

## ICC-ES Legacy Report

**9658\***

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The Subcommittee on Evaluation has reviewed the data submitted for compliance with the *Standard Building Code*® and submits to the Building Official or other authority having jurisdiction the following report. The Subcommittee on Evaluation, ICC-ES and its staff are not responsible for any errors or omissions to any documents, calculations, drawings, specifications, tests or summaries prepared and submitted by the design professional or preparer of record that are listed in the Substantiating Data Section of this report. Portions of this report were previously included in Evaluation Report #93124.

**REPORT NO.:** 9658**EXPIRES:** See the current EVALUATION REPORT INDEX**CATEGORY:** ROOF COVERINGS AND ROOF DECK  
CONSTRUCTION**SUBMITTED BY:****GACO WESTERN, INC.  
POST OFFICE BOX 88698  
SEATTLE, WASHINGTON 98138-2698**

### 1. PRODUCT TRADE NAME

Gacoflex Roof Covering Systems

### 2. SCOPE OF EVALUATION

- Roof Covering Classification
- Weather Resistance

### 3. USES

Gacoflex Roof Covering Systems are used as roof coverings on new and existing roofs.

### 4. DESCRIPTION

#### 4.1 General

Gacoflex Roof Covering Systems consist of sprayed polyurethane foam insulation applied to roof surfaces and covered with sprayed elastomeric membranes.

The insulation material evaluated for use in the roof covering assemblies listed in this report is "Polyfoam 275". When tested in accordance with ASTM E 84, the "Polyfoam 275" insulation material demonstrated a flamespread rating not exceeding 75.

A number of elastomeric membranes have been evaluated for use in the roof covering assemblies listed in this report. The Gacoflex A-55, GacoDeck Kit, and A-57 series are acrylic latex coatings. GacoSil S-1000 series is a single component air dry silicone rubber coating. Ure-Cap 68 series and Ure-Shield 6006 coatings are single component aromatic urethane moisture cures. UB-64 series, UB-7050 and U-66 series are 2 component aromatic urethane coatings. UA-60 and UA-65 are 2 component thermosetting aliphatic urethane coatings.

The various combinations of insulations and membranes allowed by this report are listed below in Section 5. INSTALLATION.

### 4.2 Roof Covering Fire Classification

Gaco Western, Inc.'s Gacoflex Roof Covering Systems have been tested for fire classification in accordance with ASTM E 108 (UL 790). The fire classified assemblies and their classifications are listed below in Section 5. INSTALLATION.

## 5. INSTALLATION

### 5.1 General

Gaco Western, Inc.'s Gacoflex Roof Covering Systems are installed by applicators approved by Gaco Western, Inc. Miscellaneous materials such as flashing, adhesives, and caulking for use with the Gacoflex Roof Covering Systems shall be approved by Gaco Western, Inc.

The manufacturer's published installation instructions, Section 1509 of the Code, and this report shall be strictly adhered to and a copy of these instructions shall be available at all times on the job site during installation. The instructions within this report and Section 1509 of the Code will govern if there are any conflicts between the manufacturer's instructions and this report.

### 5.2 Class A Roof Covering Assemblies

1. Deck: NC Incline: No Limit  
Foam: "Polyfoam 275", 1-2 inches  
Base Coat: One or two applications "Gacoflex A-5700" Series at 1.75 gal/sq/application (14.5-29 dry mils total)  
Surfacing: One application of "Gacoflex A-5700" Series at 1.5 gal/sq (12.5 dry mils)
2. Deck: NC Incline: 2-1/2:12  
Foam: "Polyfoam 275", 2 inches  
Base Coat: Two applications "Gacoflex UB-64", 1 gal/sq/application (24 dry mils total)  
Surfacing: One application of "Gacoflex UA-6500 Series" at 1 gal/sq (12 dry mils)

