



Cutting Edge Protective Coating Technologies

Waterproofing Systems Technical Manual



100% NZ
Owned & Operated

“The Environmentally Friendly Choice”

Copyright © Ironbark Technology Limited 2014

Without limiting the rights of the copyright above, no part of this publication shall be reproduced (whether in the same or a different dimension), stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), without the prior permission of the copyright owner.

Introduction

This manual describes the various waterproofing applications for AtomX™ Tanking Membrane when applied over various products. It is written to enable designers, home owners and Building Consent Authorities to understand the range and application possibilities for AtomX™ Tanking Membrane.

This manual should be read in conjunction with all technical literature for the product to be waterproofed.

Waterproofing the various building features is a critical part of preventing water damage.

In principle, the process of tanking appears simplistic; however, waterproofing requires skill, attention to detail, construction knowledge and diligence. Even a pin prick sized hole can be the undoing of an otherwise perfect waterproof barrier. For these reasons, AtomX™ Tanking Membrane may only be applied by suitably trained and qualified personnel. The application processes and layering methods are described in detail in their technical and training documentation.

Waterproof vs Water Resistant

The distinction between a **waterproof** coating and a **water resistant** coating is an important one.

AtomX™ Acrylic Paints and Textures are **water resistant** in the sense that they will not allow water, as a liquid, to pass through them. Under normal atmospheric conditions the microscopic pores of the **water resistant** Acrylic coating are too small to allow liquid water to pass through them when they have been applied to an area where a sufficient fall provides adequate run off to avoid water pooling. Water resistant coatings will however, allow water vapour to pass through these pores when in a gaseous state. This enables internal moisture vapour, such as steam from cooking or washing and vapour from breathing etc., to escape the building, whilst preventing rain from entering. Most wall and floor surfaces benefit from NOT being waterproof, but simply being water resistant.

By contrast, a **waterproof** coating has no pores to allow water liquid or vapour to pass. AtomX™ Tanking Membrane is fully **waterproof** and therefore only suitable for selected wet areas, such as decks, parapet or balustrade tops, upper surfaces of sills, bathrooms, laundries or kitchen surfaces. Elsewhere, it is critical that only **water resistant** breathable coatings are used to avoid the problems caused by a build up of internal moisture.

IMPORTANT APPLICATOR INFORMATION

- Moisture is likely to be retained in the substrate and plaster systems prior to and during the application and installation process, especially during wet winter months. It is important that applicators ensure that they allow adequate time for the substrate and any render products to completely dry out before applying any subsequent Acrylic products.
- Always allow a minimum of 24 hours between each coat of the AtomX™ Tanking Membrane System.
- Follow Technical Data Sheets located at www.AtomX.co.nz for curing periods.

IMPORTANT OWNER CARE INFORMATION

- It is important that the Owner should not rub or clean the AtomX™ Coating System with any material for the periods stated below to ensure full cure has taken place;

* 18 months after coating for AtomX™ Tanking Membrane System products.

12 months after this period, the owner can then proceed to care for the external surfaces of their building in the following manner. The owner shall wash the surface annually to keep the coating clean. Use water at a low pressure and a soft brush to remove any dirt or dust. Do not use high pressure hoses or water blasters to rinse off. Do not aim water at window vents. If fungus, oil, fuel soot, or other stubborn grime cannot be cleaned with water alone, use AtomX™ Mould, Moss and Grime Cleaner, available from your local AtomX™ Distributor. Instructions for dilution rates and application is located on the container. This process removes any dirt or other build up that has gathered on the textured coatings.

Contents

	Page		Page
1.0 Product Overview	4	4.0 Internal Waterproofing Requirements	8
1.1 Product Description	4	4.1 Internal Wet Floor Areas	8
1.2 Handling and Storage	4	4.1.1 Design Information	
1.3 Technical Specification	4	4.1.2 Preparation	8
2.0 Substrate Requirements	5	4.1.3 Application	8
2.1 Concrete	5	4.1.4 Internal Moisture - NZBC E3/AS1	9
2.2 Screeds	5	5.0 External Waterproofing Requirements	9
2.3 Fibre Cement Sheet	5	5.1 Deck, Balcony and Roof Areas	9
2.4 Plasterboard	5	5.1.1 Design Information	9
2.5 Plywood	5	5.1.2 Preparation	9
2.6 Particleboard	5	5.1.3 Application	10
2.7 MgO (Magnesium Oxide) Board	5	5.1.4 Internal Moisture - NZBC E3/AS1	10
2.8 EPS (Expanded Polystyrene)	5	5.2 Parapets	11
2.9 XPS (Extruded Polystyrene)	5	5.2.1 Design Information	11
2.10 Steel Roofing	5	5.2.2 Preparation	11
2.11 Precautions	5	5.2.3 Application	11
2.12 Butynol	5	5.3 External Stairs	12
2.13 AAC (Autoclaved Aerated Concrete)	5	5.4 Penetrations	12
3.0 Substrate Preparation	6	5.4.1 Upstand Pipes or Ducts	12
3.1 Concrete	6	5.4.2 Outlet Pipes	13
3.2 Screeds	6	5.5 Maintenance	13
3.3 Fibre Cement Sheet	6		
3.4 Plasterboard	6	Appendix A	
3.5 Plywood	6	Colour Variations Between Batches & Tints	14
3.6 Particleboard	6	Technical Support	15
3.7 MgO (Magnesium Oxide) Board	6	Guarantee	15
3.8 EPS (Expanded Polystyrene)	6	Health and Safety	15
3.9 XPS (Extruded Polystyrene)	7	Disclaimer	15
3.10 Steel Roofing (Galvanised Iron, Colour Steel, Zinalume)	7		
3.11 AAC (Autoclaved Aerated Concrete)	7		
3.12 Butynol	7		

