

**0411P PARCHEM WATERPROOFING – EXTERNAL AND TANKING****Branded worksection**

This branded worksection *Template* has been developed by NATSPEC in conjunction with PARCHEM and may be used whilst the Product Partner is licensed to distribute it. The copyright remains with NATSPEC. As with all NATSPEC worksections, it is the responsibility of the user to make sure it is completed appropriately for the project. The user should also review its applicability for local conditions and regulations. Check [www.natspec.com.au](http://www.natspec.com.au) for the latest updated version.

**Worksection abstract**

This worksection *Template* is applicable to PARCHEM waterproofing membrane systems for new construction and remedial waterproofing including roofing, podiums, decks, balconies, concrete slabs over below ground spaces, retaining walls, tunnels, landscape and planter boxes, and tanking. It relies on AS 4654.1 and AS 4654.2. It includes concrete mixtures and penetrant sealers but excludes decorative coatings.

**Guidance text**

All text within these boxes is provided as guidance for developing this worksection and should not form part of the final specification. This *Guidance* text may be hidden or deleted from the document using the NATSPEC Toolbar or the hidden text *Hide* and *Delete* functions of your word processing system. For additional information visit FAQs at [www.natspec.com.au](http://www.natspec.com.au).

**Optional style text**

Text in this font (blue with a grey background) covers items specified less frequently. It is provided for incorporation into *Normal* style text where it is applicable to a project.

**Related material located elsewhere in NATSPEC**

If a listed worksection is not part of your subscription package and you wish to purchase it, contact NATSPEC.

Related material may be found in other worksections. See for example:

- 0193 Building access safety systems.
- 0314 Concrete in situ.
- 0315 Concrete finishes.
- 0471 Thermal insulation and pliable membranes for membrane protection boards and insulation boards.
- 0612 Cementitious toppings.
- 0613 Terrazzo in situ.
- 0621p PARCHEM waterproofing - wet areas.
- 0657p PARCHEM resin based seamless flooring.
- 0802 Hydraulic design and install.

**Documenting this and related work**

You may document this and related work as follows:

- Location, extent and type of membrane including details of junctions with flashings and damp-proof courses on the drawings.
- Plan structural control and expansion joints to avoid critical areas such as low points in slabs, planter boxes and above habitable rooms, and show on the drawings.

The *Normal* style text of this worksection may refer to items as being documented elsewhere in the contract documentation. Make sure they are documented.

Search [acumen.architecture.com.au](http://acumen.architecture.com.au), the Australian Institute of Architects' practice advisory subscription service, for notes on the following:

- Guarantees and warranties.
- Waterproofing.

**Specifying ESD**

The following may be specified by including additional text:

- Low VOC emitting liquid membrane systems.
- Recycling of construction scrap materials.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

## 1 GENERAL

Parchem Construction Supplies is a leading manufacturer and supplier of products and equipment to the Australian and New Zealand concrete and construction markets. Through all of its divisions and heritage, Parchem has built over 50 years' experience in servicing the construction, civil, and concrete industries. Parchem brings solid experience and technical expertise in the supply and manufacture of construction and decorative concrete products, equipment and tools.

### 1.1 RESPONSIBILITIES

#### General

Requirement: Provide PARCHEM waterproofing membrane systems for roofing, podiums, decks, balconies, concrete slabs over below ground spaces, retaining walls, tunnels, landscape and planter boxes, and tanking, as documented.

*Documented* is defined in the *0171 General requirements* worksection as meaning contained in the contract documents.

#### Performance

Requirements: Conform to the following:

- Graded to falls to dispose of stormwater without ponding above the depth of lapped seams.
- Able to accommodate anticipated building movements.
- Able to accommodate its own shrinkage over the warranty life of the roofing system.
- Able to resist water under hydrostatic pressure.

Consider adding the required service-life of the membrane system (material and installation), 10 to 15 years appears normal.

When making selections, consider products with the following characteristics:

- Able to accommodate anticipated environmental conditions including UV light.
- Able to remain serviceable after material shrinkage and loss of elastic properties.
- Resistant to traffic and falling objects including hail.
- Chemically compatible with the surrounding building materials.
- Capable of permanent immersion (e.g. tanking, tiled areas).

### 1.2 COMPANY CONTACTS

#### Parchem technical contact

Website: [www.parchem.com.au/parchem-specification-team](http://www.parchem.com.au/parchem-specification-team)

### 1.3 CROSS REFERENCES

#### General

Requirement: Conform to the following:

- *0171 General requirements*.

*0171 General requirements* contains umbrella requirements for all building and services worksections.

List the worksections cross referenced by this worksection. *0171 General requirements* references the *018 Common requirements* subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.

NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.

### 1.4 STANDARDS

#### Membrane materials

Standard: To AS 4654.1.

#### Membrane design and installation

Standard: To AS 4654.2.

#### Stormwater drainage

Standard: To AS/NZS 3500.3.

AS 4654.1 and AS 4654.2 are applicable for external and above ground use only. Materials selected for tanking and waterproofing of below ground structures should be designed and selected with the assistance of a specialist waterproofing consultant and with the manufacturer or supplier.

## 1.5 MANUFACTURERS DOCUMENTS

### Technical manuals

Website: [www.parchem.com.au/construction/](http://www.parchem.com.au/construction/)

## 1.6 INTERPRETATION

### Definitions

General: For the purposes of this worksection the definitions given in AS 4654.1 and AS 4654.2 and the following apply:

- Bitumen: A viscous material from the distillation of crude oil comprising complex hydrocarbons, which is soluble in carbon disulphide, softens when it is heated, is waterproof and has good powers of adhesion. It is produced as a refined by-product of oil.
  - . APP Bitumen: Bitumen modified with Atactic (meaning non-crystalline or amorphous) polypropylene wax to form a plastomeric sheet. The membrane is reinforced with fibreglass or non-woven polyester (NWP).
  - . SBS bitumen: Bitumen modified with Styrene Butadiene Styrene, a thermoplastic rubber that undergoes a phase inversion at elevated temperature and converts to an elastomeric material. The membrane is reinforced with fibreglass or non-woven polyester (NWP).
- Bond breaker: A system preventing a membrane bonding to the substrate, bedding or lining.
- Double detail joint: A joint formed by turning up and bonding the horizontal membrane to a vertical substrate and adding an overflashing of membrane material bonded to the vertical substrate and folded over and bonded to the horizontal membrane. In certain situations the double detail can be achieved by bonding an angle profile of membrane material to the junction prior to laying the membrane.
- Liquid applied: A water-based formulation which cures to form elastomeric membranes.

Urethane modified acrylics have better resistance to ponding. Products include acrylics, modified polyurethanes (water-based), polyuria and modified cementitious systems.

- Polyurethane: Water or solvent based formulations which moisture cure to form an elastic rubber membrane.

They can be made more cheaply with bitumen at the expense of long term properties.

- PVC membrane: Flexible plastic sheet membrane (vinyl).
- Slip sheet: A sheet used to isolate the membrane system from the supporting substrate or from the topping or mortar bedding. The most common material is polyethylene.
- Substrate: The surface to which a material or product is applied.

