified.

E. The protective acrylic coating system shall meet the following physical property requirements:

Properties	ASTM Method	Requirements	Results
Tensile Strength, psi (Max @ 73° F)	D6083	Minimum 200	>200
% Elongation @ Break (73° F)	D6083	Minimum 100	>100
Wet Adhesion to PVC Substrate	D6083	Minimum 3.0 pli	
Permeance, perms	D6083	Maximum 15	21
Volume Solids %	D6083	> 50	> 50
Weight Solids %	D6083	> 65	> 65
Reflectivity	D6083	> 0.70	0.87
Emmissivity	D6083	> 0.75	0.90

2.02 RELATED MATERIALS

A. All materials used shall be applied in accordance with its manufacturer's recommendations. Solar Coating Systems shall approve of all flashing materials, adhesives, elastomeric caulking compounds, primers, and other similar materials either manufactured by Solar Coating Systems or others.

2.03 EQUIPMENT

A. Recommended spray equipment is the Graco GH-5030 pump or Graco GM-7000 pump, or Garlock equivalent. Use a Reverse-A-Clean tip with a minimum tip size of .033 up to about .045.

Note: For alternative equipment recommendations consult the spray equipment manufacturer directly.

PART 111. EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins and product guide specification instructions.

3.02 GENERAL CONDITIONS

- A. Substrate surfaces must be dry, clean, and void of any dirt and debris.
- B. Verify that all roof penetrations, mechanical equipment, cants, edge metal, and other on-roof items are in place and secure.
- C. Verify that all critical areas around the immediate vicinity of the spray area are suitably protected.
- D. Verify all roof drains are clean and in working order.

3.03 PREPARATION of EXISTING MEMBRANE

- A. On built up roofs with gravel, spud gravel off to obtain smooth roof surface.
- B. On smooth surface or cap sheet built-up roofs, the surface must be clean, sound, dry and free of any loose materials or existing coatings that would inhibit proper adhesion of the coating system. Achievement of this condition may require the use of Surface Cleaner, and will require power washing. Cleaning shall always be performed observing good trade practices.
- C. Roof membrane shall be repaired and made sound and watertight prior to application of the fluid applied reinforced roofing membrane using one or more of the following steps.
- D. Repair all cracks, voids, holes or other surface imperfections in the roof field or flashing areas with a three course of **SCS Brushable Elastic Patch** as appropriate. As an option, apply SCS emulsion applied at the rate of at least 5-6 gallons per 100 square feet. Polyester reinforcing fabric shall then be embedded in the wet coat of emulsion. The polyester fabric shall extend 4-6 inches beyond the area in need of repair. The emulsion shall extend 2 inches beyond the edges of the polyester reinforcing fabric.
- E. All blisters and ridging shall be cut, dried out, and repaired as described in section 3.03 D of this installation guide specification.
- F. Seal all HVAC ductwork joints as needed with **SCS Brushable Elastic Patch** and reinforcing polyester fabric. Coat entire duct assembly with two 1.0 gallon coats (per 100 sq. ft.) of SCS Acrylic Coating.
- G. Reseal around all mechanical equipment and roof penetrations with **SCS Brushable Elastic Patch**. Install new treated wood supports under pipe supports, where required.
- H. All loose seams of existing roof systems on walls shall be fastened down and sealed. Sealant must seal fasteners as well. Seal these areas with a three course of **SCS Brushable Elastic Patch** reinforced with 4-6" polyester. Allowing mastic to dry (normally 24 hours), before applying the roof renovation system. as described in section 3.04 B of this installation guide specification.

- I. In all valley areas, waterways, crickets, drain areas or other areas where ponding water accumulation is a concern, apply asphalt emulsion at the rate of 5-6 gallons per 100 square feet, approximately 46 inches wide. Immediately embed 40 inch wide T272, T325 or T326 polyester reinforcing fabric into the wet coating. The emulsion shall extend a minimum of 2 inches beyond the edges of the polyester reinforcing fabric. In any large valley area multiple widths of fabric should be used, overlapping them a minimum of 3 inches so that the emulsion and fabric extend at least six inches up above the potential waterline. Extend extra layer of polyester at least 10 feet from the walls.
- J. ReSeal Pitch Pans with **SCS Brushable Elastic Patch** or Chem Curbs if required.
- K. Allow asphalt emulsion to dry thoroughly before proceeding to application of the remainder of the roofing system as described in section 3.04 of this installation guide specification.

