

***Premium Flow*™ Barrier System**

Installation Manual

Premium flow[™] **INSTALLATION GUIDE**

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INTRODUCTION

*Premium flow*TM is a reticulation system for treating the soil around the perimeter of a concrete slab and under construction joints as a deterrent against the concealed entry of termites. The system utilizes State-of-the-art cylindrical PC low-volume drippers to provide uniform calculated delivery and the Soil dispersal of the termiticide is enhanced by the properties of the geotextile sleeve to create an even dispersal mechanism.

The chemical barrier is produced by a combination of mass flow in the geotextile which delivers the solution and capillary action in the soil which is responsible for its spread.

The *Premium flow*TM system has had an intensive period of R&D into how to build an easily replenishable and serviceable chemical barrier system to protect building from subterranean Termites.

*Premium flow*TM is attached to the face edge of a concrete slab, being a termite resistant material, and covered with soil medium with the delivery pipe approximately 30-50mm below the finished surface levels around the external perimeter of a building or structure.

*Premium flow*TM is placed on a pad of sand under the moisture barrier (plastic sheet) at the line of a construction joint in concrete slabs. This will form a chemical barrier approximately 300mm wide at the construction joint.

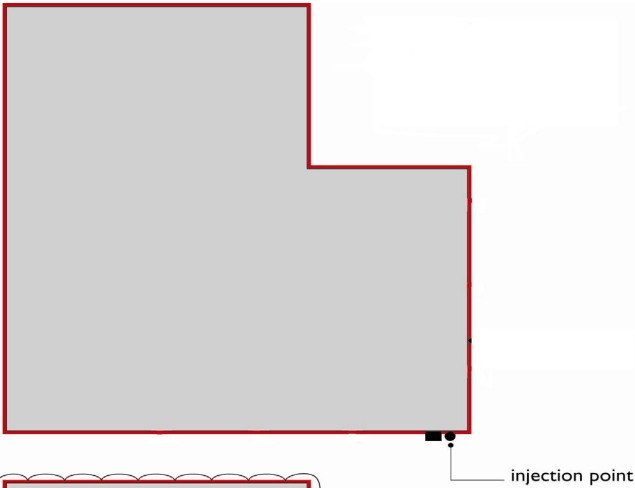
*Premium flow*TM is attached to the soil face of a retaining wall and is layered at 200mm centres across the surface of the retaining wall.

*Premium flow*TM will deliver 100litres of termiticide to each cubic metre of barrier in less than 10 minutes. Only one pump-up point is required for every 70m of line.

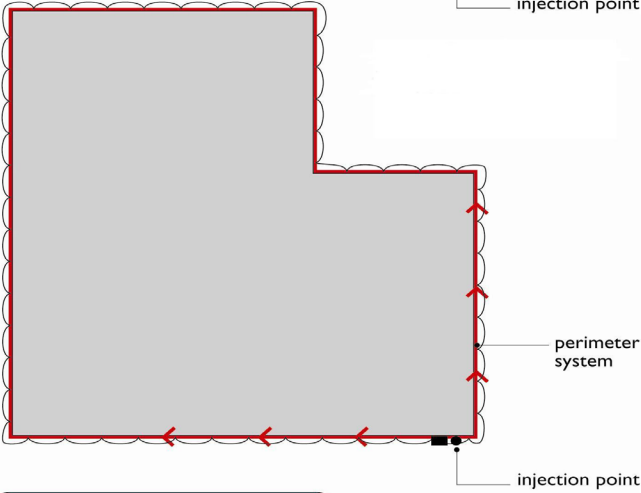
The co-efficient of uniformity (CU) for the discharge of termiticide from emitters in the drip line is approximately 98%

*Premium flow*TM is manufactured in Australia from UV stabilised and biologically resistant materials

