

Grace Above Grade Waterproofing

BITUTHENE® 3000 AND BITUTHENE LOW TEMPERATURE

Self-adhesive, rubberized asphalt/polyethylene waterproofing membranes for plaza and parking decks

Advantages

- **Waterproof**—high hydrostatic head resistance
- **Cross laminated film**—provides dimensional stability, high tear strength, puncture and impact resistance
- **Cold applied**—no flame hazard; self-adhesive overlaps ensure continuity
- **Flexible**—accommodates minor settlement and shrinkage movement
- **Controlled thickness**—factory made sheet ensures constant, non-variable site application
- **Wide application window**—
 - **Bituthene® Low Temperature** surface and ambient temperatures between 25°F (-4°C) and 60°F (16°C)
 - **Bituthene 3000** surface and ambient temperatures at 40°F (5°C) or above
- **New or rehab construction**—use with Bituthene Deck Prep® as a leveling agent and non-structural repair material
- **Ripcord®**—this split release on demand feature allows the splitting of the release paper into two pieces for ease of installation in detailed areas

Use

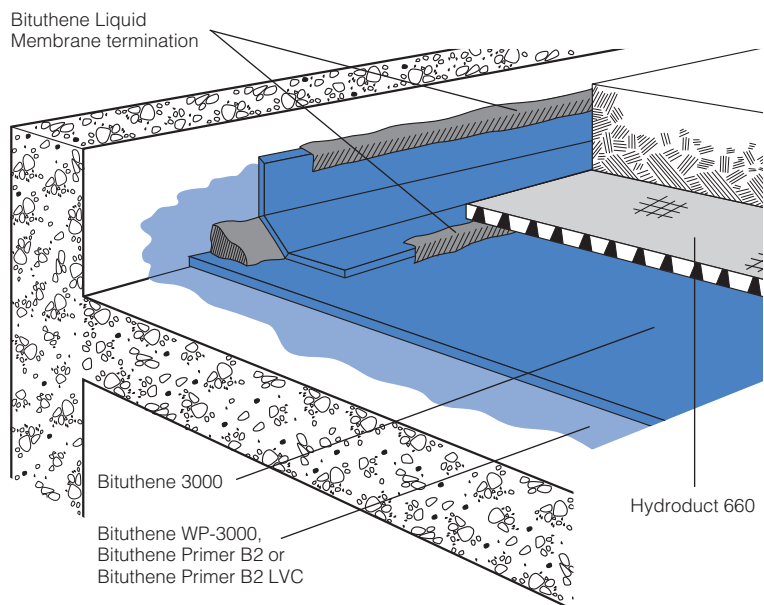
Bituthene is ideal for waterproofing concrete decks where in-service temperatures will not exceed 130°F (54°C). It can be applied to split slab construction, such as in plaza areas and parking decks. Interior uses may include mechanical rooms, laboratories, kitchens and bathrooms. (For below grade applications, see *Below Grade Waterproofing Bituthene 3000 and Bituthene Low Temperature.*)

Bituthene is 1/16 in. (1.5 mm) thick, 3 ft (0.9 m) wide and 66.7 ft (20 m) long and is supplied in rolls. It is unrolled sticky side down onto concrete slabs primed with Bituthene Primer WP-3000, Bituthene Primer B2 or Bituthene Primer B2 LVC. Continuity is achieved by overlapping a minimum 2 in. (50 mm) and firmly rolling the joint.

Bituthene is extremely flexible. It is capable of bridging shrinkage cracks in the concrete and will accommodate minor differential movement throughout the service life of the structure.

Product Advantages

- Waterproof
- Cross laminated film
- Cold applied
- Flexible
- Controlled thickness
- Wide application window
- New or rehab construction
- Ripcord split release on demand



Drawings are for illustration purposes only. Please refer to graceconstruction.com for specific application details.

