

SPECIFICATION

GEOFLEX[®]

Adhered To Nailed Base Sheet

POLYISOBUTYLENE SINGLE PLY MEMBRANE

NOTES TO SPECIFIER

SPECIFIED SYSTEM: This section is a “narrow scope section” specifying a GEOFLEX[®] Polyisobutylene roofing system manufactured by Republic Powdered Metals. Utilize this section specifically for a partially adhered polyisobutylene system using a nailed vented base sheet over lightweight insulating concrete decks. This specific system is adhered using cold adhesive or a fifty (50) percent hot asphalt application.

Additional “narrow scope sections” are available from Republic Powdered Metals, which suit other specific material systems and construction conditions.

Selection And Editing Requirements:

EDITING: Since this “narrow scope section” has been specifically written for one (1) type of installation, the section requires only minor editing. Additional notes to the specifier that follow identify such specific editing requirements. In the event additional material components or accessories are required, consult the manufacturer prior to adding specific information to the section.

TITLE: Use the specific section and number title as stated, which is in accordance with the CSI Masterformat.

1.01 – RELATED SECTIONS: Add or delete references to specific sections as necessary to suit project manual contents.

1.03 – CONFORMANCE STANDARDS: Select appropriate wind resistance requirements, either “I-60” or “I-90” and UL Class A, B or C. Republic recommends perimeter metal gauge and attachment that conforms to FM 1-49.

1.10 – WARRANTY: Select appropriate warranty option.

2.03 – ADHESIVE FOR MEMBRANE: Select GEOTAC Adhesive, GEOBOND Adhesive or hot asphalt.

3.02 – SUBSTRATE PREPARATION: It is vitally important that lightweight concrete decks are properly applied and fully cured prior to the installation of the membranes, provided that the condition of the substrate satisfies or conforms to the specifications of the lightweight concrete manufacturer. Therefore, it is necessary to specify strict performance criteria for curing and drainage of lightweight concrete in the Insulating Concrete Section.

3.04 – INSTALLATION OF BASE SHEET: Specify appropriate spacing for wind resistance requirements specified in “Conformance Standards.” Building code requirements may vary.

3.05 – INSTALLATION OF ROOFING MEMBRANE: Select GEOTAC Adhesive, GEOBOND Adhesive or hot asphalt.

Drawing Coordination:

MANUFACTURER’S RECOMMENDED STANDARD DETAILS: Republic Powdered Metals will provide standard recommended details for use by the design professional, either in hard copy or CAD electronic media. Utilize and edit such details as required to suit specific project criteria.

END OF NOTES TO SPECIFIER

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PART 1 – GENERAL

1.01 RELATED SECTIONS

- A. Section 03520 - Insulating Concrete Decks.
- B. Section 07620 - Sheet Metal Flashing and Trim.
- C. Section 07710 - Prefabricated Roof Specialties.
- D. Section 07720 - Roof Accessories.
- E. Section 07920 - Sealants and Caulking.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM).
 - 1. ASTM D 312 “Standard Specification for Asphalt Used in Roofing.”
 - 2. ASTM D 92 “Flash and Fire Points by Cleveland Open Cup.”

1.03 CONFORMANCE STANDARDS

- A. Factory Mutual (FM).
 - 1. Fire Rating: “Class 1.”
 - 2. Wind Resistance: [“I-60”] and [“I-90”].
- B. Underwriters Laboratory (UL).
 - 1. Fire Rating: “Class [A] [B] or [C].”

1.04 QUALITY ASSURANCE

- A. Certify approval of applicator in the form of an affidavit written and submitted by the manufacturer.
- B. Provide on-site instruction and inspection by the manufacturer’s Technical Service Department.
- C. Upon completion, provide an inspection by the manufacturer to assure installation is in accordance with manufacturer’s requirements.

1.05 SUBMITTALS

- A. Submit eleven (11) inch by eight and one-half (8 1/2) inch samples of roofing membrane and accessories, with manufacturer’s identification labels attached.
- B. Submit manufacturer’s application manual, which completely describes the preparation of surfaces and application of specified materials.
- C. Submit shop drawings showing details, fabrication and fastening devices for each condition encountered.
- D. Submit test data illustrating compliance with each conformance standard and criteria listed.