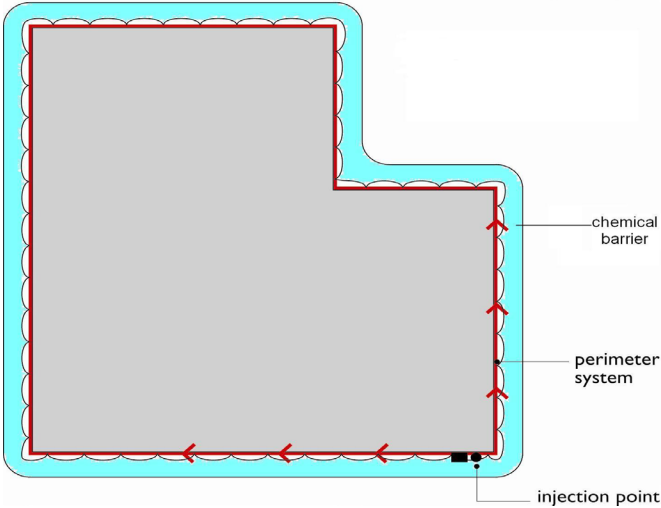
OVERVIEW



Step 1 – Measure the perimeter and find the best position for the injection box

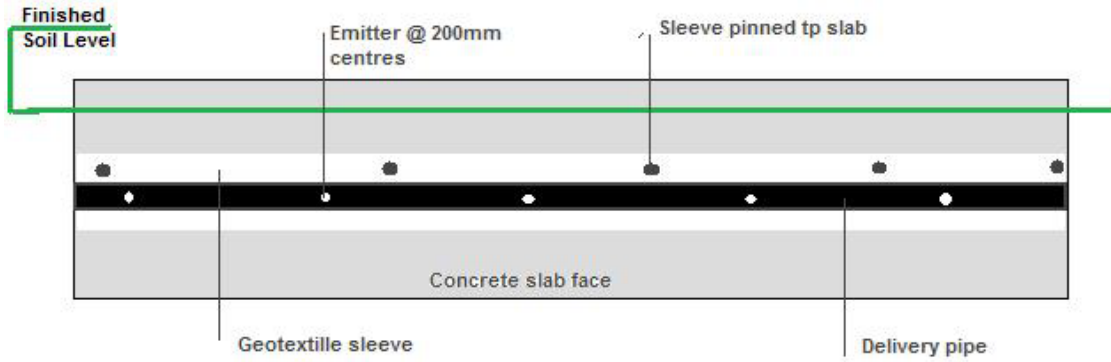


Step 2 – Pin Protectant Premium flow™ system to edge of building slab

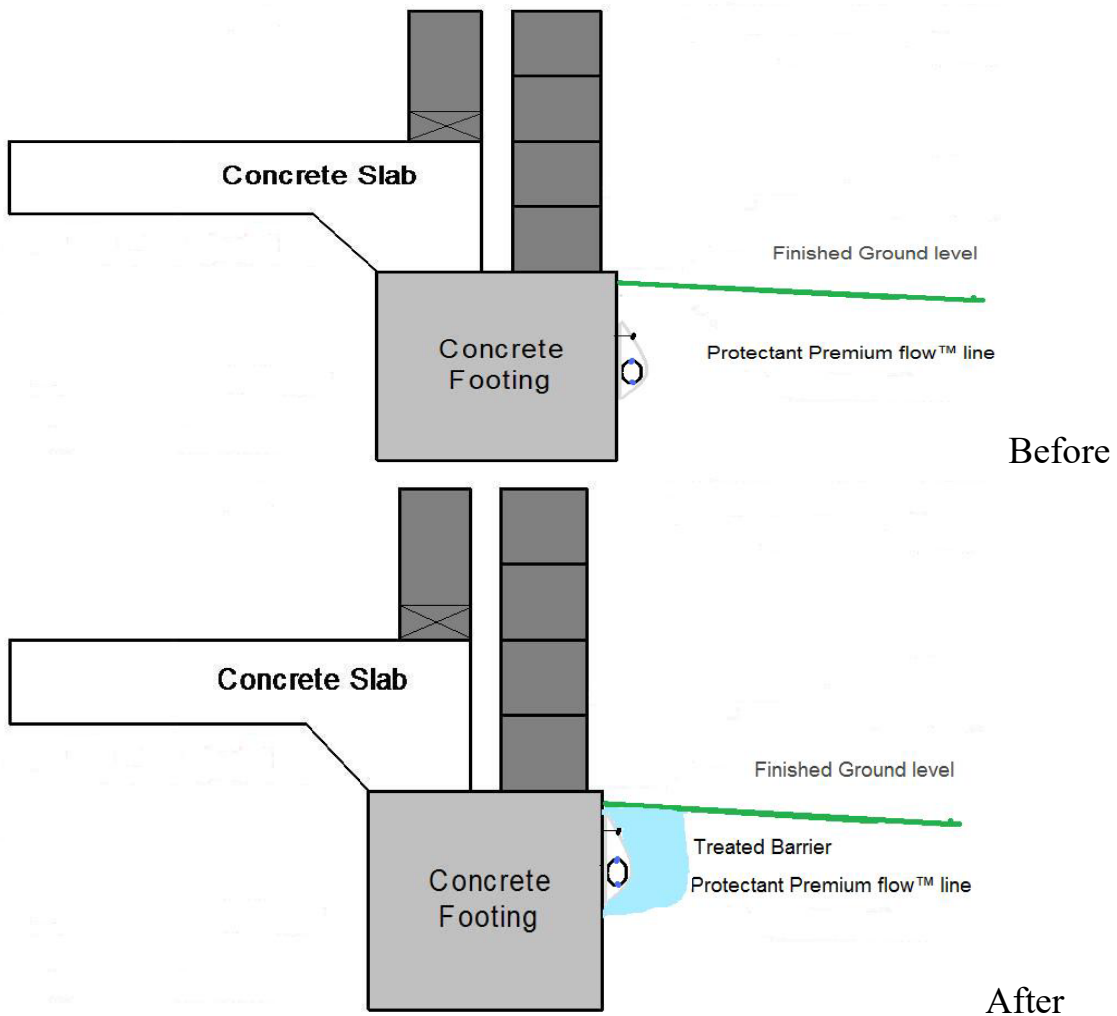


Step 3 – Inject termiticide to create a chemical barrier in the soil

Premium flow™ line



Soil treatment



INSTALLATION AND OPERATION PROCEDURE

System Design

1. Excavate an area 150mm wide and 75mm deep around the edge of the slab.



2. Measure the perimeter of the slab. If it is greater than 70m more than one system another injection point will be required. The maximum size of a zone is 70m with 35m either side of the pump-up point.
3. Slabs on different ground levels will need a separate system for each level.
