TECHNICAL BULLETIN – TB077

INSTALLATION OF BUTYNOL MEMBRANE AND THE DIRECT BONDING OF TILES

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INTRODUCTION & SCOPE

In both new construction and, particularly in the growing restoration market, there is an increasing need for the installation of a thin film membrane to which ceramic or other types of tile can be directly fixed. This need arises from the lack of available height between the level to be treated and the adjacent surfaces.

There are liquid membranes available that meet all the criteria and tiles can be direct fixed, however these can present problems on flexible substrates such as timber decks. Even when these surfaces are clad with timber or fibre cement sheets, relative movement can occur between the sheets sufficient to cause a fracture of the liquid applied membrane.

ARDEX Butynol (Butyl Rubber) sheet membranes provide an improved alternative to liquid membranes, particularly for these flexible substrates. Because of the integral strength and flexibility of this membrane, it can be loose bonded across a larger width, across the joints providing ample movement capacity and this does not impede the efficacy of the bonding of the tiles.

This Bulletin details the basic process of installation of the ARDEX Butynol sheet membrane, however the ARDEX Product Data Sheet for ARDEX Butynol should be referenced for full details of the installation, particularly in relation to detailing all intrusions and protrusions contained within the surface to be treated.

SURFACE PREPARATION

All surfaces to be treated should be smooth and thoroughly cleaned free from grease, oil, dirt or other surface contaminants.
Prior to waterproofing membrane application, all falls to waste must be incorporated into the substrate.
Concrete surfaces should have a wood trowel or rotary planer (helicopter) finish and should be true and pitched to drains.
Fibre cement sheeting should be cleaned free from grease, oil, dirt or other surface contaminants and thoroughly de-dusted by industrial vacuuming.
Timber sheeting should be cleaned free from grease, oil, dirt or other surface contaminants and rough sanded then thoroughly de-dusted by industrial vacuuming.
Other timbers should be assessed on a case by case basis. It is recommended that slat or tongue and groove timber floors are clad with fibre cement sheets using screw fixtures into the underlying bearers since the extent of movement

may cause crimping of the ARDEX Butynol membrane. High oil content timbers should be sheeted since the oils exuded can cause short term bond failure between the membrane and the substrate.

INSTALLATION OF THE ARDEX BUTYNOL MEMBRANE

Notwithstanding, the information contained herein, the installation of ARDEX Butynol membranes must be carried out in strict and complete adherence with the details contained in the Ardex Product Data Sheets for this product.

ARDEX Butynol sheeting is available in various thicknesses and for undertile installations, the 1.0mm sheeting is normally sufficient. In more severe conditions, the 1.5mm black ARDEX Butynol sheeting should be used and taking into account the increased lap thickness when installing the tiles.

Note: ARDEX Butynol 1.5mm Dove Grey is not recommended as an undertile membrane.
All joints in the substrate should be filled with silicone and taped using 25mm PVC pressure sensitive tape (duct tape).

The ARDEX Butynol sheets must be laid from the lowest line of the surface longitudinally first lapping over and under the lowest edge or into fitted gutters or drainage outlets. Subsequent sheets should be laid across the fall to overlap the preceding sheet such that sheet end laps are located distant from those of the preceding layer.

Lay the ARDEX Butynol out over the surface to relax and relieve stresses induced by manufacture and storage for at least 20 minutes prior to fixing.

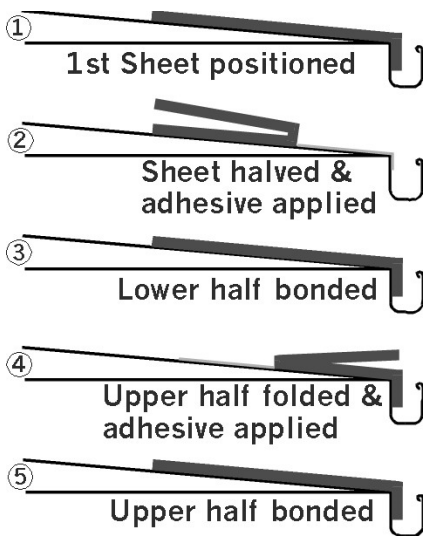
1st Layer Installation

Position the 1st layer of ARDEX Butynol and fold back in half, from the lowest edge, longitudinally.

Apply ARDEX WA98 Adhesive to the lowest exposed substrate below the 1st layer and to the exposed underside of the ARDEX Butynol sheet by brush, spray or roller at a spreading rate of 2.5 square metres per litre. Leave to tack dry in accordance with the adhesive product data before bonding the two surfaces together.

When the adhesive has become touch dry, work the folded section of the sheet back into position avoiding wrinkles or the inclusion of air bubbles.

Fold the top half of the ARDEX Butynol sheet back and repeat the above process.



Subsequent Layer Installation

Lay the ARDEX Butynol sheet taking care to position it to allow laps and mark the position of the top layer overlap onto the bottom layer. Fold the upper layer back in half, away from the lap edge, longitudinally for edge laps and transversally for end laps.