**\*Revised November 2009**

3. Deck: NC Incline: 1/4:12  
 Base Coat: One application "Gacoflex U-66" Series (various colors) applied at 1 gal/sq  
 Ply Sheet: One ply of non-woven fiberglass mat applied into the wet base coat of "Gacoflex U-66" Series (various colors) coating  
 Top Coat: One application of "Gacoflex U-66" Series (various colors) applied at 2 gal/sq  
 Surfacing: Into the wet top coat, crushed walnut shells are broadcast applied at 7 lb/sq
4. Deck: NC Incline: 2:12  
 Base Coat: Two applications GacoDeck Kit (various colors) at 1-1/4 gal/sq/application  
 Surfacing: Into the wet base coat, crushed walnut shells are broadcast applied at 7 lb/sq  
 Top Coat: Two applications of GacoDeck Kit (various colors) applied at 1 gal/sq/application
5. Deck: NC Incline: 3/4:12  
 Foam: "Polyfoam 275", 1-2 inches  
 Base Coat: Two applications "Gacoflex Ure-Cap 68" Series, at 1-1/4 gal/sq/application (28 dry mils total)  
 Surfacing: One application of "Ure-Shield 6006" at 1-1/2 gal/sq (15 dry mils)
6. Deck: NC Incline: 3/4:12  
 Foam: "Polyfoam 275", 1-2 inches  
 Surfacing: Two applications of "Ure-Cap 68" Series (various colors) coating applied at 1-3/8 gal/sq/application or 3 applications applied at 1-1/4 gal/sq/application  
 Top Coat: One application of "Gacoflex UA-65" Series (various colors) coating applied at 1 gal/sq (8-10 dry mils)  
 (Optional)
7. Deck: NC Incline: 3:12  
 Foam: "Polyfoam 275", 1-2 inches  
 Base Coat: One or two applications "Gacoflex UB-64" at 1-1/4 gal/sq/application (15-30 dry mils)  
 Surfacing: One application of "Gacoflex UA-65" Series at 1.25 gal/sq (8-10 dry mils)
8. Deck: NC Incline: 1/4:12  
 Foam: "Polyfoam 275", 1 - 2 inches.  
 Top Coat: Two applications "Gacoflex Ure-Cap 68" Series coating (various colors) applied at 1-3/8 gal/sq/application or 3 applications applied at 1-1/4 gal/sq/application.  
 Top Coat: One application of "Gacoflex UA-65" Series (various colors) coating applied at 1 gal/sq or "Gacoflex UA-60" applied at 1-1/4 gal/sq (12 dry mils).  
 (Optional)
9. Deck: NC Incline: 1/4:12  
 Foam: "Polyfoam 275", 1 - 2 inches.  
 Base Coat: One or two applications "Gacoflex UB-64" Series, 1 gal/sq/application (12-24 dry mils).  
 Surfacing: "Gacoflex UA-65" Series applied at 1 gal/sq or "Gacoflex UA-60" applied at 1-1/4 gal/sq (12 dry mils).
10. Deck: NC Incline: 1/4:12  
 Foam: "Polyfoam 275", 1 - 2 inches.  
 Base Coat: One or two applications "Gacoflex UB-7050" applied at 1 gal/sq/application or 3 applications applied at 1-1/4 gal/sq/application (16-32 dry mils).  
 Surfacing: "Gacoflex UA-65" Series (various colors) applied at 1 gal/sq (12 dry mils).
11. Deck: NC Incline: 1/2:12  
 Foam: "Polyfoam 275", 1 - 2 inches.  
 Base Coat: One or two applications "Gacoflex UB-7050" applied at 1 gal/sq/application or 3 applications applied at 1-1/4 gal/sq/application (16-32 dry mils).  
 Surfacing: "Gacoflex UA-60" Series (various colors) applied at 1-1/4 gal/sq (12 dry mils).
12. Deck: NC Incline: 2:12  
 Foam: "Polyfoam 275", 1 - 2 inches.  
 Base Coat: "GacoSil S-1000" applied at 1 gal/sq (10 mils).  
 Surfacing: "GacoSil S-1000" applied at 1 gal/sq (10 dry mils).
13. Deck: NC Incline: 2:12  
 Foam: "Polyfoam 275", 1-2 inches.  
 Base Coat: One or two applications of "Gacoflex A-5511Q" applied at 1-1/2 gal/sq/application (13-25 mils).  
 Surfacing: One application of "Gacoflex A-5511Q" Series at 1-1/2 gal/sq (13 dry mils).

### 5.3 Class C Roof Covering Assemblies

1. Deck: C-15/32\* Incline: 1/4:12  
 Base Coat: One application "Gacoflex U-66" Series (various colors) coating applied at 1 gal/sq  
 Ply Sheet: One ply of non-woven fiberglass mat applied into the wet base coat of "Gacoflex U-66" Series (various colors) coating  
 Top Coat: One application of "Gacoflex U-66" Series (various colors) coating applied at 2 gal/sq  
 Surfacing: Into the wet top coat, crushed walnut shells are broadcast applied at 7 lb/sq
2. Deck: C-15/32\* Incline: 1/4:12  
 Joint  
 Treatment: A 4 inch wide spun bonded polyester mat is embedded into a wet stripe coat of GacoDeck Kit (various colors) coating.  
 Base Coat: Two applications GacoDeck Kit (various colors) at 1-1/4 gal/sq-application  
 Surfacing: Into the wet base coat, crushed walnut shells are broadcast applied at 8 lb/sq  
 Top Coat: Two applications of GacoDeck Kit (various colors) coating applied at 1 gal/sq/application

\* All deck joints must be blocked with 2 x 4's and all exposed surface deck joints have a nominal 1/8 inch diameter bead of exterior latex acrylic caulk applied and struck flush.

#### 5.4 Existing Roof Construction

The above assemblies may be applied over existing roofs provided the requirements applicable to new roofs are observed. The roof covering classification assigned to the new roof covering shall be taken as the lesser of the classifications associated with the existing roof covering and the new roof covering.

