

# BUTYNOL & EPDM MEMBRANES





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## About ARDEX

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ARDEX specialises in high-quality construction materials for substrate preparation, levelling floors, waterproofing, the fixing of natural stones & ceramic tiles and other surfacing materials. ARDEX offers innovative products of outstanding quality and optimal environmental friendliness, as well as providing training and support services for their application. The ARDEX Group comprises of 28 subsidiaries and some 1,400 employees active in offices and branches in more than 50 countries.

The history of ARDEX can be traced back over 50 years to Witten, Germany where ARDEX Chemie GmbH was founded by Herr and Frau Fortmann and Dr. Kraft. Products such as **Ardurit Z8** and **Ardur K15** are firmly established as benchmarks for flooring products worldwide.

In December 2001 ARDEX acquired Norcros Building Products (NBP). The latter has a similar heritage in the Australasian market with **Butynol waterproofing membranes, ABA tile adhesives** – renowned for their quality and technical excellence, a reputation built over 30 years. Innovations such as Abaflex are unique in the market until this day. Other brands offered by NBP include **Superflex** under-tile waterproofing systems, **Shelter (previously Dunlop)** sheet membrane systems and **HydrEpoxy** coatings. In 2002 **Vibro Products Pty Ltd**, manufacturers under licence of ARDEX floor levelling and adhesives, was acquired and integrated into ARDEX.

These brands, leaders in their respective fields, come together under the ARDEX umbrella, offering you expert solutions. In addition, sharing of resources and technology within our extensive network enables us to provide you with a broader range of world benchmarked products and services.

Make ARDEX your single point of contact for all your waterproofing, flooring and tiling needs.

### The Ardex Vision

*The vision of the ARDEX Group is to be one of the world's leading solution providers of high-performance speciality building materials.*



masterspec



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**THIS PRODUCT MANUAL TAKES EFFECT FROM 1ST MARCH 2008 AND REPLACES ALL PREVIOUS PRODUCT MANUALS ISSUED BY ARDEX NEW ZEALAND LTD**

® Butynol, Shelterbit, Shelterseal, Sheltercoat, Episeal and Fibrepol are registered tradenames.

**ALSO AVAILABLE FROM ARDEX**



Technical data on Ardex Bituminous Membranes - torch-on, self adhesive and accessories.



Technical data on the extensive range of Ardex Liquid Membranes.



Comprehensive range of tiling solutions for various internal and external applications including: kitchens, bathrooms, floors, walls, balconies etc. Encompasses adhesives, grouts, soundproofing and silicones.



Comprehensive range of specialist, fast track substrate preparation solutions with a focus on patch and repair mortars and self levelling compounds including ARDEX K15.



A dual-format CD-ROM of Ardex Waterproofing Solutions for on-screen viewing and for cutting and pasting into your specification documents.

# ARDEX Butynol Colour Range



Colours shown may vary from actual material samples.  
Please check actual colour of material before ordering.



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# ARDEX Butynol

**BRANZ Appraised,  
E2/AS1 Acceptable Solution**

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**BRANZ Appraised**

Appraisal No.436 [2005]

**BRANZ Appraisals**

Technical Assessments of products  
for building and construction

**BRANZ  
APPRAISAL  
CERTIFICATE  
No. 436 (2005)**

**BUTYNOL®  
ROOFING  
MEMBRANE**

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## Product

1.1 Butynol® Roofing Membrane is a synthetic rubber waterproofing membrane designed to be used on roofs and decks.

1.2 The product is supplied as single-ply, flexible synthetic rubber sheet in roll form. The product is installed as a single layer system.



Current View of Christchurch Town Hall.  
1 mm Butynol® Roof Membrane laid 1972.

## Scope

2.1 Butynol® Roofing Membrane has been appraised for use as waterproofing membrane for buildings within the following scope:

- scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1; and,
- with timber supporting structures designed and constructed in accordance with the NZBC; and,
- with nominally flat or pitched roofs constructed to drain water to gutters and drain outlets complying with NZBC; and,
- with substrates of plywood sheet; and,
- with decks that have a maximum size of 40m<sup>2</sup>.

2.2 Butynol® Roofing Membrane has also been appraised for use as waterproofing membrane for external reinforced concrete and plywood roofs, pedestrian decks and balconies for buildings within the following scope:

- up to 3 storeys with a maximum height from ground to eaves of 10m and with a floor plan area limited only by seismic and structural control joints; and,
- with the reinforced concrete structure designed and constructed in accordance with the NZBC; and,
- with timber supporting structures designed and constructed in accordance with the NZBC; and,
- with nominally flat, curved or pitched roofs constructed to drain water to gutters and drain outlets complying with NZBC.

2.3 This Appraisal is limited to roofs, decks and balconies within the following scope:

- constructed to suitable falls (Refer Paragraph 13.1 – 13.9); and,
- with no steps within the deck level, no integral roof gardens and no down pipe discharging directly onto the deck.

2.4 The design and construction of the substrate and movement and control joints is specific to each building, and therefore the responsibility of the building designer and building contractor and is outside the scope of this Certificate.

2.5 The membrane must be installed by Ardex NZ Ltd approved applicators.

## Building Regulations

### New Zealand Building Code (NZBC)

**3.1 In the opinion of BRANZ, Butynol® Roof Membrane, if designed, used, installed and maintained in accordance with the statements and conditions of this Certificate, will meet or contribute to meeting the following provisions of the NZBC:**

**Clause B2 DURABILITY:** Performance B2.3.1 (b) 15 years. Butynol® Roof Membrane meets this requirement. See Paragraph 9.1.

**Clause E2 EXTERNAL MOISTURE:** Performance E2.3.1 and E2.3.2. Roofs, Decks and balconies incorporating Butynol® Roof Membrane meets these requirements. See Paragraphs 12.1 – 12.9.

**Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1. Butynol® Roof Membrane meets this requirement and will not present a health hazard to people.

3.2 This Certificate appraises an Acceptable Solution in terms of New Zealand Building Code compliance and the product complies with NZBC Acceptable Solution E2/AS1 Paragraph 8.5. This product is also appraised as an Alternative Solution as outlined in Paragraph 2.2

## Technical Specification

4.1 Materials supplied by Ardex NZ Ltd are as follows:

### Butynol® Membranes

- All membranes are single-ply, flexible synthetic rubber membranes. They are supplied in rolls nominally 1.4 metres wide by 17.9 metres long. Each roll is packed in polythene wrapper trademarked 'Butynol®' with thickness identified. Gauges available are 1.0, 1.5 and 2.25mm in black and 1.5mm in six colours.

### Adhesive WA98

- A specially formulated solvent-based adhesive for all Butynol® applications. Supplied in 1, 4 and 20 litre containers.

### Seam Primer

- A water resistant primer adhesive, used with seam tape for general lap bonding.

### Seam Tape

- Uncured cold gum tape used for general lap bonding and laps likely to be subject to periodic ponding. Supplied in 50mm x 30.5 metre rolls.

### Flashing Tape

- A malleable tape for moulding gussets, pipe flashings and awkward situations. Supplied in widths of 50-100mm x 5 metres long.

### Butynol Sealant

- A specially designed and formulated sealant for sealing Butynol® flashings into chases. Supplied in 375mm tubes.

## Handling and Storage

5.1 Handling and storage of all materials whether on or off site is under the control of the Ardex NZ Ltd trained installers. Dry storage must be provided for all products and the rolls of membrane must be stored in an upright position.

## Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Butynol® Roofing Membrane. The Technical Literature must be read in conjunction with this Certificate. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Certificate must be followed.

## Design Information

### General

7.1 Butynol® Roofing Membrane is for use on roofs, decks and balconies where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas.

7.2 The 1.0mm thickness product is designed for use on roofs and gutters, and will accommodate light traffic; the 1.5mm is for walk out decks and high maintenance areas; and the 2.25mm is a heavy duty product that is custom made on request.

7.3 The effective control of internal moisture must be considered at the design stage due to the impermeability of the membrane. Refer to BRANZ publication "Good Practice Guide to Membrane Roofing".

7.4 Timber framing systems must comply with NZS 3604, or where specific engineering design is used, the framing shall be of at least equivalent stiffness to the framing provisions of NZS 3604, or comply with the serviceability criteria of NZS 4203. In all cases framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and that all sheet edges are fully supported.

### Building to NZBC Acceptable Solution E2/AS1

7.5 NZBC Acceptable Solution E2/AS1 limits the size of decks to 40 m<sup>2</sup> as covered by the scope of this Appraisal. Butynol® Roofing Membrane is suitable for use on decks larger than 40 m<sup>2</sup>. These decks are the subject of specific design and are outside the scope of this Appraisal.

## Substrates

### Plywood

8.1 Plywood must be treated to H3 (CCA treated). LOSP treated plywood must not be used. Plywood must comply with NZBC Acceptable Solution E2/AS1 Paragraph 8.5.3 and 8.5.5. Where specific design is used (i.e. outside the scope of E2/AS1), the plywood thickness and fixing size may increase and centres may decrease to meet specific wind loadings.

### Concrete

8.2 Concrete substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101.

## Durability

### Serviceable Life

9.1 Butynol® Roofing Membrane when subjected to normal conditions of environment and with proper maintenance can expect to have a serviceable life of at least 20 years.

## Maintenance

10.1 No maintenance of the membrane is normally required provided significant substrate movement does not occur.

10.2 In the event of damage to the membrane, the membrane must be repaired by removing the damaged portion and applying a patch as for new work.

10.3 Drainage outlets must be maintained to operate effectively.

## Outbreak of Fire

11.1 The membrane must be protected from heat sources such as flues and chimneys in accordance with the requirements of NZBC Acceptable Solution C/AS1 Part 9 for the protection of combustible materials.

## External Moisture

12.1 Roofs, decks and balconies must be designed and constructed to shed precipitated moisture. They must also take account of snowfalls in snow prone areas. A means of meeting code compliance with NZBC Clause E2.3.1 is given by the Technical Literature which matches details in NZBC Acceptable Solution E2/AS1.

12.2 When installed in accordance with this Certificate and the Technical Literature, Butynol® Roofing Membrane will prevent the penetration of water and will therefore meet code compliance with Clause E2.3.2. The membrane is impervious to water and will give a weathertight roof, roof deck or balcony.

12.3 The minimum fall to roofs is 1 in 40 and to decks, balconies and gutters are 1 in 60. All falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the membrane.

12.4 Butynol® Roofing Membrane is impermeable; therefore a means of dissipating construction moisture must be provided in the building design and construction to meet code compliance with Clause E2.3.6.

12.5 Roof, deck and balcony falls must be built into the substrate and not created with mortar screeds applied over the membrane.

12.6 Allowance for deflection and settlement of the substrate must be made in the design of the deck or balcony to ensure falls are maintained and no ponding of water can occur.

12.7 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 or balcony does not drain to an external gutter or spouting.

12.8 Penetrations and upstands of the membrane must be raised above the level of any possible flooding caused by blockage of deck and balcony drainage.

12.9 The design of details not covered by the Technical Literature is subject to specific weathertightness design and is outside the scope of this certificate.

## Water Supplies

13.1 Butynol® Roofing Membrane is suitable for roofs used for the collection of water supplies in compliance with the provisions of NZBC G12.3.1. Water collection systems are the subject of specific design and are outside the scope of this Certificate.

## Installation Information

### Installation Skill Level Requirement

14.1 Installation of the membrane must be completed by trained applicators, approved by Ardex NZ Ltd.

14.2 Installation of substrates must be completed by tradespersons with an understanding of roof, deck and balcony construction, in accordance with instructions given within the Ardex NZ Ltd Technical Literature and this Certificate.

## Preparation of Substrates

15.1 Substrates must be dry, clean and stable before installation commences. Surfaces must be smooth and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents. All surface defects must be filled to achieve an even and uniform surface.

15.2 Concrete substrates can be checked for dryness by using a hygrometer, as set out in BRANZ Bulletin No. 424. The relative humidity of the concrete must be 75% or less before membrane application.

15.3 The moisture content of a timber substructure must be a maximum of 20% and plywood sheet must be dry at time of membrane application. This will generally require plywood sheets to be covered until just before the membrane is laid, to prevent rain wetting.

15.4 Substrates must be primed with a 50/50 solution of WA98 and adhesive solvent and left to dry before membrane is installed.

## Membrane Installation

16.1 The membrane must be installed in accordance with the Technical Literature.

16.2 Plywood joints must be taped with 25mm wide PVC pressure sensitive tape.

16.3 The membrane must be unrolled without tension onto the prepared substrate and allowed to 'relax' for at least 20 minutes prior to installation.

16.4 Adhesive must be applied to both the membrane and the substrate, one half at a time. When the adhesive is tack dry, the sheet is rolled onto the substrate. The process is then repeated for the other half of the sheet. Joints in substrates with a pitch of 5° or less, all coloured membranes irrespective of pitch, all guttering and areas subjected to periodic ponding require lap bonding using Ardex seam tape. Joints in substrates with a pitch above 5° can be sealed using WA98 adhesive. This applies to the black Butynol® only.

## Inspections

17.1 The Technical Literature must be referred to during the inspection of membrane installations by Building Consent Authorities and Territorial Authorities.

17.2 Critical areas of inspection for waterproofing systems are:

- Construction of substrates, including crack control and installation of bond breakers and movement control joints.
- Moisture content of the substrate prior to the application of the membrane.
- Acceptance of the substrate by the membrane installer prior to application of the membrane.
- Installation of the membrane to the manufacturer's instructions.

## Health and Safety

18.1 Safe use and handling procedures for the membrane system is provided in the Technical Literature.

The products must be used in conjunction with the relevant Materials Safety Data Sheet for each membrane.

## Basis of Appraisal

The following is a summary of the technical investigations carried out:

### Tests

19.1 Tests have been carried out on the membrane by Materials and Quality Consultancy Ltd. This testing covered specific gravity, shore hardness, tensile strength, modulus of elongation, elongation at break, tensile and elongation retention after heat aging, tear strength, ozone resistance and water absorption as detailed in NZBC Acceptable Solution E2/AS1 Paragraph 8.5.4(b). Results and test methods have been reviewed by BRANZ and found to be satisfactory.

19.2 Water vapour permeability tests have been undertaken by BRANZ in accordance with ASTM E96.

19.3 Tests have been carried out on the membrane to assess its suitability for use with potable water supplies. This testing showed the product was satisfactory.

19.4 The adhesives, primers and seam tapes used with Butynol® Roofing Membrane meet the intended performance requirements of NZBC Acceptable Solution E2/AS1 Paragraph 8.5.4(c). *Note: At the time of this Certificate's issue BRANZ EM5 as outlined on Paragraph 8.5.4(c)(i) was not published.*

### Other Investigations

20.1 An assessment was made of the durability of the Butynol® Roofing Membrane by BRANZ technical experts using NZBC B2/VM1 History of Use.

20.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.

20.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

### Quality

21.1 The manufacture of the Butynol® Roofing membrane has been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory. The membrane manufacturer is the subject of AS/NZS ISO 9001 Certificate by Telarc Limited, Registration No. 621.

21.2 The quality of manufacture of the product is the responsibility of Ardex NZ Ltd.

21.4 The quality of supply of the product to the market is the responsibility of Ardex NZ Ltd.

21.5 Quality on site is the responsibility of the Ardex NZ Ltd approved applicators.

21.6 Designers are responsible for the substrate design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of the substrate manufacturer, Ardex NZ Ltd and this Certificate.

### Sources of Information

- AS/NZS 2269:1994 Plywood – Structural
- ASTM E 96-02 Water vapour transmission of materials in sheet form, American Society of Testing Materials, Philadelphia, 1992.
- NZS 3101: 1995 The design of concrete structures.
- NZS 3604: 1999 Timber framed buildings.
- Compliance Document for New Zealand Building Code External Moisture Clause E2, Department of Building and Housing, Third Edition July 2005.
- New Zealand Building Code Handbook and Approved Documents, Building Industry Authority, 1992.
- The Building Regulations 1992, up to, and including October 2004 Amendment.
- Membrane Roofing Good Practice Guide, BRANZ, November 1999



**BRANZ**

**In the opinion of BRANZ, Butynol® Roofing Membrane is fit for purpose and will comply with the Building Code to the extent specified in this Certificate provided it is used, designed, installed and maintained as set out in this Certificate. The Appraisal Certificate is issued only to the Certificate Holder, Ardex NZ Ltd, and is valid until further notice, subject to the Conditions of Certification.**

#### Conditions of Certification

1. This Certificate:
  - a) relates only to the product as described herein;
  - b) must be read, considered and used in full together with the technical literature;
  - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
  - d) is copyright of BRANZ.
2. The Certificate Holder:
  - a) continues to have the product reviewed by BRANZ;
  - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
  - c) abides by the BRANZ Appraisals Services Terms and Conditions.
3. The product and the manufacture are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ.
4. BRANZ makes no representation as to:
  - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
  - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
  - c) any guarantee or warranty offered by the Certificate Holder.
5. Any reference in this Certificate to any other publication shall be read as a reference to the version of the publication specified in this Certificate.

