

Division 07 18 16:
GACOFLEX POLYURETHANE ELASTOMERIC COATING SYSTEM
FOR HELICOPTER PADS

PART 1 - GENERAL

1.1 SUMMARY

This section describes the requirements for installing a liquid applied traffic bearing membrane. This membrane is suitable for heavy duty, waterproof, wear surfaces for helicopter pads. This specification is not intended for use over on grade concrete surface without the use of a moisture mitigating sealer.

- A. This specification is prepared in a brief form so that it can be used verbatim in the waterproofing section. It is necessary only to make the selections indicated to complete it. Gaco General Instructions, which are incorporated by reference, provide specific detailed instructions for the guidance of contractors and inspectors.
- B. For additional information refer to GW-15-INSTR Traffic Deck Instructions, recommendations on substrate inspection, preparation and coating application that are specific to this traffic deck system.

1.2 RELATED SECTIONS

Cast-In-Place Concrete: Division 03 30 00

- A. Flashing and Sheet Metal: Division 07 53 00
- B. Drains, Vents, and 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. Americans with Disabilities Act (ADA) Recommendations: Prior to installation, submit manufacturer's data indicating that the specified waterproofing application conforms to the provisions of the ADA Accessibility Guidelines as published by the US Access Board, 1331 F St. NW, Suite 1000, Washington, DC 20004-1111.

1.4 QUALIFICATIONS

- A. Primary polyurethane elastomeric coating system shall be of:
 - 1. Single manufacturer. Manufacturer shall have a minimum of 10 years experience in the manufacture of materials of this type.
 - 2. Applicator 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.



- B. Pre-Bid Conference: Ten working days prior to the bid opening there is to be a mandatory Pre-Bid Conference. Anyone 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 an addendum issued five working days prior to the bid opening. No other changes to specification or bid documents will be accepted.
- C. Materials other than those specified shall be submitted to the architect/owner for approval no later than ten 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 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.
- D. Pre-Installation Conference: Prior to the commencement of the fluid applied waterproofing system, meet at the site with a representative of the coating manufacturer, waterproofing contractor, general contractor, architect and other parties affected by this section. Review the application methods and procedures, substrate conditions, scheduling and safety.
- E. The static co-efficient shall meet the minimum recommendations of the American Disability Act (ADA), for accessible routes, wet and dry surfaces and for leather and rubber heel materials.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store all coating materials in their original unopened containers at 50 to 80 °F (10 to 27 °C) until coating is ready for use.
- B. Follow the special handling or storage requirements of the manufacturer for cold weather, hot weather, etc.
- C. Safety: Refer to all applicable data, including, but not limited to SDS, PDS, product labels and specific instructions for specific personal protection requirements.
- D. Ventilation: Provide adequate ventilation.
- E. Environmental requirements: Proceed with the work of this section only when the existing and forecasted weather conditions will permit the application to be performed in accordance with the manufacturer's recommendations.

1.6 WARRANTY

A warranty is available for commercial projects only. Contractor must be eligible for and make application to: Gaco, prior to the start of the work under this section.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Acceptable Manufacturers:
Gaco: www.gaco.com



2.2 MATERIALS

- A. Sealer: GacoFlex E-5691 Three-Component Epoxy Primer Sealer.

Alternative Sealer: For areas vulnerable high vapor drive seal with GacoFlex E-5990 100% Solids Two-Component Epoxy Sealer.

- B. Primer: GacoFlex E-5320 Two-Component Epoxy Primer (only if alternative E-5990 Sealer is used).
- C. Polyurethane Base Coating: GacoFlex UB-64 two-component, gray Polyurethane Coating.
- D. Polyurethane Top Coating: GacoFlex U-6402 two-component, pewter, Polyurethane Coating.
- E. Base coat GacoFlex UB-64 Polyurethane and top coat GacoFlex U-6402 Polyurethane having the following physical properties:

TYPICAL PROPERTIES		
Property	Test Method	Value
Tensile Strength	ASTM D412	2100 ± 100 psi (14.48 ± .69 MPa)
Elongation	ASTM D412	400% ± 25
Tear Resistance	ASTM D624, Die C	375 ± 25 pli (66.9 ± 4.5 kg(f) / cm)
Hardness	ASTM D2240	90 ± 5 Shore A
Water Absorption	ASTM D471 max, 7 days R.T.	2.0%
Water Vapor Permeability	ASTM E96, Procedure B Max, 100% RH Difference @ 23 °C (73 °F)	0.02 perm inches
Permanent Set at Break	ASTM D412	15% max

- F. Flashing and Joint Reinforcing Fabric: GacoFlex 66B and 66S Polyester Tape. GacoFlex NF-621 Neoprene Sheet Flashing and related materials as required for flashing drains, base angles, etc.
- G. Polyurethane Coating: GacoFlex UA-7090 Two-Component Clear Aliphatic Polyurethane.
- H. Granule: GacoShell Granule, a hard (90 Rockwell Scale) non-crushable, non-extractable organic granule with a specific gravity of 1.3. Size 12/20 for general application and for sloped ramps and turn areas.
- I. Miscellaneous Accessories: All items incorporated into this system shall be compatible with and approved by the coating manufacturer.