1.06 PRE-INSTALLATION CONFERENCE

- A. Prior to ordering materials and commencing roofing, conduct a pre-installation conference to discuss the specified roofing system and its proper application. Notify the manufacturer’s representative when the prerooting conference is scheduled.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver roofing materials and accessories in manufacturer’s original protective containers with labels intact and legible. Comply with manufacturer’s published instructions for storage and handling.
- B. Store materials on clean, raised platforms with securely anchored weather protective covering.
- C. Store flammable products away from sparks or open flames.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Proceed with elastomeric sheet roofing work only when weather conditions comply with manufacturer’s recommendations. Do not exceed temperature limitations recommended by roofing manufacturer.

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- B. Do not apply roofing membrane during inclement or windy weather with ambient temperatures below 40°F and falling. During cold weather conditions, the temperature/humidity ratio must be at least 5°F above the dew point of ambient air and rising.
- C. Prior to application of elastomeric sheet roofing, provide clean surfaces, free from moisture.

1.09 PROTECTION

- A. Protect roof deck and base sheet from moisture by providing water cut-offs at the end of each day's work or when the weather is threatening. Failure to protect the deck and roofing from moisture will result in the removal of damaged materials or materials containing excessive moisture. Remove water cut-offs prior to start of new work.
- B. Protect building and adjacent surfaces from bitumen spillage.
- C. Do not permit traffic or material storage on completed roof surfaces. When unavoidable, provide walktreads or insulation boards.

1.10 WARRANTY

- A. Provide manufacturer's standard ten (10) year material warranty.
- B. Provide manufacturer's standard ten (10) year warranty covering materials and labor.
- C. Provide manufacturer's fifteen (15) year warranty covering materials and labor.
- D. Provide manufacturer's standard twenty (20) year warranty covering materials and labor. Must be 100 mil GEOFLEX PIB membrane adhered with GEOTAC or GEOBOND FIELD Adhesive.

PART 2 – PRODUCTS

2.01 BASE SHEET AND FASTENERS

- A. Base sheet: Manville Ventsulation or TAMKO VaporChan Base Sheet.
- B. See appendix for specific substrate fastener requirements.

2.02 ROOFING MEMBRANE AND ACCESSORIES

- A. Approved manufacturer: Republic Powdered Metals, Inc.
- B. Roof membrane: GEOFLEX[®] PIB Polyisobutylene
 - 1. Color: White.
 - 2. Composition: Reinforced with a non-woven synthetic fleece backing and produced with a prefabricated sealing edge; single or double sealing edge as required.
 - 3. Weight: Approximately zero point five four (0.54 ± .02) pounds per square foot.
- C. Flashing membrane
 - 1. Material: Polyisobutylene.
 - 2. Composition: Reinforced with a non-woven synthetic fleece backing and produced with a prefabricated sealing edge; single or double sealing edge as required.
- D. Tape
 - 1. Self-sealing covering tape with removable release paper.
- E. Paste
 - 1. Material: Gun grade polyisobutylene.
- F. Solvent
 - 1. Manufacturer's recommended solvent for cleaning membrane under self-sealing edge and for welding non-reinforced polyisobutylene surfaces.

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G. Adhesive

1. GEOTAC Adhesive for adhering reinforced membrane to base ply, insulation substrates and vertical surfaces up to counterflashing conditions.
2. GEOBOND FIELD Adhesive for use in VOC regulated areas for adhering reinforced membrane to base ply and insulation substrates only.
3. GEOBOND CONTACT FLASHING Adhesive for use in VOC regulated areas for adhering reinforced membrane to vertical surfaces only up to counterflashing conditions.

H. Primer

1. Manufacturer's recommended primer for adhering self-sealing edge to metal, concrete, masonry or other materials.

I. Backer rod

1. Extruded closed cell polyurethane foam rod for use with elastomeric sheet roofing.

J. Pan fill

1. Pourable elastic filler for pitch pans.

K. Walkway tread

1. Geoflex 28" D Sheet.
2. Republic Single Ply Primer / Solargard Ultra.

L. Surface mounted Reglet

1. GEOREGLET - Per manufacturer's recommendations.

2.03 ADHESIVE FOR MEMBRANE INSTALLATION

- A. GEOTAC Adhesive or GEOBOND FIELD Adhesive applied with GEO-KART applicator, or hot asphalt.
- B. Roofing Asphalt Conformance criteria: ASTM D 312, Type III or Type IV.
- C. Use only that asphalt, which has all of the following information printed on the asphalt packages or on the bills of lading covering bulk asphalt.
 1. Softening point range. The temperature ranges of the asphalt determined in accordance with ASTM D 312 and ASTM D 36.
 2. Flash point: The flash point of the asphalt as determined by ASTM D 92.
 3. Equiviscous temperature range. The temperature range, plus or minus twenty-five (25) degrees Fahrenheit, at which a viscosity of one hundred twenty-five (125) centistokes is attained.
 4. Finishing blowing temperature: The temperature at which the blowing of the asphalt has been completed.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify proper placement of all roof openings, pipes, curbs, sleeves, ducts, vents, drains and other penetrations.
- B. Verify proper securement of penetrating or roof mounted equipment, with fastening devices flush with surfaces.

