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Bituthene 3000 Elastomeric Sheet Tanking and Waterproofing Membrane

Description Bituthene 3000 is a DPM (damp proof membrane) consisting of a modified bitumen sheet comprising of modified bitumen on a cross laminated polyethylene backing which is a continuous reinforcement. A sheet membrane for waterproofing external walls.

Application areas:

- Tanking: DPM or below grade tanking (walls buried below ground). Bituthene 3000 prevents water from entering the wall or building structure from the ground.
- Under horizontal roof & floor slabs
- On masonry, precast or poured in-situ concrete, Polystyrene faced blocks

Features

- Compliant product with E2/AS1 July 2005; section 12.0, 12.2.2.b
- Used in New Zealand for over 35 years
- Compliant with BRANZ bulletin #397, Waterproofing basements; section 5.2.2
- 50 Year durability compliant; "Life of the building" (refer BBA approval).
- BBA approval (British Board of Agreement) #97/3325; March 2000
- All joints sealed by permanent self adhesive.
- Protected by sheet materials before backfilling
- 1.5mm thick
- Water vapour resistance 891 MNs/g BS3177
- Permeance: less than 2 ng/m².s.Pa. ASTM E96[12]
- Bituthene 3000 is a self adhesive sheet material supplied in a roll form. The release paper is removed and the Bituthene adheres immediately to primed concrete walls. Subsequent sheets are lapped.
- As a sheet material, it provides a consistent thickness across the wall and is not dependant on contractor application variability. Once applied, it provides immediate protection and is not affected by rain or site water.
- Use Bituthene & Preprufe waterproofing combination to provide a wall / under-slab protection system that provides complete building integrity.

Materials

- ◆ Bituthene 3000 roll 1 x 20m.
- ◆ Membrane Primer 20Lt pail applied at 5m² / Lt. This primer is suitable for use on concrete and Polystyrene faced concrete block foundations.
For single roll applications: seal the wall with solvent adhesive CS110; use 1x4lt per roll. Roller applied.
- ◆ Bituthene B2 primer for priming on wet walls to allow early installation.
- ◆ Bituthene mastic for detail work.
- ◆ Bituthene liquid membrane, LM3000 1-part polyurethane, for sealing around penetrations.

Producer Statement

Bituthene 3000 complies with the requirements of the NZ building code and any relating acts. Bituthene 3000 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 Nuplex licenced contractors and all product installation details are followed.



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BITUTHENE 3000 – SELF ADHESIVE SHEET BELOW GRADE TANKING

- Check surfaces for protrusions and sharp points. Prime dry surfaces with minimum 1 coat of Nuplex Membrane Primer. Prime wet surfaces using Bituthene B2 primer. Maximum spread rate of the primer 6m²/litre.
- Install 300mm wide Bitustrip 3000 fillets where required.
- Install Bituthene mastic fillets to all internal corners.
- Install Bituthene 3000 membrane to all areas required to achieve a waterproof finish in accordance with the Grace technical data "Bituthene 3000 Foundation Protection". It is normally dropped vertically.
- Overlap subsequent sheets and heavily roll all laps with a curved lap roller. Particularly focus on the edge where an exposed edge of the backing mastic shows – "pinch" down this piece hard. Lap and roll ends if necessary
- Bituthene is to be continuous with minimum 50mm side and end laps. Overlaps must be firmly rolled to ensure complete adhesion. Seal any "bird-mouths" with Bituthene mastic.
- Top edge. The top edge must be permanently fastened so that it does not fall-away. Mechanical fastening is preferred. Seal top edge and all end laps using Bituthene Mastic or LM 3000.
Options for the top edge include: 1.0 Affixing the top-edge with Bituthene mastic and a mechanically fastened metal bar or strapping strip. 2.0 Cutting a chase into the concrete and taking the Bituthene in to this and sealing with mastic.
- Seal all penetrations using Bituthene membrane and LM 3000.
- Install suitable protection board or Hydroduct , Tenax 600 or other approved protection/drainage sheet prior to backfilling. - Back fill as required.
- Protect exposed Bituthene 3000 from UV using Bituthene Solarshield, Soprema Soprasolin or other suitable protection. The Bituthene 3000 exposed area is difficult to coat. Nuplex Cural Aluminium finish may be used. This may be subsequently coated with acrylic coatings.