4. Every system must have a pump-up point.

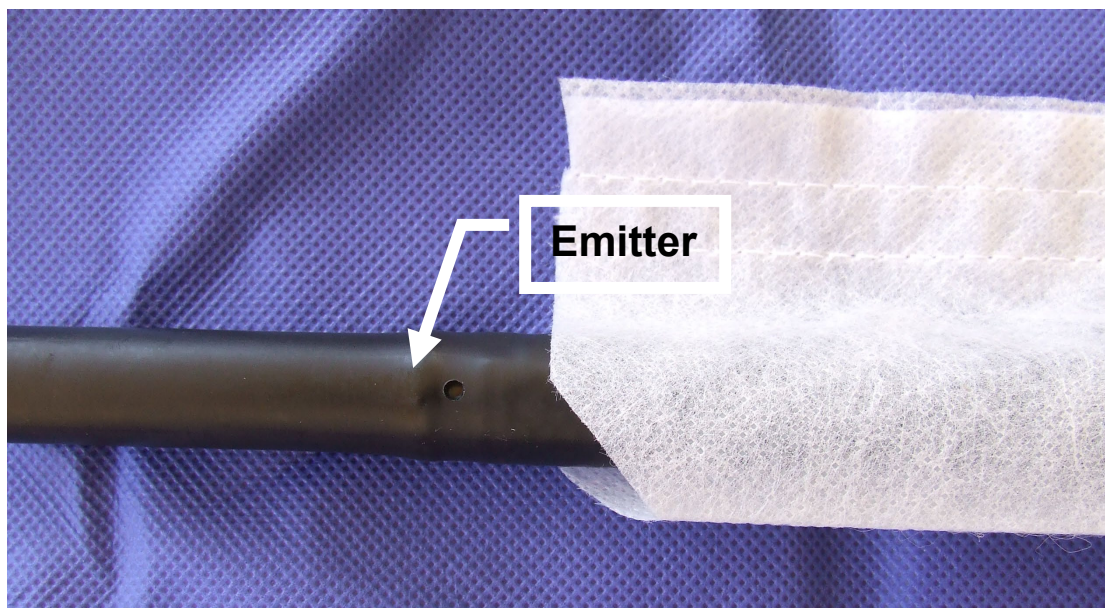
Installation

1. Start the installation from the pump-up point. This should be located at a point accessible to the street front to make charging of the system easier.
2. Setup the pump-up point in a pathway trap



3. Connect the Premium flow™ line to one side of the injection Tee

4. Run the Premium flow™ line to the first corner of the slab and check that there is no emitter where the line should be cut to fit the elbow. To install the fitting cut out the majority of the black pipe between each emitter, the fitting requires 35mm of the pipe after the emitter. This will hold the spacing at 200mm or less and will maintain adequate coverage.



