Application Specification:

ASP-U91S42-36-15
Revised:03/2025

DIVISION 07 01 50.61:
GACOFLEX™ POLYURETHANE COATING & GACOFLEX™ S4200 WHITE ELASTOMERIC SILICONE ROOF COATING FOR RESTORING MODIFIED BITUMEN AND SMOOTH BUILT-UP ROOFINGMEMBRANE ASSEMBLIES

PART 1 – GENERAL

1.1 SUMMARY

A. This specification provides a remedial roof coating for application over existing smooth and granule-surfaced modified bitumen and smooth built-up roofing membranes (BUR), including mineral surfaced cap sheets (but excluding gravel-surfaced built-up roofs). Application is restricted to circumstances in which the membrane substrate is in sound condition but requires a renewal of the surface due to the normal effects of aging and use.

NOTE: This specification only includes GacoFlex S4200 White Elastomeric Silicone Roof Coating. Non-white (i.e., colored) silicones are not approved for use on asphalt substrates.

When properly applied, GacoFlex Polyurethane Coating & GacoFlex S4200 White Elastomeric Silicone Roof Coating provides a weathertight membrane that protects the substrate from degradation caused by ultraviolet light (UV), water,and other normal weathering hazards. The substrate should have at least a 0.25 in (6.4 mm) slope per footto promote positive drainage.

B. The GacoFlex Polyurethane Coating & GacoFlex S4200 White Elastomeric Silicone Roof Coating discussed in this specification has a moderate rate of water vapor transmission and is not recommended for use on cold storage or cryogenic structures that may have constant high-water vapor drive causing long-term accumulation of moisture in the roofing system that serves as a substrate for the GacoFlex S4200 White Elastomeric Silicone Roof Coating.

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. Adhesion tests are strongly recommended prior to bidding. A Coating Applicator that is licensed by the product manufacturer should perform wet and dry adhesion tests as instructed in GacoFlex General Instructions GW-1-3 Adhesion Testing Procedures using the products listed in Section 2.2.

1.2 RELATED SECTIONS

A. Cast-In-Place Concrete:	Division 03 30 00	F. Vapor /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 and 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 Letter of Good Standing from the specified waterproofing manufacturer.

C. **SUBSTRATE CONDITIONS:**

1. Applicator to present to owner a completed inspection report 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 ten (10) years' experience in the manufacture of materials of this type.

B. Applicators shall have a minimum of five (5) years' experience in the application of waterproofing materials of the type specified. The Applicator shall possess a current Letter of Good Standing 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. Owner/owner's representative shall reject damaged or non-conforming materials. Rejected materials must be removed immediately from the job site.

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: Safety Data Sheets, 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 application.

1.6 WARRANTY

A. Manufacturer 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 ofpreviously applied coatings is beyond the control of Manufacturer and Applicator, requests for additional warranty coverage shall be subject to prior approval by Manufacturer.

B. **A FIFTEEN (15) YEAR LABOR AND MATERIAL WARRANTY MUST BE OBTAINED THROUGH THE MANUFACTURE.**

C. **PROTECTION OF BUILDING AND OCCUPANTS:**

1. All surfaces not to receive the coating specified shall be protected from overspray hazard, e.g., windows, doors, exterior surfaces and facades, parking lots, 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 ft (121.90 m) 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, www.gaco.com – Manufactured by Holcim Solutions and Products US, LLC
Other brands manufactured by Holcim Solutions and Products US, LLC as noted.

2.2 MATERIALS

A. **PRIMER**:
GacoFlex E5320 2-Part Epoxy Primer/Filler (as needed)

B. **FLASHING:**
1.) GacoFlex 66S Reinforcing Polyester Mesh
2.) GacoFlex UF9022 – GacoMastic™
3.) ERsystems® H.E.R.

C. **POLYURETHANE BASE COAT:** **Available as Low-VOC / SCAQMD-Compliant*
GacoFlex U91 Single-Component Moisture Cure Polyurethane Coating having the following physical properties:

GacoFlex U91 | Single-Component Moisture Cure Polyurethane Coating		
PROPERTY	***VALUE***	***TEST METHOD***
TENSILE STRENGTH	2600 psi	ASTM D412
ELONGATION	350%	ASTM D412
PERMANENT SET AT BREAK	7% Max	ASTM D412
TEAR RESISTANCE	360 pli	ASTM D624
HARDNESS	90 ± 5 Shore A	ASTM D2240
WATER VAPOR PERMEABILITY	0.02 Perm Inches	ASTM E96 Procedure B Max. 100% R.H. Difference @ 70 °F (27 °C)