SI Equivalent Units:

1 mil = 0.0254 mm

1 inch = 25.4 mm

1 gal/sq = 40.75 L/100 m<sup>2</sup>

1 lb /sq = 4.88 kg/100 m<sup>2</sup>

#### 6. SUBSTANTIATING DATA

- 6.1 Manufacturer's descriptive literature and application specifications
- 6.2 Test report on fire classification of roof coverings in accordance with UL 790 (ASTM E 108), prepared by Underwriters Laboratories Inc., File R5663:
- Project 89NK27034, dated February 12, 1990, signed by Thomas M. Hennessy and Kenneth Rhodes.
  - Project 90NK985, dated April 20, 1990, signed by Thomas M. Hennessy and James W. Hatcher.
  - Project 88NK26448, dated April 26, 1989, signed by Thomas M. Hennessy and Kenneth Rhodes.
  - Project 87NK27913, dated August 8, 1988, signed by Thomas M. Hennessy and Kenneth Rhodes.
  - Project 89NK7611, dated May 19, 1989, signed by Thomas M. Hennessy and Kenneth Rhodes.
  - Project 87NK27913, dated August 8, 1988, signed by Thomas M. Hennessy and Kenneth Rhodes.
  - Project 93NK9241, dated September 24, 1993, signed by Thomas M. Hennessy and Douglas C. Miller.
  - Project 92NK20020, dated December 9, 1992, signed by Thomas M. Hennessy and Douglas Miller.
- 6.3 Letter concerning formulation changes, prepared by Underwriters Laboratories Inc., File R5663, Project 90NK2422, dated March 19, 1990, signed by Thomas M. Hennessy and James Hatcher.
- 6.4 Letter concerning fire classification engineering studies, prepared by Underwriters Laboratories Inc., File R5663, Project 92NK10704, dated May 7, 1992, signed by Thomas M. Hennessy and Douglas C. Miller.
- 6.5 Test report on various physical and weathering tests, prepared by Underwriters Laboratories Inc., File R5663, Project 90NK2028, dated January 23, 1992, signed by Kenneth Rhodes.
- 6.6 Test report on fire tests conducted in accordance with UL 1256, prepared by Underwriters Laboratories Inc., File R9311, Project 85NK5765, dated June 12, 1985, signed by Kenneth Rhodes and C. J. Johnson.
- 6.7 Report of tests conducted in accordance with UL 790 (ASTM E 108) on systems employing the "Polyfoam 275" insulation, prepared by Underwriters Laboratories Inc., File R5663, Project 95NK11170, dated August 4, 1995, signed by Thomas M. Hennessy and Douglas C. Miller.
- 6.8 Report of tests conducted in accordance with ASTM G 53, prepared by Cambridge Materials Testing Limited, Laboratory No. 129894-95(A), dated October 17, 1995, signed by J. Cook.
- 6.9 Report of tests conducted in accordance with ASTM G 90, prepared by Heraeus DSET Laboratories, Inc., DSET Report No. 4068908, dated September 1, 1993, signed by Mario Birsa and David Pekara.

- 6.10 Test report on fire tests conducted in accordance with ASTM E 84, prepared by Underwriters Laboratories Inc., File R5663, Project 96NK12533, dated May 29, 1996, signed by Judith G. Marzullo and R. K. Laymon.
- 6.11 Test report on fire tests conducted in accordance with UL 1256, prepared by Underwriters Laboratories Inc., File R5663, Project 95NK32324, dated April 15, 1996, signed by Oz Polis and James Hatcher.

#### 7. CODE REFERENCES

*Standard Building Code* - 1994 Edition

Section 103.7 Alternate Materials and Methods

Section 505 Buildings Located Within a Fire District

Section 1509 Roof Coverings

Section 2603 Foam Plastic Insulation

Section F102.2 Fire District - Other Specific Requirements

#### 8. COMMITTEE FINDINGS

The Subcommittee on Evaluation in review of the data submitted finds that, in their opinion, the Gacoflex Roof Covering Systems described in this report conform with or are suitable alternates to that specified in the *Standard Building Code* or Supplements thereto.

#### 9. LIMITATIONS

- 9.1 This Legacy Evaluation Report and the installation instructions, when required by the building official, shall be submitted at the time of permit application.
- 9.2 Gacoflex Roof Covering Systems shall be installed in accordance with the manufacturer's installation instructions and this report by applicators approved by Gaco Western, Inc.
- 9.3 The foam insulation material shall not be used in any fire resistance rated assemblies unless its performance has been established by testing.
- 9.4 Documentation of the wind uplift resistance of the roof construction shall be submitted to the building official at the time of permit application.
- 9.5 The spray applied polyurethane insulation used in the Gacoflex Roof Covering Systems shall be protected from the interior of the building by a thermal barrier providing fifteen (15) minute protection.

EXCEPTION: Applications where the Gacoflex Roof Covering Systems are used in constructions conforming to UL Construction Nos. 136, 181, or 206.

#### 10. IDENTIFICATION

All packaging of components of the Gacoflex Roof Covering Systems shall bear the manufacturer's name and/or trademark, the SBCCI Public Safety Testing and Evaluation Services, Inc. Seal, and the number of this report for field identification.

#### 11. PERIOD OF ISSUANCE

SEE THE CURRENT EVALUATION REPORT INDEX FOR STATUS OF THIS LEGACY EVALUATION REPORT.

For information on this report contact:

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205/599-9800