5. Move the injection Tee slightly to allow the elbow fitting to align perfectly with each corner. Cut the pipe and fit the elbow with provided fasteners. Cover the fittings and pipe length with geotextile fabric to assist chemical spread in the area of treatment. To install the fitting cut out the majority of the black pipe between each Emitter; the fitting requires 35mm of the pipe after the Emitter. This will hold the Emitter spacing at 200mm or less and will maintain the required chemical coverage in the soil medium.



6. Put a single masonry nail (15-25mm) through the *Premium flow*[™] fabric and drive the nail firm with a hammer or pneumatic nail gun to hold the first run in place.
7. Run *Premium flow*[™] line from the other side of the pump-up tee ensuring that emitter placement doesn't interfere with the connection to the pump-up tee or the next elbow.
8. Put a single masonry nail (15-25mm) through the *Premium flow*[™] fabric and drive the nail firm with a hammer or pneumatic nail gun to hold the run in place.



9. Repeat the process of adjusting *Premium flow*[™] runs until all elbow fittings align perfectly with the slab corners.

10. Fit end plugs



11. Overlap the ends of neighbouring lines by 10cm or 1 emitter to ensure there are no gaps in the chemical barrier.

12. Nail the *Premium flow*[™] line to the slab at 0.5m intervals to prevent sagging and to ensure the system is tight against the slab

13. Check each end cap with the pathway trap has been fitted at each injection point



14. Conduct a pressure and flow check on each zone before covering the system with soil.

Pressure and flow test

Pump water through the system for 2 minutes at 100kPa pressure. If the pressure falls below 100kPa during the test then the pump cannot cope with the flow rate required by the system. In this case, either the pump or the size of the system will need to be changed. A low pump pressure may also indicate there is a leak somewhere in the system.

The volume of water pumped in 2min@100kPa = 0.66L for each meter of Premium flow™ line (excludes volume of soil component). To ensure provision of a continuous barrier use a minimum of 100 L of emulsion per M3 of soil. This equates to a delivery volume of 5 L of emulsion per linear meter for a 300 mm vertical barrier, or 10 L of emulsion per linear meter for a 600 mm vertical barrier. For a system with 70m of Premium flow™ line the volume required will be 0.66 x 70 or approximately 46.6 litres.

15. After flow and pressure tests have been completed successfully, allow the system to drain or remove the end caps and flush with air. This is a good time to take photos of the installation and to draw a plan of the site for future reference.
16. Cover the Premium flow™ line with a soil that conforms to the soil profile requirements described in this manual.
17. Consolidate the soil firmly enough to ensure it makes good contact with the system and to remove large air pockets as these interfere with capillary movement of water. Make sure the final ground level is approximately 30-50mm above the top edge of the Premium flow™ line.
18. Chemically Inject the completed system with the selected approved termiticide, at the prescribed rate and volume specified in the registered label instructions. The Premium flow™ Reticulation Termite Management System has manufactured approval for application of Bifenthrin, Imidacloprid and Fipronil register termiticides. Termiticides used in a Premium flow™ Reticulation Termite Management System shall have AVPMA Approval for use in a reticulation system and the registered termiticide label instruction shall specify used in a reticulation system.

Calculating the chemical requirement

For example, if the recommended concentration of a product is 1L of concentrate in 100L of water and this solution is to be applied at a rate of 100L per cubic metre of soil perimeter then the following calculation can be done:

Calculate this :

width X depth X length = (volume) X 100 L. = volume of mix.

All measurements in metres.