D. **SILICONE COATING:**
GacoFlex S4200 White Elastomeric Silicone Roof Coating has the following physical properties:

GacoFlex S4200 - WHITE | Elastomeric Silicone Roof Coating		
PROPERTY	***VALUE***	***TEST METHOD***
TENSILE STRENGTH	275 psi (1.9 MPa)	ASTM D2370

ELONGATION	196 %	ASTM D2370
SOLIDS CONTENT	96.5 % (By Weight) 95 % (By Volume)	ASTM D1644 ASTM D2697
VOC	< 50 g / L	EPA Method 24
REFLECTANCE	Initial: 0.87 After Soiling: 0.81	ASTM C1549 S4200 White
WATER VAPOR PERMEABILITY	6.4 Perms	ASTM E96-B

PART 3 – EXECUTION

3.1 EXAMINATION

A. A nuclear or infrared scan must be performed, and any wet roofing materials must be removed and replaced.

B. Repair to the structural components of the roof should be completed.

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

3.2 PREPARATION

NOTE: It is extremely important for the roof to be clean and dry.

A. Asphalt substrates shall be prepared by mechanically brushing away loose dirt, debris and granules, and removing via a power broom and/or industrial vacuum. The roof surface must be clean and completely dry, especially in areas of ponding water.

NOTE: For previously coated asphalt substrates, please contact Technical Services.

B. **BIOLOGICAL CONTROL:**
Areas of algae, mildew or fungus on the roofing membrane should be treated with a solution of 1-part household bleach to 3 parts water, followed by a power washer rinse using clear water. After cleaning, examine the application area to determine that no ponding or standing water remains before applying the coating.

NOTE: WITH THE EXCEPTION OF CLEANING TO REMOVE BIOLOGICAL RESIDUE**, DO NOT WASH THE ASPHALT ROOFING SUBSTRATE – INCLUDING PRESSURE WASHING AND THE USE OF CLEANERS –** EXCEPT AT THE DIRECTION OF TECHNICAL SERVICES.

3.3 PREPARATION

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. **REPAIRS:**

1. Inspect the roofing system for open field seams, open side laps, open flashings, or voids and perform repairs using granule surfaced APP membrane that is torch-applied or heat fused, regardless of the existing asphalt membrane type. Fish mouths should be cut and allowed to lie flat prior to repair.

2. Areas of delaminated, warped, bowed, or saturated insulation must be removed down to the structural decking, replaced with compatible materials and appropriately attached. The roofing membrane should be repaired using granule surfaced APP membrane that is torch-applied or heat fused, regardless of the existing asphalt membrane type.

3. Repair or replace defective edge attachments or base tie-ins and wall or penetration flashings using granule surfaced APP membrane that is torch-applied or heat fused, regardless of the existing asphalt membrane type.

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

NOTE: Only torch-applied or heat fused granule surfaced APP membrane may be used for repairs to the asphalt roofing substrate prior to the installation of GacoFlex Polyurethane Roof Coating, regardless of the existing asphalt membrane type. Do not use SBS, smooth APP or self-adhering membranes. Do not use asphalt mastics or cold adhesives as part of remedial roof repairs.

NOTE: For granular or rough surfaces, more material may be needed to achieve the required mil thicknesses

C. **AT ALL FLASHING SEAMS, CORNERS AND LAPS, CHOOSE ONE OF THE FOLLOWING:**

1. Apply GacoFlex U91 by brush or roller at a minimum width of 6 in (152 mm) centered on the seam at minimum rate of 1.5 gal / 100 ft² (5.75 L / 9.25 m²) to obtain a Wet Film Thickness (WFT) of 24 mils (approx. 200 LF / gal). Immediately embed a 4 in (102 mm) strip GacoFlex 66S Reinforcing Polyester Mesh into the wet coating until the Polyester Mesh is completely saturated. The Polyester Mesh must be smoothly applied without wrinkles, “fish mouths,” blisters, or pin holes. Once the Coating with embedded Polyester Mesh is firm to the touch, apply another coat of GacoFlex U91 at a minimum rate of 1.5 gal / 100 ft² (5.75 L / 9.3 m²) to completely encapsulate the Polyester Mesh. Allow to cure 10 – 12 hours at 75 °F (24 °C) and 50% RH. Dry time will be faster in warmer and more humid conditions, and slower in colder and dryer conditions.