For BRANZ

P Robertson  
Chief Executive

Date of issue: 11 July 2005

# ARDEX Butynol

## BRANZ Appraised, E2/AS1 Acceptable Solution



Copy available on request.

### BUTYNOL SYSTEM SPECIFICATION

A synthetic rubber with properties which resist ageing from heat, sunlight and ozone. It has excellent gas impermeability and toughness and remains flexible at low temperatures.

Butynol is manufactured by combining the petroleum gases isobutylene and isoprene at the extremely low temperature of  $-100^{\circ}\text{C}$ . (Rubber Technology–Morton)

Butynol is marketed by Ardex as a warranted roofing and tanking product and fixed by their trained and experienced approved Applicators.

### BUTYNOL MATERIAL SPECIFICATIONS

Our requirements for long term warranty necessitate that Butynol meets these typical technical requirements:

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 $115^{\circ}\text{C}$ )	
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 (7 days at $40^{\circ}\text{C}$ in 50pphm ozone)	No visible cracks
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 ( $\text{g}/\text{m}^2\text{d}$ )	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)  $7.4 \times 10^3$   
 $\text{Cal}/\text{cm}/\text{sec}/\text{deg C}$ .

Conductivity Data on 1mm Butynol sheeting

Resistance/ $\text{m}^2$   $\Omega/\text{m}^2 = 0.6816$  on 9.3 volts.

### SEAM TAPE PERFORMANCE

Tests on the seam tape bonding method, by an independent testing laboratory, have shown average

values equivalent to 90% of unwelded material. It is considered impossible for the test methods used to be duplicated in normal service ie. 400% elongation.

### BUTYNOL PROTECTION

Butynol protects against water, moisture vapour, gases, sun, ozone, frost, acids, chemicals and bacteria.

### BUTYNOL RESISTANCE

Butynol resists tearing, flex cracking, bubbling and abrasion. It is extremely strong, has a long life and is versatile.

### STAINING OF LIGHT COLOURED BUTYNOL

To avoid staining care must be taken during design stage to ensure that water running off unpainted treated timber and some metals (eg copper) do not run over light coloured Butynol.

### BUTYNOL GAUGES

Standard 1.0mm–For roofs, gutters and decks with protection.

1.2mm–For roofs.

1.5mm–For roofs and walk out decks.

2.25mm Heavy Duty

Factory welded panels in all gauges can be custom made.

### BUTYNOL IS PACKAGED

In rolls of nominal 1.4m width and 17.86m long. Each roll is packed in polythene wrapper trademarked Butynol with thickness identified. Coverage  $25\text{m}^2$  except 2.25mm gauge which is  $12\text{m}^2$

Gauges available are:

1.0mm black.	Weight: nominal 30kg
1.5mm black.	Weight: nominal 45kg
2.25mm black.	Weight: nominal 32kg
1.2mm dove grey.	Weight: nominal 32kg
1.5mm all colours.	Weight: nominal 47kg

### ADHESIVES AND SOLVENTS

Specially formulated for all Butynol applications. Supplied in 20L steel/plastic pails (approx. 20kg). 4 and 1 litre cans.

### BUTYNOL SEALANT

Available in tubes for caulking guns.

## SEAM PRIMER

Seam Primer is specially formulated for use with Seam Tape. Applied with scrubber pads. Available in 4 and 1 litre cans.

## SEAM TAPE

Supplied by Ardex in 50mm x 30.5m rolls (6 to a carton). Roofs with a pitch of less than 5°, all coloured membranes and all guttering and areas subjected to periodic ponding require special lap bonding. All coloured membranes, irrespective of pitch require special lap bonding.

## DETAIL TAPE (uncured)

A malleable exterior tape for flashing exterior corners etc. 150mm x 30.5m rolls.

## FLASHING TAPE

A malleable tape for moulding in gussets, pipe flashings and awkward situations. Supplied in 100mm x 5m rolls. Flashing tape must not be left exposed. A cover strip of Butynol or detail tape must be applied over flashing tape to finish.

## SUBSTRATE VENTILATION

Substrate ventilation should be used to release moisture trapped under the Butynol on concrete surfaces. Substrate ventilators are used in conjunction with vent tapes. Tapes should be laid in a grid pattern spaced at 600mm venting to the roof perimeter. On plywood substrates ventilators are used at the junction of the ply. Ventilators are not required in most applications for cavity ventilation - seek advice from an Ardex Representative. One way substrate ventilators prevent moisture vapour build up and if required can be installed every 90 square metres. Not designed to ventilate roof cavities. (Refer Diagram page 23).

## PLYWOOD TREATMENT

To be in accordance with Acceptable Solution E2/AS1 plywood substrate must be treated to H3.2 with Waterborne CCA treatment and kiln dried after treatment.

**Plywood must not be LOSP treated.**

## DURABILITY

Butynol when fixed according to Ardex instruction will meet the NZBC requirements of B2.3.1(b) 15 years. Refer BRANZ Appraisal Certificate No 436 (2005).

## EXTERNAL MOISTURE

New Zealand Building Code Acceptable Solution E2/AS1 requirements recommend membrane clad roofs have a minimum pitch of 1.5°.

## BUILDING TO NZBC ACCEPTABLE SOLUTION E2/AS1

NZBC Acceptable Solution E2/AS1 limits the size of decks to 40m<sup>2</sup> as covered by the scope of Appraisal No. 436 (2005). Butynol Roofing Membrane is suitable for use on decks larger than 40m<sup>2</sup>. These decks are the subject of specific design and are outside the scope of the Appraisal.

## CLEANING WEATHERED BUTYNOL

Use sugar soap to remove oxidation and restore surface.

## DAMP AND WEATHERPROOFING

The Building Code of Australia Deemed-to-Satisfy Provisions F1.9 and F1.10 are met by Butynol as an acceptable damp-proof course.

Butynol when used as described in ABSAC Technical Opinion 188 August 1994 complies with the Building Code of Australia Deemed-to-Satisfy Provision F1.7(b) and Acceptable Construction Manual Part 3.8.1.0, or AS 3740 for "Water Proofing of Wet Areas in Buildings".

## PAINTING OVER BUTYNOL

Use Roof Acrylic paint with Ardex Seam Primer on non ponding areas. Wash with Sugar Soap. Beware of using non Ardex primers as this may effect your Butynol Warranty.

## FIRE RATING

The Butynol roofing system must be considered combustible but may be used on buildings for all purpose groups, subject to the requirements of NZBC Acceptable Solution C/AS1 Part 7, Paragraph 7.11.1.

When used for roofs in Purpose Groups SC and SD a non-combustible substrate or timber 18mm thick is acceptable. Refer 7.11.1.

Building Code of Australia allows use in all building types under Specification C1.10, Clause 7(e), except in bush fire prone areas.

## PRODUCT WARRANTY

When laid by an approved Applicator in accordance with Ardex's specifications, a material warranty for up to 20 years (covering the Membrane, adhesive and tape) is available. Ardex is not responsible for any costs arising from installation of the Membrane and does not provide any warranty other than where a written Ardex material warranty has been issued.

## WORKMANSHIP

A warranty for workmanship shall be provided directly by the approved Applicator. The period and terms of the workmanship warranty shall be determined by the conditions of contract or the approved Applicator.

# ARDEX Butynol

## BRANZ Appraised, E2/AS1 Acceptable Solution

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### ADHESIVES AND SOLVENTS FOR USE WITH BUTYNOL

WA98 - The Standard contact brushing, spray grade and rolling adhesive for fixing to the substrate and for laps not subject to periodic ponding.  
(Pitch 5° and above)

Seam Primer - A water resistant primer, used with seam tape for general lap bonding.

Roofs with a pitch of less than 5°, all coloured membranes and all guttering and areas subjected to periodic ponding require special lap bonding. All coloured membranes, irrespective of pitch require special lap bonding.

Note: Temperature and Humidity

The evaporation of any solvent adhesive system causes a drop in temperature at the interface. At times of high humidity this can result in a micro molecular water layer at the interface which will result in a failure to bond, falsely attributed to Adhesive failure. Fixing should not proceed under these circumstances.

### NOTES

1. In cases of extreme absorbency, a priming coat of 50/50 WA98 adhesive and solvent may assist water shedding and absorption. However, a follow up of full strength adhesive for full bonding should not be proceeded with under four hours, thus allowing full evaporation of solvents absorbed into the substrate. Primers must be time dried not touch dried.
2. As new substrate materials continually appear on the market, consult Ardex for approval of their use with Butynol.
3. Where periodic ponding is likely and on roofs with a slope of less than 5°, Ardex Seam Tape and Seam Primer must be used on all joints.
4. Black Butynol and roofs with pitch of 5° or greater and sufficient fall to prevent periodic ponding may be formed using the sheet bonding adhesive WA98. All laps must be wiped with WA98 solvent prior to bonding.

Roofs with a pitch of less than 5°, all **coloured membranes** and all guttering and areas subjected to periodic ponding require special lap bonding.

Refer Acceptable Solution E2/AS1 8.5.5.2a.

All **coloured membranes**, irrespective of pitch require special lap bonding.

5. Do not use in temperatures less than 6°C.

### CAUTION

All Adhesives and Solvents are

### HIGHLY FLAMMABLE

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### **SUBSTRATE SPECIFICATION (Plywood)**

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

A minimum of 17mm 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.

Substrates must be dry when Butynol is applied. The plywood and the timber substructure shall have a maximum moisture content of 20% when Butynol is adhered.

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 10 gauge 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 Butynol.

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

**NOTE: The use of LOSP (Light Organic Solvent Preservative) treated plywood must NOT be used under Butynol in any circumstances or conditions.**

### **SUBSTRATE SPECIFICATION (Concrete)**

#### **New concrete**

Must be cured for a minimum of 28 days and all curing compounds removed prior to application.

A reduction in cure time can be achieved by utilising the Ardex HydrEpoxy System (consult Ardex Technical Department for details).

#### **Old concrete**

Must be clean from any contaminants prior to application.

For further substrate types please consult Ardex Technical Department.

# ARDEX Butynol

## BRANZ Appraised, E2/AS1 Acceptable Solution

### TYPICAL ARCHITECTURAL BUTYNOL RUBBER ROOFING SPECIFICATION

#### 1. Preliminary

Refer to the Preliminary and General Clauses of this specification and to the General Conditions of Contract which are equally binding on all trades. This section of the specification shall be read in conjunction with all other sections.

#### 2. Scope

This section of the contract consists in general of the provision and laying of all the Butynol rubber, for the roofs, decks, gutters and flashings on the buildings. Refer to Clause 12 hereafter for Extent of Work.

#### 3. Workmanship

The whole of the work shall be carried out by skilled tradesmen using adequate and proper equipment and methods in accordance with best trade practice, and following the specifications methods and recommendations as laid down by the manufacturers.

#### 4. Sub-contractors

The work included in this section of the contract shall be carried out by a firm of roofing experts conversant with and specialising in the supply and fixing of this material and shall be a firm approved by Ardex.

#### 5. Warranty

When laid by an approved Applicator in accordance with Ardex's specifications, a written material warranty of up to 20 years is available. It is the responsibility of the approved Applicator to confirm proper installation and to request Ardex to issue a material warranty on behalf of the customer following completion of installation. Ardex is not responsible for any costs arising from installation and does not provide any warranty other than where a written Ardex material warranty has been issued.

#### 6. Materials

##### 6.1 Butynol Rubber

(a) Shall be 1.0mm thick standard Black Butynol rubber to all roof surfaces, gutters and fascias and walk out decks where membrane is to be overlaid with tiles.

(b) Shall be 1.5mm thick Butynol to all walk out decks.

##### 6.2 Adhesives

Shall be as recommended by Ardex specially formulated for Butynol rubber and suitable for the particular application and the relevant temperature and conditions applicable.

Generally Ardex WA98 adhesive is used for substrate and lap bonding (5° and above).

Ardex seam primer shall be used in conjunction with Ardex seam tapes.

When conditions are experienced that are outside the temperature and/or moisture ranges recom-

mended by the manufacturers for the above standard adhesives work will cease.

##### 6.3 Seam Tapes

Shall be 50mm wide seam tape provided by Ardex.

##### 6.4 Substrate Joint Tape

All Plywood joints shall be taped with a 25mm wide pressure sensitive Ardex approved self adhesive tape.

#### 7. Roof Deckings

Shall be 1.5mm Butynol or 1mm with a protective covering for all deck surfaces.

All decks to which Butynol is to be fixed shall be clean, smooth, dry and free from dirt, grit or sharp objects.

Deck substrates may be primed with 50/50 WA98 adhesive/solvent.

The Butynol roofer shall co-operate with the other trades laying the decking to ensure that the final surface is in first class condition for the laying of the Butynol rubber roofing.

The Butynol roofer shall check the deck before laying any Butynol to ensure that the surface is completely sound, screw fixed to specifications: screw heads flush, sheets spaced to provide for thermal movement or shock.

NZBC Acceptable Solution E2/AS1 limits the size of decks to 40m<sup>2</sup> as covered by the scope of Appraisal No. 436 (2005). Butynol Roofing Membrane is suitable for use on decks larger than 40m<sup>2</sup>. These decks are the subject of specific design and are outside the scope of the Appraisal.

## 8. Laying of Butynol Roofing

It is the responsibility of the Applicator to ensure that the substrate surface to be covered by the Butynol is in fit and proper condition, suitable for the laying of the material.

Tape all joins in substrate sheets with 25mm wide pressure sensitive tape approved by Ardex.

All Butynol sheeting shall be laid out on the roof to "relax" the sheeting before fixing. A period of at least 20 minutes is usually required. Do not finally position sheeting with a tension exceeding 2%.

Apply adhesive to the substrate and the underside of the Butynol rubber sheeting by brush, spray or an approved type roller at a spreading rate of generally not less than 2.5 square metres per litre. Leave to tack dry before bonding the two surfaces together.

Lay sheeting by drawing back halfway either longitudinally or transversely. Thoroughly roll or work over the surface of the sheet to exclude all air and to obtain a full bond.

All Butynol shall be "lap bonded" as detailed below.

### Bonding Laps with Ardex Seam Tape and Seam Primer

Following laying of the Butynol the laps must be sealed. Roofs with a pitch of less than 5°, all coloured membranes irrespective of pitch and all guttering and areas subjected to periodic ponding require special lap bonding using Ardex seam primer and Ardex seam tape. Laps with pitch 5° and above (on black Butynol only) can be sealed using WA98 adhesive. (Lap areas must be wiped using WA98 solvent prior to applying adhesive.)

1. The top lap is positioned and the bottom sheet marked to indicate the edge of the top sheet.
2. The top sheet is folded back.
3. The Ardex Seam Primer is then applied to the Butynol 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 'dry to the touch'.
4. Position and unroll the 50mm Ardex Seam Tape along the seam. The edge of the release paper should be aligned to the mark on the bottom membrane sheet.
5. Roll the length of the seam with the release paper still in place.
6. Remove the release paper 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.

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

8. Roll the completed seam.

## 9. Tiling Over Butynol

To direct fix tiles to Butynol, ABA Optima two part adhesive should be used. Ensure the Butynol surface is clean and dry before applying the adhesive. All laps must have seam tape.

(Refer Optima page 43)

## 10. Protection of Laid Butynol Sheeting

The Butynol roofing contractor shall ensure that his fixers only work on the Butynol roofing with soft sole shoes.

The Butynol roofer shall co-ordinate with the main contractor who shall ensure that any other trades who work over the completed roof wear soft sole shoes.

Upon completion of each area the roofer shall get the main contractor to inspect the area and the main contractor will sign off that the area was free from any defects or damage. It is then the responsibility of the main contractor to ensure the Butynol roofing is in no way damaged by other trades.

## 11. Completion

On completion carefully and thoroughly clean off and remove all scraps and other rubbish from finished surfaces and leave in tidy order.

## 12. Extent of Work

Observe the foregoing specification and supply and lay Butynol rubber sheeting to all roofs, decks, gutters and flashings as shown and detailed in the Ardex specification.

Failure to comply with the above specifications will result in all warranties being null and void.

# ARDEX Butynol

## BRANZ Appraised, E2/AS1 Acceptable Solution

### LAYING SPECIFICATION

The Sub contractor for the work called for in this trade will be a Company or Person approved by Ardex.

The approved Applicator (hereafter called the Applicator) shall examine all drawings and provide for the flashing, caulking and sealing of all vents, stacks and pipes penetrating the roofing membrane. Also all flashings at walls, parapets, verges, gutters etc., unless otherwise instructed in the specifications.

The surface to which Butynol is to be fixed shall be clean, smooth, dry and free from sawdust, grit or sharp objects. Membrane laying shall not start until defects have been corrected.

To avoid staining care should be taken to avoid water runoff from copper downpipes or guttering on to light coloured Butynol.

When CCA plywood is used in conjunction with a light coloured membrane it is advisable to prime any plywood that will not be covered the same day.

It is the responsibility of the Applicator to ensure that the surface to be covered by the Butynol is in fit and proper condition, suitable in all respects for the laying of the material.

