

RETAINING WALL

How to Waterproof Block Walls

Water damage in retaining walls is expensive to rectify later, it is much cheaper to do it correctly the first time.

The following is a guide, outlining the principles, with suggested products. Taking the time and care to apply these principles will provide a long term solution.



APPLICATION PROCESS:

- CONSTRUCTION WATER STOP
- MEMBRANE PREPARATION
- MEMBRANE TANKING
- PENETRATIONS TREATMENT
- PROTECTION AND DRAINAGE

MATERIALS:

- Water Stop – **Sikaswell S2**
- Crystalline Growth Compound – **Contec C1**
- Backing Rod
- Caulking – **Sikaflex PRO**
- Masking tape
- Liquid Membrane – **Flexipro**
- Reinforcing fabric – **Polycloth**
- Protection Board
- Flow Cell drainage
- Drainage Pipe
- Geofabric – **Filter Wrap**



Contec C1
Crystallising Concrete Waterproofing Compound

Common applications:
Ponds & Swimming Pools
Basement tanking
Retaining walls
Concrete construction joints

Concrete Protection Pty Ltd right product, right advice, right price

FLEXIPRO
BELOW GROUND
WATERPROOFING MEMBRANE

15 Litres

Retaining Walls, Ponds, Tanks, Planter Boxes
Easy to use, quick drying, fibre reinforced, Certified membrane

Concrete Protection Pty Ltd

CONSTRUCTION WATER STOP

Water Stop:

The first defence in the construction phase of building the block wall is to install a 'water stop' along the slab base between the reinforcing bars. There are a couple of reasons why we recommend a gun application swellable product. First, you can control the thickness, recommended 15mm or less. This is because profile 'water stops' will be too strong and would 'blow' the block work. Second, gun application is easier and less expensive.



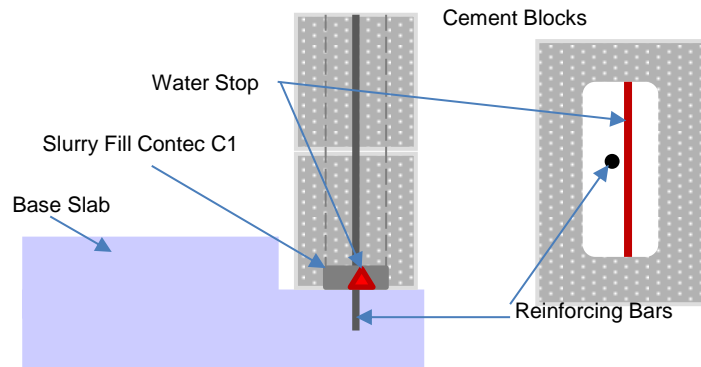
By Cutting nozzles at different lengths , different sections can be obtained

Nozzle size (mm)	section (mm ²)	theoretical length* (m)
15x15x15	98	6.20
20x20x20	173	3.50

*Length that can be applied from each unipac

First Layer Joint Protection:

Lay the first (couple) layer of blocks on the slab as a normal build. Then add a crystalline growth compound slurry to around 30mm depth in the centre core of the blocks. The crystalline growth compound is the second layer of defence in the construction phase. A slurry mix of Contec C1 would be 5 parts C1 to 2 parts water. This will simply pour into the cavity. Allow to set before core fill.



Core Fill:

Complete wall construction core filling the block wall cavity, with aggregation to avoid air cavities. An option is to add a crystalline growth compound to the concrete pour.



**CONCRETE PROTECTION
PTY LTD**

155 Barkly Avenue, Burnley, Victoria. 3121
Tel: 03 9429 3377 Fax: 03 9427 0745
Email: info@conpro.com.au

Web: www.conpro.com.au



MEMBRANE PREPARATION

The major waterproofing defence to a block wall is 'Tanking'. Good preparation is a major factor in the success of the job.

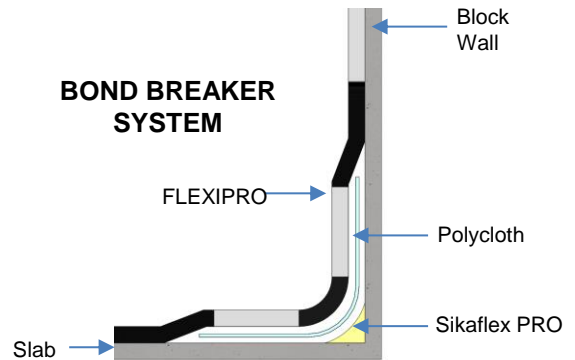
- Remove excess material from the mortar joints and block work
- Patch obvious cavities in the mortar lines and blocks.
- Sand off any excess material from patch work
- Digg out or expose the slab base which the block work is built.
- Mechanically remove any sharp edges on the slab which would prevent good membrane bonding
- Clean area
- Install backing rod to construction joints in preparation for caulking
- Use masking tape either side of the construction joint
- Install quality caulking compound, Sikaflex PRO. Smoothing the finished joint and removing the masking tape.
- Block walls are quite porous, as such, we recommend a primer coat be applied before membrane tanking. Apply either Microl Acrylic Primer or 1 part FLEXIPRO to 2 parts water, as a primer coat. Work the primer coat into the surface with a generous brush, soft broom or roller system.