Eg. 0.15 X 0.1 X 70m = 1.05m³ X 100 L = 105 L

Total length of line within a zone is 70m

Total volume of treatment solution for the zone is 105L

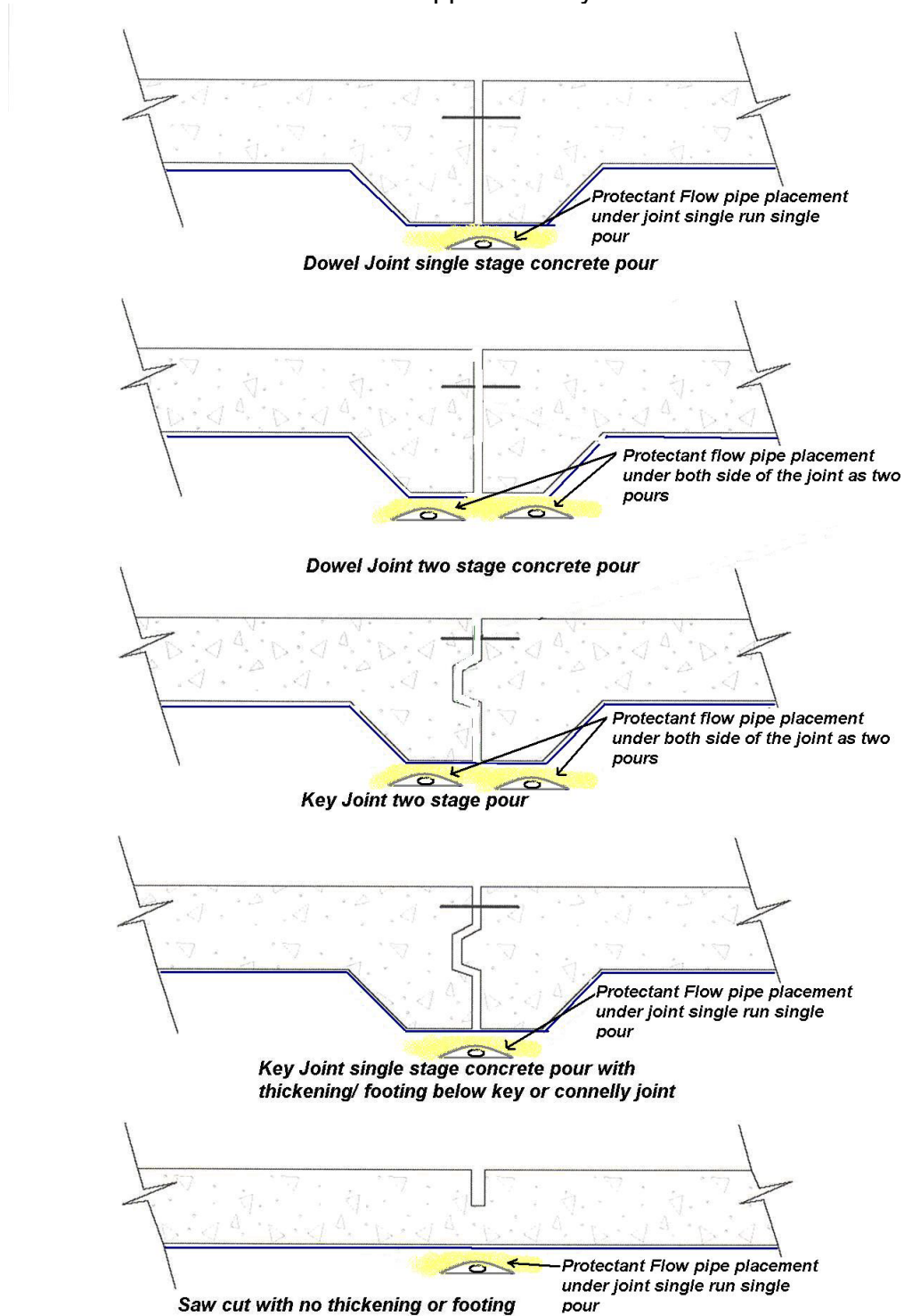
Total volume of concentrate required is 1.05L

The treatment solution can then be made by adding 1.05L of concentrate to the mixing tank and making this up to 105L with fresh water.

19. Flush rinse the mix tank with approximately 10% of the volume; this is to ensure the correct volume of termiticide is in the soil, not left in the delivery pipe.
20. Disconnect the hose from the pump-up point, recap the threaded nipple with threaded cap and close and lock the pathway trap.
21. Provide the building owner or their agent with a Certificate of Termite Treatment in accordance with AS 3660 series Take special care to record on the certificate the areas covered by the system, The length of each system and the volume required for each system and list as limitations any factors that may reduce the effectiveness of the treatment.
22. Fix two durable notices to the building in a prominent locations such as inside a meter box and under the kitchen cupboard.

