



ARDEX BUTYNOL HD / BUTYSEAL

Heavy Duty Butynol Membrane

BRANZ Appraised

E2/AS1 Acceptable Solution

Excellent resistance to atmospheric agents

Resistant to chemical attacks

High puncture resistance

Ability to be used over a wide range of substrates

Can be adhered directly to failed bitumen

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PRODUCT DESCRIPTION

ARDEX BUTYSEAL is a high performance synthetic rubber membrane based on the Genuine Butynol technology combined with a Geotextile backing.

SPECIFICATION

ARDEX BUTYSEAL has properties which resist ageing from heat, sunlight and ozone. It has excellent gas impermeability and toughness and remains flexible at low temperatures. ARDEX BUTYSEAL is marketed by ARDEX as a warranted roofing and waterproofing product and fixed by approved Applicators.

BUTYSEAL MATERIAL SPECIFICATIONS

Our requirements for long term warranty necessitate that BUTYSEAL meets these typical technical requirements for the membrane component:

Specific Gravity to ASTM D297 1.20±0.05
Hardness IRHD to ASTM D1415 65±5
Tensile Strength to ASTM D412 8.3 MPa min
Modulus at 300% elongation to ASTM D412 4.15 MPa min
Elongation at break to ASTM D412 300% min
Heat Ageing (7 days at 115° C)
Tensile Retention to ASTM D412 70% min
Elongation Retention to ASTM D412 70% min
Tear Strength to ASTM D624 26kN/m
Ozone Resistance to ASTM D1149 No visible cracks (7 days at 40°C in 50pphm ozone)

Water Absorption to ASTM D471
1.65% (by mass) 0.72% (by volume)

Water Permeability to ASTM E96-92
Vapour Flow Resistance (MNs/g) 12414
Vapour Flow Rate (g/m2d) 0.013

Note: Interesting comparable figures for water permeability are –
Polythene 156, Asphalt 1830, P.V.C. 4900.
K Values on 1mm Butynol sheeting
K Value (Thermal Conductivity) 7.4 x 103 Cal/cm/ sec/deg C.
Conductivity Data on 1mm Butynol sheeting
Resistance/m2Ω /m2 = 0.6816 on 9.3 volts.

SPECIAL FEATURES OF BUTYSEAL

- Cost effective - The fibre backing provides a protective underside barrier that allows application over a wide range of surfaces, including some existing membranes and bitumen.
- Extra strength, high puncture, tear and impact resistance.
- Retains flexibility and is not stressed in any way by the backing or inhibited to compensate for building movement.
- Ability to be loose laid over surfaces with **moisture content. No delays with uncured** slabs, water vapour can dissipate without causing stress to the membrane.
- Quick Application - The system is fully bonded using ARDEX WA98 contact adhesive. ARDEX BUTYSEAL can also be loose laid and ballasted.
- ARDEX BUTYSEAL is unaffected by thermal shock and UV rays.

BUTYSEAL IS PACKAGED

In rolls 1.4m wide and 17.86m long. (Tolerance 20mm on width and length). Each roll covers 25m2 (Approx. 35kg per roll).

Gauges:

ARDEX BUTYSEAL 1.0mm
Total thickness including fleece 1.5mm

ADHESIVES AND SOLVENTS

WA98 is specially formulated for all ARDEX BUTYSEAL applications.
Supplied in 20L pails (approx. 20kg).

OVERLAY TAPE

Cured silicone backed joint tape.
Supplied in 150mm x 30.4m rolls.

DETAIL TAPE

Semi-cured silicone backed detail/finishing tape.
Supplied in 150mm x 30.4m rolls.

BUTYSEAL SEALANT

ARDEX CA20P Grey, White and Black 300ml.

EXTERNAL MOISTURE

New Zealand Building Code requirements recommend membrane clad roofs have a minimum pitch of 1.5°. Australian Building Code Section F1.9(c) is met by ARDEX BUTYSEAL as an acceptable damp-proof course.

