

0621P DUROTECH WATERPROOFING – WET AREAS**1 GENERAL****1.1 RESPONSIBILITIES****General**

Requirement: Provide DUROTECH wet area waterproofing systems as documented.

Performance

Requirements:

- Grade to floor wastes, to dispose of water without ponding.
- Prevent moisture entering the substrate or adjacent areas.

1.2 COMPANY CONTACTS**DUROTECH technical contacts**

Website: www.durotechindustries.com.au/contact/

1.3 CROSS REFERENCES**General**

Requirement: Conform to the following:

- 0171 General requirements.

1.4 STANDARDS**Waterproofing wet areas**

Standard: To AS 3740.

1.5 MANUFACTURER'S DOCUMENTS**Technical manuals**

Website: www.durotechindustries.com.au/technical-literature/

1.6 INTERPRETATION**Definitions**

General: For the purposes of this worksection the definitions given in AS 3740 and the following apply:

- Bond breaker: A system preventing a membrane bonding to the substrate, bedding or lining.
- Membranes (waterproof): Impervious barriers to liquid water which may be:
 - . Installed below floor finishes.
 - . Installed behind the wall sheeting or render and termed External.
 - . Installed to the face of the wall sheeting or render and termed Internal.
 - . Applied in liquid or gel form and air cured to form a seamless film.
 - . Applied in sheet form with joints lapped and sealed.
- Preformed shower base: A preformed, prefinished vessel (including integral upstands) installed as the finished floor of a shower compartment, and provided with a connection point to a sanitary drainage system.
- Shower tray: An internal or external liquid applied or sheet membrane system used to waterproof the floor and the wall/floor junctions of a shower area.
- Substrate: The surface to which a material or product is applied.
- Waterproof (WP): The property of a material that does not allow moisture to penetrate through it.
- Waterproofing systems: Combinations of membranes, flashings, drainage and accessories which form waterproof barriers and which may be:
 - . Loose-laid.
 - . Bonded to substrates.
- Water resistant (WR): The property of material that restricts moisture movement and will not degrade under conditions of moisture.

- Wet area: An area within a building supplied with a floor waste.

1.7 SUBMISSIONS

Products and materials

Documentation: Submit copies of product manufacturer's:

- Product technical data sheets.
- Safety data sheets (SDS).
- Type tests certificates verifying conformance to AS/NZS 4858.

Records

Placing records: Photographically record the application of membranes and information as follows:

- Date.
- Portion of work.
- Substrate preparation.
- After primer application.
- After membrane application.
- Protection provided from traffic.

Samples

General: Submit 300 x 300 mm samples of each type of membrane.

Shop drawings

Submit shop drawings showing:

- Junctions with vertical surfaces and upstands.
- Junctions at perimeters.
- Drainage details.
- Control joints.
- Flashings.
- Penetrations.
- Corners.
- Terminations and connections.

Subcontractors

General: Submit names and contact details of proposed installers.

Evidence of experience: [complete/delete]

Warranties

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

1.8 INSPECTION

Notice

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

- Substrate preparation completed.
- Following primer application.
- Before membranes are covered up or concealed.
- After flood testing, if applicable.

2 PRODUCTS

2.1 GENERAL

Product substitution

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

Standards

Standard: To AS/NZS 4858.

Storage and handling

Store and handle to Durotech's recommendations and as follows:

- Protect materials from damage.

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.

2.2 DUROTECH MEMBRANE SYSTEMS**Duromastic ACS-3**

Description: Flexible two part high solids liquid/cement copolymer fibre reinforced waterproofing membrane.

Duromastic P15

Description: Flexible modified urethane waterproofing membrane.

Duroprime SSP

Description: Solvent free primer.

Duromastic SBR Latex

Description: Flexible micro fibre reinforced latex/copolymer waterproofing membrane.

Durotech ARW

Description: Single component water based primer.

Duro Flashing Tape

Description: Hydrophobic non-woven polypropylene fleece adhesive tape.

Duroseal Hyperflex 25 sealant

Description: Low modulus, hybrid polyurethane, flexible joint sealant and adhesive.

Durolasto Tape bond breaker

Description: Tape band system.

Durotile Mastik adhesive

Description: Cement based tile adhesive.

Flashings

Requirement: Flexible waterproof flashings compatible with the waterproof membrane system.