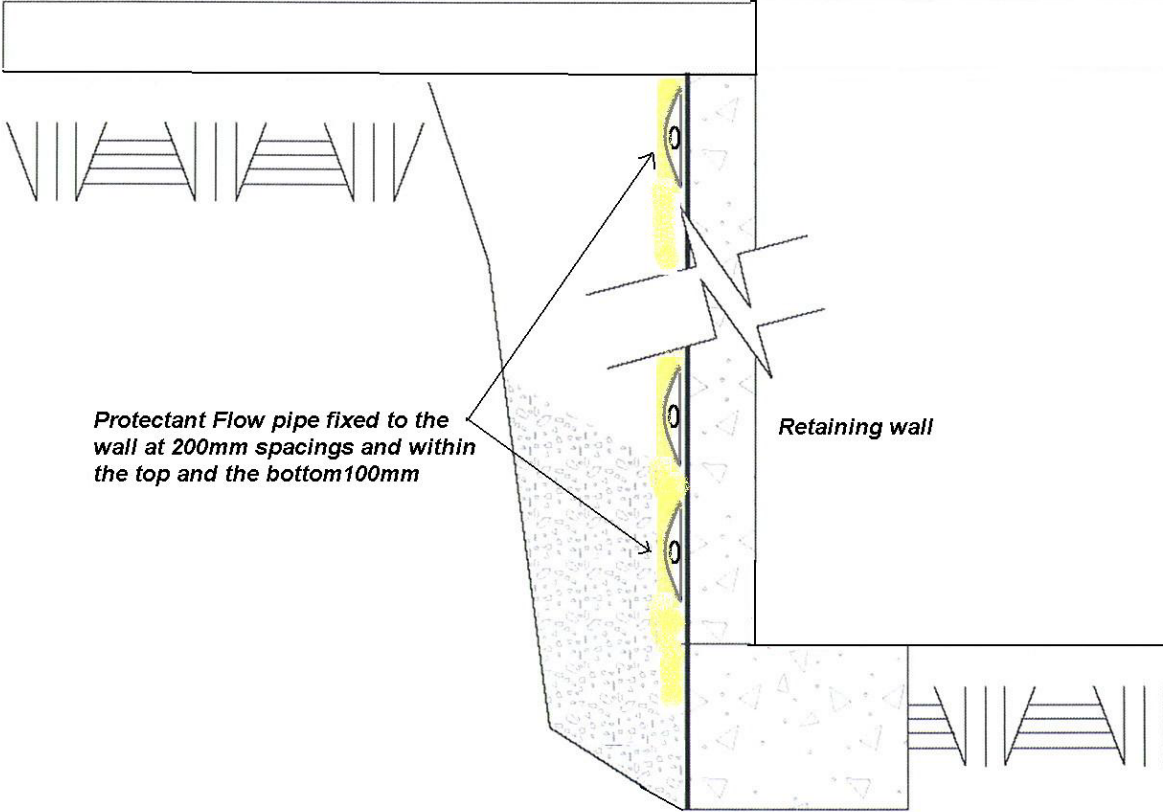
Premium flow™ Construction Joint Barrier

Premium flow™ is placed on a pad of sand under the moisture barrier (plastic sheet) at the line of a construction joint in concrete slabs. This will form a chemical barrier approximately 300mm wide at the construction joint.



Premium flow™ Retaining wall Barrier

Premium flow™ is attached to the soil face of a retaining wall and is layered at 200mm centres across the surface of the retaining wall.



SPECIFICATION

SOIL MEDIUM PROFILE.

Premium flow™ produces a uniform barrier in the soil by way of a combination of two properties:

- Mass flow in Premium flow™ reticulation the geotextile fabric which delivers the mixed termiticide solution.
- The capillary action in the soil which is responsible for its spread.

Capillary wetting is the wicking action of a soil. It determines the width of the wetting pattern and is important for the development of a uniform chemical barrier in the soil

Soils differ in their capillary properties and this is broadly related to soil texture. Fine clay soils produce the widest patterns but these develop relatively slowly which is a disadvantage when creating a chemical barrier. Sands react relatively quickly but do not achieve the same width.

Most termiticides are adsorbed onto clay and organic matter in soils. This protects the chemical barrier from washing out which can be a problem with pure sands.

Too little clay or organic matter can also be undesirable because they have the potential strip out the chemical and restrict its dispersal in the soil medium i.e. Silica Sand.

Care should be taken selecting the soil that is used to cover the system. A sandy loam is preferable. Soils with more than 10% clay or with a high content of added organic matter (compost, potting mix, biosolids etc) should be avoided. Soils that are water repellent should also not be used. Large clods of clay, rocks, bricks, timber and other debris should be removed from the soil as they will interfere with the spread of the chemical by capillary action.