Edit the **Definitions** subclause to suit the project or delete if not required. List alphabetically.

## 1.7 SUBMISSIONS

### Products and materials

Manufacturer's documentation: Submit copies of the following data:

- Product technical data sheets.
- Safety data sheets (SDS).
- Preventative maintenance procedures.
- Instructions and procedures for the repair of the membrane.
- Type test certificates verifying compliance with AS 4654.1 Section 2, Tables 2.1 to 2.3.

### Prototypes

General: Apply waterproofing to 10 m<sup>2</sup> of substrate to demonstrate surface preparation, crack and joint treatment, corner treatment, and execution quality. Install final surface finish to demonstrate aesthetic affects, physical properties, and quality of materials and execution as applicable.

Nominate an approval process and indicate if the prototype is to be retained, Indicate location, size, and other details of prototypes on drawings. Delete if not required.

### Records

Placing records: Photographically record the application of membranes and label with the following information:

- Date.

- Portion of work.
- Substrate preparation.
- Weather during application and curing.
- Protection provided from traffic and weather.

Liquid membrane applications:

- Record wet film thickness once every 10 m<sup>2</sup> and compare to the manufacturers requirements.
- On completion of every 100 m<sup>2</sup> of each coat compare the amount of membrane used with the manufacturers application rate and record the result.

For large or complex projects consider adding the following requirements:

- Daily reports: Provide daily reports of membrane placed including:

The location and element where each membrane was placed.

The method of placing and climatic conditions.

Personnel: Employ a suitably qualified person to monitor the placing and protection of the membrane and prepare the daily report.

Flood tests: Photographically record flooded area and adjacent areas noted in **Flood test**. Label photographs with date and location.

### Samples

Requirement: Submit 300 x 300 mm samples of each type of membrane including the finish of the visible surface.

### Shop drawings

Requirement: Submit shop drawings showing the following:

- Junctions with vertical surfaces.
- Drainage details.
- Control joints.
- Flashings.
- Penetrations.
- Corners.
- Terminations and connections.
- Membrane layers.
- Insulation and protection.

An alternative is to prepare these details in consultation with the membrane supplier. Delete as appropriate.

### Subcontractors

General: Submit names and contact details of proposed suppliers and installers as recommended by Parchem.

Evidence of experience: [complete/delete]

Delete if supplier/installer details are not required.

### Warranties

Requirement: Submit warranties to **COMPLETION, Warranties**.

## 1.8 INSPECTION

### Notice

Inspection: Give notice so that inspection may be made of following:

- Substrate preparation completed.
- Secondary layers preparation completed.
- Before membranes are covered up or concealed.
- Underflashings complete before installation of overflashings.
- After flood testing.

Amend to suit the project adding critical stage or mandatory inspections required by legislation or regulation.

**Hold points**, if required, should be inserted here.

## 2 PRODUCTS

### 2.1 GENERAL

#### Product substitution

Other products: Conform to **PRODUCTS, GENERAL, Substitutions** in *0171 General requirements*.

The *0171 General requirements* clause sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.

#### Marking

Identification: Marked to show the following:

- Manufacturer's identification.
- Product brand name.
- Product type.
- Quantity.
- Product reference code and batch number.
- Date of manufacture.
- Material composition and characteristics such as volatility, flash point, light fastness, colour and pattern.

Edit the list to suit the project or delete if not required.

### 2.2 LIQUID MEMBRANE SYSTEMS

#### Emer-Proof Ecoflex

Description: High performance, water-based, rubberised bitumen, liquid waterproofing membrane.

Typical application: Waterproofing of retaining walls, building foundation walls, below ground tanking structures, waterproofing/damp proofing sandwich membrane, key joints and dowel bars.

#### Emer-Proof Ecoflex Anti-Root

Description: Water-based, polymer modified, bitumen liquid waterproofing membrane with plant root inhibitors.

Typical application: Planter boxes, garden beds, retaining walls, underground waterproofing, general areas in contact with soil and plants, protective coating over bituminous sheet membranes in underground areas.

#### Emer-Proof Quick Dry Two Part

Description: Water-based, polymer/cementitious, two part liquid waterproofing membrane.

Typical application: Podium terraces, balconies and deck areas under toppings, tiles and other protected environments, wet areas and showers.

#### Emer-Proof Undertile

Description: Water-based, fibre enhanced, single component, SBR hybrid polyurethane membrane.

Typical application: Wet areas and shower alcoves, under tile balcony areas, sandwich seal between existing and new substrates, e.g. old to new concrete, cement screeds over concrete and CFC surfaces.

#### Emer-Proof – EcoSeal

Description: Water-based, solvent free polyurethane liquid waterproofing membrane.

Typical application: Wet areas and shower alcoves, podium terraces, balconies and deck areas, foot trafficable exposed roof top membrane (when over coated), foot trafficable exposed balcony decks (when over coated), foot trafficable exposed walkways subject to regular foot traffic (when over coated), sandwich seal between existing and new substrates, e.g. old to new concrete, cement screeds over concrete and CFC surfaces.

#### Emer-Proof Elastic Joint Band System

Description: Flexible bond breaking tape of nitrile butadiene rubber, with polyester fabric carrier surface and detailing accessories for sealing critical movement zones, including the following:

- Emer-Proof Elastic Joint Band Tape for floor to wall and wall to wall applications.
- Emer-Proof Elastic Joint Band Corners: 270° external, 90° internal and adjustable internal corners.
- Emer-Proof Elastic Joint Band Pipe Penetration Detailing Squares: For pipes up to 50 mm, 110 and 150 mm.
- Emer-Proof Butyl Square Floor Waste Detailing Collars of various sizes.

Typical application: Internal, external, underground and fully immersed applications used with liquid applied membranes.

#### **Emer-Proof Top Coat**

Description: Water-based, acrylic hybrid membrane top coat for UV exposed applications.

Typical application: Roof areas, exposed walk ways subject to regular foot traffic, maintenance walkways subject to foot traffic, deck and balcony areas, exposed roof surfaces for maintenance and access areas and general horizontal surfaces exposed to weather.

#### **Emer-Proof Extended Wear Clear Coat**

Description: Water-based, solvent free, aliphatic polyurethane clear sealer.

Typical application: Sealing over Emer-Proof Top Coat membrane coating to improve stain resistance, durability and weathering properties.

#### **Emer-Proof Multi-Purpose Primer and Waterproofing Additive**

Description: SBR latex, single component, fast drying primer.

Typical application: Provides high bonding and penetrating properties into concrete and masonry surfaces. It can also be used as a waterproofing additive for cement based products to enhance adhesion, water resistance and compressive strength.

#### **Emer-Proof Non-Porous Primer**

Description: Water-based, solvent, free primer for non-porous substrates.

#### **Emer-Proof Aqua Barrier**

Description: Waterborne, epoxy membrane/barrier for porous surfaces.

### **2.3 SELF-ADHESIVE MEMBRANE SYSTEMS**

#### **Emer-Proof HD**

Description: Woven polypropylene surfaced, bituminous self-adhesive membrane, to waterproof bridge decks, ramps, carparks and road pavements where the membrane will be overlaid with hot asphalt.