3.02 SUBSTRATE PREPARATION

- A. Prior to commencement of membrane application, water test decks to insure positive drainage. If ponding occurs, notify the Contractor to patch depressions in the decks prior to the application of the membrane.
- B. Do not apply membranes until decks are free of moisture.
- C. Comply with manufacturer's published instructions for preparation of substrates to receive sheet roofing. Clean substrate of dust, debris, and other substances detrimental to roofing work.

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3.03 ROOF INSULATION / TAPERED INSULATION AND CRICKETS / DRAIN SUMPS

- A. Neatly fit insulation to all penetrations, projections, and nailers. Install tapered or feathered insulation around roof drains in such a way as to provide proper slope (maximum 3:12 pitch) for drainage.
- B. Install no more insulation than can be covered with roofing membrane and completed before the end of the day's work, or before the onset of inclement weather.
- C. Adhere insulation with Republic Insulation Adhesive, hot asphalt, or mechanically fasten per manufacturer's recommendations.
- D. SPECIAL NOTE: Insulation panels installed in hot asphalt or Insulation Adhesive shall have a maximum panel size of four (4) feet by four (4) feet.
- E. Tapered roof insulation shall be installed sloping to drains, scuppers, or edges. Furnish shop drawings showing all slopes, saddles, crickets, and drain details.
- F. Apply the tapered roof insulation to assure positive flow to roof drains, exercising care to install in proper layout.
- G. Tapered crickets and saddles shall be installed to provide a minimum $\frac{1}{4}$ " per foot net slope to assure positive flow to roof drains. Widen saddles where necessary to move the valley line away from obstructions in the flow of the valley.
- H. Provide tapered edge strips along the low edge of isocyanurate saddles or crickets.
- I. **Install a minimum 48" (4ft.) tapered insulation around drain sumps to provide a smooth transition to the drain bowl. Steep or sharp sump will not be accepted.**
- J. Project conditions may require that drain bowls be raised using extensions to ensure proper sump.

3.04 INSTALLATION OF BASE SHEET

- A. Install base sheet with two (2) inch side and end laps. Run base sheet in the same direction as the roofing membrane. Terminate base sheet two (2) inches beyond roof perimeter and edges.
- B. See appendix for specific substrate fastener requirements.

3.05 INSTALLATION OF ROOFING MEMBRANE SYSTEM

- A. Cut, trim, lay, lap, seal, and install in GEOTAC Adhesive, GEOBOND FIELD Adhesive or hot roofing asphalt in strict accordance with manufacturer's published instructions and as directed by the manufacturer's field service representative.
 - 1. Over base sheet: Apply GEOTAC Adhesive or GEOBOND FIELD Adhesive with GEO-KART applicator or evenly cover fifty (50) percent of area with hot asphalt in a serpentine pattern at the rate of fifteen to eighteen (15–18) pounds per one hundred (100) square feet. Center serpentine equally between adjacent membrane sealing edges.
 - 2. At perimeter increase GEOTAC Adhesive or GEOBOND FIELD Adhesive coverage to fully adhere at a rate of 75 sq. ft. to 100 sq. ft. per gallon or increase asphalt coverage to eight-five (85) percent, a minimum of 10 ft. at all corners and perimeters.
- B. Thoroughly clean all required surfaces with solvent. Replace solvent, which has become contaminated through use.
- C. Flash all roof penetrations and projections with flashing membrane solvent welded and with self-adhesive covering tape.
- D. Flash all roof drains with GEOFLEX Drain Collars, solvent welded.
- E. Adhere base flashing conditions by using GEOTAC Adhesive or GEOBOND CONTACT FLASHING Adhesive applied to both surfaces at 50 to 60 sq. ft. per gallon.
- F. If wall height exceeds 36" (3 feet), the GEOFLEX 42" field sheet can be used for wall flashings. When running the sheets horizontally the use of cap nails every 12" or the use of a flat termination bar fastened every 12" is required to ensure wall adhesive gains sufficient "green strength." Use additional cap nails or flat bars for every additional 42" flashing sheet.
- G. Roll all side lap seams. Thoroughly check with seam probe to ensure watertight integrity of the seams.