1.0 Product Overview

1.1 Product Description

AtomX™ Tanking Membrane is available in three types, as described below, for specific applications. All are liquid applied membranes for use in sealing and eliminating water ingress. AtomX™ Tanking Membrane is particularly useful where substrates are subjected to weather, or areas subject to pooling of water or dampness. In some applications the membrane is reinforced with AtomX™ Tanking Mesh, a fine polyester netting material.

AtomX™ Tanking Membrane should only be applied by AtomX™ Coating Applicators and suitably qualified product installers. These tradespeople have been taught how to achieve the correct thickness and reinforcing placement, especially around complex shapes or penetrations, ensuring the result is an impregnable surface.

AtomX™ Tanking Membrane can be covered with render, paint and tiles or similar. It is safe to use on surfaces that collect drinking water and has a high degree of U.V. resistance.

It cannot be applied at temperatures below 10°C, or if it is likely to drop below 10°C during the drying and curing time.

It should not be applied at temperatures over 30°C.

It softens at temperatures over 70°C.

1.2 Handling and Storage

All products must be stored in a well ventilated area, kept dry, out of direct sunlight, away from freezing conditions and up off concrete floors. The products, in the original unopened containers, have a shelf life of 2 years from date of manufacture. Once opened the product should be used within 12 months. If after the first opening the lid is replaced tightly, the container can be stored upside down, thus sealing the lid and preserving the 2 year shelf life.

Keep containers closed at all times when not in use.

Avoid contact with eyes, skin or clothing. Avoid breathing vapour. Clean any overspill and splatters thoroughly from surfaces, skin and clothing after use.

1.3 Technical Specification

AtomX™ Tanking Membrane

AtomX™ Tanking Membrane is used for the coating of surfaces exposed to weather, surfaces of wet areas or as a base coat for AtomX™ Tanking Membrane Keycoat or AtomX™ Deckshield. The AtomX™ Tanking Membrane gives a smooth, soft finish, so it is not suitable for trafficable areas or for rendering or plastering over.

AtomX™ Tanking Membrane Keycoat

This product has aggregate added to aid bonding of subsequent layers of render and texture products. It can be applied directly to most surfaces, or as a top coat to AtomX™ Tanking Membrane.

AtomX™ Deckshield

This product has aggregate, hardeners and abrasion resistant additives to give a durable, trafficable, non-slip surface for use on floors that

will be subject to general foot traffic. It is generally applied as a top coat to AtomX™ Tanking Membrane and can be painted over with a hardwearing floor paint as a finished surface coating to a trafficable area if required.

AtomX™ Tanking Mesh

This is a fine polyester structural reinforcing mesh that the applicator encapsulates between the first two AtomX™ Tanking Membrane layers and completely conceals with the third coat. The AtomX™ Tanking Mesh reinforces the coating system and provides greater resistance to movement. Its embedment and concealment ensures the correct thickness of AtomX™ Tanking Membrane is applied.



1.4 Safety

For safety requirements consult the Material Safety Data Sheets on the AtomX website www.AtomX.co.nz

2.0 Substrate Requirements

The AtomX™ waterproofing systems are suitable for use in external and internal applications on residential and commercial buildings.

2.1 Concrete

Cured for a minimum of 28 days. Wetted concrete shall be thoroughly dried before application of AtomX™ Tanking Membrane.

2.2 Screeds

Cured for a minimum of 7 days. Wetted screeds shall be thoroughly dried before application of AtomX™ Tanking Membrane.

2.3 Fibre Cement Sheet

Wet area grade only to be used.

2.4 Plasterboard

Wet area grade only to be used.

2.5 Plywood

Marine grade or PAA branded structural plywood or other wet area grade only to be used.

2.6 Particleboard

Wet area grade only to be used in internal applications. Recommended that it not be used in external applications.

2.7 MgO (Magnesium Oxide) Board

Used in internal and external wall applications.

2.8 EPS (Expanded Polystyrene)

Used in internal and external wall and foundation applications.