FIRE RATING

The ARDEX BUTYSEAL roofing system must be considered combustible but may be used on buildings for all purpose groups, subject to the requirements of NZBIA Acceptable Solution C3/AS1 4.8 and 4.9. When used for roofs in Purpose Groups SC and SD a non combustible substrate or timber 18mm thick is acceptable. Australian Building Code allows use in all building types under Section C1.10 Page C-47 Part 7(e).

PRODUCT WARRANTY

ARDEX BUTYSEAL is covered by a Twenty year material warranty available from ARDEX following installation by an approved Applicator. ARDEX is not responsible for any costs arising out of installation and does not provide any warranty other than where a written ARDEX material warranty has been issued.

SUBSTRATE SPECIFICATION (Plywood)

To conform with Acceptable Solution E2/AS1 plywood shall be:

A minimum of 17 mm complying with AS/NZS 2269, at least CD Structural Grade plywood with the sanded C face upwards, and H3.2 with Waterborne CCA treatment and kiln dried after treatment.

Plywood panels shall be laid with staggered joints (brick bond), the edge of sheets shall be supported with dwangs or framing, unless a structurally tested tongue-in-groove edge provides equivalent support. The maximum recommended span in E2/AS1 is 400mm in each direction.

However specific design may allow 17.5mm plywood or greater to be laid on 400mm purlins with nogs or dwangs at 600mm or even 1200mm centres. Plywood shall be laid with the face grain at right angles to the supports. A 20mm triangular fillet shall be used at the base of any 90° upstand. External edges shall be chamfered with a minimum radius of 5mm.

Plywood shall be fixed with 10g x 50mm stainless steel countersunk head screws, eg Hylton Parker No 24639 or No 12923 for Steel Purlins, with 3mm gaps between all sheets, at 150mm centres on edges, and 200mm in the body of the sheets. All joints in the plywood and junctions of plywood with other materials shall have 25mm polyethylene release tape applied before application of BUTYSEAL.

Closed-in construction spaces under BUTYSEAL roofs and decks shall have adequate ventilation to prevent the accumulation of moisture under BUTYSEAL. There should be a minimum gap of 20mm between the underside of the substrate and any insulation.

For roof or deck areas over 40m2, roof vents will be required.

NOTE: LOSP (Light Organic Solvent Preservative) treated plywood must NOT be used under BUTYSEAL in any circumstances or conditions.

SUBSTRATE SPECIFICATION (Concrete)

Old concrete must be clean from any contaminants prior to application. For further substrate types please consult ARDEX Technical Department.

ARDEX BUTYSEAL gives the Designer or Specifier of Membrane Systems the opportunity to provide clients with a time proven waterproofing system that acts as permanent venting of the substrate, and most importantly can be applied to new substrates or over existing membrane systems, avoiding excessive cost and disruption to the client normally associated with such an exercise.

ARDEX BUTYSEAL assists in ventilating substrates permanently by allowing moisture drawn from the substrate to dissipate through the fibre backing of the membrane to perimeter flashings, or to strategically positioned Vapour Release Vents. ARDEX BUTYSEAL with its fibre backing has high resistance to mechanical damage, puncture and tear.

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The fibre backing allows the membrane to take up minor undulations in the substrate, particularly useful when applied over existing membrane systems. ARDEX BUTYSEAL may be applied over various substrates such as built-up roof systems, malthoid, liquid membranes and earth formed dams. Substrate bonding is achieved with a variety of specially developed adhesives.

ARDEX BUTYSEAL can be applied to XPS using suitable adhesives. Contact ARDEX for details. ARDEX BUTYSEAL can be applied onto Polyurethane Foams, providing an instantly suitable substrate with insulation properties. Consult ARDEX for details.

ARCHITECTURAL SPECIFICATIONS

1. Introduction

ARDEX BUTYSEAL is a roofing system designed primarily for the retrofit of existing bitumen, malthoid, concrete or tongue and groove sarking. The membrane incorporates a fibre backing which is laminated to the underside of the sheet membrane. This fleece provides an excellent means of ventilation for the membrane as well as increasing the puncture resistance of the membrane.

2. Scope

This rubber roofing specification consists of the provision and fixing of all the rubber roofing and flashings referred elsewhere in the manual.