On completion the Applicator will provide the owner with a Workmanship Warranty and obtain from Ardex a Materials Warranty.

Failure to comply with the above specifications will result in all warranties being null and void.

### LAYING THE BUTYNOL

Before applying the Butynol, it shall be unrolled for twenty minutes to relieve stresses induced by manufacture and storage. The Butynol sheet shall be set out in the exact position in which it will be finally required and while it is held in place, it shall be folded back lengthwise to expose half the underside. To the now exposed underside and the area of roof also left exposed, apply an even coat of WA98 Adhesive. When the adhesive has become touch dry, work the sheet back into its original position avoiding wrinkles and the inclusion of air bubbles.

Repeat the process with the other half of the sheet and when completed, roll the whole sheet with hand press rollers or the like.

When applying the next sheet, it shall be lapped over the first sheet by 50mm. All turn ups and downs shall be neatly formed and cut to a straight line if required.

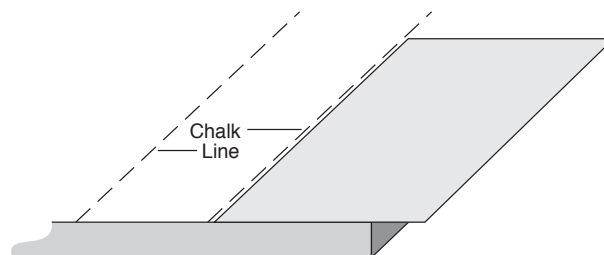
Butynol shall not be laid under tension.

When the whole area has been covered or as work progresses, the applicator has to seal the laps.

### BUTYNOL LAYING METHOD

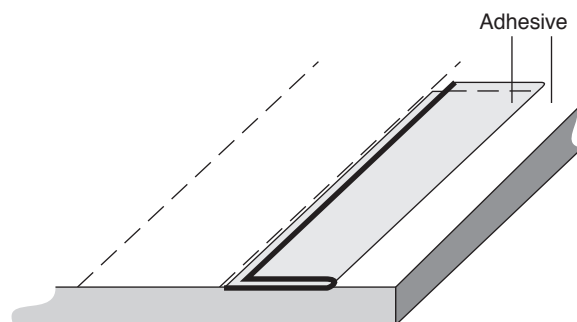
#### STEP 1

Accurately place sheet. Mark spacing with chalk line.



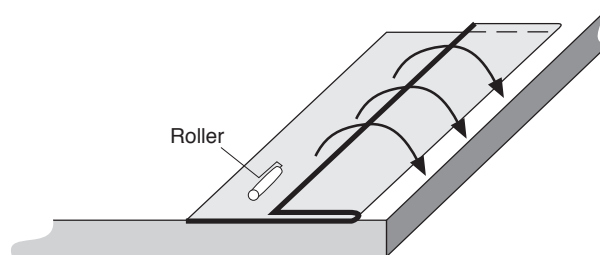
#### STEP 2

Fold back half sheet. Apply adhesive to both faces.



#### STEP 3

After flash off, fold membrane into place. Roll thoroughly.



#### STEP 4

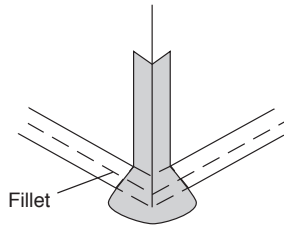
Treat 2nd half of Butynol similarly.

## EXTERNAL CORNERS

To comply with Acceptable Solution E2/AS1 Figure 57.

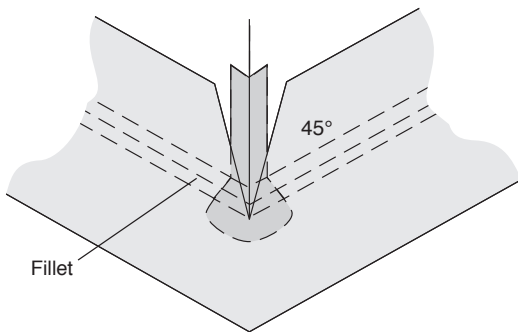
### STEP 1

Bond 100mm flashing to corner as shown.



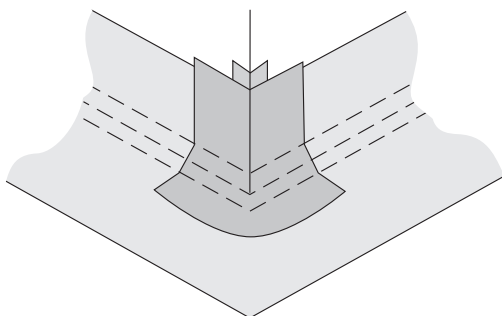
### STEP 2

Bond Butynol to deck and up wall 150mm minimum. Cut sheet from corner at 45° as shown.



### STEP 3

Cover corner point with layer of detail tape.

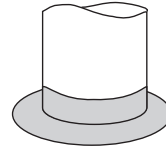


*NOTE: Fillets must be used on all internal corners.*

## FLASHING - EXISTING PIPE

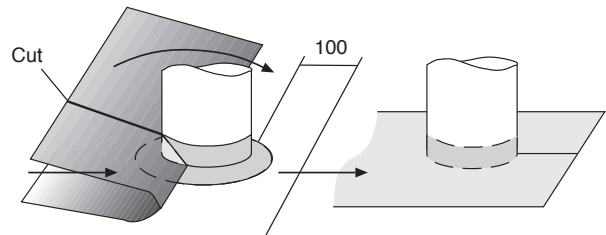
### STEP 1

Under flash pipe with 100mm Butynol flashing tape.



### STEP 2

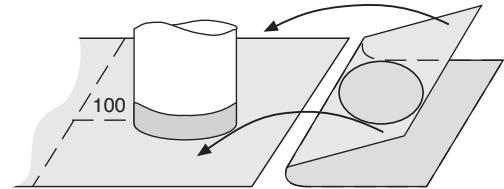
Bond Butynol to 100mm past pipe. N.B. When flashing black Butynol use Butynol or detail tape.



### STEP 3

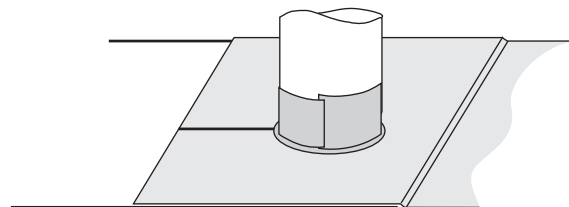
Bond continuation of Butynol to overlap base sheet and beyond pipe 100mm.

Cut a smooth round hole 20mm smaller than diameter of penetration.



### STEP 4

Apply collar of detail tape or Butynol cover strip. DO NOT STRETCH STRIP.



**N.B. Flashing tape MUST NOT be left exposed. Cover strip must be Butynol. When detail tape is used a cover strip of Butynol is not required.**

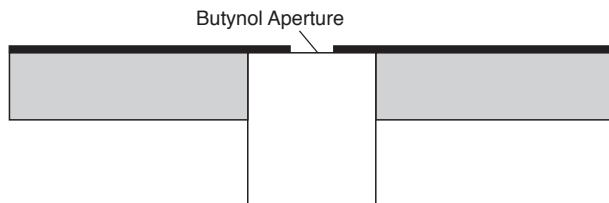
# ARDEX Butynol

## BRANZ Appraised, E2/AS1 Acceptable Solution

### FLASHING - NEW PIPE

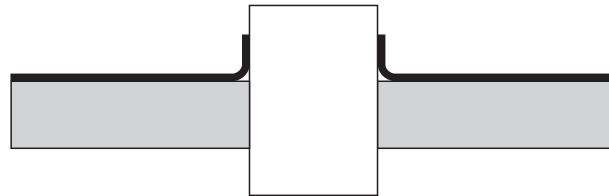
#### STEP 1

Cut smaller diameter hole than pipe.



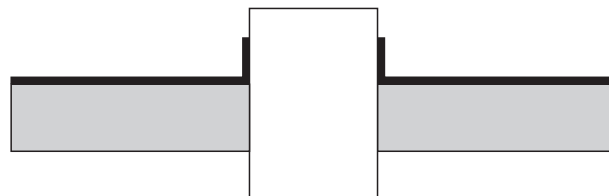
#### STEP 2

Pipe is raised through smaller diameter hole in Butynol, forcing edge upwards to create upstand.



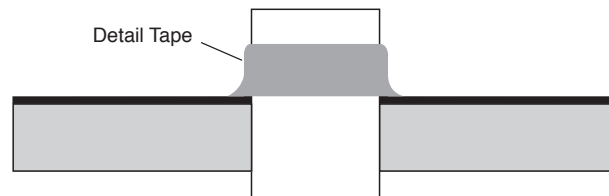
#### STEP 3

Pull pipe down to eliminate void.



#### STEP 4

After pulling pipe down approximately 1cm to sharpen corner, tape upstanding Butynol to pipe using WA98 adhesive and detail tape.



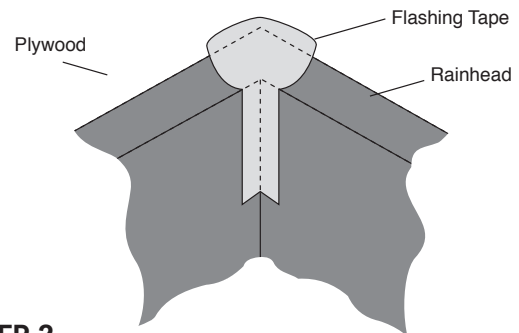
**N.B. If flashing tape is used it MUST NOT be left exposed. A cover strip of Butynol must be applied over the flashing tape to finish.**

### INTERNAL CORNERS FOR RAINHEADS

and areas where a pig's ear cannot be used.

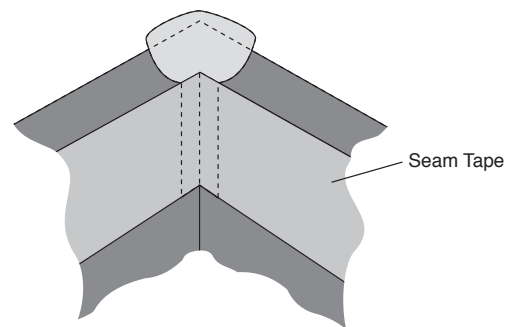
#### STEP 1

Apply Flashing Tape over Rainhead and Plywood.



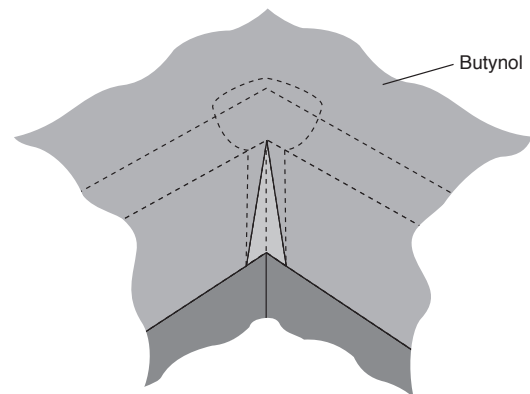
#### STEP 2

Run Seam Tape along all four vertical sides of Rainhead.



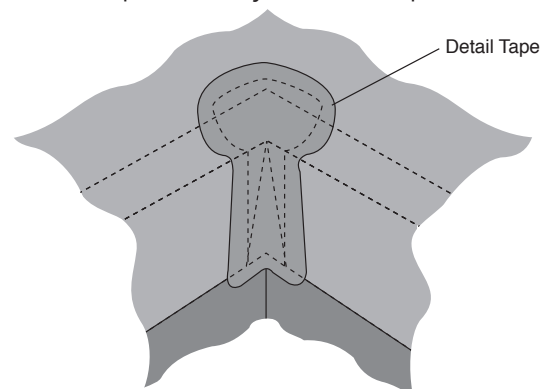
#### STEP 3

Cut Butynol sheet to fit into corners.



#### STEP 4

Cover corner point with layer of detail tape.

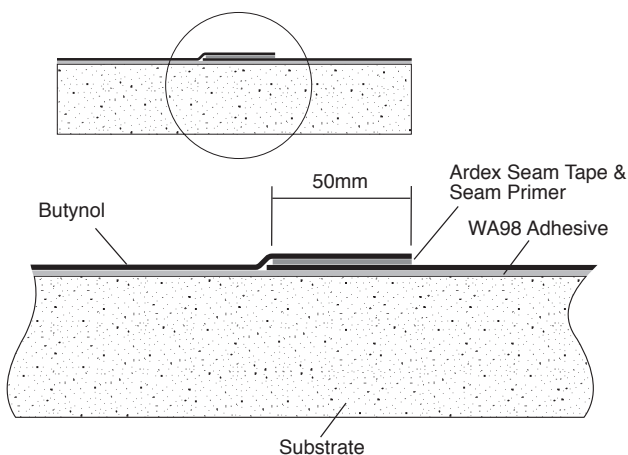


## BONDING THE LAPS

Roofs with a pitch of less than 5°, all **coloured membranes** and all guttering and areas subjected to periodic ponding require special lap bonding.

Refer Acceptable Solution E2/AS1 8.5.5.2a.

All **coloured membranes**, irrespective of pitch require special lap bonding.



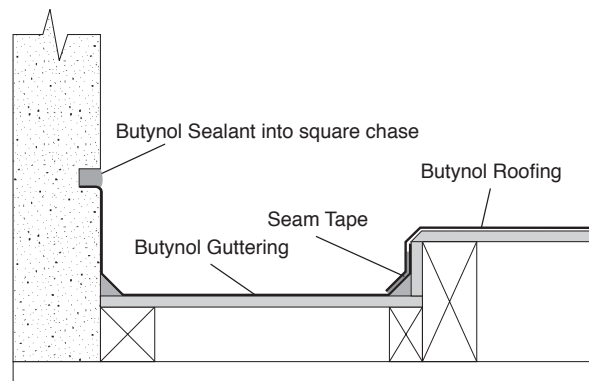
1. The top lap is positioned and the bottom sheet marked to indicate the edge of the top sheet.
2. The top sheet is folded back.
3. The Ardex Seam Primer is then applied to the Butynol in the area marked on the bottom sheet and 50mm in from the edge on the top sheet. The Ardex Seam Primer is applied 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'.
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 backing film makes this very simple.
5. Roll the length of the seam with backing film still in place.
6. Remove the backing film from the Ardex Seam Tape by pulling at a 45° angle away from the seam. Keep the backing film low to the roof surface as it is removed.
7. Fold into place the primed edge of the top sheet.
8. Roll the completed seam.

*Black Butynol and roofs with minimum pitch of 5° and sufficient fall to prevent periodic ponding may be formed using the sheet bonding adhesive WA98. All laps must be wiped with WA98 solvent prior to bonding.*

## FORMING LAPS FOR GUTTERS

Laps are most important in gutter work and should be formed using Ardex seam tape and seam primer.

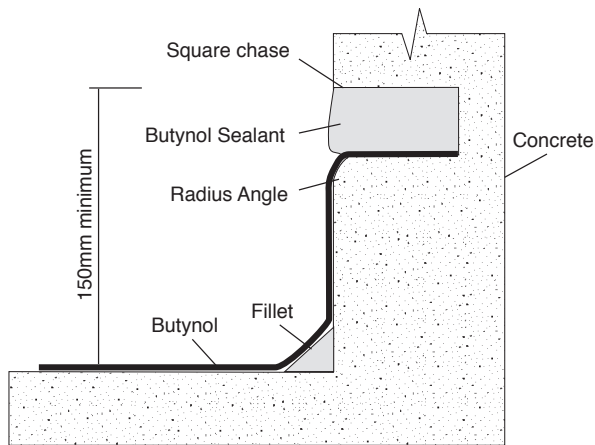
All internal boxed gutters can be easily formed to any shape or size using Butynol over any specified substrate.



# ARDEX Butynol

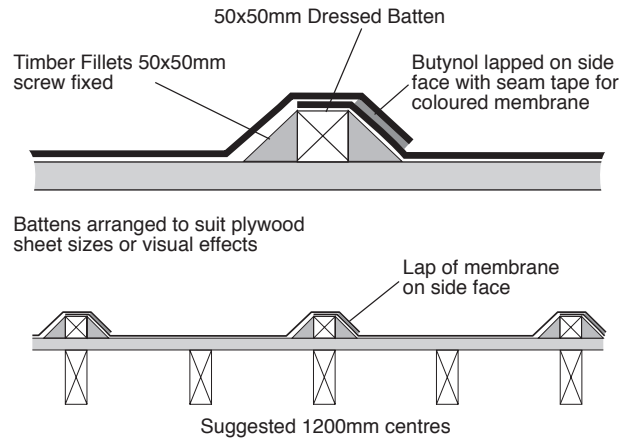
BRANZ Appraised, E2/AS1 Acceptable Solution

## FLASHING INTO CONCRETE WALLS



Butynol is glued into square chase and finished with Butynol Sealant.