Gypsum applied at the rate of 250g/m - gypsum is a useful addition to any soil as it improves capillary spread.

The sand or soil is nominally 50-100mm in depth is clean and has a grade within the following specification,

95-100% passing 6.7mm and 0-10% passing 75um sieves.”

In both the sieve size comply with AS 1152-1993 'Specification for test sieves.'

Manufactured Soils

Where the available soil is unacceptable one of the following may be used:

- Brickies Sand – This is a mixture of sand and clay components and is available across Australia
- Screened sandy loam suitable for top dressing lawns. This is generally referred to as screened living soil. The Screening process reduces the total volume of compost and biosoils ect.

The Protectant Pest Management will only warrant the installed Premium flow™ system, if these soil guidelines are followed by the Accredited installer.

Contact the Premium flow™ Technical Manger if you have any questions about the suitability or supply of a soil.

CHECK LIST

Installation and first injection

1. Excavate an area 150mm wide and 50-75mm deep around the edge of the slab.
2. Measure the external perimeter of the slab to receive the *Premium flow*TM system installed. If it is greater than 70m for the system, additional pump-up point/s will be required. Where the slab edge/footing strip extends vertically greater than 300mm depth additional Systems must be installed to ensure complete chemical soil coverage down to and 50mm beyond the slab edge/footing strip. The maximum length of a system is 70m with 35m either end of the pump-up point/s
3. Setup the pump-up point/s in a pathway trap/s.
4. Fit and attach the *Premium flow*TM to the slab face. Put a single masonry nail (15-25mm) through the *Premium flow*TM fabric and drive the nail firm with a hammer or pneumatic nail gun to hold the run in place.
5. Check end plugs and that all fittings are screwed tight.
6. Check lines are properly pinned to the slab and there is no sagging.
7. Conduct a Pressure and Flow Test of each System before covering the System/s with soil medium.
8. Visually check for emergence of wetting pattern and leaks.
9. Inject the System with the approved termiticide at the prescribed rate and volume specified in registered label instructions.
10. Flush the system with approximately 10% of the volume of chemical mix that was applied as per the calculations for that system. This can be clean water or tank wash (raise from tank).
11. Disconnect the chemical pump up hose from the systems pump-up point, recap the filler point with a cap and close and lock the pathway trap.
12. Complete all required information of installation treatment and affix a Durable Notice in electricity box and kitchen cupboard.
13. Provide certificates of installation and injection to the builder or home owner. Retain copies for records.
14. Take digital photos of the system after completion and file according to job number for future reference.

15. In Queensland to a residential dwelling, as an “Alternative Solution” in lieu of a ‘concrete cover strip’ the buildings external perimeter, shall have supplied and affixed at 10m intervals (or to each length of external perimeter wall) an approved ‘WARNING PLATE’ as provided by Protectant Pest Management and in accordance to requirements for correct application, where no concrete cover strip i.e. pathway abuts the building.

Second and subsequent injections

1. Conduct a Pressure and Flow Test on each System
2. Check that the system has not been uncovered by washouts or construction
3. Check integrity of corner fittings
4. Check that the pump-up box is locked and has not been tampered with
5. Check that Garden or path constructions have not disturbed the soil over the system
6. Chemically inject the System/s with the approved termiticide at the prescribed rate and volume specified in the registered label instructions.
7. Visually check for emergence of wetting pattern and leaks
8. Flush the system with approximately 10% of the volume of chemical mix that was applied as per the calculations for that system. This can be clean water or tank wash (raise from tank).
9. Disconnect the chemical pump up hose from the systems pump-up point, recap the filler point with a cap and close and lock the pathway trap.
10. On a new treatment Durable Notice all required information and affix a Durable Notice electricity box and kitchen cupboard.
11. Provide certificates of installation and treatment to the builder or home owner. Retain copies for records.

SYSTEM MAINTENANCE

Records

A copy of the Certificate of Installation/treatment with a site plan as required should be kept by the Accredited Installer and Protectant Pest Management asset out in Australian Standard AS 3660.1-2014 'Termite management – New building work' and Australian Standard AS 3660.2-2017 'Termite management – In and around Existing buildings and Structures.

Inspections

The householder should be informed of the need for an annual inspection of the building by a Licensed Pest Control Operator to check for bridging or breaching of the barrier. If bridging or breaching is found, a further treatment will be required.