3. Contractors

The rubber roofing shall be fixed by roofing contractors specially skilled in this work and approved by the manufacturer or distributors of the material selected.

4. Workmanship

The roofing contractors shall supply the main contractor when requested, written warranties covering the waterproofing properties of the rubber membrane and joining tapes etc., along with his own workmanship warranty covering the fixing of the membrane. It will include making good any defects which are covered by the said warranties. Should the architect raise any queries on any aspect of this work, the roofing contractor shall attend a site inspection and if required, the manufacturer or his appointed agent may also be called to attend.

5. Materials

Rubber membrane - For the purpose of this specification the approved single ply membrane system shall be:

ARDEX BUTYSEAL fibre-backed

Colour - Black

Gauge - 1.0mm, Not including fibre.

Lap tapes and other accessories as specified by the manufacturer for use with the selected membrane. Adhesives shall be as detailed in the accessories section of the manual.

6. Acceptable Substrates

- Structural concrete
- Plywood
- Modified bitumen roofs
- Malthoid
- Tongue and grooved or butt joined sarking
- Polyurethane foams
- Nuralite
- Nuraply

Before applying ARDEX BUTYSEAL the substrate should be cleared of any sharp protrusions or penetrations **that may risk** the integrity of the rubber membrane in application. For substrates not listed, please contact ARDEX Technical services.

7. Membrane Application

1. Check that substrate is in a suitable condition as stated above. If in doubt contact your local ARDEX representative.
2. Tape any large cracks or voids with suitable width self adhesive tape. Ensure the existing membrane is fixed securely to the substrate. Any large areas that have separated from the substrate should be either removed or nailed back into place.
3. Prime the substrate if required with the selected adhesive cut back 50% with its solvent.
4. Position the membrane and allow to relax where it is to be laid, allowing for the side laps to be in the correct position for adhesive application.
5. Fold back half the sheet that is to be applied.
6. Apply ARDEX BUTYSEAL adhesive (WA98) to the substrate surface and if a contact adhesive is used to the ARDEX BUTYSEAL membrane as well. The contact adhesive (WA98) must be sprayed on both the substrate and the membrane to ensure proper adhesion.
7. Fold over and adhere working progressively towards the edge of the sheet. Wrinkles can be smoothed out with a soft bristle broom, but do not stretch the sheet.
8. Fold back other edge, adhering the other half of the sheet in the same manner as the first half.

9. Bonding the laps

9.1 The top lap is positioned and the bottom sheet marked to indicate the edge of the top sheet.

9.2 The top sheet is folded back.

9.3 The ARDEX Seam Primer is then applied to the ARDEX BUTYSEAL in the area marked on the bottom sheet and 50mm in from the edge on the top sheet. The ARDEX Seam Primer is applied to the mating surfaces using a synthetic scrubbing pad. Scrubbing pads should be replaced as they become dirty. Allow the primer to become 'touch dry'.

9.4 Position and unroll the 50mm ARDEX Seam Tape along the seam. The edge of the seam tape should be aligned to the mark on the bottom membrane sheet. The see-through film makes this very simple.

9.5 Roll the length of the seam with backing film still in place.

9.6 Remove the backing film from the ARDEX Seam Tape by pulling at a 45° angle away from the seam. Keep the release paper low to the roof surface as it is removed.

9.7 Fold into place the primed edge of the top sheet.

9.8 Roll the completed seam.

10. Roll the sheet membrane and the seams with a heavy roller to ensure a good uniform bond is achieved.

11. End laps must be primed with seam primer and use 150mm overlay/detail tape. Place the roll of overlay tape on roof a metre ahead of the application start point. Position the roll so that the release paper unrolls from the top of the roll. The release paper will be on top. Peel the release paper up and back from the overlay tape. Unroll the overlay tape along the seam taking care not to stretch the overlay tape during its application. Take care to avoid wrinkles. Smooth the tape down into contact with the membranes.

12. Detail work and roof penetrations can be flashed with 150mm wide detail tape.

13. Seal all cross joints and T-joints in overlay tapes with Butynol sealant.

14. Edge sealing must be carried out when laying is halted due to rain in time to prevent moisture getting under the fibre backing.

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