2.9 XPS (Extruded Polystyrene)

Used in internal and external wall and foundation applications.

2.10 Steel Roofing

Used in external roofing/substrate applications such as Galvanised Iron, Colour Steel, Zinalume.

2.11 AAC (Autoclaved Aerated Concrete)

Used in internal and external wall, floor, deck and roofing applications.

2.12 Butynol

Used in external roof and deck applications.

2.13 Precautions

Do not use AtomX™ Tanking Membrane in the following situations:

- Areas subject to negative pressure or rising damp.
- When substrate is wet.
- When rain is imminent.
- Where the AtomX™ Tanking Membrane will be left unprotected from foot traffic.
- On surfaces pre-treated with water repellents.
- When the surface temperature of the substrate is below 10°C or above 30°C.
- Where there is insufficient fall or the surface is uneven enough to cause ponding.

For substrates or situations other than those listed contact Ironbark Technology Ltd.



3.0 Substrate Preparation

The following is a guide on preparing new and used substrates prior to application of the AtomX Tanking Membrane System.

3.1 Concrete

Remove any powdery layers, laitance or efflorescence by wire brushing and water blasting. Thoroughly degrease the area and then rinse with copious amounts of water. Sand off and/or fill any irregularities in the concrete surface. Ensure the surface is completely dry and free of debris and/or contaminants. Once concrete is completely dry, apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.2 Screeds

Remove any powdery layers, laitance or efflorescence by wire brushing and water blasting. Thoroughly degrease the area and then rinse with copious amounts of water. Sand off and/or fill any irregularities in the screed surface. Ensure the surface is completely dry and free of debris and/or contaminants. Once concrete is completely dry, apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.3 Fibre Cement Sheet

Remove any powdery layers, laitance or efflorescence with dry soft brushes or cloths. Thoroughly degrease the area (if required) and then rinse with copious amounts of water. Ensure the surface is completely dry and free of debris and/or contaminants. Once the fibre cement sheeting is completely dry, apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.4 Plasterboard

Remove any powdery layers, laitance or efflorescence with dry soft brushes or cloths. Fill all cracks and holes using the manufacturers recommended filler. Once the Plasterboard is completely dry, sand, clean and then apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.5 Plywood

Clean down thoroughly to remove any moss, mould and lichen if present. Treat the infected area using AtomX™ Moss & Mould Cleaner and wash thoroughly with clean water to remove residue. Use detergent and water to remove dirt, grease and other contaminants using a soft brush, rinse thoroughly with water and allow to completely dry. Sand the surface to remove any surface imperfections and loose surface fibres that may be present. For floors and decks machine sanding is often required to achieve a suitable finish. Remove all dust and then apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.6 Particleboard

Clean down thoroughly to remove any moss, mould and lichen if present. Treat the infected area using AtomX™ Moss & Mould Cleaner and wash thoroughly with clean water to remove residue. Use detergent and water to remove dirt, grease and other contaminants using a soft brush, rinse thoroughly with water and allow to completely dry. Sand the surface to remove any surface imperfections and loose surface fibres that may be present. For floors and decks machine sanding is often required to achieve a suitable finish. Remove all dust and then apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.7 MgO (Magnesium Oxide) Board

Use detergent and water to remove dirt, grease and other contaminants using a soft brush, rinse thoroughly with water and allow to completely dry. Remove all dust and then apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.8 EPS (Expanded Polystyrene)

Use detergent and water to remove dirt, grease and other contaminants using a soft brush, rinse thoroughly with water and allow to completely dry. Remove all EPS dust particles and then apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.9 XPS

(Extruded Polystyrene)

There are various grades of XPS, check to ensure that it does not have a waxy surface, if so contact Ironbark Technology for further information on preparation. Use detergent and water to remove dirt, grease and other contaminants using a soft brush, rinse thoroughly with water and allow to completely dry. Remove all XPS dust particles and then apply AtomX™ Tanking Membrane System directly to the exposed surface in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.10 Steel Roofing

(Galvanised Iron, Colour Steel, Zincalume)

Ensure that there is no surface rust or oxidation, if oxidation exists it is recommended that wet abrasive removal is used. Polished Zincalume and Galvanised steel can be difficult to adhere to and therefore should be wet sanded to a matt finish. Use AtomX™ Degreaser to remove dirt, grease and other contaminants using a soft brush, rinse thoroughly with water and allow to completely dry. Apply AtomX™ Tanking Membrane System directly to the exposed surface in accordance with application instructions listed in 5.0 of this guide.

3.11 AAC

(Autoclaved Aerated Concrete)

Remove any powdery layers, laitance or efflorescence with a dry nylon bristled brush. Fill all cracks and holes using the manufacturers recommended filler. Once the AAC is completely dry and clean then apply AtomX™ Surface Sealer to the coatable area prior to applying the AtomX™ Tanking Membrane System in accordance with application instructions listed in either 4.0 or 5.0 of this guide.