#### **Emer-Proof HDPE**

Description: Self-adhesive bituminous membrane incorporating a cross laminated HDPE film that provides excellent physical & application properties.

#### **Emer-Proof Self-Adhesive Primer**

Description: Self-adhesive membrane bituminous primer for Emer-Proof HD & Emer-Proof HDPE.

### **2.4 BITUMINOUS SHEET MEMBRANE SYSTEMS - TORCH APPLIED MEMBRANES**

Waterproofing sheet membrane systems and individual products, suitable for either UV protected or UV exposed applications in general new construction and remedial construction.

### **2.5 BITUMINOUS SHEET (GUIDANCE)**

#### **Index Argo P 3 mm**

Description: Plastomeric, torch-applied membrane, reinforced with polyester and stabilised with fibre glass mat, for single or multi-layer systems.

#### **Index Autotene Base P 3 mm**

Description: Thermally self-adhesive waterproofing base sheet for thermal insulation and heat sensitive substrates.

#### **Index Defend H 4 mm**

Description: Elastomeric, torch-applied, plant root repellent membrane, reinforced with rot-proof single strand spunbound, non-woven polyester fabric.

#### **Index Fidia Plain 3 mm and Fidia Mineral 4.5 kg**

Description: Elastomeric, torch-applied membrane, reinforced with rot-proof non-woven polyester stabilised with glass mat.

#### **Index Modo P 3.5 mm**

Description: Elastoplastomeric, torch-applied membrane, reinforced with polyester and stabilised with fibre glass mat, for single or multi-layer systems.

#### **Index Perfobase**

Description: Perforated reinforced base sheet, to relieve water vapour pressure from under multi-layer torch-on membrane systems.

**Index Proteaduo P 4 mm**

Description: 4 mm thick, torch applied waterproofing membrane with multi-layer SBS/APP cross-laminated composite polymer bitumen and reinforcement.

**Index Rollbase**

Description: Polyester fabric backed base sheet, for heat sensitive substrates, in multi-layer torch-on membrane systems.

**Index Testudo Plain 4 mm and Testudo Mineral 4.5 kg**

Description: Elastomeric, torch-applied membrane, reinforced with rot-proof non-woven, single strand, spunbond, polyester fabric. The Testudo Mineral version is self-protected with grey ceramic mineral granules.

**Index Testudo Mineral Design 10P Checkerboard**

Description: Elastomeric, torch-applied membrane, reinforced with rot-proof non-woven, single strand, spunbond, polyester fabric which is self-protected with grey and red squares forming a checkerboard pattern.

**Index Testudo 30 5 mm**

Description: Torch applied high performance reinforced elastoplastomeric polymer waterproofing membrane.

Index Testudo 30 5 mm is specifically designed for bridge and/or car park decks with an asphalt covering.

**Index Vapordiffuser**

Description: Elastoplastomeric membrane with bitumen underside rivets, allowing water vapour to diffuse and provide waterproofing in base layer in multi-layer systems.

**Index Bitumen Primer**

Description: Bitumen primer for all torch applied Index membranes

**2.6 CEMENTITIOUS MEMBRANE SYSTEMS****Vandex BB75-Z**

Description: Surface applied, cement based render, waterproofing barrier for positive and negative water pressure applications.

**Vandex BB75E-Z**

Description: High performance, crack accommodating, cement based render, waterproofing barrier for positive and negative water pressure applications.

**Vandex Cemelast**

Description: Flexible, surface applied, cement based render, waterproofing barrier, for positive and negative water pressure applications.

**Vandex Concrete Grey**

Description: Concrete capillary penetrating, crystal growth sealing, cement based, waterproofing system, for positive and negative water pressure applications.

**Vandex Uni-Mortar 1-Z**

Description: Cement based reprofiling and waterproofing repair mortar (6 mm to 12 mm thickness).

**Vandex Plug**

Description: Fast setting, cement based mortar to plug running water leaks.

**2.7 ACCESSORIES****Helasto-ring**

Description: Plastic support ring for concrete pavers with levelling adjustment.

**Torch on One Way Vents**

Description: Vapour relief roof vents for Index bituminous membranes.

The use of One Way Vents when used with the torch on bituminous sheet systems allows water vapour to escape the roof deck system without allowing moisture to enter through the vent. These can also be used for systems incorporating insulated panels.

**Pressure seal flashing**

Description: Aluminium strips for sealing and flashing the edge of bituminous sheet membranes.

**Flashing**

Description: Aluminium strips for sealing and flashing the edge of bituminous sheet membranes.

Proprietary item or as detailed with an aluminium angle.

Fixing: [complete/delete]

Surface fixed and sealed or fixed to cast in reglets.

Sealant: [complete/delete]

Sealant to be compatible to the nominated membrane in contact.

### Internal Bituminous Corner

Description: Prefabricated corners made of polymeric bituminous membrane for use with Index membrane (except Index Proteaduo).

### External Bituminous Corner

Description: Prefabricated corners made of polymeric bituminous membrane for use with Index membrane (except Index Proteaduo).

### Torch on Bituminous Fillet

Description: Prefabricated bond breaker made of polymeric bituminous membrane for use with Index membrane (except Index Proteaduo).

### Roof Drain

Description: Prefabricated dropper made of thermoplastic elastomer with a 170 mm spigot.

### Parapet Drain Outlet – Boy Type

Description: Prefabricated angular drain spitter made of thermoplastic elastomer.

### Torch on Pipe Sealing

Description: Prefabricated collar made of thermoplastic elastomer.

### Torch on Domed Grate

Description: Leaf guard for drainage outlets 60 to 120 mm diameter.

For torch on bituminous sheet applications, the use of Internal and External Bituminous Corners and Bituminous Fillets provide risk reduction in higher risk areas such as corners and junctions by the total melting of the bituminous waterproofing sheet.

## 2.8 THERMAL INSULATION

### Insulation boards

Description: [complete/delete]

For example, 100 mm thick 175 kg/m<sup>3</sup> density rockwool sheets or 25 mm thick 32 kg/m<sup>3</sup> density extruded polystyrene sheets. Use polyisocyanurate insulated foil faced board for fully adhered systems.

## 2.9 PROTECTION

### Emer-Proof Impraboard

Description: Lightweight polypropylene, impact protection sheet for membranes.

## 2.10 SLIP SHEETS

### Sheet material

Description: [complete/delete]

For example, 1 layer of 300 µm thick polyethylene sheet or 1 layer of 130 g/m<sup>2</sup> geotextile sheet.

Function: Isolates the movement of overlying finishes such as screeds from the membrane.

## 2.11 DRAINAGE CELL SHEETS

### Emer-Proof Drain V

Description: Dimpled protection and drainage membrane in high-density, extruded polyethylene with continuous filament yarn.

### Emer-Proof Geotex

Description: Non-woven fabric in needlepunched polyester for the drainage of construction works.

### Walls

Material: [complete/delete]

Product and thickness.

Cell panel protection: [complete/delete]

If required, the product recommended by the cell panel supplier.

Filter: [complete/delete]



Geotextile product of the recommended grade to suit the fill material. Delete if filter is integral with the drainage cell panels specified.

