

## **Specification: Loose Laid Waterproof Membrane**

Project No: W

### **Scope of Work**

The Scope of Work is to supply, fix and guarantee waterproof; the waterproof membrane to [ INSERT ] as indicated on the drawings. The membrane work is to include finishing at all perimeters as detailed, protection, backfill supervision and effective spanning of any expansion joints.

Detail to all pipes, plinths, joints, edges and protrusions to ensure full, guaranteed waterproofing.

### **Generally – terminations/laps**

The membrane shall:

Have all terminations either cast into the concrete or fitted into sawcuts as specified herein. Terminations of the pressure seal type will not be permitted;

Have all laps and connections fully homogeneously welded;

### **Generally - quality assurance:**

The manufacturer or distributor of the membrane material shall monitor the Wolfin membrane installation to ensure full compliance with the specification and all manufacturers recommendations. This liability includes (but is not limited to) the following activities:

Provide shop drawings of all details that are not included in standard published manufacturer's drawings.

The shop drawings are to take full account of the coordination requirements of connecting trades;

Approve the selection/design of all termination and similar details before installation.

Approve any detail changes as may be needed during the work, for coordination, variation or any reason;

As each area nears completion, thoroughly inspect, log any defects found, arrange for their rectification, reinspect and certify that the work is correct and complete.

Issue signed inspection sheets for each case;

On completion, take full liability for the quality, correctness and sufficiency of the workmanship as part of the single point Warranty specified hereafter.

This Clause will not be satisfied by delegation of any of the foregoing activities to the applying contractor.

### **Generally - warranty**

Submit a warranty for the Wolfin Membrane against defective materials and workmanship, issued solely by the manufacturer or distributor of the membrane material. The Warranty liability by the manufacturer or distributor to the Owner is to be *singular and complete; without distinction between materials and workmanship*; and no separate or parallel warranty offer is to be made by the applying contractor.

The Warranty shall not contain elements of "pro rata" cost sharing.

For associated materials, such as concrete repair and wall coatings, obtain the manufacturers' guarantees, made in favour of the Owner and pass to the Owner at Practical Completion.

Wolfin Warranty Period: **10 years.**

### **The Membrane**

The Membrane shall be Wolfin IB Polyester/PVC sheet; 1.5 mm thick; together with a concealed fixing and finish-detail system consisting of:

(a): Wolfinsteel; 0.6mm zinc-galvanised steel, factory pre-coated with 0.8mm thick membrane;

(b): Wolfin AF 6 cast-in extruded reglet profiles (where shown on the drawings).

All membrane junctions are to be homogeneously welded - adhesives or tapes are not to be used for jointing nor detailing to pipes, penetrations etc. Detailing is to include sealants only where indicated on the Standard Guide Details or shop drawings prepared by Wolfin Membranes Australia (WMA).

Where sealants are so specified, they are to be installed so as to be permanently accessible for service, wherever practicable.

Laying is only to be performed by applicators licensed by WMA and evidence of their licensed status is to be provided before the work commences.

Contact WMA (Ph: 02 83361666; Fax: 02 8336 1670) for a list of licensed Wolfin installers.

### **Substrate Preparation (by others)**

Concrete is to be finished to smooth helicopter standard, without ridges, boniness or sharp changes of plane.

Formed concrete to be minimum Class 3 with "sharps" knocked off.

Timber, fibre cement or plywood substrates are to be countersunk screwed not nailed, to avoid nail "backout".

Ensure that there are positive falls in the substrate to outlets/ water egress points

Brickwork should be struck flush.

Rock faces should be hand finished and flushed with mortar to remove "sharps".

### **Substrate / Underlay**

Ensure that the surface is completely clean and free of any small stones or debris.

Where the Membrane is to be overlaid with materials of any mass such as gravel, topping, tiling, plantings or similar, lay minimum A44 geotextile fabric onto the substrate as a slippage underlay.

