Gaco Western
SINCE 1955

Application Specification:

IR-60-U
August 2014
Supersedes 8/11

DIVISION 7120:
GACOFLEX ELASTOMERIC INVERTED ROOFING MEMBRANE ASSEMBLY

PART 1 - GENERAL
1.1 SUMMARY

A. This specification provides a UL class A fire resistance rated roof covering system suitable for a flat or low sloped (up to 2 inches per foot, (5.08 cm per .30 m) structural concrete roof decks. GacoFlex LM-60 is a two-component, 100% solid, polyurethane rubber membrane that protects the structure from water under polystyrene board insulation. Extruded polystyrene board provides the desired level of thermal insulation and protects the membrane from damage. Filter cloth and a top covering in the form of rounded river rock, stone pavers, or cementitious surfacing are placed over the insulation.

B. GacoFlex LM-60 is easily applied by trowel or squeegee. A 5/16" X 5/16" notched blade is effective in controlling thickness. With slight dilution, LM-60 can be applied by spray. It provides a 1/16" (0.16 cm) thick seamless waterproofing membrane with 100% adhesion to the substrate. GacoFlex LM-60 remains flexible to -50°F (-45°C) and will not creep, sag or flow at elevated temperatures.

C. This application specification is prepared in a brief form. Contractor Application Instructions LWM-62-U provides detailed membrane application instructions for the guidance of contractors and inspectors. Surfaces to receive the roof covering system must meet requirements of applicable building codes and structural design.

1.2 RELATED SECTIONS

A. Flashing and Sheet Metal: Section 07600

B. Drains, Vents, and Penetrations: Section 07700

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.

1.4 QUALIFICATIONS

A. Primary polyurethane foam insulation and the designated 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. Applicators shall have a minimum of 5 years experience in the application of waterproofing materials of the type specified. Applicator shall posses a current "Qualified Applicator" certificate from the specified waterproofing manufacturer.

B. Pre-Bid Conference: 10 working days prior to 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 a bid amendment issued 5 working days prior to the bid opening. No other changes to specification or bid documents will be accepted.

C. 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.

D. Pre-Installation Conference: Just prior to commencement of the fluid application waterproofing system, 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.

1.5 DELIVERY, STORAGE AND HANDLING

A. Store all coating materials in the original unopened containers at 50° to- 80°F (10° to 27°C) until 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 MSDS, PDS, product labels, specific instructions for specific personal protection requirements.

When working with Part B, avoid contact with skin and eyes. If contact occurs, wash skin with water or alcohol; flush eyes immediately with large quantities of water and get medical attention. Do not smoke during mixing, application, or in the immediate area if thinners are used until all vapors have disappeared.

D. Ventilation: Provide adequate ventilation.

E. Environmental requirements: Proceed with work of this section only when existing and forecasted weather conditions will permit the application to be performed in accordance with the manufacturer's recommendations.

1.6 WARRANTY

A. The contractor shall guarantee that all work performed will be free from defects in materials and workmanship. Upon notice of defect in writing to the contractor within one year after completion of work, the contractor shall, at his own expense, make necessary repairs or replacements of the defective work in question.

B. A warranty is available with this system provided it has been installed by a Gaco Western Qualified Applicator and is installed according to this specification. Application for warranty must be made prior to start of job.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Acceptable Manufacturers:
Gaco Western, LLC. www,gaco.com

2.2 MATERIALS

A. 1. Sealer: GacoFlex U-5677 Polyurethane Concrete Sealer.
2. Primer: GacoFlex E-5320 Primer.

B. Neoprene Sheet:

1. Flashing: GacoFlex NF-621 Field Curing Neoprene Flashing 1/16" thick by 9" wide (.16 cm x 22.86 cm) minimum.
2. Expansion Joints: GacoFlex NF-621 Field Curing Neoprene Flashing 1/16" thick by 9" wide (.16 cm x 22.86 cm) minimum.
3. Moving Cracks: GacoFlex NF-621 Field Curing Neoprene Flashing 1/16"thick by 9" wide (.16 cm x 22.86 cm) minimum.

C. Neoprene Adhesive: GacoFlex N-1207 single-component neoprene based adhesive.

D. Acrylic Latex Coating: GacoFlex A-30 or A-38 Acrylic Series Coating.

E. Release Tape: GacoFlex 2" (5.08 cm) 66-R Tape

F. Liquid Applied Membrane: GacoFlex LM-60 having the following physical properties:

Property	**Value**	**Test Method**
Tensile Strength	240 ± 10 psi (1.65 ± .07 MPa)	ASTM D-412
Elongation	300% ± 20	ASTM D-412
Tear Resistance	30 pli (5.4 kg(f) / cm)	ASTM D-624
Hardness	50 Shore A min @70°F (21°C)	ASTM D-2240
Water Vapor Permeability	0.02 Perm Inches	ASTM E-96 Procedure BW 100% R.H. Difference
Solids by Volume	100%	

***Note*:** Allow additional material for rough or irregular surfaces add 2% to 3% for material loss during application.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that substrate is ready to receive work; surface is clean, dry, and free of substances that could affect bond.