3.12 Butynol

Use sugar soap to remove oxidation in accordance with the manufacturer's instructions, grease and other contaminants to restore the natural surface. Rinse thoroughly with clean water and allow to completely dry. Where existing Butynol is stable but delaminating at the joints secure down using the manufacturers recommended adhesive and following their instructions. Ensure that any newly adhered Butynol joints have been left to completely cure prior to applying any subsequent coats. Remove any dust particles ensuring that the substrate is stable, clean and dry prior to applying the first coat of AtomX™ Tanking Membrane System directly to the exposed surface in accordance with application instructions listed in 5.0 of this guide.



4.0 Internal Waterproofing Requirements

The application of the AtomX™ Tanking Membrane to these areas is the same, irrespective of what the substrate flooring material is made of.

4.1 Internal Wet Floor Areas

4.1.1 Design Information

General

AtomX™ Tanking Membrane can be used for buildings where an impervious waterproof membrane is required for floors and walls to prevent damage to building elements and adjoining areas.

The AtomX™ Tanking Membrane base layers must be protected from physical damage by either AtomX™ Deckshield, vinyl, ceramic or stone tile finishes just to name a few common finishing options.

Wet Area Wall Linings

Plasterboard wall linings must be manufactured to comply with AS/NZS 2588 and be suitable for use in internal wet areas.

Fibre cement sheet must be of a type suitable for use in wet areas.

Penetrations

Penetrations through the wet area surface shall be finished as shown in Section 4.4 Penetrations.

Plastic fittings should be primed with a suitable water based primer. Metal fittings should be primed with a suitable water based metal primer.

Service Life

AtomX™ Tanking Membrane, when subject to normal conditions of environment and use, are expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tile finishes with a design service life of 15 - 25 years.

4.1.2 Preparation

- a) AtomX™ Tanking Membranes are impervious to water and when installed, as specified, will prevent water penetrating behind linings or entering concealed spaces. AtomX™ Tanking Membranes are suitable for use to contain any accidental overflow as described in NZBC Clause E3.3.2. A means of code compliance is given in NZBC Acceptable Solution E3/AS1 Paragraph 3.1.1(b) and 3.1.2(b).
- b) Falls in showers and shower areas must be a minimum of 1 in 50. In unenclosed showers, falls must extend a minimum of 1500mm out from the shower rose. Where water resistant wall finishes such as prefinished sheet materials are used, they must flash over the membrane a minimum of 30mm.

- c) All render and tile bed requirements should be finished before the application of the membrane and tiles. Other floor coverings are to be directly bonded to the membrane.
- d) Install wall & floor sheets to the sheet manufacturer's instructions.
- e) Wall nibs are to be constructed of suitable material as defined in the relative New Zealand standards. The nibs are to be flat or fall towards the wet area.
- f) Avoid floor sheet joints in wet areas. If sheets are joined in the wet area, seal with Holdfast FIXALL 220LM MS sealant spread approximately 8mm each side of the joint.
- g) Fill nail and screw holes with Holdfast FIXALL 220LM MS sealant.
- h) Seal around wall rose penetrations with Holdfast FIXALL 220LM MS sealant.
- i) Fit a bead of foam rod or triangular moulding round floor/wall or floor/nib junctions to act as bond breaker.

4.1.3 Application

Where there are areas of floor where water can collect (e.g. laundries and showers) the material forming the floor surface needs to be sealed from the ingress of water to protect the area below from water seepage. These areas usually have a formed drainage fall. In the case where panel flooring material is used, the joist may be sloped to give the panels fall.

The AtomX™ Tanking Membrane System is applied in 4 or 5 coats to the top of the screed or sloped floor and 100mm minimum up any walls or nibs surrounding this area.

The first coat is AtomX™ Surface Sealer. The second, third and fourth coats are AtomX™ Tanking Membrane.

Each AtomX™ Tanking Membrane coat is applied perpendicular to the previous, this ensures that any tiny air bubbles are removed.

After the first coat of AtomX™ Tanking Membrane has been applied and allowed to tack off, sheets of AtomX™ Tanking Mesh are lightly pressed into the surface and the second coat of AtomX™ Tanking Membrane is applied to encapsulate the mesh. After this has dried the third coat of AtomX™ Tanking Membrane is applied. Concealing the mesh ensures a total wet film system coating thickness of 1300 - 1500 microns has been achieved.

AtomX™ Tanking Membrane Keycoat is used for the fourth coat.

- a) If a tile finish is required the fourth coat is AtomX™ Tanking Membrane Keycoat. The tiles are glued to this with flexible tile adhesive.
- b) If a trafficable surface is required the fourth coat is AtomX™ Tanking Membrane and AtomX™ Deckshield is used as the fifth coat.

At Junctions of walls or nibs with the floor, where the membrane continues over the junction reinforce this junction with an extra 200mm wide strip of tanking mesh centred on the junction.