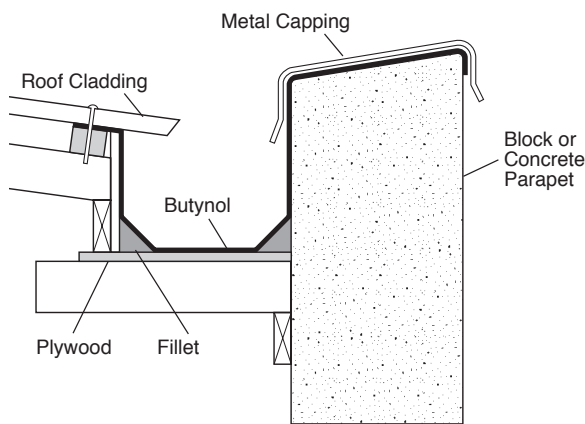
## RECOMMENDED BATTEN PROFILE DETAIL



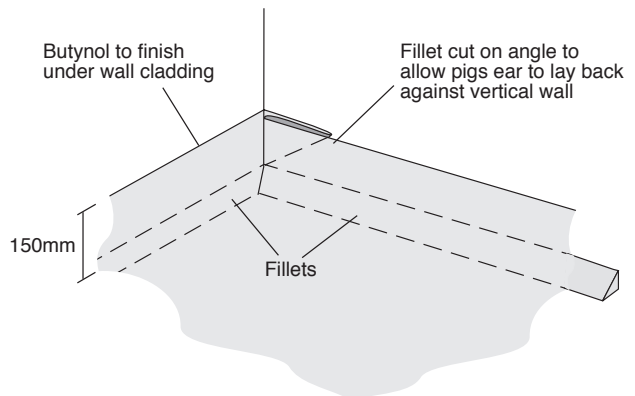
Example of a 1400mm sheet of Ardex Butynol dressed over battens at 1200mm centres

Note: Treatment for battens must be H3.2 (CCA) only. Not LOSP treated.

## BOXED GUTTER AND PARAPET DOWNTURN



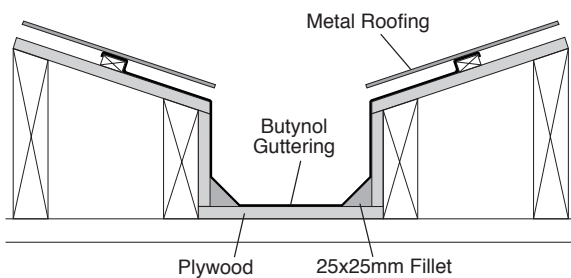
## INTERNAL CORNERS



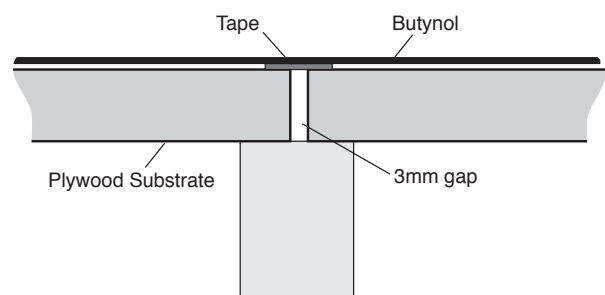
Without cutting Butynol simply fold a 'pig's ear' corner as shown. The angle fold should be behind the main sheet.

NOTE: Fillets must be used on all internal corners.

## INTERNAL GUTTER



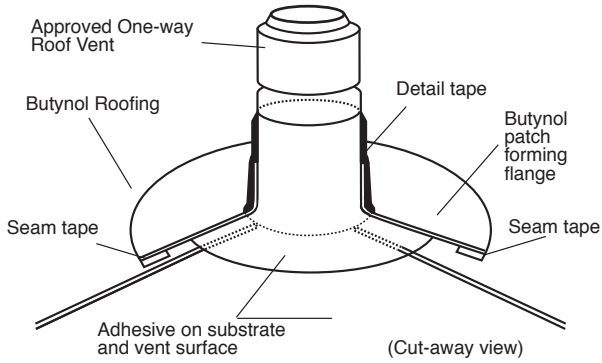
## TAPING SUBSTRATE SHEETS



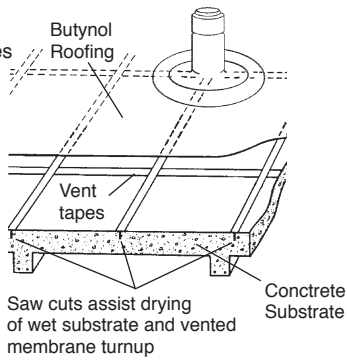
All joints between substrate sheets of Ply should be taped to prevent stressing of the Butynol in case of marked timber movement.

## ONE WAY SUBSTRATE VENTILATOR

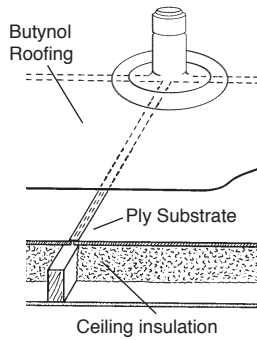
### PVC or Aluminium



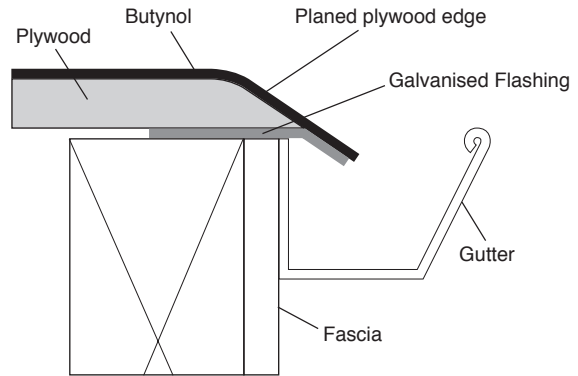
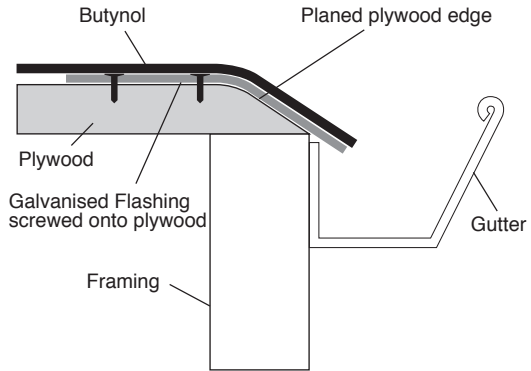
Vent installed over intersection of vent tapes on concrete substrate



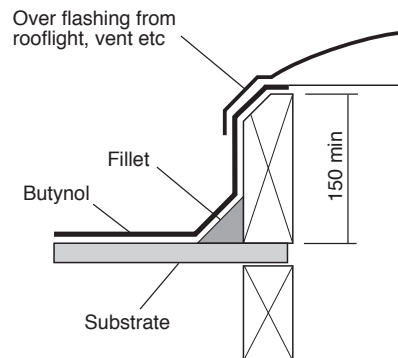
Vent installed over intersection of 3mm gap between Ply substrate sheets.



## TWO METHODS FOR FINISHING OVER A GUTTER



## ROOFING PENETRATION IN MEMBRANE

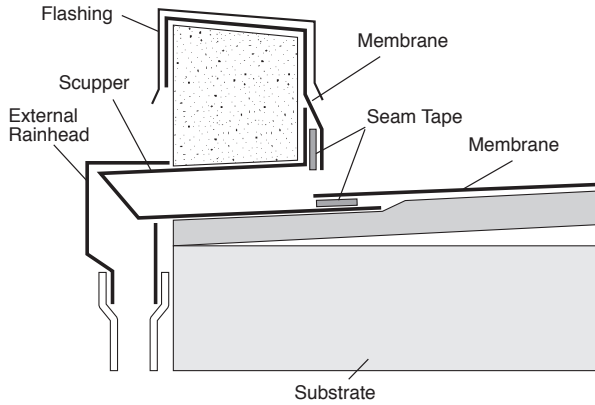


- NOTE: 1 For maximum penetration size of 1200x1200mm  
2 External corners to be formed as shown

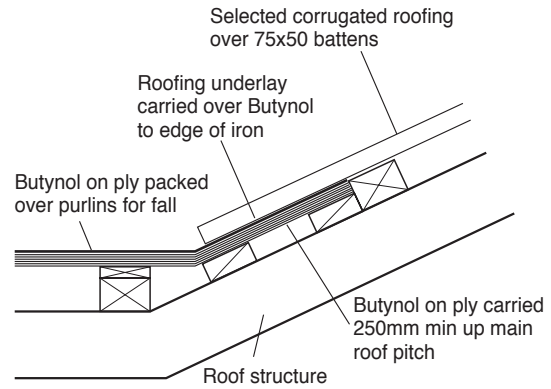
# ARDEX Butynol

BRANZ Appraised, E2/AS1 Acceptable Solution

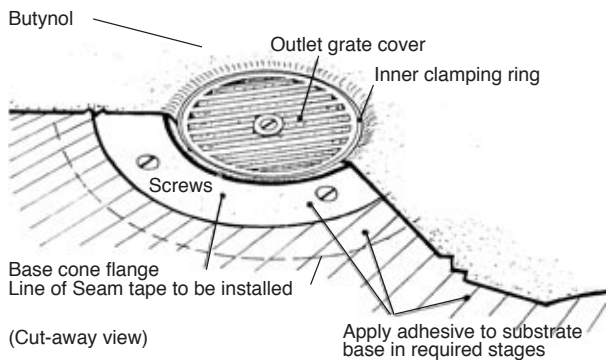
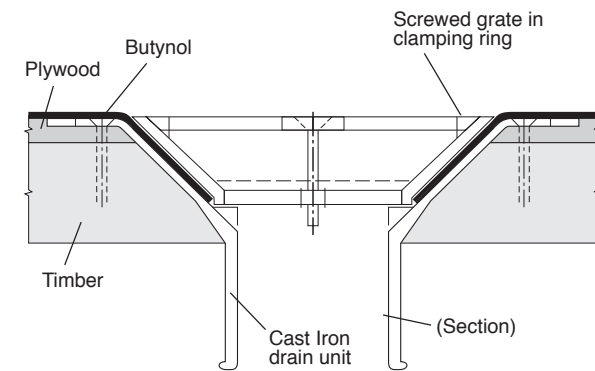
## SCUPPER OUTLET



## BUTYNOL/CORRUGATE PITCH CHANGE JUNCTION

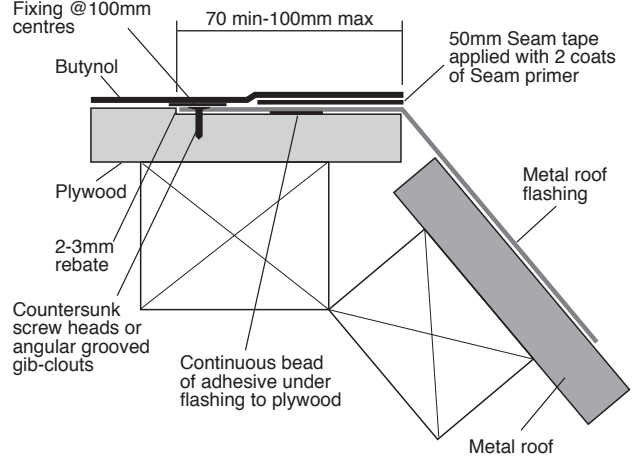


## INTERNAL ROOF DRAIN (NZBC E2/AS1 Approved)



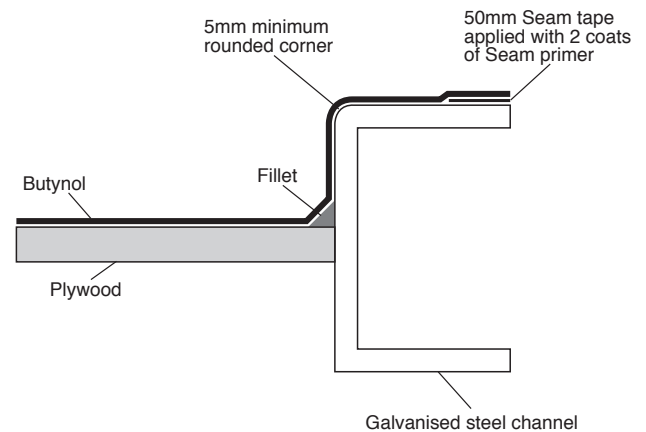
## BUTYNOL LAPPING OVER METAL FLASHING

25mm polyethylene release tape over metal edge and screw/clout heads. Fixing @ 100mm centres



Where Seam tape is to be used **no** silicone sealant should be used when installing flashing. If silicone is present remove completely with solvent.

## BUTYNOL FLUSH FINISH TO METAL EDGE



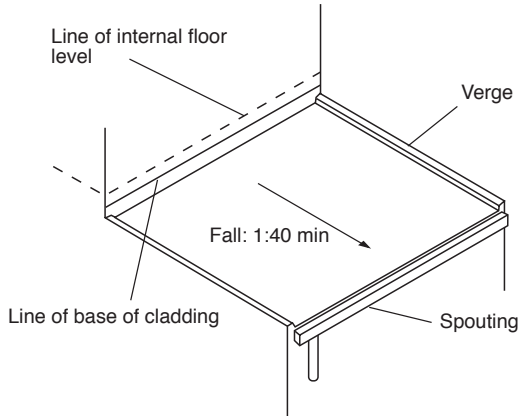


# ARDEX Butynol

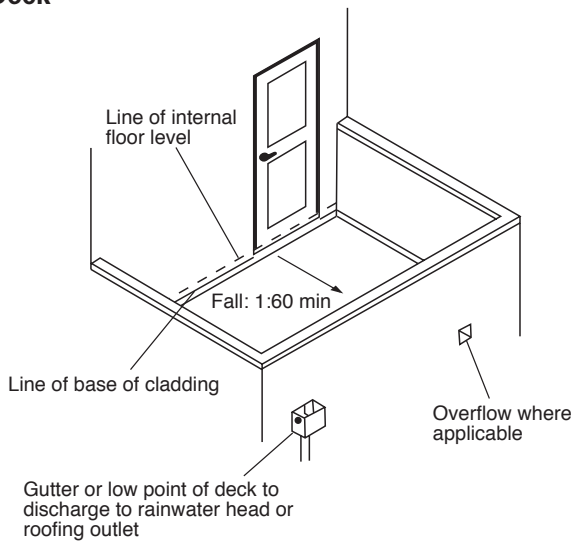
BRANZ Appraised, E2/AS1 Acceptable Solution

## FALLS IN BUTYNOL ROOFS AND DECKS

### Roof

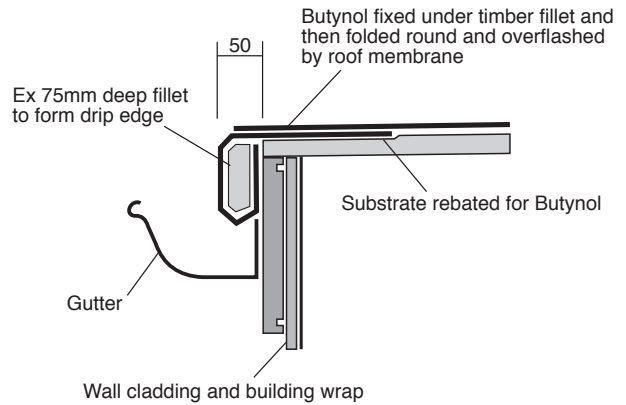


### Deck

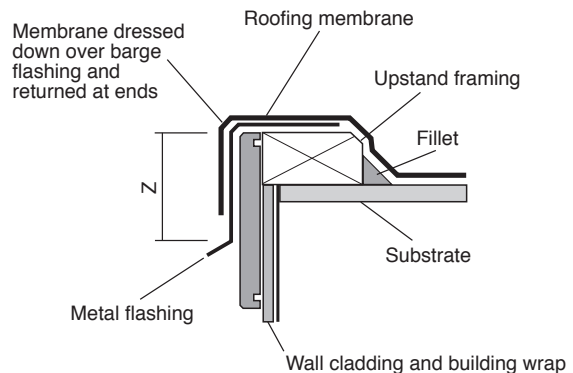
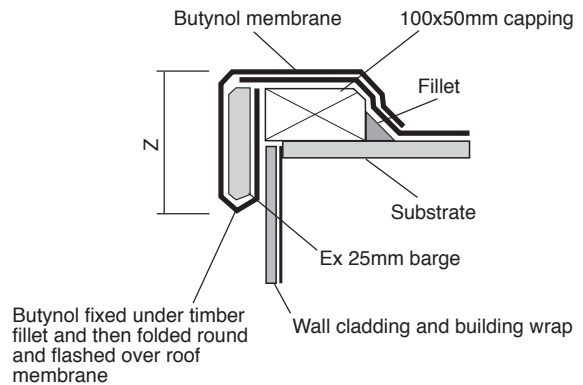


