DIVISION 07 01 50.61:
GACO WESTERN GACOFLEX™ S42 ELASTOMERIC SILICONE COATING
FOR RESTORING SINGLE PLY ROOFING MEMBRANES

PART 1 - GENERAL

1.1 SUMMARY

A. This specification provides a remedial coating system for application over pre-existing weathered EPDM, TPO, CPA, CSPE and PVC Single Ply Membrane Roofing Systems. The use is restricted to circumstances where the membrane surface is in sound condition, but requires a renewal of the membrane surface due to the normal effect of aging and use.

When properly applied, the GacoFlex S42 Series Silicone Coating System provides a weather tight seal that protects the substrate from degradation caused by (UV), ultra violet light, water and other normal weathering hazards.

NOTE: Ballasted single ply systems are excluded from this specification.

B. The GacoFlex S42 Series Elastomeric Silicone 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. Contact Gaco Western for recommendations on vapor retardant systems to use on refrigerated structures.

C. This specification is intended only as a guide for the development of a project specification. The suitability of this specification for a particular project must be determined by a qualified representative of the owner.

Conditions to check and corrections to consider are:

- The type of pre-existing system must be identified.
- All pre-existing membranes must be fully adhered or mechanically attached and intact.
- The structural decking must be sound.

Elements of this specification may require modification in order to clearly delineate project requirements. Sections that are not pertinent may be deleted.

D. On a Single Ply Membrane Roofing system judged to be acceptable for a coating application, a Coating Applicator must perform adhesion tests. The number of adhesion tests should be one for every 10,000 square feet, with a minimum of two. The tests should be performed in a manner consistent with ASTM D903 Procedures: Clean an area at least 12” x 12”. After the area has been cleaned of debris, apply GacoWash Concentrated Cleaner as per its specification. After a thorough rinse, allow the cleaned area to dry completely. Brush apply GacoFlex S4200 Silicone Coating at a rate of 1 gallon per square (16 wet mils). While the GacoFlex S4200 Silicone Coating is still wet, embed a strip of 1” or 2” wide GacoFlex 66S Polyester Flashing Tape across the test patch leaving a 4” to 6” dry section of the polyester fabric tape outside the test patch. Apply additional GacoFlex S4200 Silicone Coating to totally encapsulate the polyester fabric tape. Allow the S4200 test patch to cure for a minimum of 4 days, then attach an appropriate scale to the end of the
dry polyester fabric tape and pull at a 180° angle. A minimum of ten pounds of pull resistance must be achieved. If the minimum pull resistance is not achieved, repeat the test but first prime the substrate with GacoFlex E5320 Primer and let it cure for 24 hours before applying GacoFlex S4200 and 66S Polyester Flashing Tape. No work shall be performed until the evaluation test results indicate that adhesion to the roofing membrane system is adequate. The pull test results must be recorded and sent to Gaco Western with the application for warranty.

1.2 RELATED SECTIONS
A. Cast-In-Place Concrete: Division 03 30 00  
B. Flashing/Sheet Metal: Division 07 60 00  
C. Roof Accessorries: Division 07 72 00  
D. Rough Carpentry/wood blocking: Division 06 10 00  
E. Drains, vents, penetrations: Division 22 14 26.13

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. Applicator to present to owner a completed inspection form verifying substrate condition and any noted defects not specifically addressed in regard to the installation of the coating.

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 the installation of the coating.

3. Applicator shall complete a substrate inspection prior to the start of the installation of the coating. The architect/owner and applicator shall accept the substrate. Start of the work constitutes acceptance.

1.4 QUALIFICATIONS
A. Primary waterproofing materials shall be the products of a single manufacturer. Secondary materials shall be recommended by the primary manufacturer. The 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. The applicator shall possess a current “Qualified Applicator” Certificate from the specified waterproofing manufacturer.

C. Pre-Bid Conference: Ten (10) working days prior to the 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 addendum issued five (5) working days prior to the bid opening. No other changes to the specification or bid documents will be accepted.

D. Materials other than those specified shall be submitted to the architect/owner for approval no later than ten (10) days prior to the 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 alternate 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 the commencement of the installation, meet at the job-site with a representative of the coating manufacturer, applicator, general contractor, architect and other parties affected by this section. Review the methods and procedures, substrate conditions, scheduling and safety.

1.5 DELIVERY, STORAGE AND HANDLING

A. The application of the coating system. Owner/owner’s representative shall reject damaged or non-conforming materials. Rejected materials must be removed immediately from the job site and replaced at no additional cost to the owner.

B. Store the coating materials as recommended by the manufacturer and conforming to applicable safety regulatory agencies: town or city, 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 and overspray potential to workers and associated trades in close proximity of the site applications.