4.1.4 Internal Moisture - NZBC E3/AS1

AtomX™ Tanking Membranes are impervious to water and when installed, as specified, will prevent water penetrating behind linings or entering concealed spaces. AtomX™ Tanking Membranes are suitable for use to contain any accidental overflow as described in NZBC Clause E3.3.2. A means of code compliance is given in NZBC Acceptable Solution E3/AS1 Paragraph 3.1.1(b) and 3.1.2(b)

Falls in showers and shower areas must be a minimum of 1 in 50. In unenclosed showers, falls must extend a minimum of 1500mm out from the shower rose.

Where water resistant wall finishes such as prefinished sheet materials are used, they must flash over the membrane a minimum of 30mm.



5.0 External Waterproofing Requirements

The application of the AtomX™ Tanking Membrane to these areas is the same, irrespective of what the substrate flooring material is made of.

5.1 Deck, Balcony and Roof Areas

5.1.1 Design Information

Where exterior floor or roof surfaces are formed these also need to be sealed from the ingress of water to protect areas below from water seepage. These surfaces shall have a drainage fall formed by either sloping the supporting members or a screed of concrete slurry on top of any structural flooring material.

General

AtomX™ Tanking Membrane can be used for decks and roofs where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas.

The membrane base layers must be protected from physical damage by AtomX™ Deckshield, vinyl or ceramic or stone tile finishes, just to name a few common finishing options.

Penetrations

Penetrations through the wet area surface shall be finished as shown in Section 4.4 Penetrations.

Plastic fittings should be primed with a suitable water based primer. Metal fittings should be primed with a suitable water based metal primer.

Service Life

AtomX™ Tanking Membrane, when subject to normal conditions of environment and use, are expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tile finishes with a design service life of 15 - 25 years.

5.1.2 Preparation

- Ensure the wet area has been constructed with minimum falls to edges and/or drains of 1:40 by either constructing the wet area with the required slope or by sloping the topping screed.
- Ensure internal gutters have been constructed with a minimum fall of 1:100 by either constructing the wet area with the required slope or by sloping the topping screed.
- Ensure all required flashings are installed to the NZ Building Code requirements.
- Joints in sheet substrate shall be stopped with Holdfast FIXALL 220LM MS sealant spread approximately 8mm each side of the joint.
- Fill nail and screw holes with Holdfast FIXALL 220LM MS sealant.
- Fit a bead of foam rod or triangular moulding round floor/wall or floor/nib junctions to act as bond breaker.

5.1.3 Application

The AtomX™ Tanking Membrane System is applied in 4 or 5 coats to the top of the screed or sloped floor and 100mm minimum up any walls or nibs surrounding this area.

The first coat is AtomX™ Surface Sealer. The second, third and fourth coats are AtomX™ Tanking Membrane.

Each AtomX™ Tanking Membrane coat is applied perpendicular to the previous, this ensures that any tiny air bubbles are removed.

After the first coat of AtomX™ Tanking Membrane has been applied and allowed to tack off, sheets of AtomX™ Tanking Mesh are lightly pressed into the surface and the second coat of AtomX™ Tanking Membrane is applied to encapsulate the mesh. After this has dried the third coat of AtomX™ Tanking Membrane is applied. Concealing the mesh ensures a total wet film system coating thickness of 1300 - 1500 microns has been achieved.

AtomX™ Tanking Membrane Keycoat is used for the fourth coat.

- a) If a tile finish is required the fourth coat is AtomX™ Tanking Membrane Keycoat. The tiles are glued to this with flexible tile adhesive.
- b) If a trafficable surface is required the fourth coat is AtomX™ Tanking Membrane and AtomX™ Deckshield is used as the fifth coat.

At Junctions of walls or nibs with the floor, where the membrane continues over the junction reinforce this junction with an extra 200mm wide strip of tanking mesh centred on the junction.



A deck showing AtomX™ Tanking Membrane up dividing wall and tiles partly laid.

5.1.4 External Moisture - NZBC E2/AS1

Decks, balconies and roofs must be designed to shed precipitated moisture. They must also take into account the effects of snowfalls in snow prone areas.

The minimum falls to decks, balconies, gutters and roofs must be a minimum of 1 in 60 and all falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the surface finish and possibly the AtomX™ Tanking Membrane System.

Drainage flanges must be used for any outlet and must be fitted with a grate or cage to reduce potential sources of blockages. An overflow must be provided where the deck, balcony or roof does not drain into an external gutter or spouting.

Penetrations and upstands of the AtomX™ Tanking Membrane must be raised above the level of any possible flooding caused by blockage of deck, balcony or roof drainage.

AtomX™ Tanking Membrane can prevent the penetration of water and will therefore meet code compliance with NZBC Clause E2.3.2.

A means of dissipating construction moisture must be provided in the building design and construction to meet code compliance with NZBC Clause E2.3.6.