## EAVE AND VERGES IN BUTYNOL

### Eave



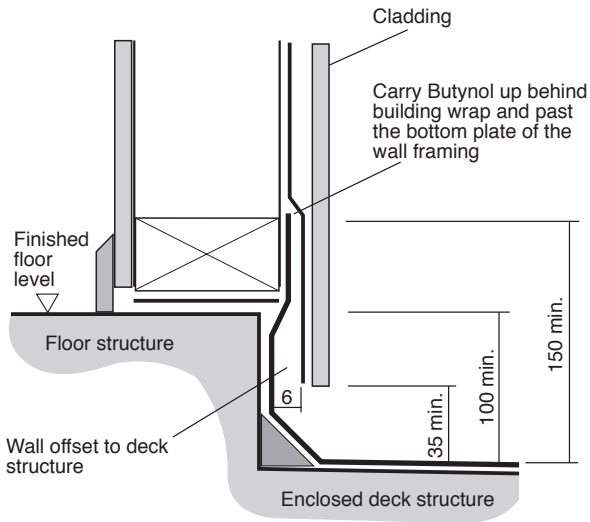
### Verges



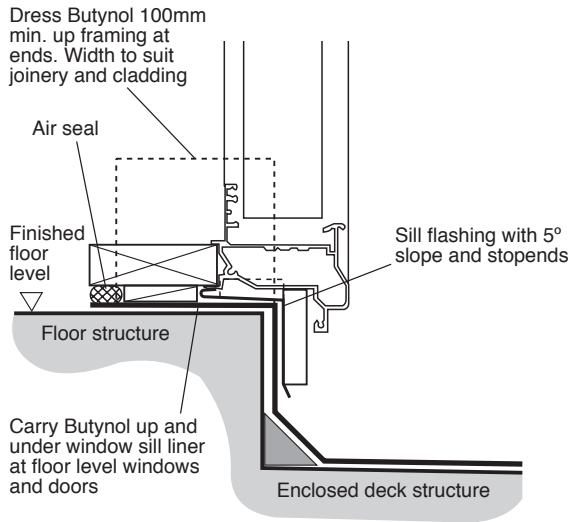
NOTE: Z = variable according to wind zone

## JUNCTIONS WITH WALLS FOR BUTYNOL

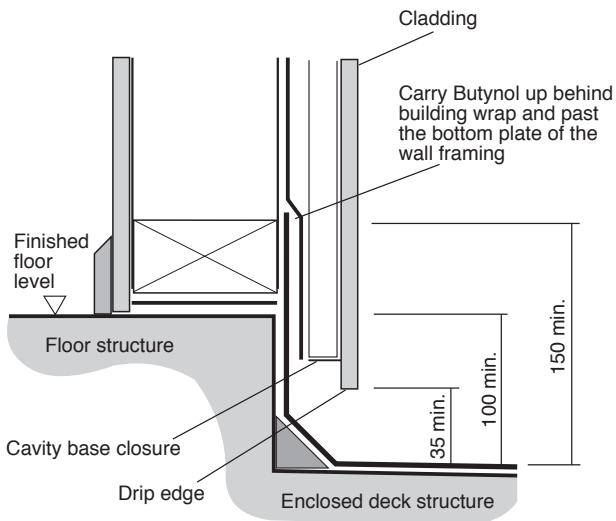
### Direct fix threshold at wall



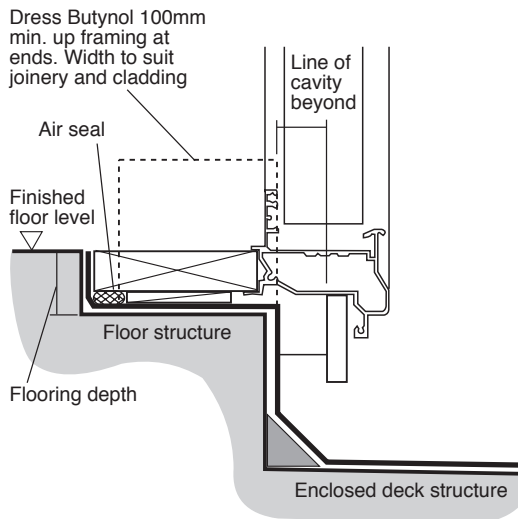
### Direct fix threshold at opening



### Cavity threshold at wall



### Alternative threshold at opening



- NOTE: 1 Internal corners to be formed as shown on page 26
- 2 Dimensions are shown to Butynol. However, where there is an additional material applied over the Butynol all dimensions shall apply to the highest level of the wearing surface

## LOOSE LAID APPLICATION OF BUTYNOL ROOFING

Materials used shall be as previously specified. When the surface is suitably prepared a large fully vulcanised Butynol sheet or sheets can be unrolled and spread over the prepared area and allowed to remain in this position for approximately one hour to relieve stresses induced by manufacture and storage. If necessary for ease of handling, these sheets can be supplied in varying sizes and vulcanised on site using an Ardex vulcanising machine or using seam tape with seam primer.

The Butynol sheet shall be set out in the exact position in which it will be finally required and whilst it is held firmly in place it shall be folded back at least one metre from the roof's surrounding parapet or wall to allow the application of adhesive to that area of the exposed substrate.

WA98 adhesive may be applied to the substrate and the corresponding area of Butynol sheeting which may then, when the adhesive is touch dry, be worked back into its required position avoiding wrinkles and the inclusion of air bubbles.

Upon completion of the detail work, parapets, drains and rainheads etc a layer of rounded gravel 30-40mm should be applied up to 50mm deep, over a layer of Geo Textile Fabric for protection of the Butynol sheet.

Care must be taken at outlets to ensure the ballast cannot enter or cause a blockage that prevents rainwater from leaving the roof area. Maintenance paths should be created to air-conditioning or roof plant with concrete tiles.

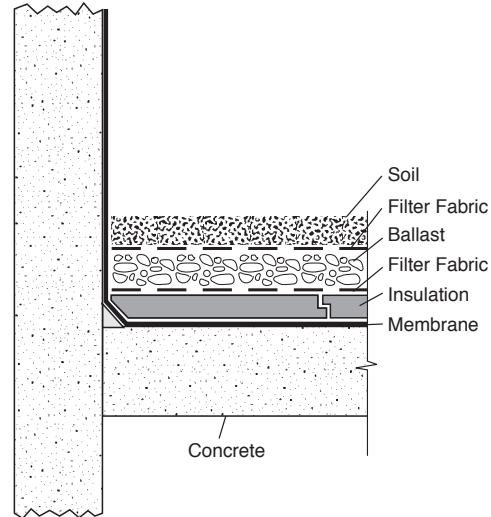
Effects on the membrane in areas of high wind can be eliminated by stabilising the ballast with cement. Dry cement should be broadcast over the 30-40mm gravel with a broad mouth shovel and left to hydrate or lightly sprayed with water to set off.

If possible a water test should be carried out prior to the application of ballast.

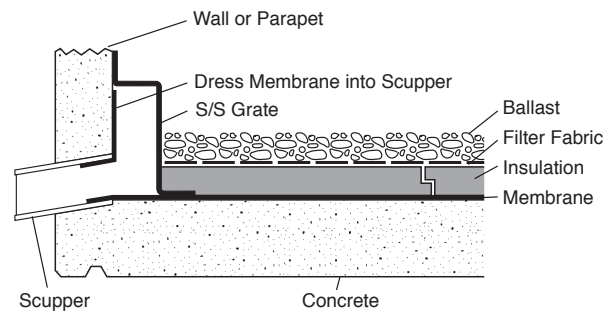
Note: Minimum pitch 1.5° to comply.

Refer NZBC Clause E@/AS1 External Moisture 8.5.1 (a).

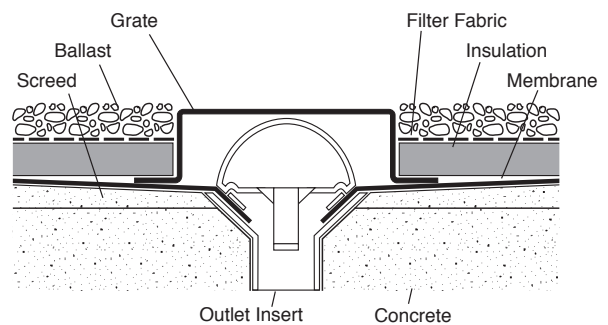
## TYPICAL BALLASTED/GARDEN ROOF DETAIL



## SCUPPER ROOF OUTLET



## SCUPPER ROOF OUTLET & GRAVEL RETAINER





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# ARDEX Butynol Shingles

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# ARDEX Butynol Shingles

## LAYING ARDEX BUTYNOL DIAMOND SHINGLES

### Setting Out

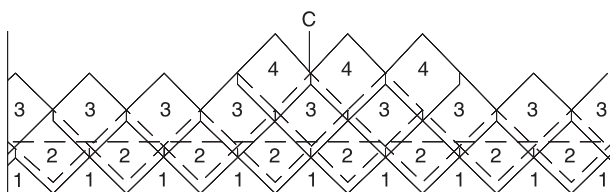
1. Mark the substrate horizontally with a chalk line 350mm up from bottom.
2. Mark a vertical line, top to bottom, and centre of the roof.
3. Mark off 300mm vertical spacings from the centre vertical line (both sides).

### Laying

1. Cut a starter flashing wide enough to cover the first 350mm at the bottom edge of the roof, up to the horizontal chalk line, allowing extra in width for gutter or fascia flashing.
2. Apply adhesive, and lay when ready.
3. Starting from the centre vertical chalk line, loose lay the first shingles, making sure that the top and bottom are in line with the vertical marking. Now loose lay the entire bottom row, making sure each shingle is butted up to each other.
4. With chalk, mark the starter flashing where the adhesive should be applied using the loose laid shingles to mark around. This is to eliminate over brushing of adhesive.
5. Remove loose laid shingles and apply adhesive to substrate and shingles which are to be laid (up to 5 shingles are manageable at one time).
6. Lay when ready, starting with centre shingle and making sure each shingle aligns with vertical markings and is well butted together.
7. Lay entire bottom row first.
8. Following rows are laid identically, but are staggered and overlap row below by 25mm.
9. Each shingle must be carefully rolled, paying special attention to lapped edges.
10. The top row of shingles may be cut to suit the specifications and a Butynol overflashing used to finish the ridge.

Any excess adhesive should be cleaned off as you go with WA98 solvent.

Roof area coverage of 50 shingles is approximately 8.82m<sup>2</sup>.



After doing 350mm bottom flashing #1, then start laying full shingles #2, #3, #4 etc.

Always start from centre on first row.

## LAYING ARDEX BUTYNOL STANDARD SHINGLES

### Priming Substrate

In areas where rain could interrupt work, it is recommended that a primer coat of WA98 adhesive be applied to substrate to prevent penetration of moisture.

### Underflashings

Glue and fix Butynol 380mm underflashing down barges, valleys, hips etc. and also along the bottom of the roof allowing an overhang into the gutter.

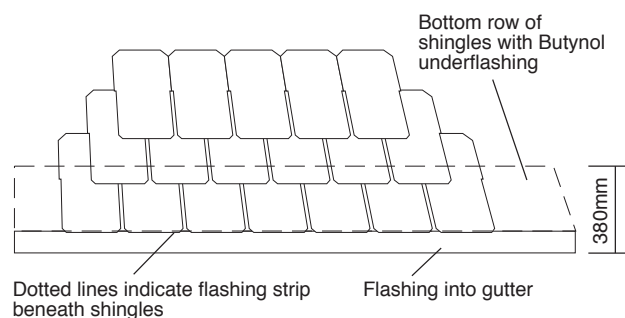
### Laying

1. Make a chalk line horizontally along the roof, one shingle height up. This line marks the top of the first row of shingles. Apply adhesive by brush or roller to substrate and shingle - approximately five at a time for one person - pulling off plastic backing before doing so. After flashing off time locate the top of the shingle on the chalk line and smooth down.
2. To locate the next row, mark a horizontal chalk line up one shingle height minus the overlap onto the lower shingle.
3. Each shingle must now be carefully rolled, paying special attention to lapped edges.
4. The top row of shingles may be cut to suit the apex and a Butynol overflashing used to finish at the ridge.

Any excess adhesive should be cleaned off as you go, with WA98 solvent.

Roof area coverage of 50 shingles is approximately 3.57m<sup>2</sup>.

Note: Ardex Shingles have a forty-five degree cut on outside edges.





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# ARDEX WPM 2000EP

## **Episeal EPDM Roofing E2/AS1 Acceptable Solution**

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Perimeter fixings normally required for solid EPDM membranes are not required for Ardex Episeal due to the Fibre Backing which allows the membrane to relax after manufacture and prevents shrinkage normally encountered after installation of EPDM sheeting

# ARDEX WPM 2000EP

## Episeal EPDM Roofing E2/AS1 Acceptable Solution

### SPECIFICATION

Ardex Episeal is a high performance synthetic rubber membrane based on the polymer Ethylene Propylene Diene-Monomer (EPDM) combined with a Polyester Fibre Mat backing.

Ardex Episeal has properties which resist ageing from heat, sunlight and ozone. It has excellent gas impermeability and toughness and remains flexible at low temperatures.

Ardex Episeal is marketed by Ardex as a warranted roofing product and fixed by approved Applicators.

### EPISEAL MATERIAL SPECIFICATIONS

Our requirements for long term warranty necessitate that Ardex Episeal meets these typical technical requirements:

#### Testings as per ASTM

Tensile Strength (D412 Die C)	1305 psi min
Ultimate Elongation (D412)	300% min
Tear Resistance (D624 Die C)	400 lbs/in min
Linear Dimensional Change (168 hrs @ 240°F) (D1204)	±2% max
Ozone Resistance (168 hrs/100PPHM/104°F/40°C 50% ext.) (D1149)	No cracks at 7x magnification
Water Absorption (168 hrs @ 70°C) (D471)	+2/-2% max
Heat Ageing (28 days @ 240°F)	
Tensile Strength (D573)	1205 psi min
Ultimate Elongation (D573)	200% min
Tear Resistance (D573)	125 lbs/in min

### SPECIAL FEATURES OF EPISEAL

- 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 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 Episeal can also be loose laid and ballasted.
- Ardex Episeal is unaffected by thermal shock and UV rays.

### EPISEAL IS PACKAGED

In rolls 3.050m wide and 15.250m long. (Tolerance 40mm on width and length). Each roll covers 46.5m<sup>2</sup> (Approx. 77kg per roll).

Gauges: Ardex Episeal	1.2mm nominal
Uncompressed Fibre	1.5mm

### ADHESIVES AND SOLVENTS

Specially formulated for all Ardex Episeal 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.

### EPISEAL SEALANT

Polyurethane 600ml.

### 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 Episeal as an acceptable damp-proof course.

### FIRE RATING

The Ardex Episeal 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 Episeal is covered by a fifteen 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.

Substrates must be dry when Episeal is applied. The plywood and the timber substructure shall have a maximum moisture content of 20% when Episeal is adhered.

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 Episeal.

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

For roof or deck areas over 40m<sup>2</sup>, roof vents will be required.

**NOTE: The use of LOSP (Light Organic Solvent Preservative) treated plywood must NOT be used under Episeal in any circumstances or conditions.**

## **SUBSTRATE SPECIFICATION (Concrete)**

### **New concrete**

Must be cured for a minimum of 28 days and all curing compounds removed prior to application.

A reduction in cure time can be achieved by utilising the Ardex HydrEpoxy System (consult Ardex Technical Department for details).

### **Old concrete**

Must be clean from any contaminants prior to application.

For further substrate types please consult Ardex Technical Department.

Ardex Episeal 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 Episeal 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 Episeal with its fibre backing has high resistance to mechanical damage, puncture and tear. The fibre backing allows the membrane to take up minor undulations in the substrate, particularly useful when applied over existing membrane systems.

Ardex Episeal 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 Episeal can be applied to XPS using suitable adhesives. Contact Ardex for details.

Ardex Episeal can be applied onto Polyurethane Foams, providing an instantly suitable substrate with insulation properties. Consult Ardex for details.

# ARDEX WPM 2000EP

## Episeal EPDM Roofing E2/AS1 Acceptable Solution

### ARCHITECTURAL SPECIFICATIONS

#### 1. Introduction

Ardex Episeal is a roofing system designed primarily for the retrofit of existing bitumen, malthoid, concrete or tongue and groove sarking. The membrane incorporates a polyester fleece 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 Episeal fibre-backed

colour - Black

gauge - 1.2mm, 1.5mm

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

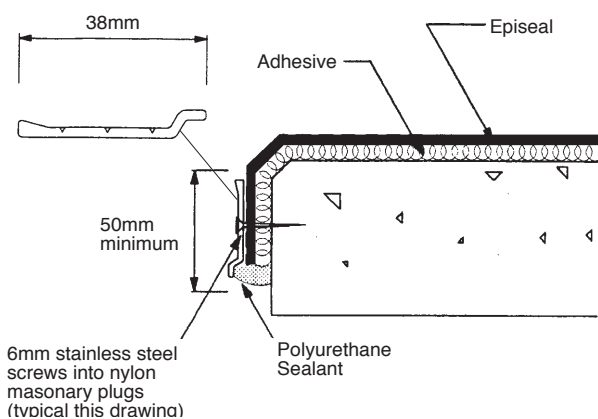
Before applying Ardex Episeal the substrate should be cleared of any sharp protrusions or penetrations that may risk the integrity of the rubber membrane in application.