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3.06 INSTALLATION OF WALKTREAD

- A. Install Geoflex 28" D Sheet around units, penetrations or walk areas as necessary. Adhere and make seams as with any flashing sheet, pulling the release paper and adhering to the field membrane. All details remain the same. Use PIB paste in t-joints, close the ends using 5" cover tape, etc. This method allows for a secondary protection layer over the PIB membrane, separate from the field.
- B. Apply Republic Single Ply Primer at 200-300 sq. ft. per gallon. Allow to cure and install Solargard Ultra at a rate of 24-32 wet mils (1 1/2 - 2 gallons per 100 sq. ft.), broadcasting roofing granules into the wet coating to form the required walk surface.

END OF SECTION

Specification Disclaimer:

This "narrow scope" specification provides general guidelines and details only regarding the installation of solely GEOFLEX materials. Republic has not been employed or retained to prepare specifications tailored to this particular project. The specifier using this "narrow scope" specification is responsible for editing or modifying the specifications to suit specific project conditions. Neither the issuance of this specification nor any information contained herein implies the acceptance by Republic of any particular roof design, installation procedure or roof component.



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APPENDIX

Installation of Base Sheet By Substrate

Cementitious Wood Fiber Decks – Installation of Base Sheet

OPTION #1

- A. Install the base sheet with min. four (4) inch side and end laps. Run base sheet in the same direction as the roofing membrane. Terminate base sheet two (2) inches beyond roof perimeter and edges.
- B. Nail Base sheet with E.S. Products Insuldeck Loc-Nails:
 - 1. Insuldeck Loc-Nails installed seven and one-half (7 1/2) inches o.c. along center of minimum four (4) inch side lap and staggered in two rows equally spaced between base sheet side laps.

OPTION #2

- A. Install the base sheet with min. two (2) inch side and end laps. Run base sheet in the same direction as the roofing membrane. Terminate base sheet two (2) inches beyond roof perimeter and edges.
- B. Nail base sheet with E.S. Products TWIN-LOC Nails:
 - 1. TWIN-LOC Nails installed maximum nine (9) inches o.c. along center of minimum two (2) inch side lap and maximum eighteen (18) inches o.c. staggered in two rows equally spaced between base sheet side laps.

Gypsum Decks – Installation of Base Sheet

OPTION #1

- A. Install the base sheet with minimum two (2) inch side and end laps. Run base sheet in the same direction as the roofing membrane. Terminate base sheet two (2) inches beyond roof perimeter and edges.
- B. Nail Base sheet with Olympic Fasteners C-R Base Sheet Fastener and C-R Base Sheet Disks or E.S. Products Nail-Tite Type A or Nail-Tite Type R Base Ply Fasteners:
 - 1. Fasteners and disks installed nine (9) inches o.c. along center of minimum two (2) inch side lap and eighteen (18) inches o.c. staggered in two rows equally spaced between base sheet side laps.

OPTION #2

- A. Install the base sheet with min. four (4) inch side and end laps. Run base sheet in the same direction as the roofing membrane. Terminate base sheet two (2) inches beyond roof perimeter and edges.
- B. Nail Base sheet with Olympic Fasteners C-R Base Sheet Fastener and C-R Base Sheet Disks or E.S. Products FM-60 Base Ply Fasteners with FM-30 Disks or FM-90 Assembled Base Ply Fasteners:
 - 1. Fasteners and Disks installed seven (7) inches o.c. along center of minimum four (4) inch side lap and in one row centered between base sheet side laps.

Lightweight Concrete – Installation of Base Sheet

- A. Install the base sheet with minimum four (4) inch side and end laps. Run base sheet in the same direction as the roofing membrane. Terminate base sheet two (2) inches beyond roof perimeter and edges.
- B. Nail Base sheet with Olympic Fasteners C-R Base Sheet Fasteners or E.S. Products FM 90 Base Ply Fastener:
 - 1. Fasteners and disks installed seven (7) inches o.c. along center of minimum four (4) inch side lap and seven (7) inches o.c. staggered in two (2) rows equally spaced between base sheet side laps.

Wood Decks – Installation Of Base Sheet

- A. Install the base sheet with minimum two (2) inch side and end laps. Run base sheet in the same direction as the roofing membrane. Terminate base sheet two (2) inches beyond roof perimeter and edges.
- B. Nail Base sheet with annular or ring shank nails having a cap of minimum one (1) inch diameter.
 - 1. Fasteners installed nine (9) inches o.c. along center of minimum two (2) inch side lap and eighteen (18) inches o.c. staggered in two (2) rows equally spaced between base sheet side laps.