Note the following:

Nuplex recommend Licensed Nuplex Contractors who are members of The Nuplex Contractors Federation; lists are provided from Nuplex .

Install minimum 100 mm dia drain with openings to collect water at the base of the wall.

Drain is to be placed 200mm below the interior basement floor level.

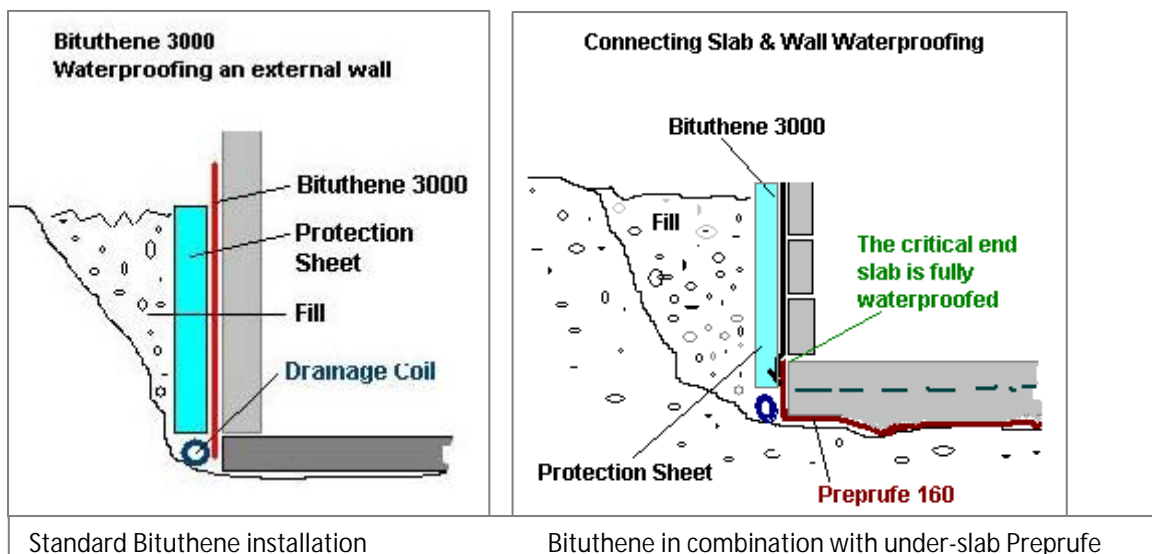
Drain must have minimum 1:200 fall to the outlet.

Outlet must have access for cleaning the drain.

Top of the Bituthene is to extend a minimum 150mm above ground level and terminate correctly, as described above.

Base of Bituthene must extend a minimum of 200mm below interior basement floor level and seal with floor DPM.

Check Bituthene Membrane for faults or damage prior to installation of protection board or drainage sheet. Ensure finished ground surface falls away from the membrane a minimum 1:30 to divert ground water.



Bituthene 3000 - for Tanking & Waterproofing

Features	Benefits
Flexible	Very flexible, very difficult to rip. Elongation 300%. (Compare to torch-on membranes @ 50%). Accommodates settlement and shrinkage movement.
Site suitable. Suits many weather conditions.	Will apply to damp concrete. It is not affected by site water. Once applied, it is not water sensitive
Flexible / Elastomeric	Will bridge developing cracks
Self adhesive	Easy to apply, no special equipment necessary or dangerous flames in enclosed spaces. Full continuity at overlaps.
Bonds to substrate	Bonds tenaciously, water cannot migrate along bond line. Bond improves with time
Hard surface	The polyethylene surface is hard to penetrate (Puncture resistance is 250N). Cross laminated film. Accepts foot traffic during construction.
Self healing	The sticky inner layer and base will self heal around any tears or penetrations. This improves with time and pressure.
Polyethylene Surface	This hard surface is not readily bonded onto. This provides a built in slip layer to overlays of tile mortars or concrete.
Relatively thin (1.5mm)	Laps heights are only 3mm compared to torch-on 6-10 mm. Factory made sheet ensures constant, non-variable site application.
Consistent Thickness	Superior to liquid waterproofing membranes as a consistent thickness must be applied by the contractor. Compare liquid Bitumen waterproofings that are often applied too thinly or in in-sufficient coats.
Compatible	Will tie into under floor layer of Preprufe 160. It has a full range of complementary primers, mastics and penetration sealants.
Chemically resistant	Provides external protection against aggressive soils and ground water
Good Coverage	Roll size is 20m x 1m; quick to lay. Fewer seams or laps per roll
Strong laps	Side and end laps are almost impossible to separate.