A deck with AtomX™ Tanking Mesh pressed into first coat of AtomX™ Tanking Membrane.



Applying second coat of AtomX™ Tanking Membrane over AtomX™ Tanking Mesh.

5.2 Parapets

5.2.1 Design Information

Where parapets are formed these also need to be sealed from the ingress of water to protect the walls from water ingress. These shall have a fall of 10° formed in the top surface towards the roof behind as required by the NZ Building Code.

Penetrations

No penetrations are allowed in the tops of parapets when AtomX™ Tanking Membrane is used as a capping.

Service Life

AtomX™ Tanking Membrane, when subject to normal conditions of environment and use, are expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tile finishes with a design service life of 15 - 25 years.

5.2.2 Preparation

- a) Ensure the parapet has been constructed as required by the NZ Building Code.
- b) Ensure all required flashings are installed to the NZ Building Code requirements.
- c) Joints in sheet substrate shall be stopped with Holdfast FIXALL 220LM MS sealant spread approximately 8mm each side of the joint.
- d) Fill nail and screw holes with Holdfast FIXALL 220LM MS sealant.

5.2.3 Application

The AtomX™ Tanking Membrane System is applied in 4 or 5 coats to the top of the screed or sloped floor and 100mm minimum up any walls or nibs surrounding this area.

The first coat is AtomX™ Surface Sealer. The second, third and fourth coats are AtomX™ Tanking Membrane.

Each AtomX™ Tanking Membrane coat is applied perpendicular to the previous, this ensures that any tiny air bubbles are removed.

After the first coat of AtomX™ Tanking Membrane has been applied and allowed to tack off, sheets of AtomX™ Tanking Mesh are lightly pressed into the surface and the second coat of AtomX™ Tanking Membrane is applied to encapsulate the mesh. After this has dried the third coat of AtomX™ Tanking Membrane is applied. Concealing the mesh ensures a total wet film system coating thickness of 1300 - 1500 microns has been achieved.

AtomX™ Tanking Membrane Keycoat is used for the fourth coat.

- a) If a tile finish is required the fourth coat is AtomX™ Tanking Membrane Keycoat. The tiles are glued to this with flexible tile adhesive.
- b) If a trafficable surface is required the fourth coat is AtomX™ Tanking Membrane and AtomX™ Deckshield is used as the fifth coat.

At Junctions of walls or nibs with the floor, where the membrane continues over the junction reinforce this junction with an extra 200mm wide strip of tanking mesh centred on the junction.





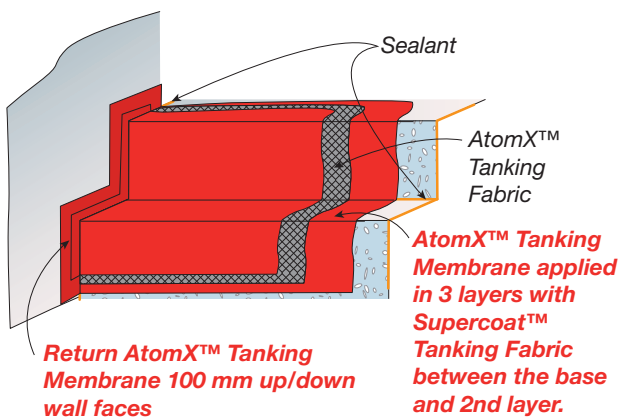
Exterior Stairs before Coating.



Finished Exterior Stairs.

5.3 External Stairs

Generally external stairs need to have their treads, risers and any exposed sides waterproofed to protect the space below the stairs, the structure supporting the stairs or the reinforcement within the stair panels from water damage. The procedure is essentially the same as for decks and roofs but extra care has to be taken in folding the AtomX™ Tanking Mesh into the internal corner between the riser or side wall and the tread and around the outer edges of the tread.



It is recommended that an MS sealant bead is applied in the internal corners of the 90° folds to create an easier gradient to ensure the AtomX™ Tanking Mesh is hard pressed to the substrate. This eliminates the possibility of any pulling or tearing.

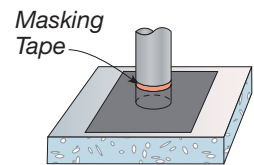
5.4 Penetrations

Penetrations through wet areas, decks, balconies or roofs are treated in the following manner.

5.4.1 Upright Pipes or Ducts

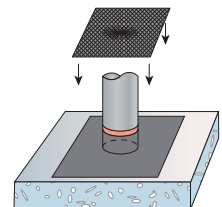
Step 1

A square (at least 200 wide all round the pipe or duct) of AtomX™ Tanking Membrane is applied around the service and 120mm (or above flooding level) up and all around the vertical face of the pipe or duct.



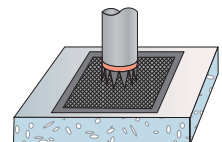
Step 2

A patch (approximately 10mm smaller than the tanking square) is cut from AtomX™ Tanking Mesh with a star arrangement of slits cut in the middle to fit over the pipe or duct.



