

Bituthene 5000

Composite membrane incorporating high performance moisture and water-resistant rubberised asphalt with tough, puncture and heat-resistant polypropylene reinforcing mesh. Specially developed for use under a hot applied asphalt concrete wearing course.

Product Description

Bituthene 5000, also known as Heavy Duty Bituthene, is a waterproofing material incorporating high strength, heat-resistant mesh embedded in a layer of self-adhesive rubberised asphalt. It is supplied in rolls interwound with special release paper which protects the adhesive surface until ready for use and allows easy handling during installation.

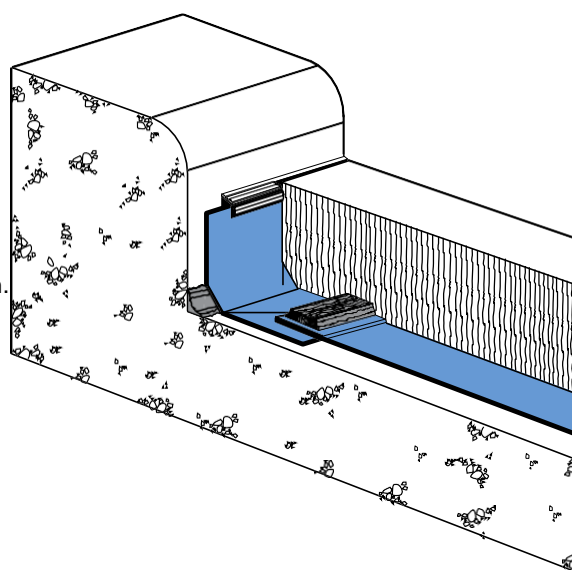
Features

- Cold applied — no heating or hot bitumen bedding adhesive required, self-adhesive overlaps provide continuity.
- Flexible — easily applied, conforms to changes in profile, accommodates shrinkage cracks up to 0.6mm.
- Robust — accepts road-laying machinery.
- Preformed — guaranteed thickness, not subject to site variation.
- Mesh reinforced — provides dimensional stability and resistance to damage.
- Rubber/bitumen — self-adhesive, elastic compound provides bonding and transmission of braking forces to substrate, allows healing of small punctures.

Application

Bituthene 5000 is supplied in rolls 1.00m wide, 20.0m long and in min. membrane thickness of 1.6mm and 2.0mm. The rubberised asphalt is covered with release paper that is removed during installation. The membrane is self-adhesive and cold applied. No special adhesive or equipment is necessary to form laps. Bituthene 5000 is an excellent waterproofing membrane for plazas, bridges, vehicular traffic structures, or parking decks to be overlaid with an asphalt concrete wearing course. It is adaptable for either new construction or repair applications.

Bituthene S5000 strips are recommended for the restoration of concrete pavements with asphalt concrete overlays to prevent premature deterioration of asphalt paving over the transverse and longitudinal joints caused by reflection cracking and sub-base erosion. Bituthene 5000 membrane will remain flexible to perform over the extreme range of service temperatures expected on plazas, bridges, and parking decks. Its toughness and flexibility allow it to cycle over small cracks, even during critical winter months.



The membrane is highly resistant to water and de-icing salt solutions. Electrical resistance measurements on structures have been exceptionally high to indicate the effectiveness of Bituthene 5000 in preventing water migration into decks.

Installation

Surface Preparation

Smooth, monolithic concrete surfaces are required for proper membrane adhesion. Surfaces must be free of voids, spalled areas, loose aggregates, and sharp protrusions, with no coarse aggregate visible. Broom finishes must not be used. Concrete must be cured and dry before applications of Bituthene 5000.

Clean surface (broom, vacuum cleaner or compressed air) to remove dust, loose stones, and debris.

Performance

Property	Typical Test Values	Test Method
Thickness*	1.6 mm or 2 mm	-
Tensile Strength - Mesh	10N/mm ²	ASTM D882
Elongation - Ultimate Failure of Rubberised Asphalt	>100%	ASTM D412
Pliability at Low Temperature (-32°C)	No damage	ASTM D1970
Puncture Resistance - Mesh	>900N	ASTM E-154

Typical Test Values may represent average values from samples tested. Test Methods noted may be modified.