Location: [complete/delete]

Refer to **Subsoil drains**, 0802 Hydraulic design and install for groundwater disposal.

### Planter bases

Material: [complete/delete]

Product and thickness.

Protection: [complete/delete]

The product recommended by the membrane supplier.

Filter: [complete/delete]

Geotextile product of the recommended grade to suit the soil.

## 3 EXECUTION

### 3.1 PREPARATION

#### Substrates

General: Prepare substrates as follows:

- Fill all cracks in substrates wider than 1.5 mm with a filler compatible with the membrane system.
- Fill voids and hollows in concrete substrates with a concrete mix not stronger than the substrate.
- Remove projections.
- Remove deleterious and loose material.
- Remove all traces of a concrete curing compound if used.

Delete the reference to the curing compound if it is demonstrated to be compatible with the membrane.

- Leave the surface free of contaminants, clean and dust free.

Concrete substrates: Cure for more than 28 days.

Refer to the manufacturers substrate curing time requirements for the membrane system being used.

#### Moisture content

Requirement: Verify that the moisture content of the substrate is compatible with the water vapour transmission rate of the membrane system by testing to AS 1884 Appendix A.

Refer to NATSPEC TECHnote DES 008 on the preparation of concrete substrates. Refer also to CCAA Data Sheet Moisture in concrete and moisture-sensitive finishes and coatings.

#### Falls

Requirement: Verify that falls in substrates are greater than 1:80.

Consult the membrane supplier to determine a fall that minimises ponding at lapped seams.

#### Joints and fillets

Internal corners: [complete/delete]

Select: Provide 45° fillets 50 x 50 mm or a Double detail joint.

Fillet material: [complete/delete]

Select hardwood or plastic for 45° fillets, or nominate the membrane for double detail joints.

External corners: Round or arris edges.

Control joints: Prepare all substrate joints to suit the membrane system.

#### Priming

Compatibility: If required, prime the substrates with compatible primers for adhesion of the membrane system.

Refer product technical data sheet.

## 3.2 APPLICATION

### Protection during installation

Damage: Protect membrane from damage during installation and for the period after installation until the membrane achieves its service characteristics that resist damage.

For example, until liquid applied membranes have fully cured.

### Drains

See AS 4654.2 clause 2.10.

General: Prevent moisture from tracking under the membranes at drainage locations.

Drains and cages: Provide removable grates or cages to prevent blockage from debris. If the finished surface is above the level of the membrane, provide a slotted extension piece to bring the grate up to the level of the finished surface.

Overflows: Apply a bond breaker to the perimeter of the overflow outlet at its junction with the surface to which the membrane will be fixed. Turn the membranes into the overflow to prevent moisture from tracking behind the membrane.

Alternatively, fit a pre-formed overflow outlet fitting with a face mounted flange and bond membrane to flange.

See AS 4654.2 clause 2.11 on overflows.

### Sheet joints – Self-adhesive membranes

Longitudinal laps: 50 to 60 mm.

Transverse laps: 70 to 80 mm.

### Sheet joints – Pre-applied sheet membranes

- Selvege: 75 mm.

- Over-seal: 75 mm.

### Sheet joints – Bituminous sheet membranes

- Side laps: 100 mm.

Refer to product technical data sheets.

- End laps: 150 mm.

Refer to product technical data sheets.

### Curing of liquid applied systems

General: To the manufacturers' instructions.

### Control of movement

See AS 4654.2 clause 2.9 on major control joints. Consult the membrane supplier for the preparation of details and selection of products to ensure their ability to withstand the expected long term movements of joints and the substrate.

General: Provide control joints located over control joints in the substructure.

Fillets and bond breakers: Size to allow the membrane to accommodate movement.

**Backing rod:** [complete/delete]

e.g. Closed cell polyethylene foam with 25% to 50% compression.

**Joint Sealant:** [complete/delete]

Select a sealant that is compatible with the membrane type and to the manufacturer's recommendations.

**Joint backing gutter:** [complete/delete]

Consider for joints in critical locations. Fix a formed metal gutter to one side of the soffit directly below the joint and fall to a suitable disposal or drainage point.

Control joint covers: Install after fixing hobs and membranes.

Bonded membranes: Carry control joints in the substrate through to and into the surface finish.

### Membrane terminations

Membrane upturns: Provide upturns above the maximum water level expected from the exposure conditions of rainfall intensity and wind.

- Height: To AS 4654.2 Appendix A, Table A1.

See AS 4654.2 clause 2.8.1 and Appendix A for termination heights ranging from 40 to 180 mm.

- Anchoring: Secure sheet membranes along the top edge.

- Edge protection: Protect edges of the membrane.

Vertical upward terminations: [complete/delete]

For sheet membranes: Terminate under an overflashing, or specify a pressure seal overflashing or an overflashing fixed into a cast-in reglet as detailed on the drawings.

For liquid membranes: Terminate under an overflashing, or specify an overflashing of liquid applied membrane as detailed on the drawings.

If vertical terminations are not shown on the drawings, describe them in detail here.

Waterproofing above vertical terminations: Waterproof the structure above the termination to prevent moisture entry behind the membrane using cavity flashings, capping, waterproof membranes or waterproof coatings.

Vertical downward terminations: [complete/delete]

See AS 4654.2 clause 2.8.2.

For sheet membranes select pressure seal overflashing as detailed on the drawings.

For liquid membranes extend membrane to the underside of a horizontal return as detailed on the drawings.

If vertical terminations are not shown on the drawings, describe them in detail here.

Horizontal terminations: Do not provide. Use vertical terminations.

### Membrane vertical penetrations

See AS 4654.2 clause 2.8.4 for drawn details.

Pipes, balustrades, ducts, and vents: Provide separate sleeves for all pipes, balustrades, ducts and vents and fix to the substrate using Emer-Proof Elastic Joint Band System Pipe Penetration Detailing Squares.

### Membrane horizontal penetrations

See AS 4654.2 clause 2.8.4 for drawn details.

PVC-U conduits and pipes: To seal the membrane without burning the PVC-U, protect PVC-U conduits and pipes with Index Autotene 3 mm. Do not use high density polyethylene (HDPE), polypropylene (PP) pipes or flexible PVC conduit.

Penetrations: Install Emer-Proof Elastic Joint Band System Pipe Penetration Detailing Squares for all vertical penetrations to Parchem's recommendation.

Adhesion to HDPE and PP is very poor, and flexible PVC conduit has low temperature resistance. Specify copper if seeking Green Star credits for PVC minimisation.

### Membrane at balcony doors and windows

See AS 4654.2 clause 2.8.3 for drawn details.

Requirement: Install membrane before the fixing of door or window frames.

Membrane upturn:

- Vertical height above external finished floor level: [complete/delete]

See AS 4654.2 Appendix A Table A1 for termination heights ranging from 40 to 180 mm.

Hobless and flush thresholds: Install membrane before the fixing of door or window frames with a continuous grated drain abutting the external face of the door or window sill.

### Membrane around skylights and hatches

Requirement: Install membranes to upstands before the installation of the skylight or hatch.

Upstand height above roof surface: [complete/delete]

e.g. 150 mm.