3.04 APPLICATION

A. Reinforced Asphalt Emulsion:

1. For the first ply, apply **SCS Asphalt Emulsion** approximately 46 inches wide at the rate of at least 5-6 gallons per 100 square feet. Immediately embed 20 inch wide polyester reinforcing fabric into the wet emulsion. Using a roller or roofing broom, apply pressure to the surface of the fabric to ensure good saturation of the fabric by the emulsion, working out any wrinkles at the same time. Immediately apply a second coat of asphalt emulsion over the area at the rate of at least 5-6 gallons per 100 square feet. A second ply of 40 inch wide polyester reinforcing fabric should then be laid directly over the last asphalt emulsion application.
2. Continue application using 40 inch wide polyester reinforcing fabric, overlapping each 40 inch strip by about 22 inches each time until the entire deck is covered. Pay particular attention to assuring good saturation and sealing of all edges when applying the SCS asphalt emulsion and polyester.
3. Overlap side laps of 40" polyester by at least 2". Overlap end laps 6". Offset end laps 18" minimum from previously installed sheets. Assure good saturation and sealing of all edges when applying the emulsion and polyester. Broom in or roll in polyester polyester.
4. Extend ply system above the cant a minimum 2" at wall and projection bases.
5. The Emulsion/polyester system shall extend up any parapet walls high enough so that the edges can be overlapped by a metal cap flashing. Allow emulsion to dry before proceeding.
6. At roof edges where there is no parapet wall, add 12" wide polyester fabric along perimeter, and embed in **SCS Emulsion** at a rate of 5-6 gallons per 100 Square Feet.
7. After allowing the emulsion to dry, pressure wash the cured asphalt emulsion surface to remove all residual surfactant materials that migrated to the surface. Allow the roof to dry immediately preceding the application of the protective acrylic coating to avoid further surfactant migration.

B. Solar Coating Systems Surface Coating:

1. Apply one coat of an approved **SCS Acrylic Coating** at a rate of 1-1/2 gallons per 100 Square Feet. After the first coat dries, apply a second coat of **an approved SCS Acrylic Coating** over the entire system, at the rate of 1 1/2 gallons per 100 square feet per coat.

Total Coating application is 3.0 gallons per 100 Square Feet. Use crosshatch technique for the second coat. Apply these top coats over all HVAC duct work and over the top of any parapet walls, etc.

2. These minimum recommendations for material usage are for ideal conditions. The number of gallons per 100 square feet may need to increase due to uneven application, rough surface texture, wind conditions while spraying, or other variables.
3. No coating shall be applied if weather will not allow it to dry prior to exposure to precipitation, dew, or freezing temperatures.

3.05 FIELD QUALITY REQUIREMENTS

- A. Manufacturer's Field Services: Inspection by the coating manufacturer's representative shall be made to verify the proper installation of the system. Any areas that do not meet the minimum standards for application as specified herein shall be corrected at the contractor's expense. Manufacturer's inspection or verification shall not constitute acceptance of responsibility for any improper application of material.

3.06 CLEANING

- A. Surfaces not intended to receive elastomeric coating materials shall be protected during the application of the system. Should this protection not be effective, or not be provided, the respective surfaces shall be restored to their proper conditions by cleaning, repairing or replacing. All debris from completion of work shall be completely removed from the project site.

PART 1V. MATERIALS

The following materials listed in these recommendations are available from Solar Guard Coatings Corporation:

1. Approved SCS Acrylic Coating
 - a. SCS Premium Elastomeric Coating
 - b. SCS BUR
 - c. SCS MB
2. SCS Emulsion clay stabilized, non-fibered asphalt emulsion.
3. SCS Brushable Elastic Patch, 100% acrylic, elastomeric architectural sealant.
4. SCS T272, T325, or T326 Polyester Reinforcing Fabric.
5. Surface Cleaner, water based biodegradable cleaner.