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Bituthene® 3000/3000 HC

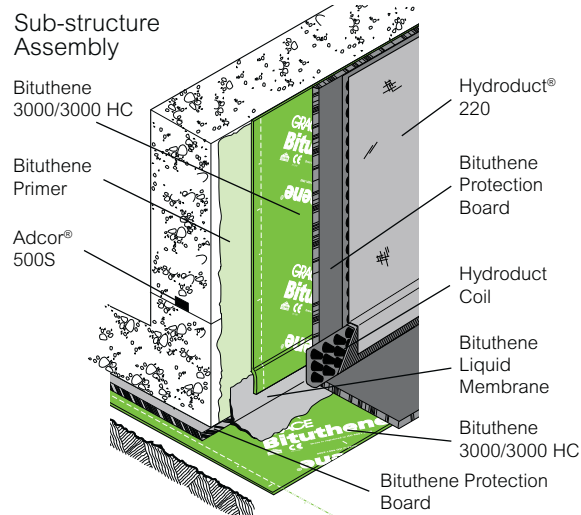
High performance waterproofing membrane for sub-structures and flat deck applications

Description

Bituthene® 3000/3000 HC is a high performance, cold applied, flexible, preformed waterproof membrane combining a special high performance cross-laminated, HDPE carrier film with a unique self-adhesive rubber bitumen compound.

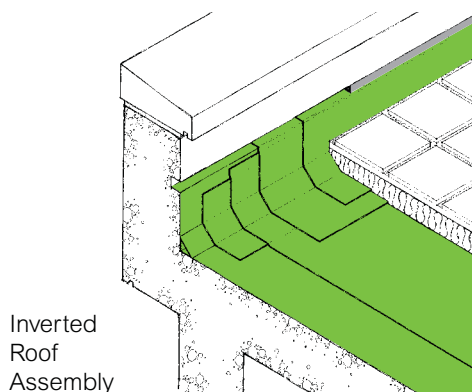
Applications

- Basement
- Sub-structures
- Flat Decks
- Roof assemblies
- Elevated or grade level podiums
- Plaza decks / Roof gardens / Terraces



Advantages

Features	Advantages
Waterproof	<ul style="list-style-type: none"> • High hydrostatic head resistance
High density cross laminated polyethylene film	<ul style="list-style-type: none"> • Provides dimensional stability • Provides puncture resistance
Single layer	<ul style="list-style-type: none"> • Simple, reliable, low labour cost with the benefit of site programmed installation
Gas Resistant	<ul style="list-style-type: none"> • Methane, carbon dioxide and radon gas protection in excess of the standard membrane requirements in BRE Reports 211 (radon) and 212 (methane and carbon dioxide)
Cold applied	<ul style="list-style-type: none"> • No flame hazard • No heating required
Self-adhesive rubberised asphalt	<ul style="list-style-type: none"> • Continuity ensured at overlaps • Unique rubber/bitumen formulation allows healing of small punctures
Factory controlled thickness	<ul style="list-style-type: none"> • No variation by site practices
Chemically resistant	<ul style="list-style-type: none"> • Provides effective external protection against aggressive environments and ozone attack
Flexible	<ul style="list-style-type: none"> • Accommodates minor settlement and shrinkage movement
Tanking security	<ul style="list-style-type: none"> • Combined flexible membrane and waterstop system for security



Installation

- Measures should be taken to ensure that all surfaces are free from ice, frost or condensation. Roof slab surfaces must be dry, and free from sharp protrusions, and any hollows to be filled with high strength mortar.
- Horizontal and vertical faces must be smooth, regular, dry and free from nails. Prime the

Physical Properties

Property	Typical Values	Test Method
Colour	Dark Grey	NA
Nominal Thickness*	1.5mm	NA
Tensile strength of membrane	4 N/mm	ASTM D412 modified **
Elongation of membrane (to ultimate failure of rubberised asphalt)	200%	ASTM D412 modified **
Lap adhesion @23°C	683 N/m	ASTM D1876
Cycling over crack @-32°C	No effect 100 cycles	ASTM C836
Puncture resistance of membrane	>220N	ASTM E154
Resistance to hydrostatic head	60m	ASTM D5385
Tear resistance	23 N/mm	ASTM D624
Permeance	1.9 Pa m ² .s.	ASTM E96 [12]

Typical test values represent average values from samples tested. Test methods noted may be modified.