2. Apply GacoFlex UF9022 – GacoMastic at the approximate rate of 70 LF / gal and 4 in (102 mm) wide, crested and centered at the seam. Achieve an average minimum WFT of 64 mils when measured at center at all areas to receive flashing. Allow to dry a minimum of forty (40) hours at 75 °F (24 °C) and 55 % R.H. to achieve full cure. Low humidity and low temperature will result in longer cure times.

3. Apply ERSystems H.E.R. Sealant at the approximate rate of 70 LF / gal and 4 in (102 mm) wide, crested and centered at the seam. Achieve an average minimum WFT of 64 mils when measured at center at all areas to receive flashing. Allow to dry a minimum of twelve (12) to twenty-four (24) hours at 75 °F (23.9 °C) and 45 % R.H. Weather-related conditions such as frost, dew, mist, condensation, humidity, and temperature must be taken into consideration prior to coating. Temperature should be above 40 °F (4.45 °C) more than 5 °F (2.8 °C) above the dew point and rising, for best application results.

   NOTE: Refer to manufacturer’s product instructions and/or data sheet for important information regarding drying times and other important factors to consider regarding application.

D. **HVAC / ELECTRICAL:**
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 in (203 mm) above the roofing membrane.

E. **SLEEPERS:**
Any units that are sitting on sleepers must be lifted so that the membrane underneath the units can be cleaned, primed and coated. An approved slip sheet must be placed under the sleepers to protect the coating. 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 manufacturer’s warranty.

F. **POLYURETHANE BASE COAT:**
Apply one (1) coat of GacoFlex U91 Polyurethane Coating at an approximate rate of 1.5 gal / 100 ft² (5.7 L / 9.3 m²) to achieve the required 24 mil Wet Film Thickness (WFT). Coat all surfaces including expansion joint covers and flashings. The required Dry Film Thickness (DFT) is 18 mils.

NOTE: For granular or rough surfaces, more material may be needed to achieve the required mil thicknesses.

NOTE: Unlike single ply membranes, modified bitumen and built-up roofs have varying degrees of cracks in the surface of the asphalt and bleed out at the seams. With this application it is highly recommended that a test patch be installed to determine how much coating will be needed because asphalt roof surface profiles vary due to weathering and other factors.

H. **SILICONE TOPCOAT:**
Apply one (1) coat of GacoFlex S4200 White Elastomeric Silicone Roof Coating at the average rate of 1.25 gal / 100 ft² (4.7 L / 9.3 m²) to obtain 20 mil Wet Film Thickness (WFT) / 18 mil Dry Film Thickness (DFT). Coat all surfaces including expansion joint covers and flashings. At all edges and penetrations, an extra pass must be applied.

Allow to cure for a minimum of twenty-four (24) – 48 forty-eight hours (depending on temperature and humidity) before being suitable for light foot traffic.

NOTE: For granular or rough surfaces, more material may be needed to achieve the required minimum mil thicknesses. Application below required minimum mill thickness will cause adhesion failure and result in non-warrantable damage/failure of the application.

I. **GRANULAR COAT (OPTIONAL):**
An additional granular coat may be added. Apply one coat of GacoFlex S4200 Silicone Roof Coating at a minimum of 0.5 gal / 100 ft² (1.9 L / 9.25 m²) for 8 mils DFT. Immediately broadcast white roofing granules into finish coat at the rate of 30 lb / 100 ft² (13.6 kg / 9.25 m²).

J. **WALKPAD (OPTIONAL):**
***THESE INSTRUCTIONS APPLY TO APP AND BUR(S) MEMBRANES ONLY
Apply one (1) coat of GacoFlex SF2036 WalkPad at a rate of 4 gal / 100 ft² (15.2 L / 9.25 m²) to obtain 64 mil WFT. Immediately broadcast GacoWalkPad safety yellow granules into wet coating at a rate of 0.5 lb / 100ft² (0.23 kg / 9.25 m²) improve traction.

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

NOTE: GacoFlex WalkPad SF2036 is the *only* walk pad system approved for use with GacoFlex S4200 Silicone Roof Coating. However, WalkPad may not be used on coated SBS roofing membranes.

CAUTION: While the use of granules will improve traction, caution should still be exercised when walking on the coated roofing system, especially in wet conditions.

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. **MINIMUM DRY FILM THICKNESS (DFT) REQUIREMENT:**
Gaco recommends adding a 10 % variance factor to meet the minimum Dry Film Thickness (DFT) mil requirement to qualify as a warrantable application. It is the Applicator's responsibility to calculate the amount of coating needed to obtain the minimum Dry Film Thickness (DFT) mil thickness.

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.