Gaco™

Application Specification:

SP-A47-12-5
Revised: 06/2021

DIVISION 07 01 50.61:
GACOFLEX™ A47 SERIES ACRYLIC ROOF COATING
FOR RESTORING SINGLE-PLY ROOFING MEMBRANES

PART 1 – GENERAL

1.1 SUMMARY

A. This specification provides a remedial coating system for application over existing weathered Single-Ply Membrane Roofing Systems. Use is restricted to circumstances where the membrane is at least 45-mils, aged less than 25 years, and the surface is in sound condition but requires a renewal of the membrane surface due to the normal effects of aging and use.

When properly applied, the GacoFlex A47 Series Acrylic Roof Coating provides a weathertight seal that protects the substrate from degradation caused by normal weathering hazards.

NOTE: Not intended for low-slope applications (< 2:12) or over surfaces prone to ponding water.

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

B. 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 existing system must be identified.
- All 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.

C. Adhesion tests are strongly recommended prior to bidding, with special attention to determine if a primer is necessary given the condition of the existing substrate. 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:**

i. Applicator to present to owner a completed inspection report verifying substrate condition and any noted defects not specifically addressed regarding the installation of the coating.

ii. 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.

iii. 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:

i. 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.

ii. 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 jobsite 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 of previously 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 FIVE (5) YEAR LABOR AND MATERIAL WARRANTY MUST BE OBTAINED THROUGH THE MANUFACTURER.**

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 (122 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

2.2 MATERIALS

A. **CLEANER:**
GacoFlex GacoWash Concentrated Cleaner

B. **PRIMER:**
GacoPrime LVOC Primer *(as needed)*
(GacoFlex E5320 Primer is an acceptable alternate)

C. **FLASHING:**
1.) GacoFlex 66S Reinforcing Polyester Mesh Tape
OR
2.) GacoFlex AF4700 Acrylic SeamSeal

D. **ACRYLIC COATING:**
Meets the following minimum physical property specifications:

GacoFlex A47 Series | Acrylic Roof Coating		
PROPERTY	***VALUE***	***TEST METHOD***
TENSILE STRENGTH (1000 hours)	411 psi (2.8 MPa)	ASTM D2370
ELONGATION AT BREAK (1000 hours)	252 %	ASTM D2370
SOLIDS	Weight: 66.5 % Volume: 51.0 %	ASTM D1644 ASTM D2697
VOC	< 50 g / L	EPA Method 24
REFLECTANCE (INITIAL)	0.86	C1549

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.

D. 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 suitable substrates to receive a coating system. Please contact Technical Services for recommendations.

3.2 PREPARATION

NOTE: IT IS EXTREMELY IMPORTANT FOR THE ROOF TO BE 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 ft (0.9 - 1.2 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 (21 MPa) to remove debris and continue rinsing until all suds are gone. Start at the highest point of the roof and work towards the lowest 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 to 3-parts water, followed by a power washer rinse using clear water.

D. **SUBSTRATE DRYING:**
Allow surfaces to dry thoroughly. Examine the roof, paying particular attention to areas of physical damage or previous repairs to determine that residual water has in fact dried before applying GacoFlex A47 Series Acrylic Roof 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° 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. **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: Repair all leaks, cracks, and other deficiencies and seal flashings in the existing substrate using like materials as recommended by the original manufacturer before applying GacoFlex A47 Series Acrylic Roof Coating. Newly repaired areas should be primed with GacoPrime LVOC Prime. GacoFlex E5320 2-Part Epoxy Primer/Filler is an acceptable alternate.

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

1. Apply GacoFlex A47 Series Acrylic Roof Coating 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 (5.7 L / 9.3 m²) to obtain a Wet Film Thickness (WFT) of 24 mils (approx. 200 LF / gal (61 LM / 3.8 L). Immediately embed a 4 in (102 mm) strip of GacoFlex 66S Reinforcing Polyester Mesh Tape into the wet coating and ensure it is fully embedded into the coating. GacoFlex 66S Reinforcing Polyester Mesh Tape must be smoothly applied without wrinkles, "fish mouths," blisters, or pin holes. Once the Coating with embedded GacoFlex 66S Reinforcing Polyester Mesh Tape is firm to the touch, apply another coat of GacoFlex A47 Series Acrylic Roof Coating at a minimum rate of 1.5 gal / 100 ft² (5.7 L / 9.3 m²) and ensure complete encapsulation of the tape.