Apply ARDEX WA98 Adhesive to the lower exposed substrate and the exposed underside of the ARDEX Butynol sheet by brush, spray or roller at a spreading rate of 2.5 square metres per litre. Do not apply the ARDEX WA98 adhesive to areas less than 50mm from the lower edge and overlapping end to allow for the lapping procedure.

When the adhesive has become touch dry, work the folded section of the sheet back into position avoiding wrinkles or the inclusion of air bubbles.

Fold the top half of the ARDEX Butynol sheet back and repeat the above process except that the ARDEX WA98 adhesive is applied over all surfaces including the 50 mm area from the edge.

Further sheets are installed to form a complete cover.

All perimeter walls, protrusions and intrusions through the membrane should be detailed in accordance with the ARDEX Butynol Product Data Sheet.

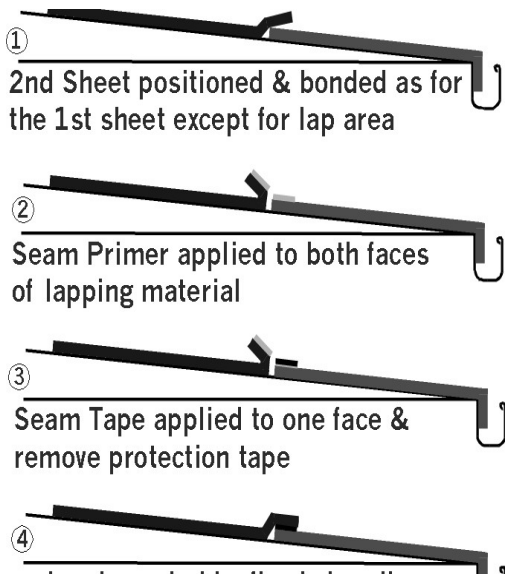
Bonding the Laps

Laps are bonded by folding the loose laid lap area back to expose both the mating faces of the membrane sheets.

Apply ARDEX WPM299 Seam Primer to both exposed surfaces of the upper and lower ARDEX Butynol sheets. The seam primer should be applied using a scourer and scrubbing the primer well into the Butynol.

Firmly bond ARDEX Seam Tape onto the lower level and remove the protection tape on the top side.

Finally fold the upper layer back onto the ARDEX Seam Tape and firmly and uniformly pressure roll the joint to achieve a total bond.



INSTALLATION OF CERAMIC TILES

Tile installation must conform to the requirements of the Australian Standard AS3958.1 - 2007.

The installation of ceramic tiles is recommended for black Butynol only.

ARDEX Dove Grey Butynol is not recommended as an undertile membrane.

All exposed surfaces of the ARDEX Butynol should be thoroughly solvent cleaned using ARDEX WA98S solvent or equivalent to remove all traces of surface contaminants including residual rolling oils from the manufacturing process. Allow to dry before proceeding.

Lay the tiles using ARDEX Optima adhesive applied to the membrane surface using a 12mm notched trowel to achieve a dry bed thickness of not less than 2.5 - 3mm. Place the tiles in position and work into the adhesive to ensure a 100% coverage to the reverse side of the tiles. Only spread the adhesive to an area of approximately one (1) square metre at a time to ensure that the tiles can be placed before the adhesive forms a surface skin which will inhibit the bond strength.

Allow the ARDEX Optima adhesive to cure for at least 24 hours before proceeding with the next stage. Low absorbency tiles can extend the cure time.

GROUTING OF THE TILES

All joints up to 8mm wide may be grouted using ARDEX FG8 cement-based grout mixed with ARDEX Grout Booster. Joints from 2 to 15mm wide may be grouted using ARDEX EG15 epoxy grout. Joints from 5 to 50mm wide may be grouted using ARDEX WJ50 cement-based grout mixed with ARDEX Grout Booster. All grouting is to commence only after the adhesive has fully cured. After mixing the grout in accordance with the instructions, work it well into the joints ensuring there are no voids under the grout. Apply the grout to a small area of approximately one (1) square metre at a time and clean all excess grout from that area prior to proceeding. Only mix small quantities of the grout at a time to enable workability within the pot life of the product.

When using ARDEX EG15, cleaning the excess grout from the surface should be carried out by the applicator as he works. The surface should be finally cleaned using a clean wet scourer to remove all remaining excess material from the joints and the tile surfaces, followed by wiping with an absorbent material to remove any residual material. Finishing the Ardex cement-based grouts should be carried out in the normal fashion prior to allowing any residual grout film to dry before polishing. When the cement-based grouts have been mixed with ARDEX Grout Booster, adding a small amount of methylated spirits to the wash water may assist with cleaning.

IMPORTANT

This Technical Bulletin provides guideline information only and is not intended to be interpreted as a general specification for the application/installation of the products described. Since each project potentially differs in exposure/condition specific recommendations may vary from the information contained herein. For recommendations for specific applications/installations contact your nearest Ardex Australia or Ardex New Zealand Office.

DISCLAIMER

The information presented in this Technical Bulletin is to the best of our knowledge true and accurate. No warranty is implied or given as to its completeness or accuracy in describing the performance or suitability of a product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

REASON FOR REVISION – ISSUER

PERIODIC UPDATE

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