* Nominal thickness refers to the thickness of the membrane without release liner.

** The test is run at a rate of 100mm per minute.

Please consult Grace representative on recommended installation temperature.

horizontal and vertical surfaces with one coat of Bituthene Primer applied by brush or roller at a rate of 6-8 sq m per litre depending on the porosity of the surface, and allow to dry completely before the application of Bituthene 3000/3000 HC.

- Bituthene 3000/3000 HC should be laid by peeling back the protective silicone release paper and applying the self-adhesive face on to the surface to ensure good initial bond.
- Adjacent rolls are aligned and overlapped 50mm minimum at side and 150mm at ends, and the overlaps well rolled with a firm pressure using a Bituthene lap roller to ensure complete adhesion and continuity between the layers.
- Following the application and inspection, care should be taken to prevent damage by following trades. As soon as practicable after the application, Bituthene 3000/3000 HC should be protected from exposure to the weather and physical damage using Servipak® protection boards, insulation or Hydroduct® drainage composites laid dry.
- Any punctured or damaged areas should be cleaned and patched using Bituthene 3000/3000 HC with minimum 50mm laps all around.
- Following the application, care should be taken to prevent damage by following trades by using Servipak boards spot bonded with Pak Adhesive or a 25mm screed as horizontal protection. Vertical faces to be protected against damage from backfilling and reinforcement by using Servipak spot bonded with Pak Adhesive.

Supply

Pack size	1m x 20m roll (20 sqm)
Gross weight	39 kg
Storage	Dry conditions below +35°C

- The junction between the slab and parapet shall have a fillet of Bituthene Liquid Membrane or other acceptable methods placed firmly into position before using 300mm wide reinforcing corner strips of Bituthene 3000/3000 HC placed centrally over the axis of the change of direction.
- 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.

Health and Safety

Refer to relevant Material Safety Data Sheet.

Quality Assurance

W. R. Grace (Singapore) Pte. Ltd. is certified to ISO 9001 Quality Systems by the Singapore Productivity and Standards Board for the manufacture of Bituthene Waterproofing Membranes under the registered certification number ISO 93-2-0268.

Grace Technical Services

For assistance with working drawings for projects and additional technical advice, please contact Grace Technical Services.