   Allow to dry for a minimum of 4 – 6 hours (at 75 ºF (24 °C) and 50% RH) before proceeding to the next step of installation. Low temperatures or high humidity conditions will extend dry times. Do not apply GacoFlex A47 Series Roof Coating when precipitation or heavy dew is expected within 4 hours (6 – 8 hours in high humidity conditions). Apply product in the morning to allow for maximum dry time during daylight hours

2. Apply GacoPrime Low VOC Primer at a minimum rate of 4 in (102 mm) wide, crested and centered at the seam, with a minimum thickness at the center of 64 wet mils (approx. 70 LF / gal (22 LM / 3.8 L)). Allow to dry for 2 hours (dependent on ambient conditions) before proceeding to the next step of installation. GacoPrime Low VOC Primer must be coated within 24 hours – otherwise clean surface with GacoWash, allow to dry thoroughly and re-apply GacoPrime Low VOC Primer following the instructions previously stated in this section.

D. **ROOF EQUIPMENT (HVAC / SLEEPERS):**
FOR 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 roof system compatible sealant. Curbs must be a minimum of 8 in (203 mm) above the roofing membrane.

Any units that are sitting on 4 in (102 mm) x 4 in (102 mm) wooden sleepers will be lifted so that the membrane underneath the units can be cleaned, primed (when required due to unsuccessful adhesion test) and coated following application instructions within this document. An approved slip sheet shall be placed under the sleepers to protect the coating system. If the units are not lifted off the deck to be able to accomplish this procedure, the untreated area will be excluded from the warranty.

E. **ACRYLIC COATING:**

NOTE: If adhesion testing indicated the need for a primer, apply GacoPrime Low VOC Primer at a rate of 4.5 gal / 300 ft² (17 L / 27.9 m²) to achieve a minimum Dry Film Thickness (DFT) of 2-3 mils. Do not over-apply. Spray application of E5320 Primer (i.e., a non-continuous dusting) is preferred to achieve the required dry mils, but roller application using a ¼ in (6 mm) to ⅜ in (10 mm) nap roller or nylon brush is permitted. Allow to dry for 2 hours (dependent on ambient conditions) before proceeding to the next step of installation. GacoPrime Low VOC Primer must be coated within 24 hours – otherwise clean surface with GacoWash, allow to dry thoroughly and re-apply GacoPrime Low VOC Primer following the instructions previously stated in this section.

Apply GacoFlex A47 Series Acrylic Roof Coating at the average rate of 1.5 gal / 100 ft² (5.7 L / 9.25 m²) to obtain 24 mil Wet Film Thickness (WFT) / 12 mil Dry Film Thickness (DFT). Do not apply at an application rate greater than 1.5 gal / 100 ft² (5.7 L / 9.25 m²) per coat. GacoFlex A47 Series Acrylic Roof Coating may be applied with a 3/8 in (10 mm) nap roller, brush, or airless sprayer. Coat all surfaces including expansion joint covers and flashings. At all edges and penetrations, an extra coat must be applied. Allow appropriate drying time as adjusted for environmental conditions (see note below). If roof temperature exceeds 100 ºF (38 °C), a light mist of water may be used to increase working time.

NOTE: MINIMUM DRY TIME PER COAT IS 4 – 6 HOURS AT 75 ºF (24 °C) AND 50% RH. Longer dry times are needed in lower temperatures or higher humidity conditions. Do not apply GacoFlex A47 Series Acrylic Roof Coating when precipitation or heavy dew is expected within 4 hours (6-8 hours in high humidity conditions). Apply product in the morning to allow for maximum dry time during daylight hours.

NOTE: FOR USE OF AIRLESS SPRAYERS: General recommendation of 2,000 – 3,000 psi (13.8 MPa – 20.7 MPa) at the gun tip, 1.0 –3.0 gal / min (3.8 L – 11.4 L / min) flow rate, and tip sizes ranging from 0.025 – 0.040 in (0.64 – 1 mm). Larger spray units will allow for longer hoses on larger jobs. Contact Technical Services if further assistance is required in determining the optimal equipment for project-specific requirements.

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 obtain the minimum DFT mil thickness required. It is the Applicator's responsibility to calculate the amount of coating needed to obtain the minimum 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.