Liquid membrane reinforcement

Requirement: Flexible fabric compatible with the waterproof membrane system.

Shower tray

General: Purpose-made jointless shower tray, with wall upstands at least 50 mm higher than the hob upstands. Set hob masonry on the inside of the tray upstands.

Water stop angles

Material: Rigid, corrosion resistant angles compatible with the waterproof membrane system.

3 EXECUTION

3.1 PREPARATION**Substrates**

General: Make sure substrates are as follows:

- Clean and remove any deposit or finish which may impair adhesion of membranes.
- If walls are plastered, remove loose sand.
- If walls or floors are framed or discontinuous, support members are in full lengths without splicing.
- If floors are solid or continuous:
 - . Remove excessive projections.

- . Fill voids and hollows greater than 10 mm with abrupt edges with a cement:sand mix not stronger than the substrate nor weaker than the bedding.
- . Fill depressions less than 10 mm with a polymer modified cementitious product with feathering eliminated by scabbling the edges.
- . Cover cracks in substrates wider than 1.5 mm.
- . Concrete substrates: Cure for more than 28 days.

External corners: Round or arris edges.

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.

Falls

Membrane is directly under the floor finish: Make sure the fall in the substrate conforms to the fall documented for the finish.

Sheet substrate fastening

Requirement: Fasten or adequately fix to the supporting structure.

Control joints

Finishes: Align control joints in finishes and bedding with control joints or changes in materials in the substrate.

Water stop angles

Requirement: Provide water stop angles at door thresholds and shower enclosures to support the waterproof membrane at junctions between waterproofed and non-waterproofed areas.

Sizing: Size the vertical leg of the water stop angle to conform to the requirements of AS 3740.

Corners: Cut the horizontal leg and bend the vertical leg at corners instead of forming vertical joints between separate lengths of angle.

Fixing: Fix water stop angles to the substrate with compatible sealant or adhesive and corrosion-resistant countersunk or wafer head screws.

Priming

General: Prime the substrates with a primer compatible with the membrane system and suited to the substrate surface.

Bond breakers

Requirement: After the priming of surfaces, provide bond breakers at all wall/floor, hob/wall junctions, and at control joints where the membrane is bonded to the substrate.

Sealant bond breakers: If using a sealant as the bond breaker, apply the sealant before priming the surfaces as follows:

- Applications: Form a triangular fillet or cove of sealant to internal corners within the period recommended by the membrane manufacturer before the application of the membrane primer.
- Widths: 5 x 5 mm to vertical corners. 6 x 6 mm to 9 x 9 mm to horizontal corners.

3.2 APPLICATION

Protection

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

Extent of waterproofing

Waterproof or water resistant surfaces: To the requirements of BCA F1.7 for Class 2, 3 and 4 buildings, or BCA 3.8.1.2 for Class 1 buildings.

Vertical membrane terminations

Upstands: At least 150 mm above the finished tile level of the floor or 25 mm above the maximum retained water level, whichever is the greater.

Edge protection: Protect edges of the membrane.

Flashings

All flashed areas: Install **Duro Flashing Tape** to accommodate any potential movement between the nominated surfaces.

Junctions between waterproof surfaces: Provide a bond breaker at internal corners behind flashings.

Junctions between waterproof surfaces and other surfaces: Provide a bead of sealant at the following junctions:

- Waterproof and water-resistant surfaces.
- Water-resistant and water-resistant surfaces.
- Water-resistant and non-water-resistant surfaces.

Perimeter flashings: Provide continuous flashings to the full perimeter of waterproof areas at wall/floor junctions and to water stop angles.

Vertical flashings: Provide vertical corner flashings continuous across wall/wall junctions to at least 1800 mm above finished floor level.

Vertical liquid applied flashings:

- Return legs at least 40 mm on each wall.
- Overlap the vertical termination of the floor waterproofing membrane at least 20 mm.

Vertical sheet flashings:

- Return legs at least 50 mm on each wall.
- Overlap shower tray upstands at least 50 mm.
- Do not penetrate flashing with wall lining fasteners.

Reinforcement: At coves, corners and wall/floor junctions with gaps greater than 3 mm reinforce liquid applied membranes with **Duro Flashing Tape** to provide critical movement reinforcement.