B. Do not begin work until concrete substrate has cured a minimum of 7 days and reached moisture.

C. The work shall not be started when temperature is under 40°F (4°C) or when precipitation is imminent.

D. Verify that all other work involved with this area, done under other sections, has been completed and accepted by the architect and general contractor prior to starting the waterproofing application.

3.2 PREPARATION

A. Clean substrate to remove any and all surface contaminants. Refer to Gaco Western's General Instructions GW-1-1 Surface Preparation.

B. The surface shall be tested for the presence of adhesion reducing curing agents. Adhere a 2" x 6" (5.08 cm x 15.24 cm) piece of NF-621 Neoprene Sheet Flashing to the deck using GacoFlex N-1207 Adhesive. After 48 hours, 90 degree pull resistance should be a minimum of 5 lbs./in. (.9 kg / cm^2).

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. which are to receive coatings with one coat of GacoFlex U-5677 Sealer at the rate 1 gallon per 300 square feet (3.78 L / 27.9 m^2). Allow to dry a minimum of 1 hour and no more than 24 hours before applying primer coat.

C. Prime: Apply one coat of GacoFlex E-5320 Primer by spray or roller at the rate of 1 gallon per 200-250 square feet per pass.

D. Flashing: All changes of surface plane that are not a continuous pour of concrete, such as, but not limited to, deck to wall parapet transition, curbs including penetrations or protrusions shall be flashed with the NF-621 Field Curing Neoprene Flashing prior to the application of the liquid applied membrane. It shall extend a minimum of 6" (15.24 cm) on the vertical and a minimum of 3" (7.62 cm) on the deck.

E. Expansion Joints and cracks where movement may exceed 1/8" (.32 cm): Install NF-621 Field Curing Neoprene Flashing prior to the application of the liquid applied membrane.

F. Joints and Cracks where movement is restricted to less than 1/8" (.32 cm)**:** Install 2" (5.08 cm) 66R release tape centered over crack and stripe coat with GacoFlex LM-60 to a thickness of 60 mils (1.52 mm) by 6" (15.24 cm) wide.

G. Control Joints & Non-Moving Cracks**:** Install GacoFlex LM-60 over these in stripe coat 60 mils (1.52 mm) by 6" (15.24 cm) wide prior to field application of liquid applied membrane.

H. Sealants: Apply a bead of approved polyurethane sealant to the outside edge and lap seams of GacoFlex NF-621. Allow to cure before application of GacoFlex LM-60.

I. Liquid Applied Membrane**:** All neoprene sheets shall be Solvent wiped prior to the application of GacoFlex LM-60. Install LM-60 at the minimum rate of 4 gallons per 100 square feet (15.14 L / 9.3 m^2) to achieve an average of 60 dry mils (1.52 mm) over entire deck areas.

1. Liquid applied membrane shall overlap previous days work with a minimum of 3" (7.62 cm).

2. If water test is required by project specification, plug drains and flood roof with 1" (2.54 cm) of water for 48 hours, or as otherwise specified. Check for leaks, drain and dry membrane and repair if necessary.

3. GacoFlex LM-60 that will be exposed to the sun or applied to vertical areas, should be primed with GacoFlex E-5320 Primer. Allow 24 hours to cure and then apply GacoFlex A-30 Acrylic or GacoFlex A-38 Acrylic. Apply two coats to achieve 15 mils (.38mm) dry thickness.

J. Extruded polystyrene board, filter cloth and top covering.

1. After membrane has cured sufficiently to prevent thermal insulation from adhering, install board directly over membrane.

2. Install filter cloth over thermal insulation a top covering in the form of rounded river rock, stone pavers or cementitious surfacing are placed over the insulation.

3 Install stone pavers over filter cloth. *NOTE:* Dow Corning Chemical cementitious-coated Styrofoam RM can be used as an alternative to stone pavers.

3.5 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 to record actions in the field.

B. Inspections: A minimum of three (Substrate, Application and Final) inspections, by an approved manufacturer's representative, will be required on all projects requiring a warranty.

C. Thickness: Minimum overall dry film thickness of the completed fluid applied waterproofing will average not less than 60 mils (1.52 mm).