BITUTHENE® 6000

Heavy duty, preformed composite membrane combining a self-adhesive rubber/bitumen compound and a tough, puncture-resistant 4 ply polyethylene waterproof laminate for waterproofing critical sub-structures and civil works

Product Description

BITUTHENE® 6000 is ideal for waterproofing structural concrete and civil works such as airports, rapid transit systems, power plants, environmental projects and earth sheltered structures and may be used in lieu of Bituthene 3000 on basements and substructures that require extra tough waterproofing protection.

Features

- Waterproof — capable of resisting a hydrostatic head when fully supported.
- Cross laminated — provides dimensional stability, high tear strength, puncture and impact resistance.
- Single layer — simple, reliable, low labour cost with benefit of site programmed installation.
- Cold applied — no heating, self-adhesive overlaps ensure continuity.
- Chemically resistant — provides effective external protection against aggressive soils and ground water.
- Flexible — accommodates minor settlement and shrinkage movement.
- Controlled thickness — factory-made sheet ensures constant, non-variable site application.
- Tanking security — combined flexible membrane and waterstop system for security.

Applications

Bituthene 6000 is a heavy duty, advanced, cold applied, flexible preformed waterproof membrane combining a special high performance 4 ply cross-laminated, HDPE carrier film with a self-adhesive rubber bitumen compound. The heavy duty advanced carrier film is manufactured by cross laminating and chemically bonding the layers together, to produce a film with greatly improved physical characteristics compared with traditional low density polyethylene films. Tear strength, puncture resistance and impact resistance are all increased to give a better factor of safety against accidental damage. When used in conjunction with PREPRUFE® membranes in reverse tanking applications and waterstops, cast into the concrete shell, it will provide a continuous waterproofing/ tanking system for sub-structures and civil works.

It is supplied to sites in rolls 1.6mm thick, 1m wide and 20m long (20 sq metres) and is unrolled sticky side down on to primed concrete slabs or vertical concrete faces. Continuity is achieved by overlapping 50mm and firmly rolling the joint. A guideline is printed on the membrane.

Applied to walls and to underground roof slabs, Bituthene 6000 will provide a continuous heavy duty moisture-waterproof barrier.

Being factory made, thickness of membrane is constant throughout and is not subjected to variations by site labour such as occur with brush applied materials. Bituthene 6000 is extremely flexible and well capable of bridging shrinkage cracks in the concrete and will accommodate minor differential movement throughout the service life of the structure.

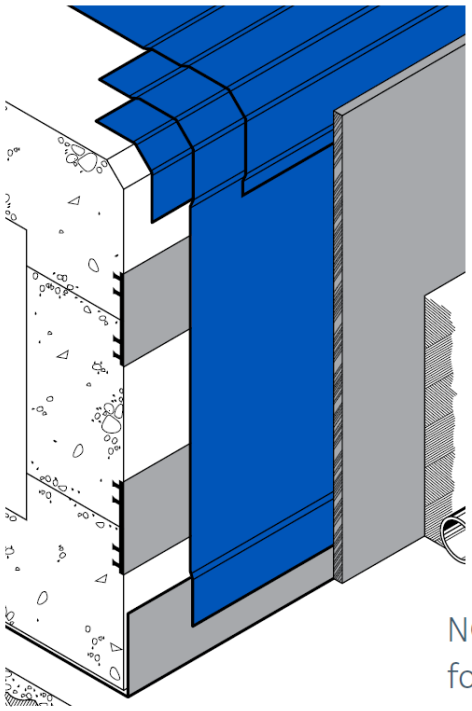
Bituthene membranes should never be taken through load bearing brick/blockwork walls and must be linked with the damp-proof course to prevent extrusion under load.

Performance

Bituthene 6000 Typical Performance Properties

PROPERTY	TYPICAL VALUES	TEST METHOD
Colour	Dark Grey / Black	N/A
Tensile Strength (Film Only)	7N / mm	ASTM D412*
Tape Strength	10N / mm	ASTM D412
Elongation of Membrane (To Ultimate Failure of Rubberised Asphalt)	150%	ASTM D412*
Lap Adhesion @ 23oC	683N / m	ASTM D1876
Cycling Over Crack @ -32aC	no effect 100 cycles	ASTM C836
Puncture Resistance	400 N	ASTM E154*
Resistance to Hydrostatic Head	60m	ASTM D5385
Tear Resistance>	36N / mm	ASTM D624
Permeance	1.3ng / m^3 .s.Pa	ASTM E96 [12]

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



NOTE: See Preprufe® data sheet for waterproofing under slabs and vertical reverse tanking applications

Installation

Sloping or vertical faces shall be smooth, regular, dry and free from nails and primed with one coat of Primer WP-3000 applied by brush or roller, at a rate of 12 ~ 15 sq metre / litre depending on the porosity of the surface, and allowed to dry completely before the application of the Bituthene. Brickwork shall be flush pointed or rendered to provide a smooth surface before priming.

Where Bituthene is to be left temporarily exposed on vertical surfaces, batten fixing may be necessary to prevent slippage. Prior to backfilling remove battening and cover fully with a subsequent layer of Bituthene.

Bituthene 6000 shall be laid by peeling back the protective release paper and applying the adhesive face onto the prepared surface. The material should be brushed onto the surface to ensure good initial bond and exclude air. Adjacent rolls are aligned and overlapped 50mm minimum at side and ends and well rolled with a firm pressure using a Bituthene Lap Roller to ensure complete adhesion and continuity between the layers. Damaged areas to be repaired by patching with an oversized patch applied to a clean dry surface and firmly rolled.