Application Procedures

Safety, Storage and Handling Information

Bituthene products must be handled properly. Vapors from solvent-based primers and mastic are harmful and flammable. For these products, the best available information on safe handling, storage, personal protection, health and environmental considerations has been gathered. Material Safety Data Sheets (MSDS) are available at graceconstruction.com and users should acquaint themselves with this information. Carefully read detailed precaution statements on product labels and the MSDS before use.

Surface Preparation

Surfaces should be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Concrete must be properly cured (minimum 7 days for normal structural concrete and 14 days for lightweight structural concrete).

If time is critical, Bituthene Primer B2 or Bituthene Primer B2 LVC may be used to allow priming and installation of membrane on damp surfaces or green concrete. Priming may begin in this case as soon as the concrete will maintain structural integrity. Use form release agents which will not transfer to the concrete. Remove forms as soon as possible from below horizontal slabs to prevent entrapment of excess moisture. Excess moisture may lead to blistering of the membrane. Cure concrete with clear, resin-based curing compounds which do not contain oil, wax or pigment. See Technical Letter 5 for more information. Except with Bituthene Primer B2 or Bituthene Primer B2 LVC, allow concrete to thoroughly dry following rain. Do not apply any products to frozen concrete.

Repair defects such as spalled or poorly consolidated areas. Remove sharp protrusions and form match lines. For rough or uneven deck surfaces use Bituthene Deck Prep as a repair and leveling agent. See *Above Grade Waterproofing Bituthene Deck Prep* product information sheet for details. On masonry surfaces, apply a parge coat to rough concrete block and brick walls or trowel cut mortar joints flush to the face of the concrete blocks.

Temperature

- Apply Bituthene 3000 Membrane only in dry weather and at air and surface temperatures of 40°F (5°C) and above.
- Apply Bituthene Low Temperature Membrane only in dry weather and when air and surface temperatures are between 25°F (-4°C) and 60°F (16°C).
- Apply Bituthene Primer WP-3000 in dry weather above 40°F (5°C).
- Apply Bituthene Primer B2 or Bituthene Primer B2 LVC in dry weather above 25°F (-4°C). (See separate product information sheet.)

Priming

- Apply Bituthene Primer WP-3000 by spray or roller at a coverage rate of 500–600 ft²/gal (12–15 m²/L). Allow to dry one hour or until concrete returns to original color.
- Apply Bituthene Primer B2 by a lamb's wool roller at a coverage rate of 250–350 ft²/gal (6–8 m²/L). Allow primer to dry one hour or until tack-free.
- Apply Bituthene Primer B2 LVC by a lamb's wool roller at a coverage rate of 325–425 ft²/gal (7.5–10.0 m²/L). Allow primer to dry one hour or until tack-free.
- Dry time may be longer in cold temperatures. Reprime areas if contaminated by dust. If the work area is dusty, apply membrane as soon as the primer is dry.
- **Do not apply any primer onto Bituthene membrane.**

Corner Details

The treatment of corners varies depending on the location of the corner. For detailed information on Bituthene Liquid Membrane, see separate product information sheet.

- At plaza deck to wall inside corners—
 - Option 1:** Apply membrane on wall and deck to within 1 in. (25 mm) of corner. Treat the inside corner by installing a ¾ in. (20 mm) fillet of Bituthene Liquid Membrane. Extend Bituthene Liquid Membrane at least 2½ in. (65 mm) onto deck membrane, and 2½ in. (65 mm) onto wall membrane. Terminate top of wall flashing with Bituthene Mastic, Bituthene Liquid Membrane or termination bar.
 - Option 2:** Apply membrane on deck to within 1 in. (25 mm) of corner. Treat the inside corner by installing a ¾ in. (20 mm) fillet of Bituthene Liquid Membrane. Extend Bituthene Liquid Membrane at least 2½ in. (65 mm) onto wall.
 - Option 3:** Apply membrane on deck to within 1 in. (25 mm) of corner. Treat the inside corner by installing a ¾ in. (20 mm) fillet of Bituthene Liquid Membrane. Apply membrane flashing sheet on wall, over fillet and 6 in. (150 mm) onto deck membrane. Apply 1 in. (25 mm) wide troweling of Bituthene Mastic or Bituthene Liquid Membrane over all terminations and seams within 12 in. (300 mm) of corner. Terminate top of wall flashing with mastic, Bituthene Liquid Membrane or termination bar.
- In planters, reflecting pools and fountains, apply membrane on wall and deck to within 1 in. (25 mm) of corner. Treat the inside corner by installing a ¾ in. (20 mm) fillet of Bituthene Liquid Membrane. Extend Bituthene Liquid Membrane at least 2½ in. (65 mm) onto deck membrane, and 2½ in. (65 mm) onto wall membrane. Terminate top of wall membrane with Bituthene Liquid Membrane or termination bar.

