

P R O D U C T I N F O R M A T I O N

Bituthene® 3000 and Bituthene Low Temperature

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

Advantages

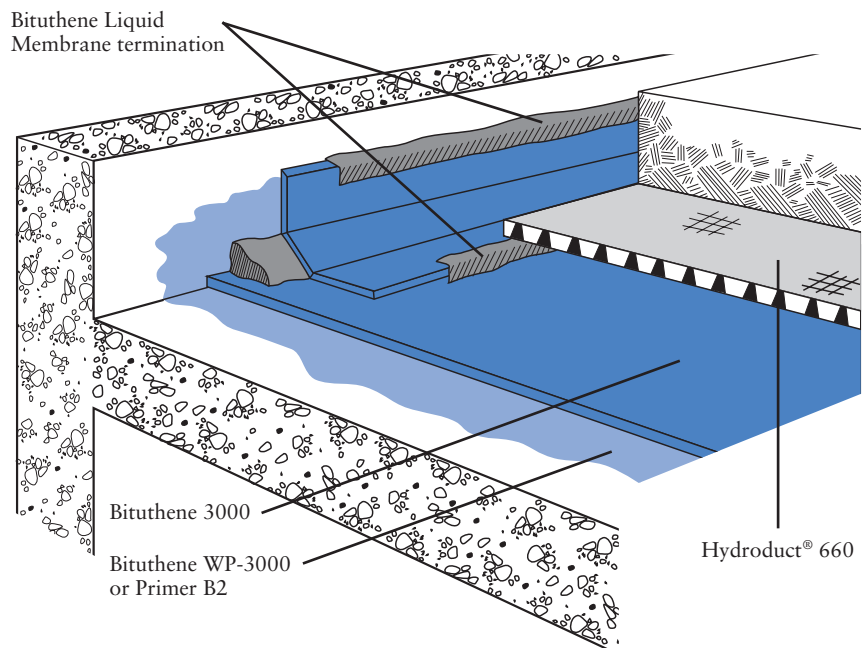
- **Waterproof** – high hydrostatic head resistance
- **Cross laminated film** – provides dimensional stability, high tear strength, puncture and impact resistance
- **Cold applied** – no flame hazard; self-adhesive overlaps ensure continuity
- **Flexible** – accommodates minor settlement and shrinkage movement
- **Controlled thickness** – factory made sheet ensures constant, non-variable site application
- **Wide application window** –
 - **Bituthene® Low Temperature** surface and ambient temperatures between -4°C (25°F) and 16°C (60°F)
 - **Bituthene 3000** surface and ambient temperatures at 5°C (40°F) or above
- **New or rehab construction** – use with Bituthene Deck Prep® as a leveling agent and non-structural repair material
- **RIPCORDER®** – this Split Release on Demand feature allows the splitting of the membrane into two (2) pieces for ease of installation in detailed areas

Use

Bituthene is ideal for waterproofing concrete decks where in-service temperatures will not exceed 54°C (130°F). 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 1.5 mm (1/16 in.) thick, 0.9 m (3 ft) wide and 20 m (66.7 ft) long and is supplied in rolls. It is unrolled sticky side down onto concrete slabs primed with Bituthene Primer WP-3000 or Primer B2. Continuity is achieved by overlapping a minimum 50 mm (2 in.) 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.



Application Procedures

Safety, Storage and Handling Information

Bituthene products must be handled properly. Vapors from solvent-based primers and mastic are harmful and flammable. Grace Protection Board Adhesive is extremely 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 www.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 dried (minimum 7 days for normal structural concrete and 14 days for lightweight structural concrete).

If time is critical, Bituthene Primer B2 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. Except with Primer B2, 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 5°C (40°F) and above.
- Apply Bituthene Low Temperature Membrane only in dry weather and when air and surface temperatures are between -4°C (25°F) and 16°C (60°F).
- Apply Bituthene Primer WP-3000 in dry weather above 5°C (40°F).
- Apply Bituthene Primer B2 in dry weather above -4°C (25°F). (See separate product information sheet.)

Priming

- Apply Bituthene Primer WP-3000 by spray or roller at a coverage rate of 12-15 m²/L (500-600 ft²/gal). 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 6-8 m²/L (250-350 ft²/gal). 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 to 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 25 mm (1 in.) of corner. Treat the inside

corner by installing a 20 mm (³/₄ in.) fillet of Bituthene Liquid Membrane. Extend Bituthene Liquid Membrane at least 65 mm (2½ in.) onto deck membrane, and 65 mm (2½ in.) 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 25 mm (1 in.) of corner. Treat the inside corner by installing a 20 mm (³/₄ in.) fillet of Bituthene Liquid Membrane. Extend Bituthene Liquid Membrane at least 65 mm (2½ in.) onto wall.