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 or Korkpak spot bonded with Pak adhesive.Backfill material should be compacted in layers to prevent settlement and dragging forces being transferred to the waterproofing systems

Supply

Bituthene 6000

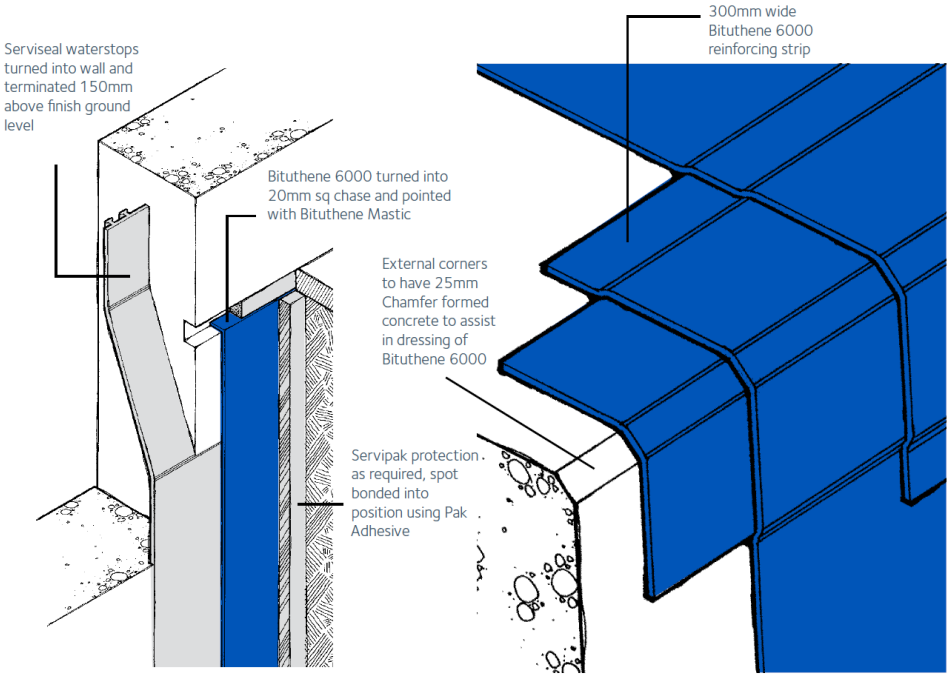
Bituthene 6000	1m x 20m roll (20 sq m) Average net weight 40kg
Storage	Store upright in dry conditions below 35°C
Primer WP-3000	18.9 litre pails
Coverage	12 ~ 15 sq metre per litre depending on method of application, surface texture, porosity and ambient temperature
Bituthene LM	5.7 litre pails
Bituthene Mastic	850cc cartridges / 3 litre pails
Bituthene Lap Roller	Unit

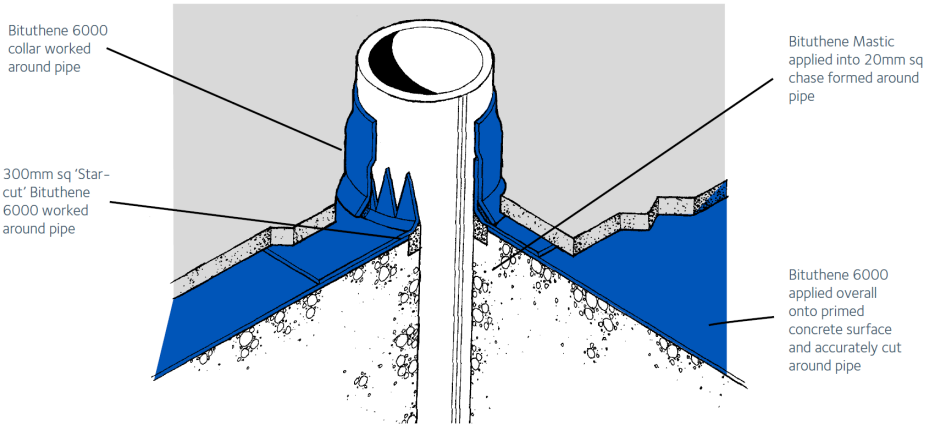
Complementary Materials

Servipak, Servipak SA protection boards	See separate data sheet for details
Pak Adhesive	See separate data sheet for details
Serviseal, PVC Edgetie, and Servitite waterstops	See separate data sheet for details
Preprufe 160R and 300R	See separate data sheet for details

Equipment by Others

Soft broom, Stanley knife, brush or roller for priming.





Pipe through Slabs

A similar detail to this can also be used for pipes through walls

Quality Assurance

GCP Applied Technologies is certified to ISO 9001 : 2008 by TUV SUD PSB Pte Ltd.

Health and Safety

Refer to relevant Material Health and Safety data sheets.

Flat Deck Waterproofing

Bituthene 6000 is suitable for use as a primary waterproofing membrane on a protected roof structure. Refer to Flat Deck Protection section.

Specification

Bituthene 6000 preformed membrane shall be applied onto smooth primed concrete by applying the preformed membrane, sticky side downwards to give well rolled 50mm overlaps, laid strictly in accordance with manufacturer's instructions and supplied by GCP Applied Technologies. For further information, contact your local GCP representative.

Technical Services

For assistance with working drawings for projects and additional technical advice, please contact GCP Applied Technologies.

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GCP Applied Technologies Inc., 2325 Lakeview Parkway, Alpharetta, GA 30009, USA
GCP Applied Technologies (Malaysia) Sdn. Bhd, 7 Lorong CJ 1/1A, Off Jalan Balakong, 43200 Cheras Jaya, Kuala Lumpur, Malaysia
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Last Updated: 2026-04-02

gcpat.my/solutions/products/bituthene-post-applied-waterproofing/bituthene-6000