Door jambs and architraves

Requirement: If the bottom of door jambs and architraves do not finish above the floor tiling, waterproof their surfaces below tile level to provide a continuous seal between the perimeter flashing to the wall/floor junction and the water stop angle.

Drainage connections

Floor wastes: Provide floor wastes of sufficient height to accommodate the thickness of floor finishes and bedding at the outlet position. Position drainage flange to drain at membrane level. Turn membrane down 50 mm minimum into the floor waste drainage flanges, and adhere to form a waterproof connection.

Priming: Prime porous surfaces with Durotech ARW primer.

Floor wastes in shower trays: Provide drainage of the tile bed and a waterproof connection between the tray and the drain.

Preformed drainage channels:

- With continuous drainage flanges: Provide a continuous waterproof connection between the membrane and the channel.
- Without drainage flanges: Provide continuous waterproofing under the channel and terminate the membrane at a floor waste with a recessed drainage flange.

Enclosed showers with hobs

General: Construct from masonry, concrete or corrosion-resistant metal. Fix securely to the floor, seal against walls and make flush all gaps, joints and intersections before applying of the membrane.

Autoclaved aerated concrete hobs: Do not use for external membrane systems. Prime before applying the membrane.

Internal membranes: Extend membrane over the hob and into the room at least 50 mm.

External membranes (hob located inside membrane tray): Dress membrane up outside of hob and finish at the underside of tiles capping the top of the hob.

Enclosed showers with step-downs

Levels: Conform to AS 3740 Figure 3.5 and as follows:

- Finish the highest level of the shower area at a level at least 15 mm below the finished floor level outside the shower.
- Extend the membrane at least 10 mm above the maximum retained water level in the area outside the shower or 150 mm above the finished floor level of the shower area, whichever is the greater.

With framed shower screens: Terminate the membrane directly below the floor tiles below the shower screen sill mounted on the upper level of the step-down. Support and adhere the membrane to a water stop angle fixed securely to the upper level substrate.

With frameless shower screens: Install the shower screen with the inside face flush with the step-down. Terminate the membrane outside the shower screen at least 1500 mm from the shower rose outlet on the wall. Support and adhere the membrane to a water stop angle fixed securely to the substrate. Finish membrane flush with the underside of tiles.

Enclosed hobless showers with framed shower screens

Requirement: Conform to AS 3740 Figure 3.6 and as follows:

- Turn the membrane up against a water stop angle fixed securely to the substrate directly below the shower screen sill.
- Size the angle so that the vertical leg finishes at least 5 mm above the level of the tiles.

Support and adhere the membrane to the angle and finish it flush with the top of the vertical leg.

Enclosed hobless showers with trench drain located below screen

Framed or frameless shower screens: Install a water stop angle where the outer edge of the trench drain to the perimeter of the shower will be installed. Size the angle so that the vertical leg finishes at the underside of the tiles. Support and adhere the membrane over the water stop angle and terminate the membrane at floor wastes as documented in **Drainage connections**. Install the trench drain with the shower screen located vertically above it.

Unenclosed showers

Requirement: Extend membrane at least 1500 mm into the room from the shower rose outlet, on the walls and floor.

Preformed shower bases

Support: Fully support shower bases without causing distortion or cracking.

Junction with walls for bases with integral perimeter upstands: Conform to AS 3740 Figure 3.1 and as follows:

- Recess shower base into walls or batten off wall lining sufficiently to allow water-resistant wall finishes to overlap the integral upstands along the top edge of the shower base.
- Maintain the structural integrity of walls that are rebated.

Baths and spas

Junction of walls with baths: Conform to AS 3740 Figure 3.2 and as follows:

- Baths with integral upstands: Recess bath edges into walls or batten off wall lining sufficiently to allow water-resistant wall finishes to overlap the bath's integral perimeter upstands. Maintain the structural integrity of walls that are rebated.
- Baths without integral upstands or with showers over – rendered masonry walls: Form or chase a rebate in the render to receive the bath edge. Waterproof the wall above and below the rebate, including the rebate, and the floor area under the bath. Seal the edge of the bath into the rebate.
- Baths without integral upstands or with showers over – framed and lined walls: Form a rebate in the wall lining with a corrosion-resistant lipped channel to receive the bath edge. Waterproof the wall above and below the rebate, including the rebate, and the floor area under the bath. Seal the edge of the bath into the rebate.