Reinjection interval

The frequency with which a site will require treatment will depend largely on the chemical properties of the termiticide and the climatic conditions. This information can be obtained from the chemical manufacturer is generally shown on the label.

The slab external perimeter will need to be retreated at a shorter interval whenever the soil chemical termite management system barrier has been disturbed. In this case, the termite management system may be re-established by reinjecting the slab through the Installed *Premium flow*TM system and where the soil medium is disturbed, hand spray to the disturbed soil area.

Treatment will be in accordance with the registered label instructions for use in a reticulation system of an APVMA approved termiticide.

Repairs

Leaks around elbows and other cam lock fittings can be repaired by reconnecting the fitting and tightening the cam lock.

Punctures in the drip pipe can be repaired by cutting out the section of damaged pipe and rejoining the line with an inline joiner. If an emitter is involved, it can be removed and replaced with a section of new pipe with emitter. This operation will need two joiners.

After any repairs, it is important to re-establish the geotextile fabric strip to bridge the affected region and maintain the integrity of the System.

Physical breaches

Any disturbance of the treated soil may disrupt the chemical barrier and void the warranty. This could be because soil is removed or because the barrier is covered with untreated soil or mulch.

In all cases, the area should be repaired and chemically retreated. Any new soil should conform to the requirements outlined earlier in this manual. Furthermore the finished level of the soil should be approximately 25mm above the top edge of the system.

Flushing

The Premium flow™ system can be flushed by removing the end plugs and pumping fresh water through the lines. The waste water from this operation should be collected and disposed of appropriately as it will contain residual termiticide.

Certificates, Durable Notice and 'WARNING PLATE'

The NCC 2019 – Amendment 1, Volume Two; Part 3.1.4.4 Durable Notice, requires that a Durable Notice for each Installation is affixed in a prominent position i.e. electric meter box after and kitchen cupboard to new building work with a Certificate of Installation shall be provided to the installer, builder, homeowner or his agent. To an existing building System re-injection, a Certificate of Treatment and Durable Notice shall be provided to the homeowner.

Premium Flow is a chemical reticulation termite management system with its components including an advisory sign "Warning Plate" produced for Protectant Pest Management Pty Ltd.

The chemicals applied in the reticulation must have APVMA registered approval for those chemicals approved for use with the termite management system.

"Warning Plate" Requirements and Installation shall be in accordance with the specifications laid out for manufacture of the advisory sign.

The advisory sign "Warning Plate" must be permanently fixed in a prominent location, not greater than 10mt apart to external perimeter wall as required, where no concrete cover abuts the building.

Where any single length of external perimeter wall is greater than 10mt additional advisory signs "Warning Plate" shall be fixed at 10mt or less spacing.

Each advisory sign "Warning Plate" fixed to the external perimeter wall of a building by use of an appropriate adhesive and/or fastening screws must be not less than 300mm above the finished ground level to allow for ease of access and readily seen for inspection.

Technical Specifications

- Premium flow™ – Non PC
- Opening Pressure - 0m head
- Discharge Rate - 20 L/m/hr (litre/metre/hour)
- Component Materials:
 - Irrigation pipe: Drip line
 - Geotextile: Polyester composites
- Operating Pressure Range: 0 - 18m head (0 -176kPa)
- Dripper line: ID: 13.90 mm - OD: 15.7 mm ; wall 0.9
- Best applications: Level House Slabs
- Maximum perimeter length per pump-up point: 70m (Up to 35m either side of pump-up Tee)
- Suggested depth of installation: 25-50mm below finished soil level
- Maintenance requirements: Reinject lines according to chemical manufacturer's specifications for application, the registered label of the approved chemical product and this Installation Manual
- Installation method: Nail to vertical side of house slab.
- Connection fittings: Drip line and 16mm Cam-lock fittings

PARTS LIST

PART PHOTO	PART NAME	PART NUMBER
	STOP END CAP	NL16 STOP
	TEE JOINER TEE PUMP-UP POINT	NL 16 TEE
	90°ELBOW SINGLE PUMP-UP POINT	NL 16 E
	FEMALE TAKE OFF END	NL 16 FEM
	MALE TAKE OFF END	NL 16 MAL
	INLINE JOINER	NL 16 INLINE
	$\frac{3}{4}$ " THREADED CAP 20mm THREADED CAP	20 CAP
	PATHWAY TRAP	PWT
	Warning Plate	WPlate