NOTE: Allow additional material for rough or irregular surfaces and for material loss during the application.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that the substrate is ready to receive the work; the surface is clean, dry and free of surface contaminants that could affect the bond.
- B. Do not begin the work until the concrete substrate has cured 28 days and/or has achieved a moisture content of no greater than 6.8%.
- C. Prior to application of waterproofing perform calcium chloride test, to verify a moisture content of 6.8% or less has been established.



- D. Verify that the concrete meets the requirements of the coating manufacturer. Refer to Gaco General Instruction GW-2-1 for complete information on the installation and finishing of concrete.
- E. Verify with architect, general contractor and manufacturer that substrate conditions are acceptable to receive waterproofing application.

3.2 PREPARATION

- A. Clean substrate to remove all surface contaminants. Refer to Gaco General Instructions GW-1-1 Surface Preparation.
- B. Mask off all adjoining areas that are not to receive the fluid applied waterproofing.
- C. Provide a suitable workstation to mix the coating materials.

3.3 INSTALLATION

- A. Technical Advice: The installation of this waterproofing membrane 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. Concrete Sealer: Seal entire deck surface and all vertical or sloping surfaces of curbs, cants, parapets, etc., to receive coatings with one coat GacoFlex E-5691 Primer Sealer at a rate of one gallon per 200 ft² (3.78 L / 18.6 m²). Allow to dry until nearly tack free where water has evaporated leaving a clear film before proceeding to next coat. Recoat window is approximately 2 hours (depending on temperature and humidity) to 28 days. No additional primer is necessary when sealing with GacoFlex E-5691 Primer Sealer.

Alternative Concrete Sealer: For areas vulnerable to a high vapor drive seal with GacoFlex E-5990 100% Solids Two-Component Epoxy Sealer. Use a squeegee to uniformly apply product over coverage area at a rate of one gallon per 150 square feet for CSP 3 190 ft² for CSP 2. Any excess product should be back rolled over entire area to ensure even application. Do not apply product if substrate is below 50 °F (10 °C) or above 110 °F (43 °C).

- C. Concrete Primer: Only if alternative GacoFlex E-5990 Sealer is used, apply one coat of GacoFlex E-5320 Primer by roller at the rate of 1 gallon per 250 ft² (3.78 L / 18.6 m²). Allow 3 to 24 hours for drying time. For maximum solvent resistance, see drying time directed in Gaco General Instructions GW-2-2. Consult Gaco for alternate primer/sealer recommendations.
- D. Detail Work: Install approved, 100% polyurethane sealant as required and tool the surface smooth. Install GacoFlex 66B Polyester Reinforced Tape at all changes of plane and irregular surfaces using GacoFlex UB-64 Polyurethane base coat. Treat cracks in the surface with GacoFlex UB-64 Polyurethane and GacoFlex 66B Tape. GacoFlex NF-621 Neoprene Sheet Flashing should be used for expansion or seismic joints or joints showing movement over 1/8". Consult GW-621 Neoprene Sheet Flashing System for additional information.
- E. Polyurethane Base Coat: Apply one coat of GacoFlex UB-64 Polyurethane at a rate of 1½ gallons per 100 ft² (4.73 L / 9.3 m²) (24 wet mils, 18 dry Mils.) to all areas to receive fluid applied waterproofing, including areas previously sealed, flashed or fabric reinforced. Allow the base coat to cure for at least 8 hours, but no more than 72 hours before applying the wear course. If 72 hours or more have elapsed, contact your Gaco representative for further instructions.
- F. Intermediate Coat: Apply a second coat of GacoFlex UB-64 Polyurethane to the entire deck surface at a rate of 1 gallon per 100 ft² (3.78 L / 9.3 m²). While the coating is still wet, broadcast GacoShell granule size 12/20 into all areas at 30 to 50% coverage, approximately 3 to 5 lb per 100 ft² (1.4-2.3 kg / 9.3 m²). Allow the wear course to cure for at least 8 hours, but no more than 72 hours before applying the finish coat.

NOTE: An additional top coat may be required to fully encapsulate granule when GacoShell coverage rate exceeds recommendations.



- G. Coat: Prior to installing the finish coat sweep or vacuum away all loose GacoShell from the surface. Apply one coat of GacoFlex U-6402 Polyurethane in “pewter” color at a rate of 1.25 gallons per 100 ft² (4.73 L / 9.3 m²) (20 mils wet, 15 dry mils). Alternate finish coat colors are available using GacoFlex UA-60 Series Aliphatic Polyurethane or GacoFlex U-66 Series Polyurethane Coatings.
- H. Polyurethane Finish Coat: Apply two coats of GacoFlex UA-7090 Aliphatic Polyurethane at the rate of ¾ gallon per 100 ft² (2.84 L / 9.3 m²) to achieve 12 wet mils, and 7 dry mils per coat) Applied coating will set to touch in 20 to 30 minutes and can be used for light foot traffic after 48 hours cure. For vehicle traffic, an additional 24 hours is necessary. 96 hours at 70 °F (21 °C) is required to achieve good chemical and solvent resistance.

3.4 FIELD QUALITY CONTROL

- A. The contractor for work under this section shall maintain a quality control program specifically to verify compliance with this specification. A daily log shall be kept recording actions in the field.
- B. Inspections: A minimum of three (Substrate, Application and Final) Inspections by a manufacturer’s representative is required on all projects requiring a warranty.
- C. Thickness: Minimum over all dry film thickness of the completed fluid applied, vehicular waterproofing system, excluding GacoShell, will average 60 mils. Thickness of coatings, including GacoShell, will average 70 mils.