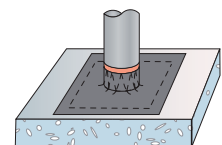
Step 3

While the 1st coat is still wet, the patch is slid over the service and pressed into the AtomX™ Tanking Membrane. The star prongs formed by the cutting are pressed into the tanking on the vertical face of the pipe or duct.



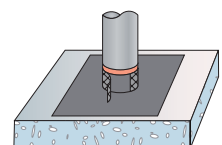
Step 4

Before the 1st coat is dry a second coat of AtomX™ Tanking Membrane is applied over the whole of the first coat to encapsulate the mesh patch.



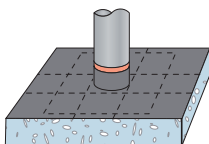
Step 5

Immediately after applying this coating, a bandage of AtomX™ Tanking Mesh is wrapped around the service and pressed into the AtomX™ Tanking Membrane to cover the star prongs of the patch.



Step 6

The remaining surface of the deck, balcony or roof is coated with its 1st coat of AtomX™ Tanking Membrane and sheets of AtomX™ Tanking Mesh are pressed into this 1st coat.

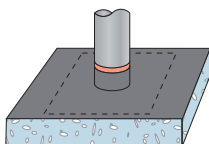


NOTE: To ensure complete sealing it is important that the mesh patch is completely lapped by these sheets of mesh on all four sides.

Step 7

Finally, the remaining coats of AtomX™ Tanking Membrane are applied to conceal the reinforcing mesh, patch and bandage.

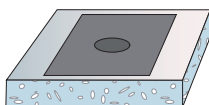
By this method penetrations are completely sealed watertight preventing the leakage of water into the space below the deck, balcony or roof.



5.4.2 Outlet Pipes

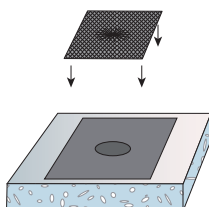
Step 1

A square (at least 200 wide all round the hole) of AtomX™ Tanking Membrane is applied around the service and down the vertical face of the hole as far as practical (preferably the depth of the panel).



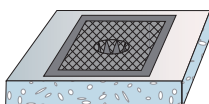
Step 2

A patch (approximately 10mm smaller than the tanking square) is cut from AtomX™ Tanking Mesh with a star arrangement of slits in the middle the same size as the hole.



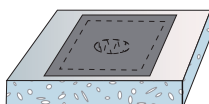
Step 3

While the 1st coat is still wet the patch is placed over the service and pressed into the tanking. The star prongs are pressed down, around the inside of the hole and pressed into the AtomX™ Tanking Membrane.



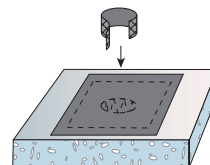
Step 4

Before the 1st coat is dry a second coat of AtomX™ Tanking Membrane is applied over the whole of the first coat to encapsulate the AtomX™ Tanking Mesh patch.



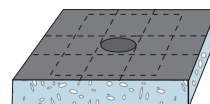
Step 5

Immediately after applying this coating, AtomX™ Tanking Mesh a bandage, the same width as the depth of tanking in the hole is pressed around the inside of the hole to cover the star prongs of the patch.



Step 6

The remaining surface of the wet area, deck, balcony or roof is coated with its 1st coat of AtomX™ Tanking Membrane and sheets of AtomX™ Tanking Mesh are pressed into this 1st coat.

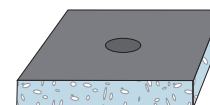


NOTE: To ensure complete sealing it is important that the mesh patch is completely lapped by these sheets of mesh on all four sides.

If vinyl or AtomX™ Deckshield is to be used as the final surface finish the outlet fitting and piping may be fitted at this point to allow the final coats of AtomX™ Tanking Membrane to cover the joint between the fitting and the floor.

Step 7

Finally, the remaining coats of AtomX™ Tanking Membrane are applied to the wet area, deck, balcony or roof to conceal the reinforcing mesh and patch.



5.5 Maintenance

Providing the substrate, AtomX™ Tanking Membrane and surface finish are applied in accordance with their relevant technical literature, the AtomX™ Tanking Membrane should require no maintenance. However, during normal use the surface finish (tiles, vinyl or AtomX™ Deckshield) can be accidentally damaged. Regular checks must be made of the surface finish to ensure it is sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately by the methods recommended in the appropriate manufacturer's literature.

In the event of damage to the AtomX™ Tanking Membrane, the surface finish must be removed and the AtomX™ Tanking Membrane repaired by removing the damaged portion and applying a patch as for new work.

If the AtomX™ Deckshield surface finish is damaged then the damaged area can be patched as for new work and similarly, if required, any of the layers of AtomX™ Tanking Membrane below that have been damaged.

Drainage outlets must be maintained to operate effectively and surface finishes must be kept clean.