Expansion Joints in Concrete Construction

Bituthene membrane is not an expansion joint filler or sealant, but may be used as an expansion joint cover only in limited, special situations, as shown in Figures 1 and 2.

To adequately waterproof an expansion joint requires the use of materials specifically designed to do that job. Bituthene waterproofing systems can, in most cases, be tied into expansion joint waterproofing and/or covering systems to provide full waterproofing protection on a project.

Project designers and/or contractors should consult with expansion joint sealant and covering manufacturers for design and installation details. A partial listing of manufacturers is included in Technical Letter 11. Also, Section 05800 of Sweets, *Expansion Control*, and Section 07920, *Sealant and Caulking*, provide information on manufacturers and design possibilities.

Designers should consider using gutters under critical expansion joints to provide a second line of defense against seal failure.

Use of Bituthene Membrane as an Expansion Joint Cover

Figures 1 and 2 illustrate the use of Bituthene membrane as an expansion joint cover.

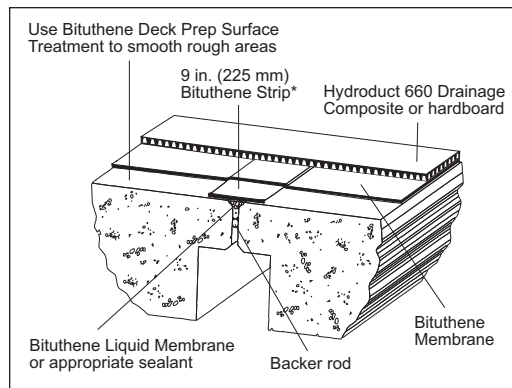


Figure 1 Passive Joint Cover

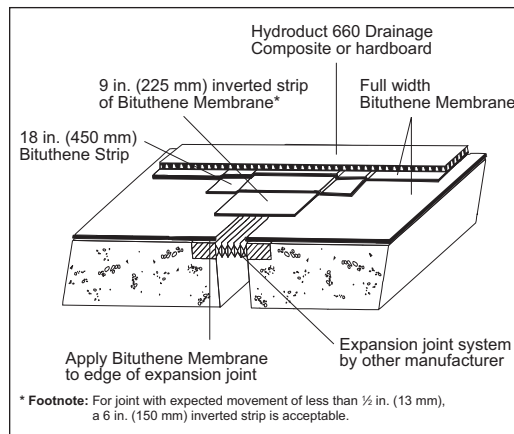


Figure 2 Active Movement Joint

- Wall to wall inside corner, apply 12 in. (300 mm) sheet membrane strip centered on corner. Press membrane tightly into corner to assure full contact. Cover the treated corner with a full sheet of membrane to ensure 2-ply coverage.
- Outside corners, apply 12 in. (300 mm) sheet membrane strip centered on corner. Cover the treated corner with a full sheet of membrane to ensure 2-ply coverage.

Insulation

Always apply Bituthene membrane directly to primed or conditioned structural substrates. Insulation, if used, must be applied over the membrane. Do not apply Bituthene membranes over lightweight insulating concrete.