### **Existing Membranes (preparation by applicator)**

It is generally not necessary to remove existing membranes if they either present, or can be rectified to present, a smooth sound surface. Wolfin is completely bitumen compatible. Subject to any contrary WMA advice, the following are appropriate preparation methods:

- a) **Nuralite:** Perforate with 20 dia punched holes at 3 per square metre to allow trapped vapour diffusion. Repair any voids with 3:1 sand/cement with 50% bitumen emulsion in the mixing water. Do not use cold bitumen compounds.
- b) **Torch applied bitumen systems:** All as Nuralite above. Where the surface is coated with slate or similar chips, remove all loose material with a mechanical brush machine and dispose.
- c) **Butyl Sheet or Urethane Coatings:** Where butyl, perforate as above. Loose laps in the butyl sheet shall be covered with WolfinTec E. Note; the existing butyl sheet bond may be unsatisfactory and should be carefully checked - call for WMA advice re fixbands in such cases.
- d) **EPDM Sheet, PIB Sheet, and Acrylic Coatings:** Check the surface quality and thoroughly clean. For EPDM and PIB, perforate as above.
- e) **Monomeric PVCs:** Check the surface quality and thoroughly clean.
- f) **Substrate Quality Generally:** Refer all doubtful substrates to WMA for advice as to the recommended "clean up" process and/or supplementary fixation required for each case.

### **Terminations**

All membrane terminations are to use WMA recommended details and are to be self sufficiently waterproof at each termination. This responsibility does not extend to the internal waterproof integrity of the substrates, such as masonry walls.

Where the cut in profile is specified, the preparation by the Applicator is a sawcut 5 mm wide x 20 mm deep, which is prefilled with one part urethane. The profile is inserted while the sealant is wet and a second run of sealant is applied after the membrane welding is completed.

Where the cast in extruded reglet is specified, it is to be supplied and fixed to the form shutter by the Membrane Applicator. The Applicator is to clean off any laitence or fixing media after strip before welding the membrane to the profile.

### **Shop Drawings**

All details that are not precisely as the Standard Guide Details, are to be the subject of shop drawings prepared by WMA submitted by the Applicator for the approval of the Superintendent, time permitting. The contractual responsibilities remain unchanged by such approval.

Before commencement the Applicator is to coordinate with WMA to ensure the shop drawings are provided in adequate time for approval, allowing time for resubmission if needed.

No variation to the Applicator's price is to result from any shop drawing (nor WMA advice), unless the detail is a legitimate contract variation within the meaning of the Contract.

### **Inspection**

WMA will conduct work-in-progress inspections at intervals agreed with the Applicator and the Builder. Any directions/advice/modification drawings issued by WMA in consequence are to be submitted to the Superintendent for approval and followed.

On completion (or if in stages on completion of each stage), and in any event before covering up, the WMA Inspector is to be called to inspect the work. The Inspector will, if necessary, issue a Defect Notice to the Applicator with a copy to the Builder. The membrane Applicator is to comply with any such Notice and arrange reinspection.

### **Bolt Fixings:**

Where handrail standards, pergola posts, columns and the like are to be installed such that their fixings penetrate the membrane, the fixings are to be installed before the membrane. They are to be of a type which leaves a firm stud, threaded rod or similar projecting from the substrate. The Membrane Applicator will detail the membrane to those studs. The installation of the standard, column etc is to be closely supervised by the Membrane Applicator.

#### **Plinths (on concrete decks):**

When possible apply Wolfin membrane system to deck prior to the installation of plinths. Seal the reinforcing bars penetrating the Wolfin membrane. Install a slipsheet over the membrane area to be covered by the plinth. DO NOT FIX FORMWORK THROUGH THE MEMBRANE. Hold formwork in place with sandbags or similar.

#### **Door and Glazing Unit Sills/Thresholds:**

Where the pond height at the sill (internal FFL minus external FFL ) is less than 100 mm, it is preferred that the membrane is carried beneath the sill or subsill. To achieve this it is necessary that the sills be fitted in conjunction with the Membrane Applicator. Refer also the clause "Bolt Fixings" above.

#### **Applied Finishes:**

Ideally any finish applied directly to the Membrane should be performed by the Membrane Applicator to maximise Warranty protection.