Cleaning materials that affect polymer based membranes must not be used. Please consult Ironbark Technology Ltd or your Applicator for professional advice.

Appendix A

Colour Variations between Batches & Tints

As in good trade practice, all pails of final coat Deckshield should be boxed together prior to use (without exception). This ensures consistency of colour is achieved over the entire job.

Ironbark Technology Ltd produces only the highest quality paints for professionals using the highest quality raw materials; this is backed up with quality support. As part of this service, we offer advice to our Networks of Distributors and system providers about colour to help them achieve the best results time after time.

The human eye can differentiate between approximately 10 million colours, the way in which light hits a building can alter that perceived colour, in some cases substantially. However, although paint manufacturers have been making and using colours for many, many years, there are fundamental issues around colour matching that still arise.

Industry standard paint technology is still plagued with many variables and whilst these variables may be very small, they can still be quite significant at times.

Why are variables experienced?

- 1) Manufactured pigments have always differed from batch to batch.
- 2) Tinting machines consistently produce a slightly different strength of colour each time.
- 3) Raw materials used in the manufacture of bases vary every time the product is made.

These are just three reasons why, historically, the paint industry has always experienced batch to batch variation on ready mixed and tinted paint based products.

Over the last 20 years the market has moved from ready mixed to predominately tinted paints. Whilst this gives our Distributors, system providers and end users greater advantages, it also introduces the obstacles associated with colour variation. These colour variations effect a wide range of industry where colours are used.

What can be done to minimise the impact of colour variation?

- 1) Use a single batch for a job or an isolated area. i.e. a paint product that has been tinted from the same tinting machine at the same time.
- 2) Do not use paint from different batches on the same surface or surfaces close together. If possible, purchase paint for the whole job at one time.

- 3) Industry trade practice requires that if you have mixed batches of coloured paint then they must always be 'boxed' together. i.e. mixing all the paints in a large container will always ensure colour consistency.
- 4) Check the colour of all buckets in each batch before you use it.
- 5) Ask the Client or Project Manager to agree that the colour (and quality of the paintwork) is in line with the specification by signing off a small test area at the beginning of the project. This will avoid costly recoating every time.
- 6) The appearance of a colour always depends on the type of lighting. Therefore be sure that the Client or Project Manager checks the colour in suitable lighting conditions. The Client or Project Manager may not ask for this so painting contractors need to be proactive in requesting this check.
- 7) 'Touching up' should only be attempted using paint from the original job using the same application methods. Therefore, paint should be reserved specially for this purpose. It is recommended that touching up is carried out up to a break in the wall or surface. With particular colours, usually deeper shades and higher sheen finishes it may be necessary to recoat the entire area to avoid noticeable differences in appearance.

If you have any questions don't hesitate to contact Ironbark Technology Ltd for professional advice.

Technical Support

Ironbark Technology Ltd and its nationwide network of distributors and system providers offer technical assistance in New Zealand.

Visit www.atomx.co.nz for your nearest distributor or system provider who will offer free estimating services and/or technical support to project architects, engineers, builders and owners.

Guarantee

Ironbark Technology Ltd guarantees its AtomX™ Coating Systems to be free of defect in materials and manufacture. This guarantee excludes all other guarantees and liability for damage or loss in connection with defects in Ironbark Technology Ltd's product, other than those imposed by legislation.

Health & Safety

Information on any known health risks of our products and how to handle them safely is shown on their package and/or the documentation accompanying them. Additional information is listed in the Material Safety Data Sheets available on our website www.atomx.co.nz.

Disclaimer

Colour Variations between Batches & Tints

Ironbark Technology take no responsibility for any colour variations between different batches of tinted paint based products. Please ensure that you always order enough paint to complete the entire project. Refer to Appendix A of this manual for further information.

*For further information on products and our New Zealand wide Distribution Network
Phone (03) 456 4222 or visit
www.atomx.co.nz*

Authorised Distributor

Ironbark Technology Ltd
75 Reid Rd, P.O. Box 2398
Dunedin, New Zealand.
Phone: +64 3 456 4222
www.atomx.co.nz

**For your nearest distributor of AtomX™ Products
visit our website www.atomx.co.nz**

The information presented herein is supplied in good faith and to the best of our knowledge was accurate at the time of preparation. No responsibility can be accepted by Ironbark Technology Ltd or its staff for errors or omissions. The provision of this information should not be construed as a recommendation to use any of our products in violation of any patent rights or in breach of any statute or regulation. Users are advised to make their own determination of the suitability of this information in relation to their particular purposes and specific circumstances. Since the information contained in this document may be applied in conditions beyond our control, no responsibility can be accepted by us for any loss or damage caused by any person acting, or refraining from action as a result of this information. The systems detailed in this design manual are only to be used with AtomX™ Coating Systems, distributed by Ironbark Technology Ltd. This literature is not permitted to be used for other types of Coating Systems.