Priming

Apply Primer, Bituthene Primer, to all concrete or masonry surfaces with a lambs wool roller (6 ~ 8m² per litre). Allow primer to dry one hour or until tack free. Prime only the area which will be covered with membrane in a working day. Areas not covered with membrane in 24 hours must be reprimed.

Temperature

Apply Bituthene 5000 waterproofing membrane only in fair weather when air and surface temperature are above +5°C.

Slab Drainage and Joints

Provide proper pitch to drains and gutters. Bituthene 5000 should be laid from the low point to the high point with the membrane overlapped min. 50mm in shingle fashion. Weep holes or drainage openings should be provided at the structural deck level to drain water which penetrates the asphalt concrete. A 320 mm reinforcing strip of Bituthene 5000 must be applied over nonworking joints or cracks not exceeding 3mm in width before applying the full coverage of membrane. Terminate Bituthene 5000 at expansion joints and seal terminations with Bituthene Mastic at the termination to ensure a tight seal. Steel finger joints or other expansion joints assemblies should be placed to the level of the asphalt concrete overlay.

Kerb and Termination Edges

Kerb flashing strips should be applied to a joint just below the height of the asphalt concrete overlay and a minimum of 150mm on the deck. Then apply the first full sheet as close as possible to the kerb. A fillet should be provided at the kerb and parapets to avoid a sharp break at these points. The fillet material (latex modified cement mortar) should be well adhered to the deck and kerb or parapet. Performed cant strips are not recommended.

Supply

Bituthene 5000 1.6mm thick - 1.0m wide x 20.0m long/roll

Weight Gross weight 40kg

Bituthene Primer 18L/pail (6 ~ 8 sq m/L)

Bituthene Mastic 850cc cartridges / 3L cans

Compatibility

Bituthene 5000 is incompatible with certain fresh tars, pitches, liquid waterproofing, and sealants which contains tars or polysulfide polymer. Avoid direct contact of the adhesive layer of Bituthene 5000 or Bituthene Mastic with such systems.

Paving

The asphalt concrete overlay should be placed as soon as possible after application of Bituthene 5000, or Bituthene S5000. A minimum of 50 mm compacted overlay is recommended. The preferred asphalt concrete temperature in the paving machine hopper is 140°C to 160°C. Preformed protection courses such as roofing felts or asphaltic hardboard are not recommended. Paving must not be started following rain until the membrane surface is dry. Only asphalt concrete delivery equipment should be permitted on the membrane prior to placement of the asphalt concrete.

Flat tracked or pneumatic tire equipment may be used. In the event of skidding of the pneumatic tire machine during warm weather, broadcast a very small amount of fine sand or cement in the tire paths. Excess use of cement or sand could prevent adhesion of the asphalt concrete. Pavers should avoid stopping with a full hopper or build-up of material in the auger. If a stop is necessary, use extreme care in restarting. Paver screeds should be preheated, but burners should not be on during paving.

Precautions

Care should be taken to minimise the possibility of pavement shoving on heavy traffic structures with more than a 4% grade. Bituthene S5000 strips over joints in T beam structures will not provide complete waterproofing. For such structures, 320mm strips, followed by membrane coverage over the entire surface are required to provide a complete waterproofing system.

Health and Safety

Refer to relevant Material Health and Safety data sheets.

Quality Assurance

GCP Applied Technologies is certified to ISO 9002 by TUV SUD PSB Pte Ltd.

Specification

All areas so designated shall be waterproofed with a minimum 1.6mm or 2.0mm thick self-adhering membrane of rubberised asphalt integrally bonded to polypropylene mesh (Bituthene 5000 manufactured by GCP Applied Technologies). Bituthene 5000 set pre-formed self-adhesive membrane shall be laid onto smooth concrete primed with Primer B1 and with minimum overlaps of 50 mm. Bituthene 5000 must be laid strictly in accordance with Manufacturer's instructions and supplied by GCP Applied Technologies. For further information, contact your local Allnex representative.

Technical Services

For assistance with working drawings for projects and additional Technical advice, please contact Allnex Construction Products.