#### 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. See diagram page 40.
5. Fold back half the sheet that is to be applied.
6. Apply Ardex Episeal adhesive to the substrate surface and if a contact adhesive is used to the Ardex Episeal membrane as well.
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 Episeal 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. 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.
  11. Roll the sheet membrane and the seams with a heavy roller to ensure a good uniform bond is achieved.
  12. End laps must be primed with seam primer and 150mm overlay tape. See diagram page 40.
  13. Detail work and roof penetrations can be flashed with 150mm wide detail tape.
  14. Seal all cross joints and T-joints in overlay tapes with Butynol sealant.
  15. Edge sealing must be carried out when laying is halted due to rain in time to prevent moisture getting under the fibre backing.

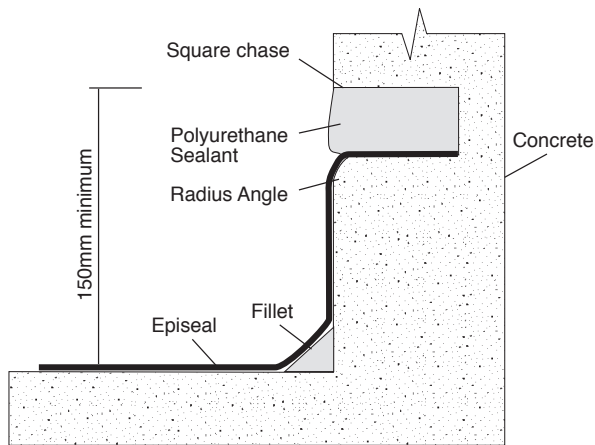
## ALUMINIUM PRESSURE SEAL DETAILS



# ARDEX WPM 2000EP

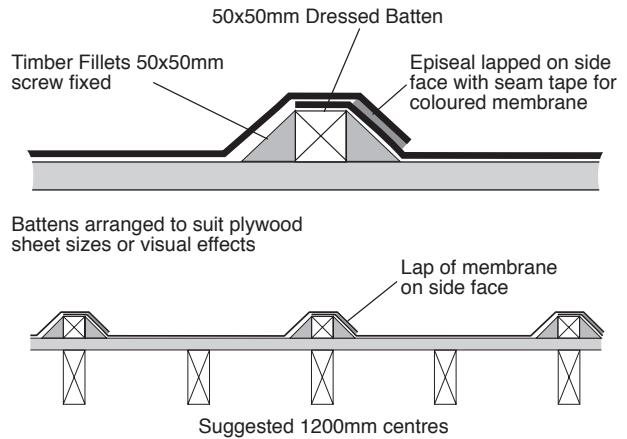
## Episeal EPDM Roofing E2/AS1 Acceptable Solution

### FLASHING INTO CONCRETE WALLS



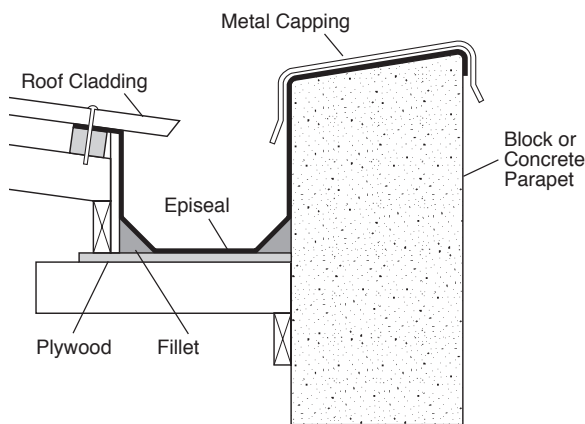
Episeal is glued into square chase and finished with Polyurethane Sealant.

### RECOMMENDED BATTEN PROFILE DETAIL

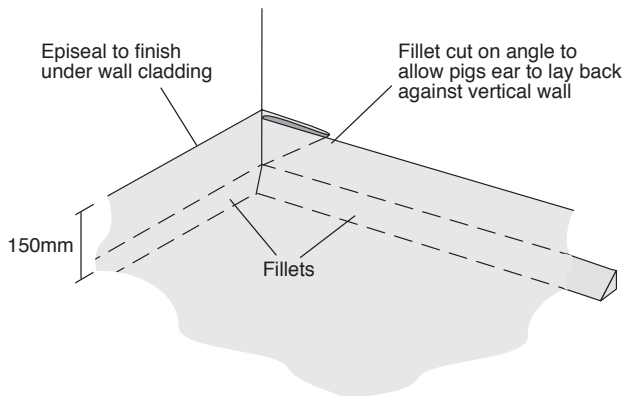


Example of a 1400mm sheet of Episeal dressed over battens at 1200mm centres

### BOXED GUTTER AND PARAPET DOWNTURN



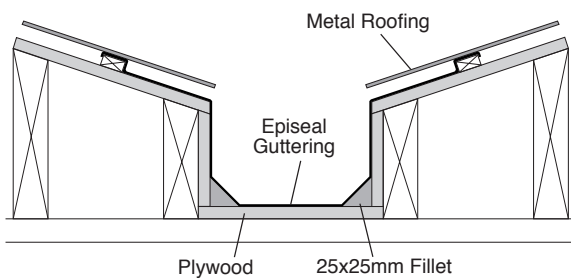
### INTERNAL CORNERS



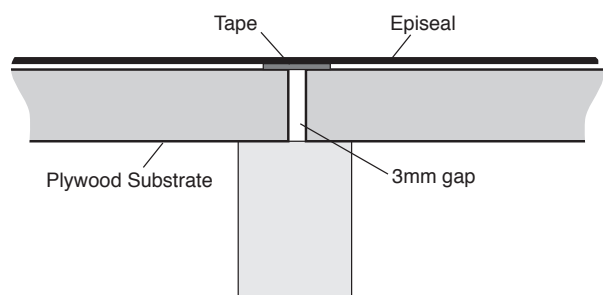
Without cutting Episeal simply fold a 'pig's ear' corner as shown. The angle fold should be behind the main sheet.

*NOTE: Fillets must be used on all internal corners.*

### INTERNAL GUTTER



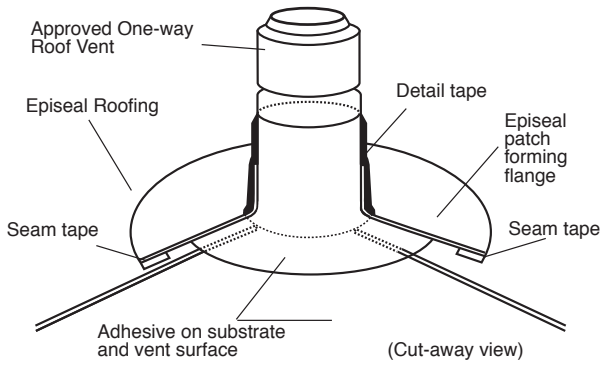
### TAPING SUBSTRATE SHEETS



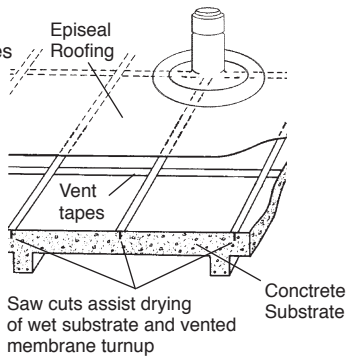
All joints between substrate sheets of Ply should be taped to prevent stressing of the Episeal in case of marked timber movement.

## ONE WAY SUBSTRATE VENTILATOR

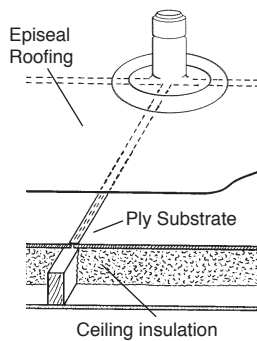
### PVC or Aluminium



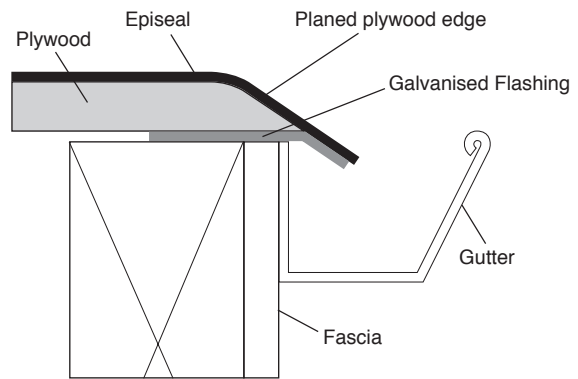
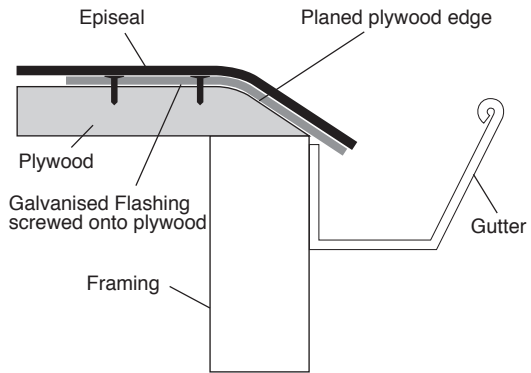
Vent installed over intersection of vent tapes on concrete substrate



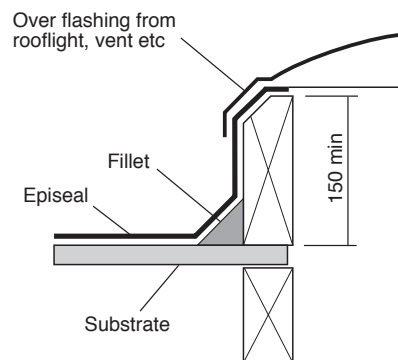
Vent installed over intersection of 3mm gap between Ply substrate sheets.



## TWO METHODS FOR FINISHING OVER A GUTTER



## ROOFING PENETRATION IN MEMBRANE

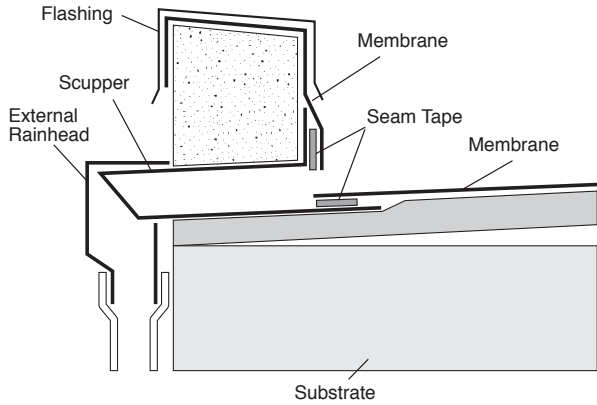


- NOTE: 1 For maximum penetration size of 1200x1200mm  
2 External corners to be formed as shown

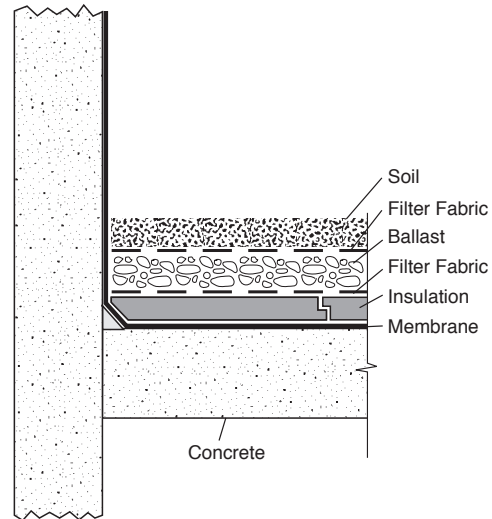
# ARDEX WPM 2000EP

## Episeal EPDM Roofing E2/AS1 Acceptable Solution

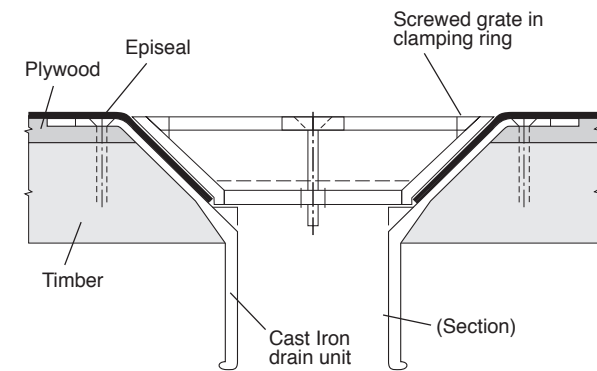
### SCUPPER OUTLET



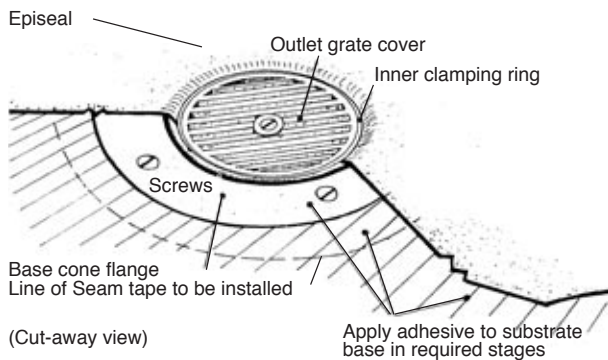
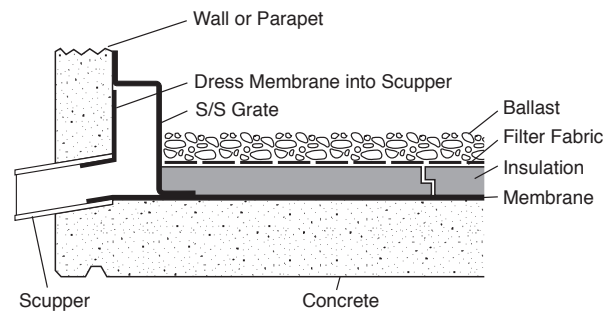
### TYPICAL BALLASTED/GARDEN ROOF DETAIL



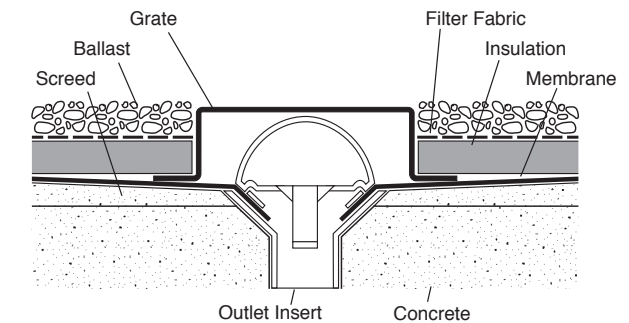
### INTERNAL ROOF DRAIN (NZBC E2/AS1 Approved)