MEMBRANE TANKING

Installing a two coats of liquid applied membrane system to 'Tank' the block wall from the positive side.

- Install a 'Bond Breaker' system to the joints between the slab and first course of blocks. Run a bead of caulking compound, Sikaflex PRO into the corner joint; apply a coating of Flexipro membrane, whilst wet place Polycloth reinforcing fabric into the membrane, then coat again with Flexipro.
- Apply the first coat of FLEXIPRO waterproofing membrane with a brush, roller or soft broom with a coverage thickness between 0.5mm to 1mm.
- Apply a second coat of FLEXIPRO waterproofing membrane with a coverage thickness between 0.5mm to 1mm. The final application strokes should be running diagonally to the first coat.
- An optional third coat can be applied, with the finished membrane being 2mm or less.
- Allow three to five days to cure fully



PENETRATION TREATMENT

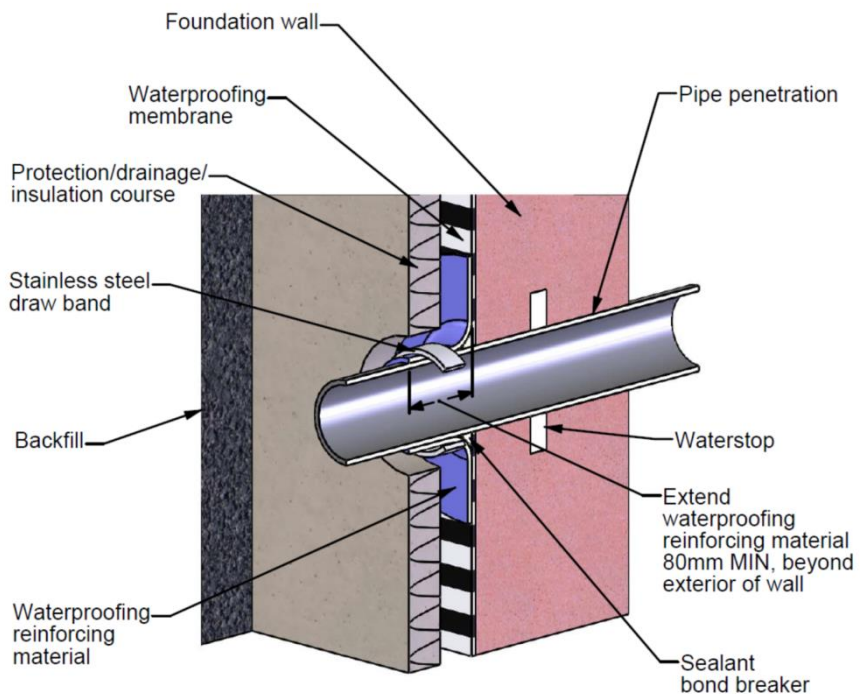
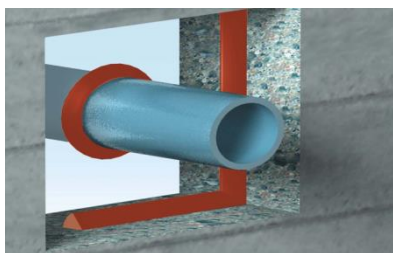
Planned Penetration Treatment

- Before the block work is core filled, or tanked, cut penetration cavity and in place penetration in position.
- Ensure a snug fit to the penetration by installing backing rod
- Install the caulking, Sikflex PRO to provide flexible bonding between the two materials.
- Complete the membrane application by installing a 'bond breaker' system.



Post Installation Penetration

- Mechanically cut an opening for the penetration
- Install 'water stop', Sikaswell S2, to centre of walls and penetration item
- Prepare form work and fill with concrete.
- Complete the membrane application by installing a 'bond breaker' system.



**CONCRETE PROTECTION
PTY LTD**

155 Barkly Avenue, Burnley, Victoria. 3121
Tel: 03 9429 3377 Fax: 03 9427 0745
Email: info@conpro.com.au

Web: www.conpro.com.au



PROTECTION AND DRAINAGE

Protecting the waterproofing from damage and directing the water away from the structure is the final defence.

There are two primary methods of providing membrane protection which aid drainage:

- Install plastic sheeting or 'bubble' rolls against the membrane prior to backfill.
- Install FLOCELL sheets, covered with FILTERWRAP geo-fabric against the membrane prior to backfill. This method also helps the water get to the drainage system more efficiently.

The standard residential drainage system involves installing agriculture pipes, often with aggregate and geo-fabric.

