

Application Specification:

RC-30-GF21
October 2016
Supersedes 10/15

DIVISION 07 01 50.61:
GACO WESTERN GACOFLEX S21 SILICONE COATING
FOR RECOATING ELASTOMERIC ROOF SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

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

GacoFlex® S2100 White Cleanable Solvent-Free Silicone Coating is the first high-solids 100% silicone coating to resist dirt pick-up even after years of exposure, thereby maintaining significantly higher whiteness and solar reflectivity than other silicones. It exhibits self-cleaning properties resulting from local rainfall, and if necessary, can be easily cleaned with GacoWash Concentrated Cleaner. Improved rheology provides better film build on high spots and over granulated or uneven surfaces. GacoFlex S2100 develops water sheeting action that allows roofs to dry more quickly, thus reducing dust and dirt interactions with the coating. Like all GacoFlex Silicone Coatings, it withstands permanent ponding water. **GacoFlex S2100 contains 37% recycled content and does not contain crystalline silica.**

Conditions to check and corrections to consider are:

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

Existing foam roofs with extensive delamination or blistering of the foam or the coating system, or with major areas of wet, saturated foam, etc., will require total removal and replacement. When situations are questionable, Gaco Western's technical field service shall be contacted for recommendations. In all cases, prospective re-coats should be verified as to moisture content by survey, i.e. infra-red, in conjunction with core cuts and moisture readings.

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 GacoFlex 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:	Division 03 30 00	F. Vapor barriers/air barriers:	Division 07 25 00
B. Flashing/Sheet Metal:	Division 07 60 00	G. Board Insulation:	Division 07 22 00
C. Roof Accessories:	Division 07 72 00	H. Skylights:	Division 08 60 00
D. Rough Carpentry/wood blocking	Division 06 10 00	I. Metal decking	Division 05 30 00
E. Drains, vents, penetrations	Division 07 72 00		

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. Warranty must be supplied by product manufacturer.
- D. 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. Meets Energy Star performance levels for reflectivity and Recycled Content.
- G. Primary waterproofing materials must be made in the USA

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, 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. Warranty must be supplied by product manufacturer.
- C. 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.
- D. Substrate: Proceed with work as specified only after substrate construction, preparation, and detail work has been completed.
- E. Equipment: All equipment used during operations shall be located so as not to adversely affect 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, www.gaco.com

2.2 MATERIALS

- A. Cleaner: GacoFlex GacoWash Concentrated Cleaner.
- B. Primer: GacoFlex E5320 Epoxy Primer.
- C. Flashing: Gaco Western GacoFlex 66S Polyester Flashing Tape, GacoFlex SF2000 SeamSeal, GacoFlashFoam

D. Coating: GacoFlex S21 Series Silicone (if required to separate the mid-point of dry film mils, apply 2 coats in contrasting colors) and having the following physical properties:

<u>Property</u>	<u>Value</u>	<u>Test Method</u>
Tensile Strength	292 psi	ASTM D-412
Elongation @ 0 deg	175%	ASTM D-412
Tear Resistance	21 pli	ASTM D-624
Water Vapor Permeability	5.5 perms Procedure B at 0.5 mm (20 mils) thickness \pm 10% Minimum permeance requirement is 2.5 U.S. perms	ASTM E-96
Volume Solids	95% \pm 1%	Calculated
Initial SRI	103	E1980
Emittance	0.90	ASTM C-1371

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

It is extremely important to get the roof clean and dry.

- A. First remove heavy deposits of dirt, leaves and other debris from the roof using broom or air broomer, then inspect the entire roof surface and flashings for any open seams, tears, cuts, etc. Repair these flaws so water is not blown in under membrane during the cleaning process. Pressure wash roof with water and allow to dry completely.
- B. For general cleaning, after the roof is dry from initial cleaning, apply GacoWash Concentrated Cleaner according to label instructions with sprayer of choice, using a 3-4 foot (0.91-1.22 m) arc pattern. A Hudson-type agricultural sprayer, conventional pressure sprayer or airless sprayer is recommended. Allow solution to stand for 10-15 minutes, adding a light mist of water to prevent drying. While it sets, lightly agitate any heavily soiled areas with a broom or brush. Do not allow dirt to settle in low areas. Use a commercial power washer >3,000 psi (20.69 MPa) to remove debris and continue rinsing until all suds are gone. Start at the lowest point of the roof and work towards the highest point. For low-sloped roofs, work away from and then back towards, roof drains. It is important to keep the surface wet until all of the GacoWash and other residue has been completely rinsed off and the surface is clean. After cleaning and rinsing the roof, ensure no dirt or debris is present.
- C. Biological Control: Areas of algae, mildew or fungus on the roof membrane or the existing coating should be treated with a solution of 1 part household bleach and 3 parts water, followed by a power washer rinse using clear water.
- D. Drying: Allow surfaces to thoroughly dry to prevent blistering. Examine roof, paying particular attention to areas of physical damage to determine that residual water has in fact dried before applying GacoFlex S21 coating.