Approvals

- City of Los Angeles Research Report RR 24386
- Miami-Dade County Code Report NOA 04-0114.03
- U.S. Department of Housing and Urban Development (HUD) HUD Materials Release 628E
- Bituthene 3000 and Low Temperature Membranes carry a Underwriters' Laboratory Class A Fire Rating (Building Materials

Directory, File #R7910) when used in either of the following constructions:

- Limited to noncombustible decks at inclines not exceeding $\frac{1}{4}$ in. (6 mm) to the horizontal 1 ft (0.3 m). One layer of Bituthene waterproofing membrane, followed by one layer of $\frac{1}{8}$ in. (3 mm) protection board, encased in 2 in. (50 mm) minimum concrete monolithic pour.
- Limited to noncombustible decks at inclines not exceeding $\frac{1}{4}$ in. (6 mm) to the horizontal 1 ft (0.3 m). One layer of Bituthene waterproofing membrane, followed by one layer of DOW Styrofoam PD Insulation Board [2 in. (50 mm) thick]. This is covered with one layer of 2 ft x 2 ft x 2 in. (0.6 m x 0.6 m x 50 mm) of concrete paver topping.

Warranty

Five year material warranties covering Bituthene and Hydroduct® products are available upon request. Contact your Grace sales representative for details.

Technical Services

Support is provided by full time, technically trained Grace representatives and technical service personnel, backed by a central research and development staff.

Supply

Bituthene 3000 or Bituthene Low Temperature	3 ft x 66.7 ft roll (200 ft ²) [0.9 m x 20 m (18.6 m ²)]
Roll weight	83 lbs (38 kg) gross
Palletization	25 rolls per pallet
Storage	Store upright in dry conditions below 95°F (+35°C).
Ancillary Products	
Bituthene WP-3000	5 gal (18.9 L) pail/24 pails per pallet
Bituthene Primer B2	5 gal (18.9 L) pail/48 pails per pallet
Bituthene Primer B2 LVC	5 gal (18.9 L) pail/48 pails per pallet
Bituthene Liquid Membrane	1.5 gal (5.7 L) pail/125 pails per pallet or 4 gal (15.1 L) pail/48 pails per pallet
Preprufe® Detail Tape	2 in. x 50 ft (50 mm x 15 m) roll/16 rolls per carton
Bituthene Deck Prep	4 gal (15.1 L) pail/24 pails per pallet
Complementary Material	
Hydroduct	See separate data sheets

Equipment by others: Soft broom, utility knife, brush or roller for priming

Physical Properties

Property	Typical Value	Test Method
Color	Dark gray-black	
Thickness	1/16 in. (1.5 mm) nominal	ASTM D3767—method A
Flexibility, 180° bend over 1 in. (25 mm) mandrel at -25°F (-32°C)	Unaffected	ASTM D1970
Tensile strength, membrane, die C	325 lbs/in. ² (2240 kPa) minimum	ASTM D412 modified ¹
Tensile strength, film	5,000 lbs/in. ² (34.5 MPa) minimum	ASTM D882 modified ¹
Elongation, ultimate failure of rubberized asphalt	300% minimum	ASTM D412 modified ¹
Crack cycling at -25°F (-32°C), 100 cycles	Unaffected	ASTM C836
Lap adhesion at minimum application temperature	Bituthene 3000: 4 lbs/in. (700 N/m) Bituthene Low Temp: 5 lbs/in. (880 N/m)	ASTM D1876 modified ²
Peel strength	9 lbs/in. (1576 N/m)	ASTM D903 modified ³
Puncture resistance, membrane	50 lbs (222 N) minimum	ASTM E154
Resistance to hydrostatic head	200 ft (60 m) of water	ASTM D5385
Permeance	0.05 perms (2.9 ng/m ² sPa) maximum	ASTM E96, section 12—water method
Water absorption	0.1% maximum	ASTM D570

Footnotes:

1. The test is run at a rate of 2 in. (50 mm) per minute.
2. The test is conducted 15 minutes after the lap is formed and run at a rate of 2 in. (50 mm) per minute at 40°F (5°C).
3. The 180° peel strength is run at a rate of 12 in. (300 mm) per minute.

www.graceconstruction.com

For technical assistance call toll free at 866-333-3SBM (3726)

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BIT-2601 Printed in U.S.A. 10/13

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