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GACO WESTERN

Application Specification:

RC-22-GS10EPDM

February 2007

NEW

SECTION 07120:

GACO WESTERN GACOSIL S-10 ELASTOMERIC SILICONE COATING FOR COATING WEATHERED EPDM SINGLE PLY ROOFING MEMBRANES

PART 1 - GENERAL

1.1 SUMMARY

NOTE TO ARCHITECTS AND ENGINEERS: This specification provides a remedial coating system for application over a pre-existing weathered EPDM membrane on a roofing substrate. The use is restricted to circumstances where the coated surface is in sound condition, but require a renewal of the coated surface due to the normal effect of aging and use.

When properly applied, GacoSil S10 coating system provides a weather tight seal that protects the substrate from degradation caused by ultra violet light, water and other normal weathering hazards. The deck should have at least a ¼" (0.64 cm) to the foot slope for drainage.

The GacoSil S-10 elastomeric coatings discussed in this specification have a moderate rate of water vapor transmission. They are not recommended for use on cold storage or cryogenic structures. Such structures may have constant high water vapor drive causing long-term accumulation of moisture in the insulation. Consult Gaco Western for vapor retardant systems to use on refrigerated structures.

Conditions to check and corrections to consider are:

The type of pre-existing system must be identified. With proper surface preparation, including primer, elastomeric coating types, with some exceptions, can be re-coated.

All pre-existing coating must be well adhered and intact. The areas to be re-coated must have sufficient slope to drain water.

On a roof judged to be acceptable for a recoat application, a Gaco Western Qualified Applicator or Gaco Western Field Service Representative shall perform an adhesion patch test on at least a 12"x12" (30.48 cm x 30.48 cm) area of clean, dry roof using primer/base coat. No further work shall be performed until evaluation test results show that adhesion is adequate. Samples of test areas must be taken and sent for review to Gaco Western. Depending upon circumstances, foam core testing may also be required before approval to proceed will be granted.

1.2 RELATED SECTIONS

A. Cast-In-Place Concrete:	Section 03300	F. Vapor barriers/air barriers:	Section 07190
B. Flashing/Sheet Metal:	Section 07600	G. Board Insulation:	Section 07212
C. Roof Accessories:	Section 07800	H. Skylights:	Section 05300
D. Rough Carpentry/wood blocking	Section 06100	I. Metal decking	Section 05300
E. Drains, vents, penetrations	Section 07700		

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1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's standard submittal package including specification, installation instructions, and general information for each waterproofing material.
- B. Applicator Qualifications: Submit current "Qualified Applicator" certificate from the specified waterproofing manufacturer.
- C. Substrate Conditions:
 - 1. Manufacturer's representative to present to owner a completed inspection form verifying substrate condition and any noted defects not specifically addressed in regard to this installation.
 - 2. Surface shall be free from loose dirt, stone, debris, moisture, and shall be in stable condition. Any work on the area to receive this application shall be completed prior to installation.
 - 3. Applicator shall complete a substrate inspection prior to start of roofing. The architect/owner and applicator shall accept the surface. Start of the work constitutes acceptance.

1.4 QUALIFICATIONS

- A. Primary waterproofing materials shall be products of a single manufacturer. Secondary materials shall be recommended by the primary manufacturer. Manufacturer shall have a minimum of 10 years experience in the manufacture of materials of this type.
- B. Applicators shall have a minimum of 5 years experience in the application of waterproofing materials of the type specified. Applicator shall possess a current "Qualified Applicator" certificate from the specified waterproofing manufacturer.
- C. Pre-Bid Conference: 10 working days prior to bid opening there is to be a mandatory Pre-Bid Conference. Those not attending the Pre-Bid Conference will not be allowed to bid the project. All products considered an equal to the specified product or any changes in the scope of work installation or specifications must be presented at the Pre-Bid Conference. If a change in the specifications is accepted, it will be considered as an alternate and will be presented as a bid amendment issued 5 working days prior to the bid opening. No other changes to specification or bid documents will be accepted.
- D. Materials other than specified shall be submitted to the architect/owner for approval no later than ten days prior to bid date. In requesting prior approval, it shall be necessary to submit:
 - 1. A letter of certification, signed by an officer of the manufacturer, stating that the alternative material is equal to or better than the specified product.
 - 2. Independent laboratory test data giving physical property values in comparison to the specified material.
- E. Pre-Installation Conference: Just prior to commencement of the installation, meet at the site with a representative of the coating manufacturer, the waterproofing contractor, the general contractor, the architect and other parties affected by this section. Review methods and procedures, substrate conditions, scheduling and safety.
- F. GacoSil S-1000 white meets ENERGY STAR[®] solar reflectance performance requirements both low and high-sloped roofs and is approved by the Cool Roof Rating Council (CRRC).

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in sufficient quantities as not to cause delays in application of the roofing system. Owner/owner's representative shall reject damaged materials not conforming. Rejected materials shall be removed immediately from the job site and replaced at no additional cost to the owner.
- B. Store materials as recommended by manufacturer and conforming to applicable safety regulatory agencies: town, state, and federal. Refer to all applicable data including but not limited to MSDS sheets, Product Data sheets, product labels and specific instructions for personal protection.

- C. Provide adequate ventilation, protection from hazardous fumes, overspray potential to workers and associated trades in close proximity of site applications.