Note: Drying time 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 seams, cracks, penetrations or terminations; choose one of the following:

1. In areas where the substrate has been damaged such as polyurethane foam with an abraded or ground surface or where loose coating has been removed, Sport prime with 1 coat GacoFlex E-5320 Primer by brush or spray to the surface.
2. GacoFlex SF-2000 Liquid Seam Seal at a minimum rate of 64 wet mils, 60 dry mils before the top coat or coats are applied.
3. GacoFlex GacoFlashFoam: Apply GacoFlashFoam to the desired thickness, minimum $\frac{3}{4}$ " (+- $\frac{1}{4}$ ") and not to exceed 1- $\frac{1}{4}$ inches (+- $\frac{1}{4}$ ") per pass.

Note: For further details or installation refer to the Operating Instructions in the GacoFlashFoam kits

4. Taping reinforced with a layer of GacoFlex 66-S Spun-laced Polyester Tape embedded in two coats of GacoFlex S21 Series Silicone Coating.

C. Primer: Apply one coat of GacoFlex E-5320 Primer by spray or roller at the rate of 1 gallon per 300 square feet. Allow it to dry a minimum of 6 hours.

Note: Primer is required on all recoat projects to ensure proper adhesion. Exceptions are substrates that have existing GacoFlex S21 Silicone Series.

Primer must be coated within 72 hours of the application. If primer is not coated within 72 hours, mechanical abrasion is necessary to improve the coating adhesion. Cure time will vary depending upon the ambient temperature and humidity. Stop the application two hours before rain or when the dew point would be reached.

The cure time will vary depending upon UV and humidity conditions. Stop the application two (2) hours before any rain or dew point is reached.

D. Coating: Apply 1 coat of GacoFlex S21 Series Silicone at a rate of 2 gallons per 100 sq. ft. (5.68 L / 9.3 m²). Coat all surfaces including expansion joint covers and flashing. At all edges and penetrations, an extra pass must be applied. Dry film thickness shall be a minimum of 30 mils.

NOTE: Application rate based on theoretical coverage, actual coverage may be less due to surface profile, losses due to overspray and wind, and residual coating left in the container. Additional material may be required to achieve a minimum of 30 dry mils.

Optional 2 Coat Application:

1. Base Coat: Apply GacoFlex S21 Series Silicone at the rate of 1 gallon per 100 sq. ft. (2.84 L / 9.3 m²). At all edges and penetrations, an extra pass must be applied. Dry film thickness shall be a minimum of 15 mils (.38mm).
2. Top Coat: Apply GacoFlex S21 Series Silicone at the rate of 1 gallon per 100 square feet (2.84 L / 9.3 m²). Coat all surfaces including expansion joint covers and flashing. At all edges and penetrations, an extra pass must be applied. Dry film thickness shall be a minimum of 15 mils (.38mm).

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

If different colors are required to separate the mid-point of dry film mils, then two separate coats will need to be applied:

E. Optional Granular Coat: An additional granular coat may be added. Apply one coat of GacoFlex S21 Series Silicone at the rate of not less than .5 gallon per 100 square feet (1.89 L / 9.3m²), (8 mils dry (.20 mm)). Immediately broadcast roofing granules into finish coat at the rate of 30 lbs per 100 square feet. (13.6 kg / 9.3m²).

F. Optional WalkPad: Apply one coat of GacoFlex WalkPad SF2036 at a rate of 4 gallons per 100 sq. ft. (64 wet mils); Broadcast GacoFlex WalkPad safety yellow granules into wet coating at a rate of 0.5 lb. per 100 square feet to help ensure good traction.

Note: Tape off WalkPad area using duct tape. Remove duct tape while coating is still wet.

GacoFlex WalkPad SF-2036 is the only walk pad system approved for use with GacoFlex coating systems

Caution: While the use of granules will improve traction, caution should still be exercised when walking on WalkPad, especially in wet conditions.

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 30 mils (.56 mm) of GacoFlex S21 Series Silicone and will have an approximate total thickness with granule of 42 mils (.81 mm).