Option 3: Apply membrane on deck to within 25 mm (1 in.) of corner. Treat the inside corner by installing a 20 mm (³/₄ in.) fillet of Bituthene Liquid Membrane. Apply membrane flashing sheet on wall, over fillet and 150 mm (6 in.) onto deck membrane. Apply 25 mm (1 in.) wide troweling of Bituthene Mastic or Bituthene Liquid Membrane over all terminations and seams within 300 mm (12 in.) 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 25 mm (1 in.) of corner. Treat the inside corner by installing a 20 mm (³/₄ in.) fillet of Bituthene Liquid Membrane. Extend Bituthene Liquid Membrane at least 65 mm (2½ in.) onto deck membrane, and 65 mm (2½ in.) onto wall membrane. Terminate top of wall membrane with Bituthene Liquid Membrane or termination bar.
- Wall to wall inside corner, apply 300 mm (12 in.) 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.

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.

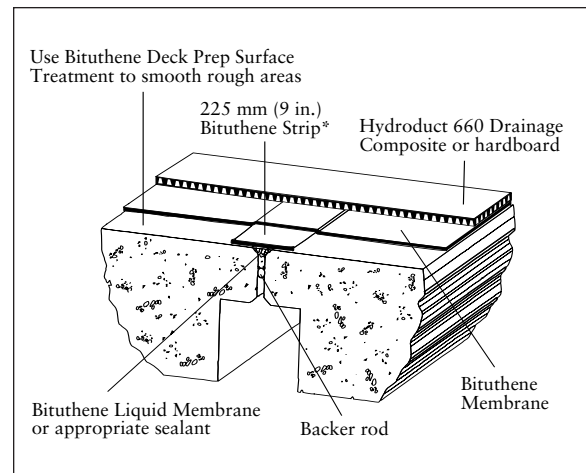


Figure 1 Passive Joint Cover

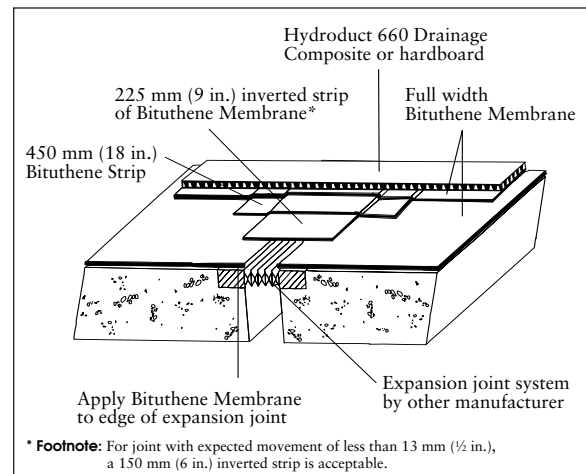


Figure 2 Active Movement Joint

- Outside corners, apply 300 mm (12 in.) 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
- 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 6 mm (1/4 in.) to the horizontal 0.3 m (1 ft). One layer of Bituthene waterproofing membrane, followed by one layer of 3 mm (1/8 in.) protection board, encased in 50 mm (2 in.) minimum concrete monolithic pour.
 - Limited to noncombustible decks at inclines not exceeding 6 mm (1/4 in.) to the horizontal 0.3 m (1 ft).

One layer of Bituthene waterproofing membrane, followed by one layer of DOW Styrofoam PD Insulation Board [50 mm (2 in.) thick]. This is covered with one layer of 0.6 m x 0.6 m x 50 mm (2 ft x 2 ft x 2 in.) 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	0.9 m x 20 m roll (18.6 m ²) 3 ft x 66.7 ft (200 ft ²)
Roll weight	38 kg (83 lbs) gross
Palletization	25 rolls per pallet
Storage	Store upright in dry conditions below +35°C (95°F).

Ancillary Products

Bituthene WP-3000	18.9 L (5 gal) pail/24 pails per pallet
Bituthene Primer B2	18.9 L (5 gal) pail/48 pails per pallet
Bituthene Liquid Membrane	5.7 L (1.5 gal) pail/125 pails per pallet or 15.1 L (4 gal) pail/48 pails per pallet
Hydroduct Tape	2.5 cm x 61.0 m (1 in. x 200 ft) roll/6 rolls per carton
Bituthene Deck Prep	15.1 L (4 gal) pail/24 pails per pallet

Complementary Materials

Hydroduct	See separate data sheets.
Protection Board Adhesive	18.9 L (5 gal) pail/36 pails per pallet

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

Physical Properties

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

Footnotes:

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

For Technical Assistance call toll free at 866-333-3SBM (3726).

 Visit our web site at www.graceconstruction.com

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