### Membrane at parapets

See AS 4654.2 clause 2.8.2.2 for drawn details.

Requirement: Terminate membrane upstands under parapet flashing or capping giving 75 mm overlap. Do not top fix parapet cappings. Seal heads of fasteners against capping.

### Membrane at gutters

See AS 4654.2 clause 2.8.2.3 for drawn details.

Requirement: Terminate membrane over a corrosion resistant metal angle fixed to the gutter support substrate with the vertical leg of the angle turned down into the gutter at least 35 mm.

**Membrane at post supports**

See AS 4654.2 clause 2.8.4 for drawn details.

**Post supports fixed before/after membrane: [complete/delete]**

Select from the following options, edit prompt and cross reference to a detail drawing:

Post supports fixed before membrane: Fix post support to substrate with countersunk fasteners and seal the perimeter of the baseplate to the substrate. Layout membrane sheets to minimise cuts around the post support vertical member. Dress the membrane closely around the post support and seal the edge of the penetration to the vertical member. Fix an overflashing of membrane so that any join is staggered as much as possible relative to joins in the base membrane, and which overlaps it at least 150 mm beyond the perimeter of the baseplate.

Post supports fixed after membrane: Fix post support to substrate with countersunk fasteners over a waterproof resilient gasket cut to match the shape of the baseplate, and seal the perimeter of the baseplate to the membrane. Fix an overflashing of membrane which overlaps the base membrane at least 150 mm beyond the perimeter of the baseplate. Dress the overflashing closely around the post support and seal the edge of the penetration to the vertical member.

**Membrane to planter boxes**

See AS 4654.2 clause 2.13 for drawn details.

Membrane: Extend root-resistant membrane at least 100 mm vertically above the soil fill level and secure.

For aggressive root systems and trees, the selected membrane system should be tested and certified for root resistance by the manufacturer. Root resistance may be built into waterproofing membranes either by the addition of root-inhibiting chemical treatments, or because the composition of the membrane provides an impenetrable barrier to root growth.

Drainage: Grade the base of the planter to adequately sized drainage outlets and terminate the membrane in the outlets.

Drainage riser: Install a riser with drainage slots that extend from the membrane level to the top of the drainage cell. Extend the riser above the soil fill level and finish with a screw cap to provide access for drain clearing.

Protection board: Provide protection board to the full extent of the membrane including areas between soil level and the underside of flashings and cappings.

Drainage cell: Provide geo-filter fabric wrapped drainage cell to the base of the planter and turn geo-filter fabric up drainage riser at least 100 mm above drainage slots.

Cappings and flashings: Provide capping to the tops of planter walls to protect the membrane. Extend the capping to overlap the top of the protection board on the inside face of the planter wall. Where planter walls abut other walls, provide a flashing over the top of the membrane.

**Membrane to below ground structures**

Membrane: Externally apply membrane to all walls and return to horizontal surfaces to prevent water tracking around structure at joints and corners.

Protection board: Provide protection board to the full extent of the membrane.

Protection boards can be self-adhesive to ensure they remain in situ prior to back filling. Ensure that there are no materials used requiring mechanical fixing to the membrane. When backfilling and using hard edged drainage cell, protect the membrane with a 6 mm thick layer of reconstituted rubber mat protection sheet.

Drainage cell: Provide geo-filter fabric wrapped drainage cell to vertical surfaces of the structure.

Reinforcement: Provide reinforcement to the membrane at junctions, corners and over joints to the manufacturer's recommendations.

**Overlaying finishes on membranes**

Compatibility: If a membrane is to be overlaid with another system such as tiles, pavers, ballast, insulation or soil, provide an overlaying system that is compatible with and will not cause damage to the membrane.

Bonded or partially bonded systems: If the topping or bedding mortar is to be bonded to the membrane, provide sufficient control joints in the topping or bedding mortar to reduce the movement over the membrane.

Slip sheet: If the topping or bedding mortar is structurally sufficient not to require bonding to the substrate, lay a double slip sheet over the membrane to separate it from the topping or bedding mortar.

Paint coatings: If maintenance pathways are indicated by a paving paint, use a paving paint which is compatible with the membrane.

**Membrane protection boards:**

- Installation: [complete/delete]

If flood testing is specified: Immediately after the successful conclusion of flood testing. Otherwise: Immediately after the installation of the membrane.

- Location: [complete/delete]
- Fixing: [complete/delete]

Multi-layer APP modified bitumen systems: Adhere to the membrane with a solvent-free or low melt bitumen adhesive. Provide a gap no greater than 6 mm at joints between extruded polystyrene foam (XPS) boards.

Single layer SBS modified bitumen systems: Adhere to membrane by spot torching the membrane to the XPS board (i.e. by applying the torch to the membrane, not the board). Polypropylene board provides very poor adhesion, so it may be necessary to use mechanical fixings, taking care not to affect waterproofing.

Liquid applied membrane: Tape joints and fix with an adhesive compatible with the membrane.

**3.3 TESTING****Flood test**

A flood test may be required where the waterproofed area is over a habitable space particularly that of another occupant. However it should be noted that most membrane system failures are due to damage caused on site after the flood test is conducted. Delete if not required.

Application: Perform a flood test before the installation of surface finishes.

Moisture content measurement method: Conform to AS 1884 Appendix A

**Set-up:**

- Measure the wall/floor junction of adjacent spaces and of the slab soffit below for dryness.
- Record the result for each area.
- Dam the access openings and seal drainage outlets to allow 50 mm water level but no higher than 25 mm below the weir level of the perimeter flashings.
- Provide temporary overflows of the same capacity as the roof outlets to maintain the flood level.

The aim is to prevent damage if it rains overnight. If the building is occupied consider calling for the flood test to be conducted during supervised working hours.

- Fill space with clean water and leave overnight.

**Evaluation:**

- Make a visual inspection of the wall/floor junction of adjacent spaces and of the slab soffit below for obvious water or moisture.
- Test the same areas for dryness using a moisture meter, and compare the results to the measurements taken before flooding.

**Conformance:**

- Evidence of water from the visual test: Failure.
- No visual evidence of water: Proceed with the moisture meter test.
- Increase in test results before and after flooding: Failure.

Records: Submit records of all flood tests.

Specify here the approval criteria set up for the project. If necessary nominate a **Hold point**.

**3.4 COMPLETION****Protection**

General: Keep traffic off membrane surfaces after laying until bonding has set, 24 hours or to Parchem's recommendation, whichever period is the longer.

Reinstatement: Repair or replace faulty or damaged work. If the work cannot be repaired satisfactorily, replace the whole area affected.

**Warranties**

Waterproofing: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the supplier and the applicator.

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: [complete/delete]

Parchem offers 10-20 years warranty depending on system selection.

## 4 SELECTIONS

**Schedules** are a way of documenting a selection of proprietary or generic products or systems by their properties. Indicate their locations here and/or on the drawings. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

### 4.1 EXTERNAL WATERPROOFING

#### Requirements schedule

Property	A	B	C
Traffic			
Nature of traffic			
Slip resistance classification			
Overlying finish			
Root and bioresistance			

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

Traffic: Nominate Trafficable or Non-trafficable.