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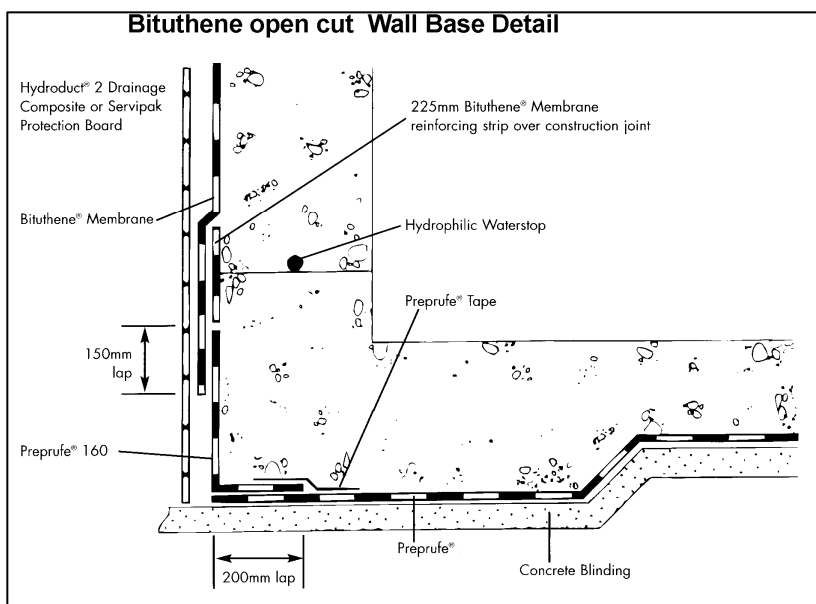
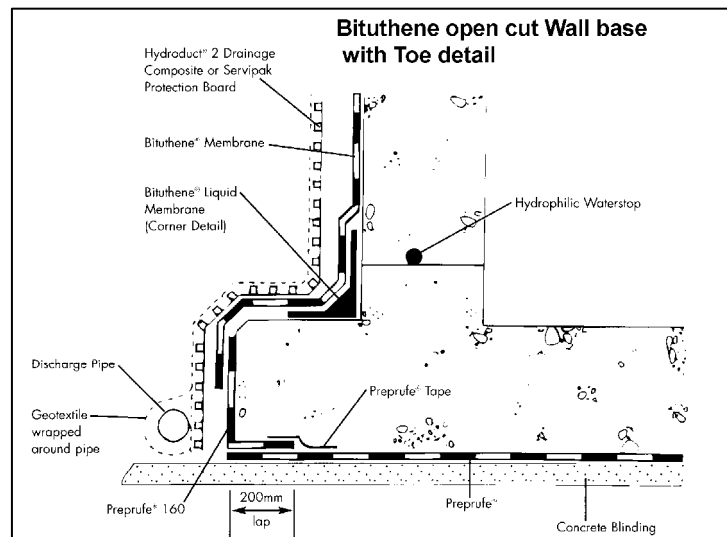
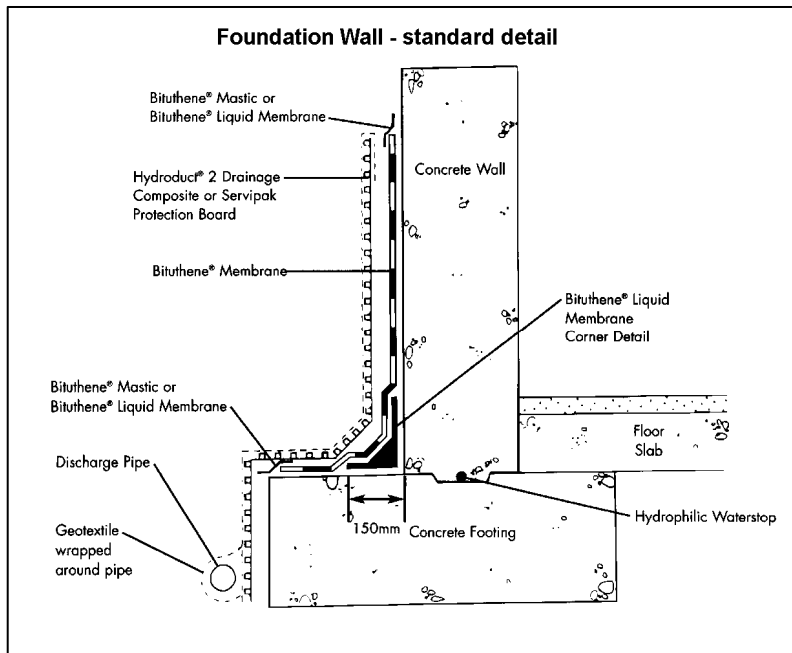
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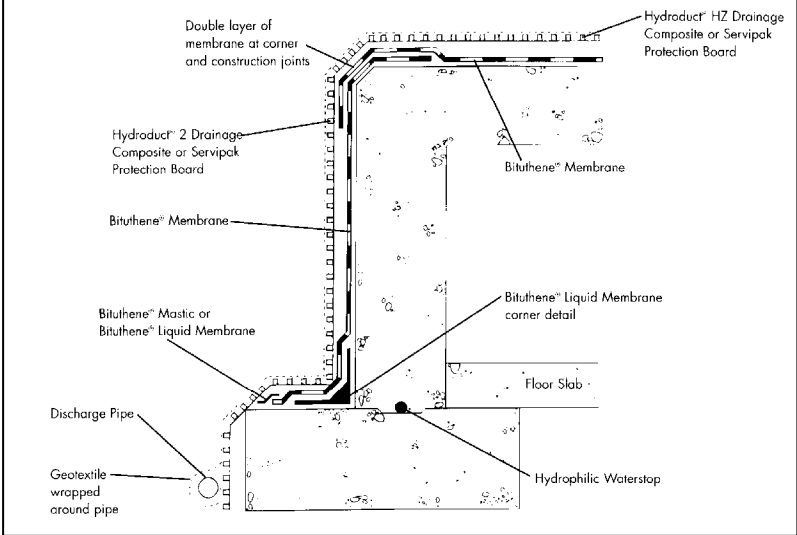
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Bituthene Details



Tunnel cover or earth sheltered structure



Plaza deck - tie-in of waterproofing