If the applied finishes are required to be performed by others, their installation shall be closely supervised by the Membrane Applicator. The Builder is to ensure that appropriate arrangements exist in the contract to cover the Membrane Applicator's attendance on such works.

Gravel or similar ballast is to be applied only by the Membrane Applicator.

- a) **Toppings, tile beds:** It is preferred that the Membrane Applicator supply and adhere abelflex or similar to all upstand faces and supply, place and tape a PE slip plane to the surface of the membrane.
- b) **Bar Reinforced slabs:** The protection methods should be discussed with the Membrane Applicator (or WMA) before the tender is finalised. If not specified otherwise, the Membrane Applicator is to allow for supply and placement of Projex Shockmat in lieu of the PE slip plane, to minimise reinforcement steel placement damage.
- c) **Concrete Dish Drain:** Where the dish drain is to be poured against the membrane, it is preferred that the Membrane Applicator bond 10mm thick abelflex or similar to the membrane as a separation.
- d) **Gravel Ballast:** The membrane is to be underlaid with A 44 geotextile fabric. The Membrane Applicator shall lay A64 geotextile fabric onto the Membrane turned up and taped for the height of the ballast at all upturns. The ballast shall be minimum #2 wash round river gravel/pebbles, free of fines and sharp or broken stone – or other material as specified and approved by WMA. Ballast is only to be installed onto the membrane by the Membrane Applicator.
- e) **Insulation and Gravel Ballast:** The membrane is to be underlaid with A 44 geotextile fabric. The Membrane Applicator shall place the specified insulation boards onto the Membrane, overlaid with filter fabric, turned up and taped for the height of the ballast at all upturns. The ballast shall be minimum #2 wash round river gravel/pebbles, free of fines and sharp or broken stone – or other material as specified and approved by WMA. Ballast is only to be installed by the Membrane Applicator.
- f) **Pad Supported Pavers:** The Membrane Applicator shall bond 200 square Shockmat pads to the Membrane, set out at paver intersections. The Shockmat reduces impact sound transmission and protects the membrane from pad abrasion. While laying the pavers, clip together with Dunlop paver pads laid loose on the Shockmat. Where the underlying surface is irregular, Pabco Polypads may be used in lieu of the Dunlop.
- g) **Planters - Drainage Cells / Media:** Where such materials are to be laid onto the Membrane, the Membrane Applicator is to place A64 geotextile fabric onto the Membrane beforehand. Drainage cells are to be placed by the Membrane Applicator, to avoid "cut-edge" and/or tight fit damage.

Vertical faces:

Where drainage cell is carried for the height of the planter bed depth, the Membrane Applicator is to adhere the cells to the vertical membrane with Bostik Matrix 600 urethane.

Otherwise the vertical face is to be protected by the Membrane Applicator with Corflute, Dörken dimpled HDPE, proprietary plastic sheet drain, or 4.5 mm FC as specified – all to WMA approval.

*The fill is to be placed as immediately as possible under the direct supervision of the Membrane Applicator.*

- h) **Render or Skirting Tiles on Membrane:** Where render is shown on the drawings to be applied onto membrane upturns, the membrane is to be Wolfin GWSK for the extent of the rendered area, laid and detailed tight. Apply Metz 27 with a notched trowel to the membrane to act as a scratch coat and allow to cure. Apply render to the cured scratch coat. Adhere tiles to vertical face of Wolfin membrane with Metz 27.

**Pre-surfacing Damage Check:** The membrane is to be checked for damage and signed off by the Membrane Applicator immediately prior to pour or covering up.

**Protection Generally**

No work by others is to proceed over the Membrane unless the Membrane Applicator's advice as to protection media is sought AND FOLLOWED.

In all cases where temporary protection is to be provided, or a finish is to be applied by others, the Builder must notify the Membrane Applicator, giving two working days notice before protection removal or commencement of finished works, to inspect the Membrane and certify it as being undamaged. The Builder is to accept the cost of any repairs found necessary as a consequence of any such works.