Nature of traffic: For trafficable surfaces nominate maintenance, pedestrian or vehicular as defined in AS 4654.1 clause 1.3.7 and AS 4654.2 clause 1.3.14.

Slip resistance classification: For trafficable surfaces only. Delete for non-trafficable surfaces. Select the slip resistance classification to AS 4586. See NATSPEC TECHnote DES 001, SAA HB 197 and SAA HB 198.

Overlying finish: Nominate the finish by reference to the appropriate worksection or put none. Note: Roofing membranes are generally not trafficable.

Root and bioresistance: Nominate for planters, roof gardens and tanking where resistance to roots, fungus, mould and rot is required. To AS 4654.1 clauses 2.8 and 2.9. Required to all systems.

### 4.2 ROOF/PODIUM/DECK WATERPROOFING - NEW CONSTRUCTION

#### Maintenance traffic areas schedule (UV exposed membrane)

Property	1A	1B	1C	1D
Proprietary system	Parchem	Parchem	Parchem	Parchem
Material type	Two-layer, torch on mineral finish sheet membrane system	Two-layer, torch on mineral finish sheet membrane system	Water-based, Polyurethane liquid applied membrane	Water-based, Polymer/Cementitious, liquid applied membrane
Primer: Porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Multi-Purpose Primer and Waterproofing Additive	Emer-Proof Multi-Purpose Primer and Waterproofing Additive
Primer: Non-porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Non-Porous Primer	Emer-Proof Non-Porous Primer
Joint bond breaker	Sand/cement fillet	Sand/cement fillet	Emer-Proof Elastic Joint Band System	Emer-Proof Elastic Joint Band System
Base membrane	Index Fidia 3 mm	Index Fidia 3 mm	-	-
Top membrane	Index Testudo Mineral Grey or Checkerboard	Index Fidia Mineral	Emer-Proof EcoSeal	Emer-Proof Quick Dry Two Part
UV wear coat	-	-	Emer-Proof Top Coat	Emer-Proof Top Coat

Property	1A	1B	1C	1D
Optional*			Emer-Proof Extended Wear*	Emer-Proof Extended Wear*

A, B, C, D: These designate each instance or type of the item scheduled. Edit to align with the project's codes or tags.  
 System 1A: Torch applied, 2 layer, high tensile strengths, elongation, cold flexibility, standard warranty 10 to 20 years.  
 System 1B: Torch applied, 2 layer, economical, strong performance properties, standard warranty 10 to 20 years.  
 System 1C: Liquid applied, high tensile strength, fast curing, flood test after 24 hours, standard warranty 10 to 15\* years.  
 System 1D: Liquid applied, low VOC: low water vapour transmission, standard warranty 10 to 15\* years.  
 Edit codes in the **Schedule** to match those on drawings.  
 Contact Parchem to discuss the most appropriate waterproofing design option for your project. Delete redundant options.  
 Optional\*: Surface protection/finish.

#### Pedestrian traffic areas – tiled /paved schedule (UV protected)

Property	2A	2B	2C	2D
Proprietary system	Parchem	Parchem	Parchem	Parchem
Material type	Two-layer, torch on sheet membrane with screed, tile/paver over	Two-layer, torch on sheet membrane with screed, tile/paver over	Water-based, Polyurethane, liquid applied membrane with screed, tile/paver over	Water-based, Polymer/Cementitious, liquid applied membrane with screed, tile/paver over
Screed	Concrete screed over	Concrete screed over	Concrete screed over	Concrete screed over
Primer: Porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Multi-Purpose Primer and Waterproofing Additive	Emer-Proof Multi-Purpose Primer and Waterproofing Additive
Primer: Non-porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Non-Porous Primer	Emer-Proof Non-Porous Primer
Joint bond breaker	Sand/cement fillet	Sand/cement fillet	Emer-Proof Elastic Joint Band system	Emer-Proof Elastic Joint Band system
Base membrane	Index Fidia 3 mm	Index Fidia 3 mm	-	-
Top membrane	Index Testudo 4 mm	Index Fidia 3 mm	Emer-Proof EcoSeal	Emer-Proof Quick Dry Two Part

A, B, C, D: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags. Edit codes in the **Schedule** to match those on drawings.  
 System 2A: Torch applied, 2 layer, 7 mm thickness, high tensile strengths, elongation, cold flexibility, standard warranty 10 to 20 years.  
 System 2B: Torch applied, 2 layer, 6 mm thickness, economical, strong performance properties, standard warranty 10 to 20 years.  
 System 2C: Liquid applied, high tensile strength, fast curing, flood test after 24 hours, standard warranty 10 to 15 years.  
 System 2D: Liquid applied, low VOC: low water vapour transmission, standard warranty 10 to 15 years.  
 Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

#### Carpark/vehicle traffic areas schedule (UV protected membrane)

Property	3A	3B	3C	3D
Proprietary system	Parchem	Parchem	Parchem	Parchem
Material type	Two-layer, torch on sheet membrane	Single layer, torch on sheet membrane	Single layer, self-adhesive, sheet membrane	Water-based, Polyurethane, liquid applied membrane
Overlay	Concrete topping	Concrete topping	Concrete topping	Concrete topping

Property	3A	3B	3C	3D
	slab	slab or asphalt overlay	slab	slab
Primer: Porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Self-Adhesive Primer	Emer-Proof Multi-Purpose primer and Waterproofing Additive
Primer: Non-porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Self-Adhesive Primer	Emer-Proof Non-Porous primer and Waterproofing Additive
Joint bond breaker	Sand/cement fillet	Sand/cement fillet	Sand/cement fillet	Emer-Proof Elastic Joint Band System
Base membrane	Index Fidia 3 mm	-	-	-
Top membrane	Index Testudo 4 mm	Index Testudo 30 (5 mm)	Emer-Proof HDPE (concrete topping) or Emer-Proof HD (asphalt topping)	Emer-Proof EcoSeal

A, B, C, D: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 3A: Torch applied, 2 layer, 7 mm thickness, suitable for concrete topping over, standard warranty 10 to 20 years.

System 3B: Torch applied, single layer, 5 mm thickness, suitable for asphalt or concrete topping over, standard warranty 5 to 10 years.

System 3C(i): Self-adhesive, single layer, 1.6 mm thickness, suitable for concrete topping over, standard warranty 5 to 10 years.

System 3C(ii): Self-adhesive, single layer, 1.6 mm thickness, suitable for asphalt topping over, standard warranty 5 to 10 years.

System 3D: Liquid applied, high strength, fast curing, suitable for concrete topping over, standard warranty 5 to 10 years.

Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

### 4.3 BALCONY AREAS – NEW CONSTRUCTION

#### Balcony/terrace areas – tiled/paved schedule (UV protected membrane)

Property	5A	5B	5C	5D
Proprietary system	Parchem	Parchem	Parchem	Parchem
Material type	Two layer torch-on, sheet membrane system with screed, tile/paver over	Two layer torch-on, sheet membrane system with screed, tile/paver over	Water-based, polyurethane, liquid applied membrane with screed, tile/paver over	Water-based, polymer/cementitious, two part, liquid applied membrane with screed, tile/paver over
Screed	Screed layer over	Screed layer over	Screed layer over	Screed layer over
Primer: Porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Multi-Purpose Primer and Waterproofing Additive	Emer-Proof Multi-Purpose Primer and Waterproofing Additive
Primer: Non-porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Non-Porous Primer	Emer-Proof Non-Porous Primer
Joint bond breaker	Sand/cement fillet	Sand/cement fillet	Emer-Proof Elastic Joint Band System	Emer-Proof Elastic Joint Band System
Base membrane	Index Fidia 3 mm	Index Fidia 3 mm	-	-
Top membrane	Index Testudo 4 mm	Index Fidia 3 mm	Emer-Proof EcoSeal	Emer-Proof Quick Dry Two Part



A, B, C, D: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 5A: Torch applied, 2 layer, 7 mm thickness, high tensile strengths, elongation, cold flexibility, standard warranty 10 to 20 years.

System 5B: Torch applied, 2 layer, 6 mm thickness, economical, strong performance properties, standard warranty 10 to 20 years.

System 5C: Liquid applied, high tensile strength, fast curing, flood test after 24 hours, standard warranty 10 to 15 years.

System 5D: Liquid applied, low VOC: low water vapour transmission, standard warranty 10 to 15 years.

Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

#### 4.4 LANDSCAPED GARDEN – NEW CONSTRUCTION

##### Landscaped garden areas schedule (UV protected membrane)

Property	6A	6B
Proprietary system	Parchem	Parchem
Material type	Two layer torch-on, root resistant, sheet membrane system with drainage sheet	Two layer torch-on, root resistant, sheet membrane system with drainage sheet
Primer	Index Bitumen Primer	Index Bitumen Primer
Base membrane	Index Proteaduo P 4 mm	Index Fida 3 mm
Top membrane	Index Defend H 4 mm	Index Defend H 4 mm
Drainage sheet layer	Emer-Proof Drain V	Emer-Proof Drain V

A, B: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 6A: Torch-on, 2 layer, 8 mm thick, high tensile strengths, elongation, cold flexibility, root resistant sheet membrane, with drainage sheet, landscaping over, standard warranty 10 to 20 years.

System 6B: Torch-on, 2 layer, 7 mm thick, root resistant sheet membrane, with drainage sheet, landscaping over, standard warranty 10 to 20 years.

Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

##### Planter box gardens schedule (UV protected membrane)

Property	7A	7B	7C
Proprietary system	Parchem	Parchem	Parchem
Material type	Two layer torch-on, root resistant, sheet membrane system with drainage sheet	Two layer torch-on, root resistant, sheet membrane system with drainage sheet	Polymer modified bituminous, liquid applied membrane, containing root inhibitors, with drainage sheet
Primer: Porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Multi-Purpose Primer and Waterproofing Additive
Primer: Non-porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Non-Porous Primer
Joint bond breaker	Sand/cement fillet	Sand/cement fillet	Emer-Proof Elastic Joint Band System
Base membrane	Index Proteaduo P 4 mm	Index Fidia 3 mm	-
Top membrane	Index Defend H 4 mm	Index Defend H 4 mm	Emer-Proof Ecoflex Anti-Root with Emer-Proof Elastic Joint Band System
Drainage sheet	Emer-Proof Drain V	Emer-Proof Drain V	Emer-Proof Drain V
Protection board	Impra Board	Impra Board	Impra Board

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 7A: Torch-on, 2 layer, 8 mm thick, high tensile strengths, elongation, cold flexibility, root resistant sheet membrane, with drainage sheet, landscaping over, standard warranty 10 to 20 years.

System 7B: Torch-on, 2 layer, 7 mm thick, root resistant sheet membrane, with drainage sheet, protection board, landscaping over, standard warranty 10 to 20 years.

System 7C: Liquid applied, root resistant membrane, with drainage sheet, protection board, landscaping over, standard warranty 5 to 10 years.

Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

#### 4.5 BELOW GROUND BASEMENT WATERPROOFING/TANKING – NEW CONSTRUCTION

##### Below ground basement waterproofing and drainage/tanking schedule (UV protected membrane)

Property	8A	8B	8C	8D
Proprietary system	Parchem	Parchem	Parchem	Parchem
Material type	Single layer, pre-applied, sheet waterproofing & tanking membrane system	Two layer torch-on, sheet membrane system with drainage sheet	Single layer, self-adhesive, sheet membrane with drainage sheet	Water-based, rubberised bitumen, liquid applied membrane with drainage sheet
Primer: Porous substrates	-	Index Bitumen Primer	Emer-Proof Self Adhesive Primer	Emer-Proof Multi-Purpose Primer and Waterproofing Additive
Primer: Non-porous substrates	-	Index Bitumen primer	-	Emer-Proof Non-Porous Primer
Joint bond breaker	Sand/cement fillet	Sand/cement fillet	Sand/cement fillet	Emer-Proof Elastic Joint Band System
Base membrane	-	Index Fidia 3 mm	-	-
Top membrane	-	Index Testudo 4 mm	Emer-Proof HDPE 1.6 mm	Emer-Proof Ecoflex
Waterproofing	Fosroc Proofex Engage	-	-	-
Drainage	Emer-Proof Drain V	Emer-Proof Drain V	Emer-Proof Drain V	Emer-Proof Drain V

A, B, C, D: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 8A: Pre-applied to mechanically bond to poured concrete, water vapour and gas protection, single layer, standard warranty 5 to 20 years.

System 8B: Torch applied, 2 layer, 7 mm thickness, high tensile strengths, elongation, cold flexibility, standard warranty 10 to 20 years.

System 8C: Self-adhesive, single layer, 1.6 mm thickness sheet membrane, standard warranty 5 to 10 years.

System 8D: Liquid applied membrane, with drainage sheet, protection board, standard warranty 5 to 10 years.

Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

##### Retaining wall waterproofing and drainage schedule (UV protected membrane)

Property	9A	9B	9C	9D
Proprietary system	Parchem	Parchem	Parchem	Parchem
Material type	Two layer torch-on, sheet membrane system with	Single layer torch-on, sheet membrane with	Single layer, self-adhesive, sheet membrane with	Polymer modified bituminous, liquid applied membrane,

Property	9A	9B	9C	9D
	drainage sheet	drainage sheet	drainage sheet	incorporating plant root inhibitors, with drainage sheet
Primer: Porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Self Adhesive Primer	Emer-Proof Multi-Purpose Primer and Waterproofing Additive
Primer: Non-porous substrates	Index Bitumen Primer	Index Bitumen Primer	Emer-Proof Self Adhesive Primer	Emer-Proof Non-Porous Primer
Joint bond breaker	Sand/cement fillet	Sand/cement fillet	Sand/cement fillet	Emer-Proof Elastic Joint Band system
Base membrane	Index Fidia 3 mm	-	-	-
Top membrane	Index Fidia 3 mm	Index Fidia 3 mm	Emer-Proof HDPE 1.6 mm	Emer-Proof Ecoflex Anti-Root
Drainage	Emer-Proof Drain V	Emer-Proof Drain V	Emer-Proof Drain V	Emer-Proof Drain V

A, B, C, D: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 9A: Torch applied, 2 layer, bitumen sheet membrane, 6 mm thickness, high tensile strengths, elongation, cold flexibility, economical, standard warranty 10 to 20 years.