### SCUPPER ROOF OUTLET

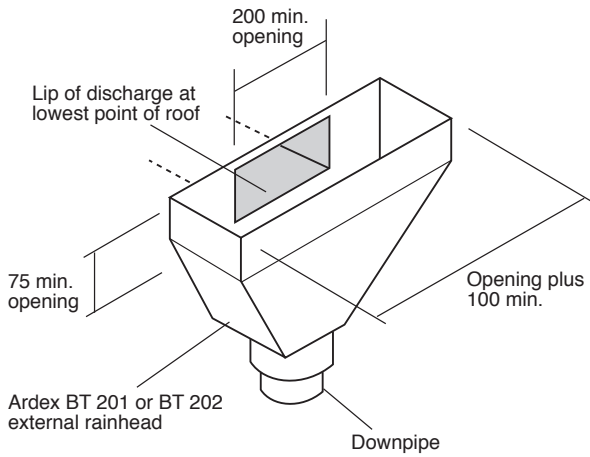


### SCUPPER ROOF OUTLET & GRAVEL RETAINER

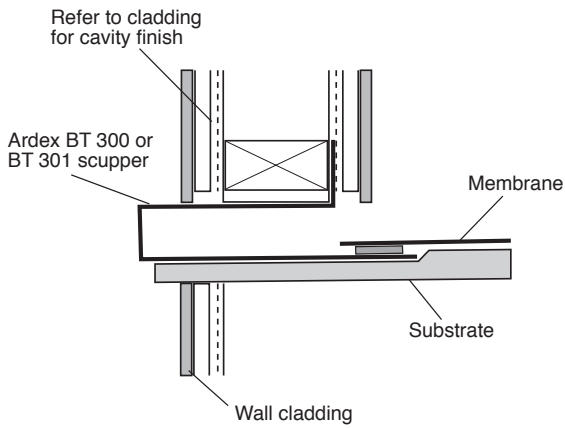


**RAINWATER HEAD AND SCUPPER OPENING IN MEMBRANE USING ARDEX BT 300 OR BT 301 SCUPPER**

**Deck outlet**

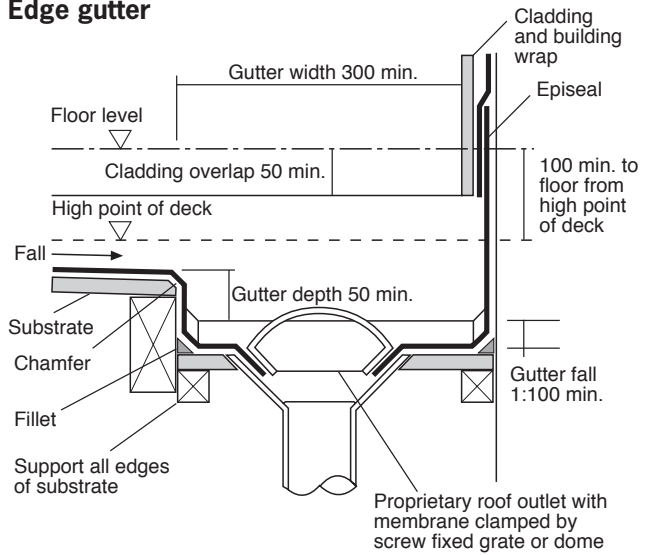


**Overflow**

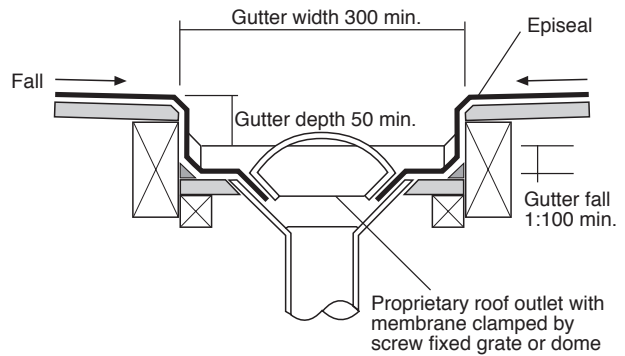


**GUTTERS AND OUTLETS IN MEMBRANE**

**Edge gutter**



**Central gutter**

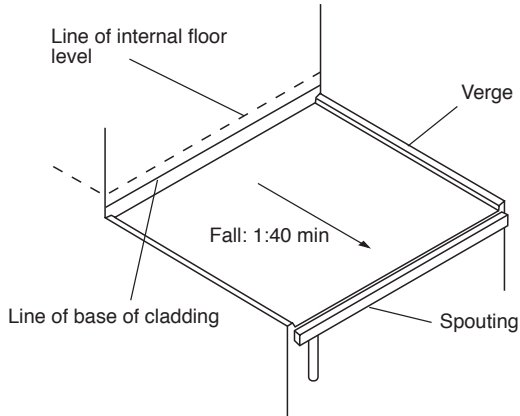


# ARDEX WPM 2000EP

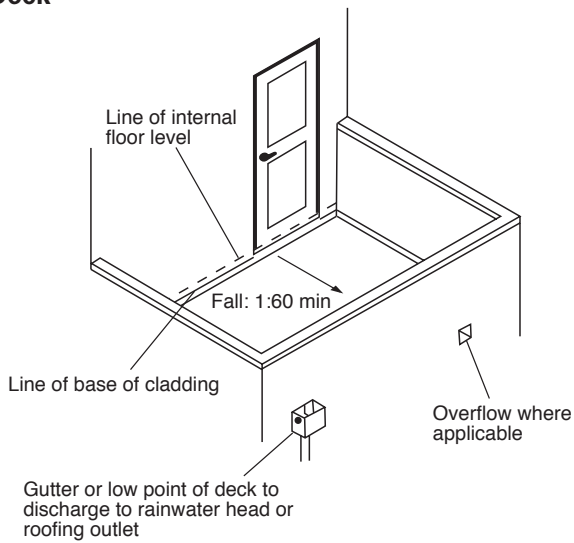
## Episeal EPDM Roofing E2/AS1 Acceptable Solution

### FALLS IN EPISEAL ROOFS AND DECKS

#### Roof

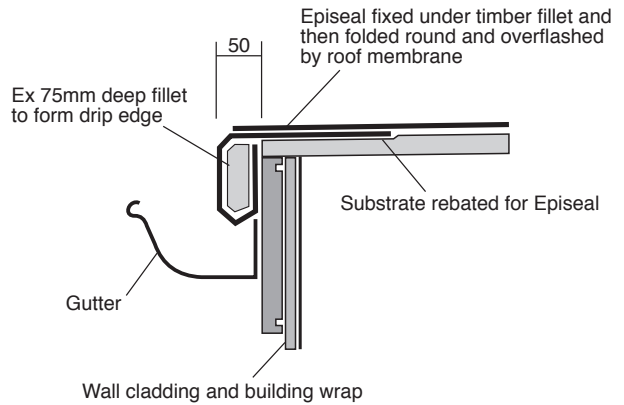


#### Deck

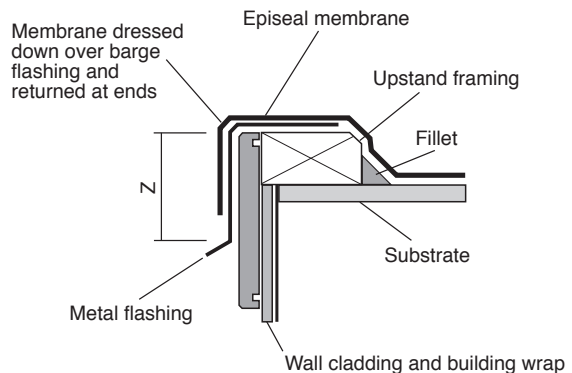
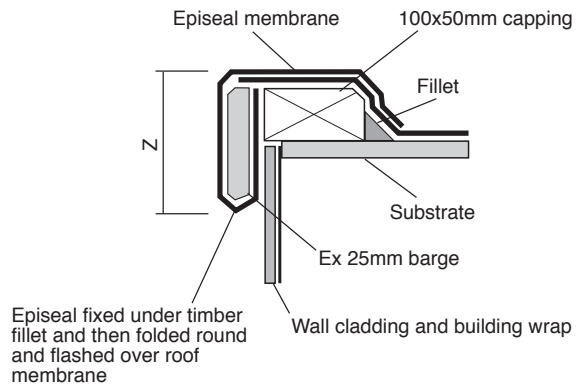


### EAVE AND VERGES IN EPISEAL

#### Eave



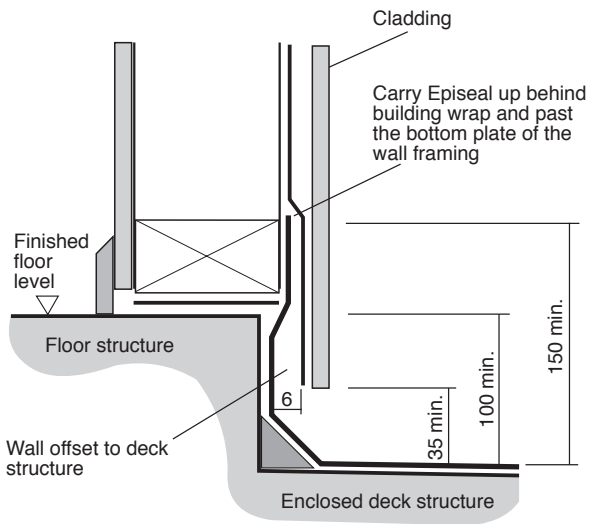
#### Verges



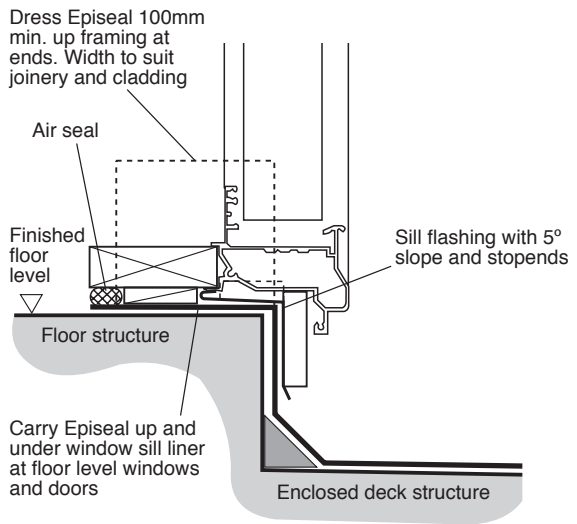
NOTE: Z = variable according to wind zone

## JUNCTIONS WITH WALLS FOR EPISEAL

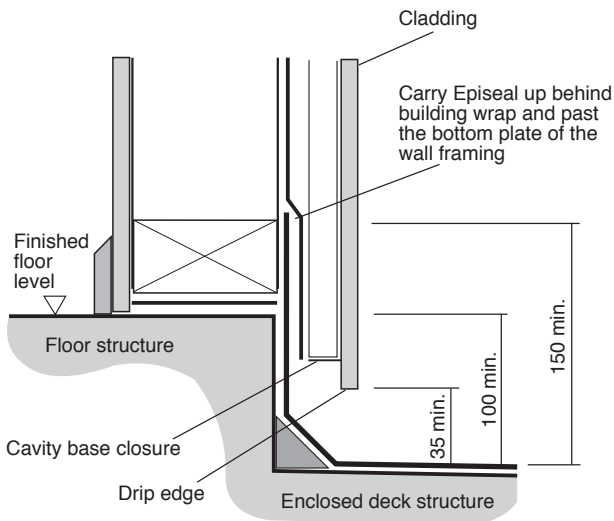
### Direct fix threshold at wall



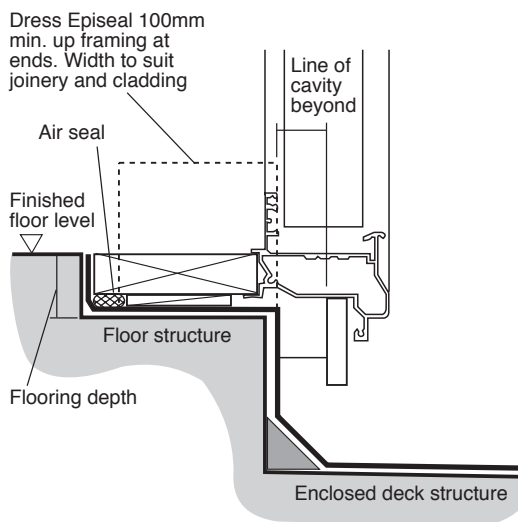
### Direct fix threshold at opening



### Cavity threshold at wall



### Alternative threshold at opening



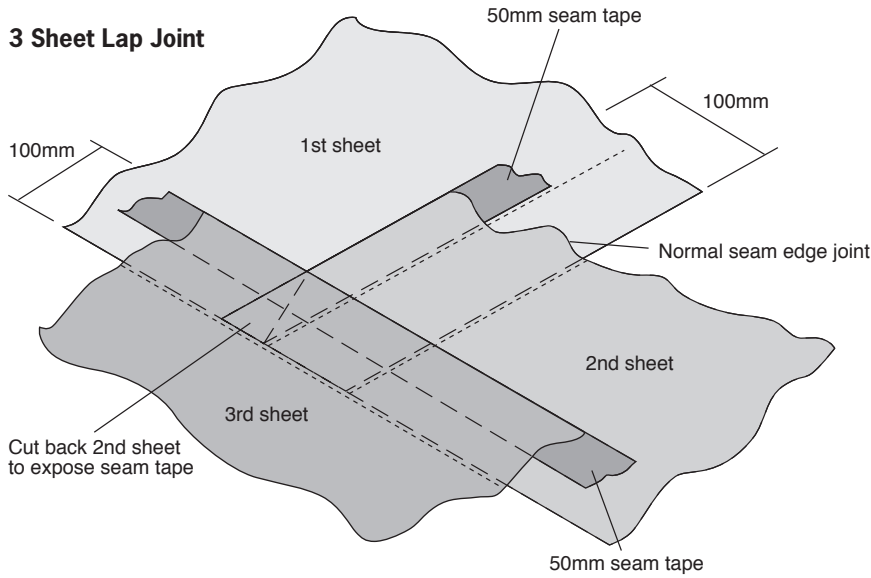
- NOTE: 1 Internal corners to be formed as shown on page 24
- 2 Dimensions are shown to Episeal. However, where there is an additional material applied over the Episeal all dimensions shall apply to the highest level of the wearing surface

# ARDEX WPM 2000EP

## Episeal EPDM Roofing E2/AS1 Acceptable Solution

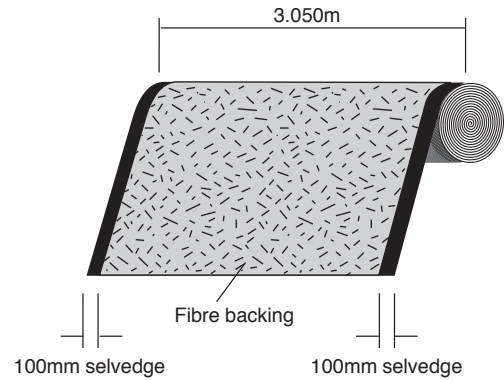
### LAP AND BUTT JOINTING

#### 3 Sheet Lap Joint

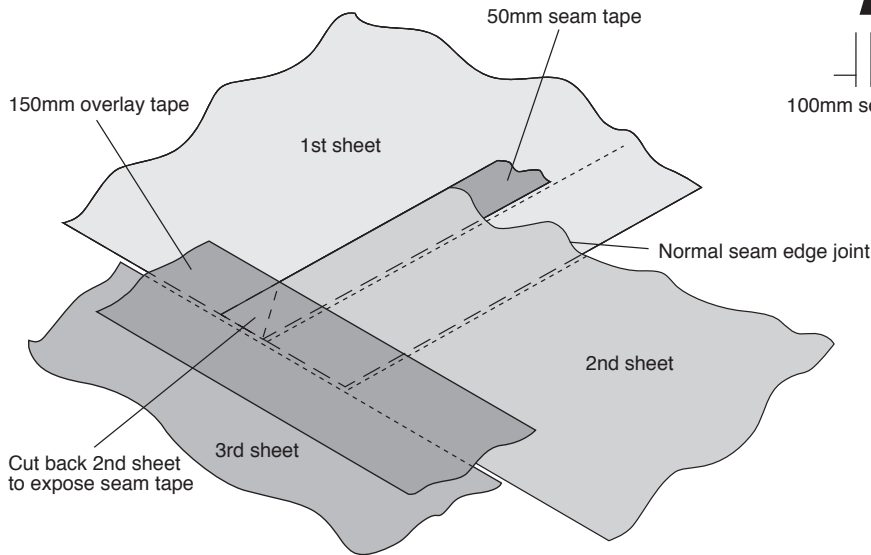


#### IMPORTANT NOTE

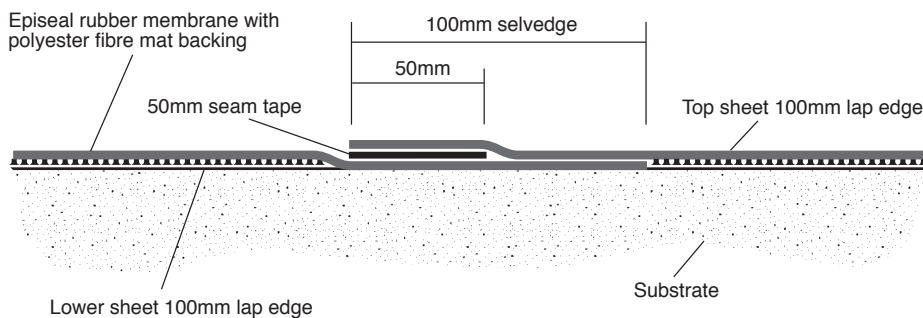
The new construction of Ardex Episeal sheet is 3.050m wide with a 100mm selvedge on both sides.



#### 3 Sheet Lap and Butt Joint



#### Edge Seam





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# ARDEX Optima

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# ARDEX Optima

## DESCRIPTION

Ardex Optima is a two component cementitious acrylic modified white adhesive. When mixed in the recommended portions Ardex Optima produces a resilient water resistant adhesive for bonding most ceramic tiles to Butynol Synthetic Rubber and other substrates (see below).

## APPLICATION RANGE

### Location

Internal, external and water immersion.

### Performance Levels

Residential, commercial and industrial.

### Surfaces

Walls, floors and decks.

### Tiles

Natural stone, porcelain, mosaics, fully vitrified & ceramic tiles.

### Uses

Particularly suited for adhering ceramic and clay tiles to Butynol decking and facings as per the Ardex recommended direct-stick system described below.

### Other suitable substrates

- Brick and blockwork
- Fibre cement sheets, plaster boards
- Tilt up and pre-cast concrete
- Cement render, concrete, aerated concrete
- Powder coated cladding, galvanised, stainless steel (degreased), brass
- Existing tiles (thoroughly cleaned)
- Superflex and Shelter acrylic waterproofing membranes
- Particleboard
- Roughened fibreglass

## SUBSTRATE PREPARATION

### Butynol

Butynol must be cleaned to remove any dust or contaminants. This can usually be accomplished by using sugar soap and water, but if more stubborn soils remain, contact your local Ardex representative for instruction. Allow surface to dry before applying adhesive.