Features

- Water proofing membrane. Bituthene 5000 prevents water from entering the building structure from the traffic deck.
- Under asphalt, minimum 50mm compacted hot
- Compliant product with E2/AS1 July 2005; section 12.0, 12.2.2.b
- Used in New Zealand for over 35 years
- 50 Year durability compliant; "Life of the building"
- All joints sealed by permanent self-adhesive.
- Protected by the asphalt topping
- 1.6mm thick
- Water vapour resistance 891 MNs/g BS3177
- Permeance: less than 2 ng/m².s.Pa. ASTM E96 [12].
- Very highly elastic; very high ability to bridge joints and cracking movement in the concrete underneath the membrane.
- Protects concrete reinforcing from corrosion.

Materials

Bituthene 5000 roll 1 x 20m. 1.6 mm thick.

Membrane primer 20Lt pail applied at 5m² / Lt or Bituthene B2 primer for priming on wet surfaces.

Bituthene mastic for detail work.

Bituthene liquid membrane, LM3000, (two part polyurethane for sealing around penetrations.)

50mm compacted hot Asphalt (supplied by others) & Asphaltic primer

Producer Statement

Bituthene 5000 complies with the requirements of the NZ building code and any relating acts. Bituthene 5000 complies with E2/AS1 and durability under B2. The conditions under B2 (50years durability for elements that are inaccessible) are accepted and complied with providing all preparation and installation is carried out by Allnex licenced contractors and all product installation details are followed.

BITUTHENE 5000 - SELF ADHESIVE SHEET BELOW Traffic asphalt

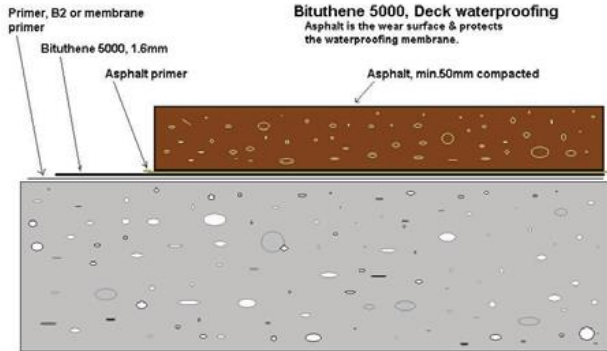
- Prime dry surfaces with minimum 1 coat of Allnex Membrane Primer. Prime wet surfaces using Bituthene B2 primer. Maximum spread rate of the primer 6m²/litre.
- Install 300mm wide Bitustrip 5000 fillets where required.
- Install Bituthene mastic fillets to all internal corners.
- Install Bituthene 5000 membrane to all areas required to achieve a waterproof finish in accordance with the Grace technical data.
- Bituthene is to be continuous with minimum 50mm side and end laps. Overlaps must be firmly rolled to ensure complete adhesion.
- Seal top edge and all end laps using Bituthene Mastic or LM 3000.
- Seal all penetrations using Bituthene membrane LM 3000.
- Install Asphalt after appropriate primer
- Protect exposed Bituthene 5000 from UV using Bituthene Solarshield, Soprema Soprasolin or other suitable protection.

Note the following:

- *Must be installed by Licensed Allnex Contractors who are members of The Allnex Contractors Federation Inc.*
- *Install minimum 100 mm dia drain with openings to collect water at the base of any falls.*
- *Drain is to be placed 200mm below the interior basement floor level.*
- *Deck must have falls; minimum 1:200 fall to the outlet.*
- *Outlet must have access for cleaning the drain.*
- *Top of the Bituthene is to extend a minimum 150mm above ground level and finish into a sawn chase.*
- *Check Bituthene Membrane for faults or damage prior to installation of asphalt.*
- *Ensure finished ground surface falls away from the membrane.*

Caution

- If the traffic topping is concrete , then use Bituthene 3000
- Do not use Bituthene 5000 if hot asphalt is not used. The hot asphalt seals the Bituthene laps.
- Sometime after installation there may be signs of asphalt cracking or shoving in small areas. This is normal as the asphalt layer finds its stability point. Large slab areas will be subjected to normal under-slab expansion and contraction.
These can be minimized by:
 - Ensuring the thickness exceeds 50mm compacted in all areas
 - Compacting whilst hot (greater than 135c).



Asphalt being laid on Bituthene 5000. The asphalt is laid in excess of 135°C and compacted while hot.



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 **gcp** applied technologies
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