System 9B: Torch applied, single layer, bitumen sheet membrane, 3 mm thickness, high tensile strengths, elongation, cold flexibility, economical standard warranty 5 to 10 years.

System 9C: Self-adhesive HDPE sheet membrane, single layer, 1.6 mm thickness, standard warranty 5 to 10 years.

System 9D: Liquid applied, polymer modified bituminous membrane, root resistant, standard warranty 5 to 10 years.

Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

#### 4.6 OTHER WATERPROOFING APPLICATIONS – NEW CONSTRUCTION

##### Water storage retaining tanks/vessels schedule (UV protected/UV exposed membranes)

Seamless wet area membranes	10A	10B	10C
Proprietary system	Parchem	Parchem	Parchem
Material type	Flexible, dynamic crack accommodating, cement based render waterproofing barrier for new or old concrete/masonry structures, potable water approved to AS/NZS 4020	In-depth concrete capillary penetrating, crystal growth sealing, cement based waterproofing barrier for high positive/negative water pressures, potable water approved to AS/NZS 4020	Water-based, polymer/cementitious, potable water approved to AS/NZS 4020, liquid applied membrane
Primer: Porous substrates	-	-	Slurry Prime (sand: cement: Emer-Proof Multi-Purpose Primer and Waterproofing Additive): 1:1:1
Primer: Non-porous substrates	-	-	Emer-Proof Non-Porous Primer
Joint bond breaker	-	-	Emer-Proof Elastic Joint Band System
Membrane (UV Protected or Exposed)	Vandex Cemelast	Vandex Concrete Grey	Emer-Proof Quick Dry Two Part

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 10A: Flexible, dynamic crack accommodating, cement based render waterproofing barrier, for new or old concrete/masonry structures, standard warranty 5 to 10 years.

System 10B: In-depth concrete capillary penetrating, crystal growth sealing, cement based waterproofing barrier for high positive/negative water pressures, standard warranty 5 to 10 years.

System 10C: Water-based, polymer/cementitious, potable water approved, liquid applied membrane, low VOC, low water vapour transmission, slurry primed, standard warranty 5 to 10 years. This membrane is not suitable for UV exposure and is suitable to be tiled over using a compatible tile adhesive.

Material type: Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

#### Tunnel waterproofing and drainage/tanking schedule (UV protected membrane)

Property	11A	11B	11C	11D
Proprietary system	Parchem	Parchem	Parchem	Parchem
Material type	Two layer torch-on, sheet membrane system with drainage sheet	Single layer torch-on, sheet membrane with drainage sheet	Single layer, pre-applied, sheet waterproofing & tanking membrane	Single layer, self-adhesive, sheet membrane with drainage sheet
Primer	Index Bitumen Primer	Index Bitumen Primer	-	Emer-Proof Self-Adhesive Primer
Base membrane	Index Fidia 3 mm	-	-	-
Top membrane	Index Testudo 4 mm	Index Fidia 3 mm	Fosroc Proofex Engage	Emer-Proof HDPE 1.6 mm
Drainage	Emer-Proof Drain V	Emer-Proof Drain V	Emer-Proof Drain V	Emer-Proof Drain V

A, B, C, D: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 11A: Torch applied, 2 layer, bitumen sheet membrane, 7 mm thickness, high tensile strengths, elongation, cold flexibility, dimpled polypropylene drainage sheet with geo-textile fabric, standard warranty 10 to 20 years.

System 11B: Torch applied, single layer, bitumen sheet membrane, 3 mm thickness, dimpled polypropylene drainage sheet with geo-textile fabric, standard warranty 5 to 10 years.

System 11C: Pre-applied polyethylene sheet membrane to mechanically bond to poured concrete, water vapour and gas protection, single layer, standard warranty 5 to 10 years.

System 11D: Self-adhesive HDPE sheet membrane, single layer, 1.6 mm thickness, standard warranty 5 to 10 years.

Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

#### 4.7 ROOF / PODIUM / DECK AREAS – REMEDIAL CONSTRUCTION

##### Vented waterproofing systems for failed membranes, or heat sensitive substrates schedule (UV exposed membrane)

Property	12A	12B	12C
Proprietary system	Parchem	Parchem	Parchem
Material type	Multi-layer torch-on, vented, mineral finish membrane system	Two layer torch-on, vented, mineral finish, sheet membrane system	Multi-layer heat adhered/torch-on, mineral finish, sheet membrane system over failed membranes, or heat sensitive substrates
Primer	Index Bitumen Primer	Index Bitumen Primer	-
Adhesives	-	-	Adhesive A901 or mechanically fixed
Preparation/Vent Sheet	Index Vapordiffuser	Index Vapordiffuser (Double Detailed)	Index Rollbase 2 mm

Property	12A	12B	12C
Middle Membrane	Index Fidia 3 mm	-	Index Fidia 3 mm
Top Membrane	Index Testudo Mineral 4.5 kg	Index Testudo Mineral 4.5 kg	Index Testudo Mineral 4.5 kg

A, B, C: These designate each instance or type or location of the item scheduled. Edit to align with the project's codes or tags.

Edit codes in the **Schedule** to match those on drawings.

System 12A: Torch applied, 3 layer, bitumen sheet membrane system, vent layer with base and top layer exhibiting high tensile strengths, elongation, cold flexibility, suitable for damp new and existing substrates, mineral finish, standard warranty 10 to 20 years.

System 12B: Torch applied, 2 layer, bitumen sheet membrane system, vent layer with top layer exhibiting high tensile strengths, elongation, cold flexibility, suitable for damp new and existing substrates, mineral finish, standard warranty 10 to 15 years.

System 12C: Heat adhered/torch applied, multi-layer, bitumen sheet membrane system, preparation layer mechanically fixed or adhered over failed membranes or heat sensitive substrates, base and top layer exhibiting high tensile strengths, elongation, cold flexibility, mineral finish, standard warranty 10 to 20 years.

Contact Parchem to discuss the appropriate waterproofing design option for your project. Delete redundant options.

#### 4.8 OTHER NEW AND REMEDIAL WATERPROOFING SOLUTIONS – REMEDIAL CONSTRUCTION

##### REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1884	2012	Floor coverings - Resilient sheet and tiles - Installation practices
AS/NZS 3500		Plumbing and drainage
AS/NZS 3500.3	2015	Stormwater drainage
AS 4654		Waterproofing membranes for external above-ground use
AS 4654.1	2012	Materials
AS 4654.2	2012	Design and installation

The following documents are mentioned only in the **Guidance text**:

AS 4586	2013	Slip resistance classification of new pedestrian surface materials
SAA HB 197	1999	An introductory guide to the slip resistance of pedestrian surface materials
SAA HB 198	2014	Guide to the specification and testing of slip resistance of pedestrian surfaces
NATSPEC DES 001	2016	Slip resistance performance
NATSPEC DES 008	2015	Preparation of concrete substrates
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
NATSPEC TR 01	2016	Specifying ESD