1.6 WARRANTY

- A. Gaco Western warrants that the material supplied will meet or exceed physical properties as published. The contractor guarantees that workmanship will be free of defects in coating application. Since performance of previously applied coatings are beyond the control of Gaco Western or the contractor, requests for additional warranty coverage shall be subject to prior approval by Gaco Western.
- B. Protection of building and occupants:
 - 1. All surfaces not to receive system specified shall be protected from overspray hazard i.e. windows, doors, exterior and vehicles. Protective coverings shall be secured against wind and shall be vented if used in conjunction with applications preventing collection and moisture.
 - 2. Contractor is to post signs noting potential overspray hazard within 400' (121.90 meters) of applications.
 - 3. All air intake ventilation equipment shall be turned off to prevent fumes from entering building.
 - 4. Surfaces damaged during application shall be restored at no expense to the owner.
 - 5. No smoking signs to be posted as mandated by local fire officials.
- C. Substrate: Proceed with work as specified only after substrate construction, preparation, and detail work has been completed.
- D. Equipment: All equipment used during operations shall be located so as not to adversely effect the daily operations or endanger occupants, structure or materials on-site. All spray equipment must be grounded during operations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Acceptable Manufacturers:
Gaco Western

2.2 MATERIALS

- A. Cleaner: GacoFlex D-09 etching detergent.
- B. Coating: Gaco Western GacoSil S-10 series using contrasting colors and having the following physical properties:

<u>Property</u>	<u>Value</u>	<u>Test Method</u>	Change in % after exposure Emmaqua, ASTM G90-94 401 DAYS @ 86°F (30°C)
Tensile Strength	480 psi	ASTM D-412-68	0%
Elongation	210%	ASTM D-412-68	-9%
Tear Resistance	40 pli	ASTM D-624	30%
Hardness	50 Shore A	ASTM D-676	0%
Water Vapor Permeability	6.2 perms	ASTM E-96	
	Procedure B at 0.5 mm (20 mils) thickness ± 10% Minimum permeance requirement is 2.5 U.S. perms	Calculated	
Volume Solids	69% ± 1%		
Reflectance	0.89	ASTM C-1549 S-1000 White	
Emittance	0.89	ASTM C-1371 S-1000 White	

Note: GacoSil S-1000 white meets ENERGY STAR solar reflectance performance requirements both low and high-sloped roofs and is approved by the Cool Roof Rating Council (CRRC).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Repair to structural components of the roof are complete.
- B. Verify that drains, vents, ducts, gutters, metal cap or other penetrations have been replaced or modified.
- C. Installation of materials to change slope or otherwise facilitate water drainage has been completed.

3.2 PREPARATION

- A. For general cleaning, apply etching detergent with sprayer of choice, Hudson type agricultural sprayer, Conventional pressure sprayer, or airless sprayer. Use 3 to 4 foot (.91 to 1.22 m) arc pattern. Allow D-09, etching detergent to stand for 5 minutes. Clean with commercial powerwasher, >2000 psi (13.79 MPa).
- B. Biological Control: Identified areas of algae, mildew or fungus on the roof membrane or the coating should be treated with a chlorine water solution, followed by a clear water rinse. (This treatment can be done using a commercially available chlorine compound available from swimming pool supply houses. Concentration of the chlorine solution should be five times that recommended for normal treatment of swimming pool.)
- C. Drying: After washing and cleaning the roof, allow surface to dry 48 hours before placing any coating. Examine roof, paying particular attention to areas of physical damage or exposed foam to determine that residual water has in fact dried. The roof should be allowed to dry completely if there is water present.

NOTE: Drying depends on weather conditions such as temperature, humidity and air movement. The above drying times assume good weather (70°F / 21°C.) daytime temperature and no rain. Conditions of lower temperature and rain will require a longer period for drying.

3.3 INSTALLATION

- A. Technical Advice: The installation of this system shall be accomplished in the presence of, or with the advice of the manufacturer's technical representative. Contact the nearest regional office for assistance.
- B. Repair: Loose or torn seams can be repaired with tape designed for EPDM application.
- C. Base Coat: Apply GacoSil S-10 at the rate of 1.1 gallon per 100 sq. ft. (4.16 L / 9.3 m²) At all edges and penetrations, an extra pass must be applied. Allow to dry 3 to 7 hours. Dry film thickness shall be a minimum of 11 mils (.28mm).
Note: Extra base coat material is required at all edges and penetrations if neoprene sheet flashing is not used. Losses due to over spray, surface profile, and wind. Increase material required.
- D. Top Coat: Apply GacoSil S-10 at the rate of 1.1 gallon per 100 square feet (4.16 L / 9.3 m²) Coat all surfaces including expansion joint covers and flashing. Dry film thickness shall be a minimum of 11 mils (.28mm). At all edges and penetrations, an extra pass must be applied. Allow to dry 3 to 7 hours.

NOTE: Surface must be dry, clean and free of debris between coats.

3.4 FIELD QUALITY CONTROL

- A. No traffic shall be permitted on the coated surface for a minimum of three (3) days. Damage to surface by other trades shall not be responsibility of the roofing contractor.
- B. Thickness: The finished dry film thickness will average 22 mils (.56 mm) of GacoSil S-10 and will have an approximate total thickness with granule of 32 mils (.81 mm).