## MIXING

Mixing ratio three parts of powder by weight to one part of liquid (weight or volume).

Mix adhesive by mechanical means until a homogeneous creamy paste is achieved, do not over mix. Allow mix to stand for 2 minutes prior to use.

## APPLICATION

Tile installation must conform to the requirements of the Australian Standard 4992-2003.

Lay the tiles using Ardex Optima 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 1m<sup>2</sup> 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 to cure for at least 24 hours before proceeding with the next stage. Low absorbency tile can extend the cure time.

## GROUTING OF TILES

All joints should be grouted using Ardex Grouts with Grout Booster (80:20) 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 1m<sup>2</sup> at a time and clean excess grout from that area prior to proceeding. Only mix small quantities of grout at a time to enable workability within the pot life of the product.

Finishing Ardex Grouts should be carried out in the normal fashion by allowing the residual grout film to dry and polish off to totally remove.

### Abapoxy

When using Ardex Abapoxy, cleaning the excess grout from the surface should be carried out using a wet cloth wrapped around a firm rectangular item such as a block of wood to remove the bulk of the excess. Surface should be finally cleaned using a clean wet scourer to remove all excess material from the joints and the tile surfaces.

## COVERAGE

One 30kg/10L unit will cover 6m<sup>2</sup> using a 12mm notched trowel at the specified dry bed thickness of 2.5 - 3mm.

## PACKAGING

Mini Kit (1.7L liquid/5kg powder)

Large Kit (10L liquid/6x5kg powder)

## DRYING

Approximately 24 hrs at 23°C, 50% RH, allow longer for colder conditions.

## STORAGE AND SHELF LIFE

12 months when stored at 5°C - 25°C in airtight, sealed container.

## CAUTION

High temperatures caused by heat absorption by black Butynol will accelerate drying time.

## TECHNICAL DATA

Type	Two Part
Colour	White
Specific Gravity of liquid	1.02
pH	7.5
Application Properties (@ 23°C, 50% RH)	
Mixing Ratio	Powder/Liquid 30kg/10kg
Specific Gravity of Mix	1.67kg/litre
Viscosity of Mix	148,000 cps
Open Time	25 minutes
Adjustability Time	20 minutes
Pot Life	45 minutes
Water Absorption	1.18%
Mechanical Properties	
Shear Bond Strength (MPa)	
7 days dry	2.7
14 days dry	3.56
7 days water immersion	2.86
8 month immersion in fresh water concrete pool	3.1
Tensile Strength (MPa)	
7 days	2.3



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# ARDEX Bonding/ Seam Primer

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**Solvent Based Primer**

# ARDEX Bonding/Seam Primer

## Solvent Based Primer

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### DESCRIPTION

Bonding Primer solvent based primer is designed to lock particles on the substrate to achieve maximum adhesion. It has excellent durability and is a low viscosity binder that seals absorbent substrates and penetrates dust.

### TYPICAL APPLICATIONS

- New and old concrete
- Timber
- Compressed fibreboards
- Primer for acrylic coatings

### APPLICATION REQUIREMENTS

#### General

Do not apply Bonding Primer if the temperature is below 5°C or above 35°C.

#### Substrate preparation

The surface to be coated should be dry, clean, sound and free from oil, grease and flaking paint. New concrete should be left a minimum of 28 days before application commences. All cracks or holes exceeding 2mm are to be repaired before application commences.

### APPLICATION SPECIFICATION

Apply with brush, long nap roller or conventional spray. Ensure that the coating is applied evenly at the recommended coverage rates. Allow a drying time of at least one hour.

### COVERAGE

Approximately 5-8m<sup>2</sup>/litre on horizontal and vertical surfaces.

### PACKAGING

4 litre and 1 litre cans.

### CLEAN UP

Clean all equipment in general purpose thinners immediately after use.

### STORAGE

Bonding Primer must be stored above 6°C.

### SHELF LIFE

One year in unopened containers stored at 20°C.

### SAFETY DIRECTIONS

Avoid contact with skin and inhalation of the vapour. Provide adequate ventilation. Keep out of reach of children. If swallowed contact a doctor or Poisons Information Centre.

Contact Ardex for specific applications and material safety data sheet.



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# ARDEX Butynol Sealant

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# ARDEX Butynol Sealant

## BUTYNOL SEALANT

### Description

Butynol Sealant has been specially designed and formulated for sealing Butynol flashings into chases. Butynol Sealant has excellent sealing and adhesive properties to Butynol and a variety of building components.

### DANGER

Gives off highly flammable vapour. Keep well away from heat, sparks and open flame. Keep closed when not in use.

### AVOID BREATHING VAPOUR

Use with adequate air flow.

### DIRECTIONS

Once the Butynol Membrane has been fixed into place, prepare the chase to ensure it is clean dry and sound. Cut the cartridge nozzle to give the desired aperture and angle. For best results the sealant should be gunned by pushing the cartridge nozzle forward during application. Tool the sealant bead to ensure there are no voids, gaps or air pockets and that the bead has a neat and flush finish.

### TACK FREE TIME

Approx. 24 hours, depending on temperature conditions, can be painted within 4 to 6 days.

### FULL CURE TIME

4-6 days depending on temperature conditions.

### CLEAN UP

Clean tools, etc., with mineral turps.

### COLOUR

Black in 375ml tubes

### Also available for Butynol

Seal 'n' Flex Polyurethane

600ml sausages

Colours - black and grey

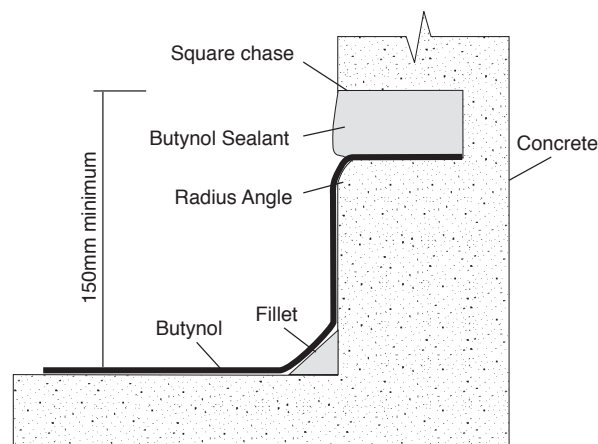
Silaflex MS

300ml tubes

Colour - grey

Refer to respective tubes for their material warranty.

## FLASHING INTO CONCRETE WALLS



Butynol is glued into square chase and finished with Butynol Sealant.



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# Drainage & Substrate Ventilation

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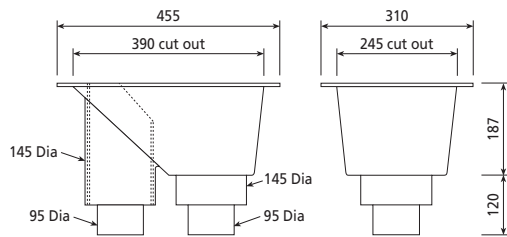
# Drainage & Substrate Ventilation

## BT 200 RAINHEAD (illustrated)

Moulded rainhead with overflow.  
To suit 100mm or 150mm downpipe.

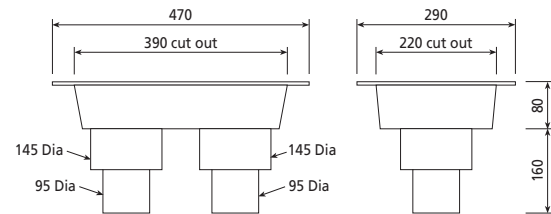
### Complies with E1/AS1 5.5.1

An internal gutter overflow outlet should be located to give an early, conspicuous warning to the building occupier that maintenance is required.



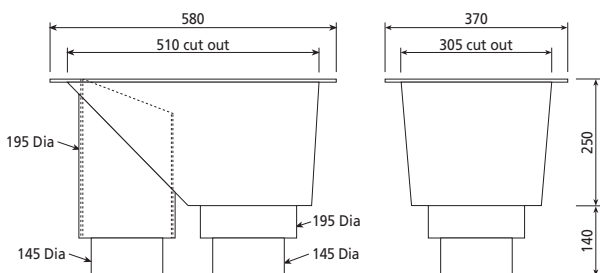
## BT 205 RAINHEAD

Moulded rainhead with overflow.  
To suit 100mm or 150mm downpipe.



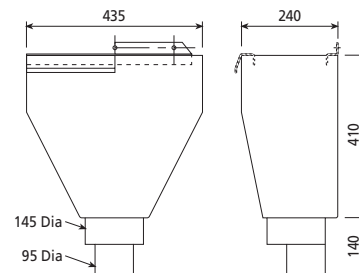
## BT 204 RAINHEAD

Moulded rainhead with overflow.  
To suit 150mm or 200mm downpipe.



## BT 202 EXTERNAL RAINHEAD

Moulded rainhead with metal fixing strip.  
To suit 100mm or 150mm downpipe.  
Can be used in conjunction with BT 301 Scupper.



### BT 203 SQUARE RAINHEAD

Moulded rainhead 295mm square.  
To suit 100mm or 150mm downpipe.



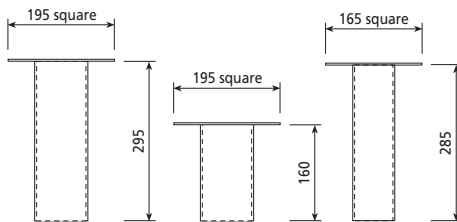
### BT 700, BT 701 KICKOUT FLASHING

Available in Black (BT 700) or Grey (BT 701).



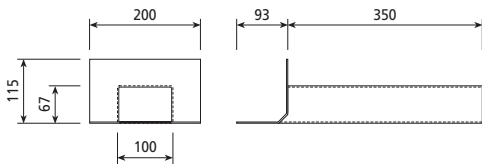
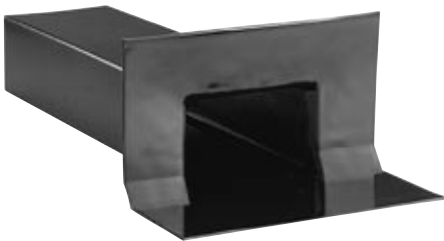
### BT 100, BT 101, 102 DROPPERS

To suit 100mm (BT 100), 80mm (BT 101),  
150mm (BT 102) downpipes.



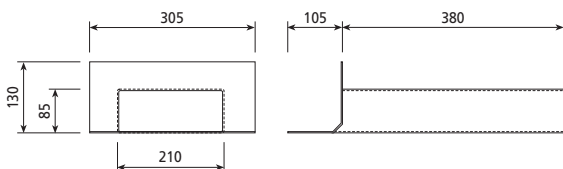
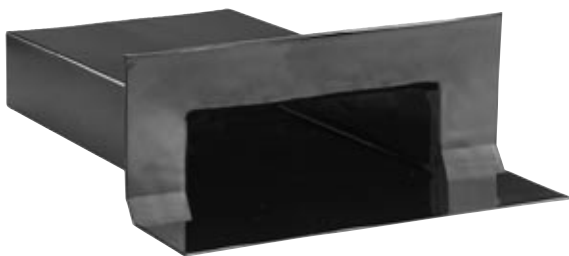
### BT 300 SCUPPER

For all types of single ply membrane roofing.



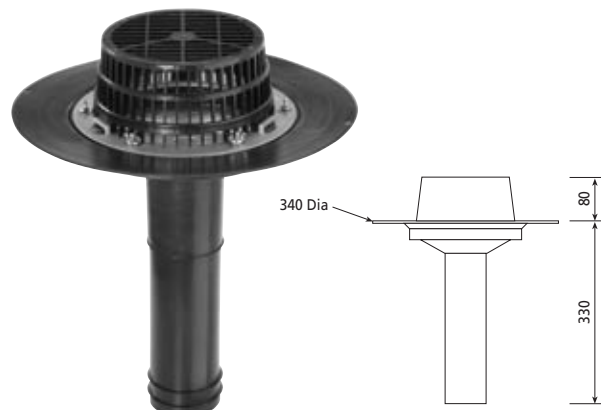
### BT 301 SCUPPER

For all types of single ply membrane roofing.



### BT 608, BT 609, BT 610 DRAIN

3 piece unit with clamp.  
BT 608 - 80mm, BT 609 - 100mm, BT 610 - 150mm.



# Drainage & Substrate Ventilation

## BT 602, BT 603 PLASTIC DECK DRAIN

Flat white plastic.  
BT 602 - 80mm, BT 603 - 100mm.



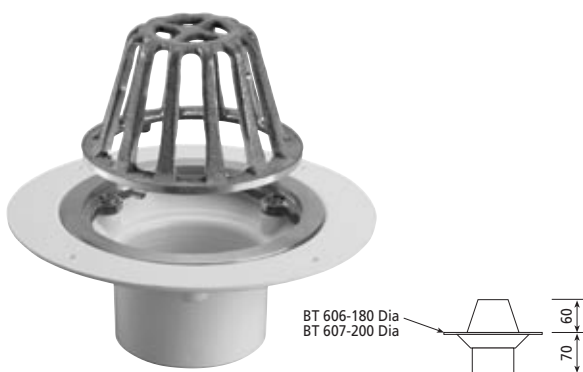
## BT 604, BT 605 CHROME DECK DRAIN

Flat chrome insert.  
BT 604 - 80mm, BT 605 - 100mm.



## BT 606, BT 607 DOME DECK DRAIN

Bronze cast dome and insert.  
BT 606 - 80mm, BT 607 - 100mm.



## BT 500 LEAFGUARD

Moulded from tough PVC to suit 80-140mm outlets such as the BT 100 Dropper.



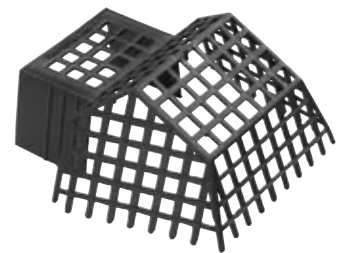
## BT 501 LEAFGUARD

Moulded from tough PVC to suit 100-180mm outlets.



## BT 502 LEAFGUARD

Moulded from tough PVC. Fits into BT 300 and 302 Scuppers.



## BT 400, BT 401, BT 402 ROOF VENTS

These one-way ventilators are available in spun aluminium (BT 400) or moulded polyethylene Black (BT 401), Grey (BT 402) for use on concrete or plywood substrates.



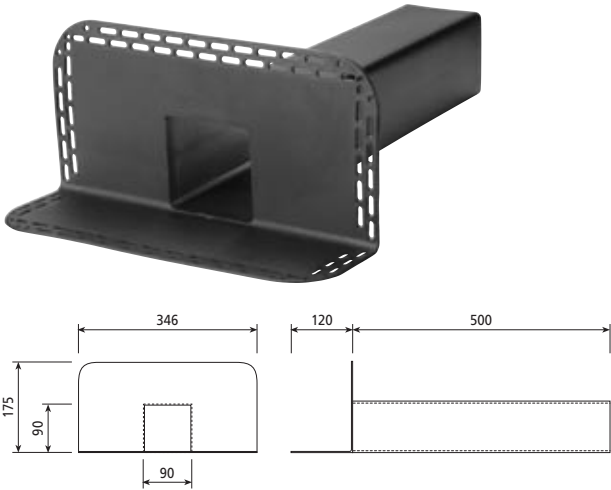
### IMPORTANT NOTE

Ardex vents are designed only for venting substrate - ie plywood, joists etc.

If venting roof or ceiling cavities a ventilation engineer should be contracted to advise on requirement especially for skillion roof construction.

Whilst predominately torch-on these accessories can be used with Butynol and EPDM membranes where by-laws permit.

**BT 302 SCUPPER**



**BT 103 DROPPER**

To suit 100mm downpipe.

**BT 104 DROPPER**

To suit 80mm downpipe.



**BT 420 PAVER SUPPORT**

Protects membrane against damage from heavy paving slabs. For use over external membrane.



**BT 355, BT 360 SCUPPER DOWNPIPE CONNECTOR**

Connects to BT 302 80mm or 100mm Scuppers.

BT 355 - 100mm

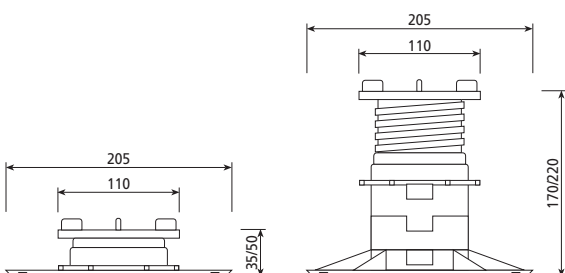
BT 360 - 80mm.

**MAXI ADJUSTABLE SUPPORT**

An adjustable paving support for floating paving systems.

Adjustable height from 35-220mm.

Available on indent order.





## **New Zealand**

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[www.butynol.co.nz](http://www.butynol.co.nz)

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