1.6 WARRANTY

A. Gaco Western warrants that the material supplied will meet or exceed physical properties as published. The applicator 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 applicator, 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. Applicator 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 2-Part Epoxy Primer/Filler (as needed)
C. GacoFlex 66S Polyester Flashing Tape, GacoFlex SF4200 SeamSeal

D. Coating: GacoFlex S42 Series Silicone Coating having the following physical properties:

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
<th>TEST METHOD</th>
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<tbody>
<tr>
<td>Tensile Strength</td>
<td>254 psi</td>
<td>ASTM D2370</td>
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<tr>
<td>Elongation</td>
<td>110%</td>
<td>ASTM D2370</td>
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<tr>
<td>Solids</td>
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<td>ASTM D1644</td>
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<tr>
<td></td>
<td>95% by volume</td>
<td>ASTM D2697</td>
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<td>VOC</td>
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<td>ASTM C1549</td>
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<tr>
<td></td>
<td>0.812 after soiling</td>
<td>S4200 White</td>
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<tr>
<td>SRI</td>
<td>110 initial</td>
<td>ASTM E1980</td>
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<tr>
<td></td>
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<td>S4200 White</td>
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<tr>
<td>Water Vapor Permeability</td>
<td>5.0 Perms</td>
<td>ASTM E96 (20 mils DFT) (inch pounds)</td>
</tr>
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</table>

PART 3 - EXECUTION

3.1 EXAMINATION

A. A mandatory nuclear or infrared scan has been performed and any wet roofing materials have been removed and replaced.

B. Repair to the structural components of the roof is complete.

C. Verify that the drains, vents, ducts, gutters, metal cap flashing or other penetrations have been replaced or modified.

D. The installation of materials to change the pitch or otherwise facilitate the water drainage has been completed.

E. An aged reinforced single ply membrane exhibiting significant millage loss to the point that the reinforcement scrim is exposed must be disqualified as a suitable substrate to receive a coating system. Aged thermoplastic membranes that shrink or have become brittle due to plasticizer loss must be disqualified as a suitable substrate to receive a coating system. Please contact Technical Services for recommendations.

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 a stiff broom or air broom, then inspect the entire roof surface and flashings for any open seams, tears, cuts, etc. Repair these defects using "like" materials recommended by the membrane manufacturer so water does not enter the roofing system during the cleaning process. Pressure wash roof with water and allow to dry completely.

B. 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 of the S42 coating. Examine roof, paying particular attention to areas of physical damage to determine that residual water has in fact dried before applying GacoFlex S42 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 with the advice of, the manufacturer's technical representative. Contact Technical Services for assistance.

B. Primer: Certain single ply membranes may require a primer. Please consult Technical Services for direction.

C. Repairs:

1. Inspect the roofing system for open seams, open T-Joints, open corner patches or flashing voids and perform repairs with like materials as recommended by the membrane manufacturer.

2. Repair or replace any areas of delaminated, warped, bowed or displaced insulation utilizing materials and methods recommended by the membrane manufacturer.

3. Repair or replace defective edge attachments or base tie-ins and bridged or tented wall or penetration flashings utilizing materials and methods recommended by the membrane manufacturer.

4. Remove defective pitch pan filler, metal flashing sealants or termination caulking and replace with appropriate materials.

5. Areas of wet roofing materials must be removed down to the structural decking and replaced utilizing materials and methods recommended by the membrane manufacturer.

**NOTE:** All areas repaired with new membrane must be primed with a single ply primer recommended by the membrane manufacturer prior to the installation of the S42 coating system.

D. At all seams and laps, choose one of the following:

1. GacoFlex SF4200 Seam Seal applied at a minimum of 4” wide, crested and centered at the seam, with a minimum thickness at the center of 64 wet mils before the S42 top coat or coats are applied.

2. GacoFlex S42 coating reinforced with a layer of GacoFlex 66S Spun-laced Polyester Tape embedded in two coats of GacoFlex S42 coating.

After the specified top coat has been applied, the applicator must walk the roof and make sure that all seams are covered. If any open seams are discovered, additional S42 coating must be brushed on the seam until it is completely encapsulated. GacoFlex SF4200 SeamSeal is an acceptable alternate.

E. Existing HVAC Units and other equipment on curbs with a membrane flashing: The membrane flashing must be coated up to the bottom of the metal cap of the unit and sealed underneath with a 100% silicone sealant. Curbs must be a minimum of 8” above the roofing membrane.

F. Any units that are sitting on 4”x4” wooden sleepers will be lifted so that the membrane underneath the units can be cleaned, primed and coated. An approved slip sheet shall be placed under the sleepers to protect the coating system. If the units are not lifted off the deck so as to be able to accomplish this procedure, the untreated area will be excluded from the warranty.
G. Coating: Apply 1 coat GacoFlex S42 Series Silicone Coating at the average rate of 1.25 gallons per 100 square feet. Coat all surfaces including expansion joint covers and flashings. The total dry mil thickness of the coating shall measure a minimum of 18 mils (.46mm).

Optional Granular Coat: An additional granular coat may be added. Apply one coat of GacoFlex S42 Silicone Series 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).

Optional WalkPad: Apply one coat of GacoFlex SF4236 WalkPad at a rate of 4 gallons per 100 sq. ft. (64 wet mils). Broadcast GacoWalkPad 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.

NOTE: GacoFlex WalkPad SF4236 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.

NOTE: An extra base coat of GacoFlex S42 Series Silicone Coating is required at all edges and penetrations if GacoFlex NF-621 Neoprene Sheet Flashing is not used.

NOTE: Losses due to overspray, surface profile, and wind may occur. Provide for an increased amount of GacoFlex S42 Series Silicone Coating if any of these conditions exist.

3.4 FIELD QUALITY CONTROL

A. Any variations from the specified limits found by the applicator or owner’s representative shall be corrected by the applicator.

B. Dry Film Thickness: The total dry mil thickness of the coating, without a granular coat, shall measure a minimum of 18 dry mils. Gaco Western suggests adding a 10% variance factor to obtain the minimum dry mils required. It is the applicator’s responsibility to calculate the gallons needed to obtain the required minimum dry mils.

C. No traffic shall be permitted on the coated surface for a minimum of three (3) days. Damage to the surface by other trades shall not be the responsibility of the applicator.