Plinth-mounted insert baths and spas: Conform to AS 3740 Figure 3.2 and as follows:

- Line framed enclosures for insert baths.
- Form an upstand on the inside edge of the enclosure opening to receive the bath with an angle or compressible foam rod.
- Waterproof walls abutting the enclosure, the top of the plinth and the interior and exterior of the enclosure.
- After tiling the walls, outside of the enclosure and plinth top, install the bath with its downturn edge lip outside the upstand formed on the edge of the opening and seal the lip to the tiles.

Taps and spouts

Requirement: Waterproof penetrations for taps and spouts a membrane compatible sealant.

Provision for servicing: Install taps in a manner that allows tap washers or ceramic discs to be serviced without damaging the waterproofing seal.

Recessed soap holders

Construction: Support all faces of the recess and line with the same sheet material as the adjacent wall. Fall base of recess towards the shower area. Flash all junctions and waterproof all surfaces.

Curing of liquid applied systems

General: To the manufacturer's recommendations.

Curing: Allow membrane to fully cure before tiling.

Overlaying finishes on membranes

Requirement: Protect waterproof membranes with compatible water-resistant surface materials that do not cause damage to the membrane.

Suitable materials: Conform to AS 3740.

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

3.3 TESTING**Flood test**

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 the floor soffit below for dryness.
- Record the result for each area.
- Dam the doorway(s) and seal floor wastes and drainage outlets to allow 50 mm water level.
- Fill space with clean water and leave overnight.

Evaluation:

- Make a visual inspection after a minimum period of 2 hours of the wall/floor junction of adjacent spaces and of the floor soffit below for obvious water or moisture.
- Test the same areas for dryness and compare the results to the measurements taken before flooding.

Compliance:

- Evidence of water from the visual test: Failure.
- No visual evidence of water: Proceed with moisture measurements.
- Test results indicating an increase in moisture before and after flooding: Failure.

Records:

- Submit records of all flood tests.

3.4 COMPLETION**Protection**

General: Keep traffic off membrane surfaces until bonding has set or for 24 hours after laying, whichever period is the longer.

Reinstatement: Repair or replace faulty or damaged work.

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]

4 SELECTIONS**4.1 SYSTEMS****Durotech liquid applied membrane systems schedule**

| Property | 1A | 1B | 1C |
|--------------------|--|---|--|
| Proprietary system | Durotech | Durotech | Durotech |
| Material type | Latex/pu Hybrid-based, single component, fibre enhanced membrane | Fast drying two part, polymer/cementitious membrane | Water based polyurethane liquid applied membrane |

| Property | 1A | 1B | 1C |
|---|--|--|--|
| Tensile strain (elongation at the break) (%) | 400 | 800 | 800 |
| Tensile stress at break (MPa) | > 1.1 | 1.5 | 1.74 |
| Shore A hardness | 65 | 65 | 70 |
| Colour | Light grey | Grey | Green/grey |
| Priming: Porous surfaces (e.g. masonry) | Duromastic ARW Primer | Duromastic ARW Primer | Duromastic ARW Primer |
| Priming: Non-porous surface (e.g. ceramic tile, metals, and plastics) | DuroPrime SSP | DuroPrime SSP | DuroPrime SSP |
| Number of coats (minimum) | 2 | 2 | 2 |
| Membrane first coat | Duromastic SBR Latex | Duromastic ACS-3 | Duromastic P15 |
| Membrane second coat | Duromastic SBR Latex | Duromastic ACS-3 | Duromastic P15 |
| Method of application | Thick brush or roller | Thick brush or roller | Thick brush or roller |
| Application rate/coat (L/m ²) | 0.75 | 0.75 | 0.75 |
| Dry film thickness (total) (mm) | 1.2 | 1.2 | 1.2 |
| Water stop angles | | | |
| Bond breakers | Durolasto Tape joint band system or, Duroseal Hyperflex 25 | Durolasto Tape joint band system or, Duroseal Hyperflex 25 | Durolasto Tape joint band system or, Duroseal Hyperflex 25 |
| Tile adhesive | Durotile Mastik | Durotile Mastik | Durotile Mastik |

Shower tray schedule

| Product | A | B | C |
|---------------------------|---|---|---|
| Material | | | |
| Dimensions | | | |
| Surface protection/finish | | | |