

ARDEX GROUP

For more than 60 years, ARDEX has been the quality leader for an entire industry, offering excellent building chemicals with supreme processing reliability – the brand of choice for installers and wholesalers.

Strong internal growth and intelligent acquisitions in foreign markets today put the ARDEX Group on the map with 36 subsidiaries and 1,700 employees in over 50 countries on all continents, with one unique theme around the world; ARDEX ensures our valued customers receive the same high quality products and services.







 Germany (HQ)
 Australia
 Austria
 Belgium
 Bulgaria
 China

 Czech Republic
 Denmark
 Finland
 France
 Great Britain
 Hong Kong

 India
 Ireland
 Hungary
 Italy
 Netherlands
 New Zealand

 Norway
 Poland
 Romania
 Singapore
 Sweden
 Spain

 Switzerland
 Taiwan
 Turkey
 United Arab Emirates
 USA

ARDEX VISION



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



PERFORMANCE

- ARDEX is a system solution provider of high-performance specialty building materials.
- In close cooperation with our partners we commit ourselves to gold standard business practices to ensure mutual success and profitable growth.
- We will be the premium supplier in each of our selected segments.
- We strive for market leadership in defined markets worldwide.



FAMILY-OWNED BUSINESS

- As a family-owned company we encourage the development of team spirit and identification with the culture of the business.
- Building on the platform for growth established over many years, we look forward with confidence to a successful future.
- We are proud of our history.



CORPORATE CULTURE

- The guiding principle of ARDEX is "excellence in all that we do".
- ARDEX believes that all employees and partners should operate within a spirit of fairness, transparency and responsible business practices at all times.
- Employees are the foundation on which we build our business.
- Sustainable, long-term growth objectives underpin all of our various activities.

ARDEX SUPPORT

ARDEX products are backed by a team of Technical Support Specialists and Sales Professionals dedicated to one goal – eliminating guesswork, improving onsite efficiencies and taking risk out of flooring installation.

ARDEX supports building professionals to complete successful projects by having:

- The largest field team of trained professionals
- Project specific installation recommendations
- Job start up and walk through support
- Local and national training
- Contractor recommendation

SYSTEM ARDEX

ARDEX is committed to developing products that are easy to use and offer high performance. ARDEX products, systems and services are designed to ensure professional contractors the competitive advantage of a lower total cost of installation through superior performance.

ARDEX flooring products are designed to work together for total reliability and performance.

Each product is the careful result of research and development combining the input of contractors, specifiers and installers to ensure absolute product compatibility.

We call this System ARDEX.



For information on products, field support, customer service, training products or product demonstrations please contact us on 1300 788 780 in Australia and 0800 227 339 in New Zealand.

ARDEX DIGITAL SERVICES

Website:

All the information you need in one place.

www.ardex.co.nz



YouTube:

Access an extensive video library with helpful how-to videos.

www.youtube.com/ardexaustralia



Facebook:

- Product news & updates
- Introduction of new products
- Access to video library
- And much more...

www.facebook.com/ArdexNZ

Apple & Android Apps:

The ARDEX app is a slimmed down version of the website and hosts a variety of helpful features in the palm of your hand.

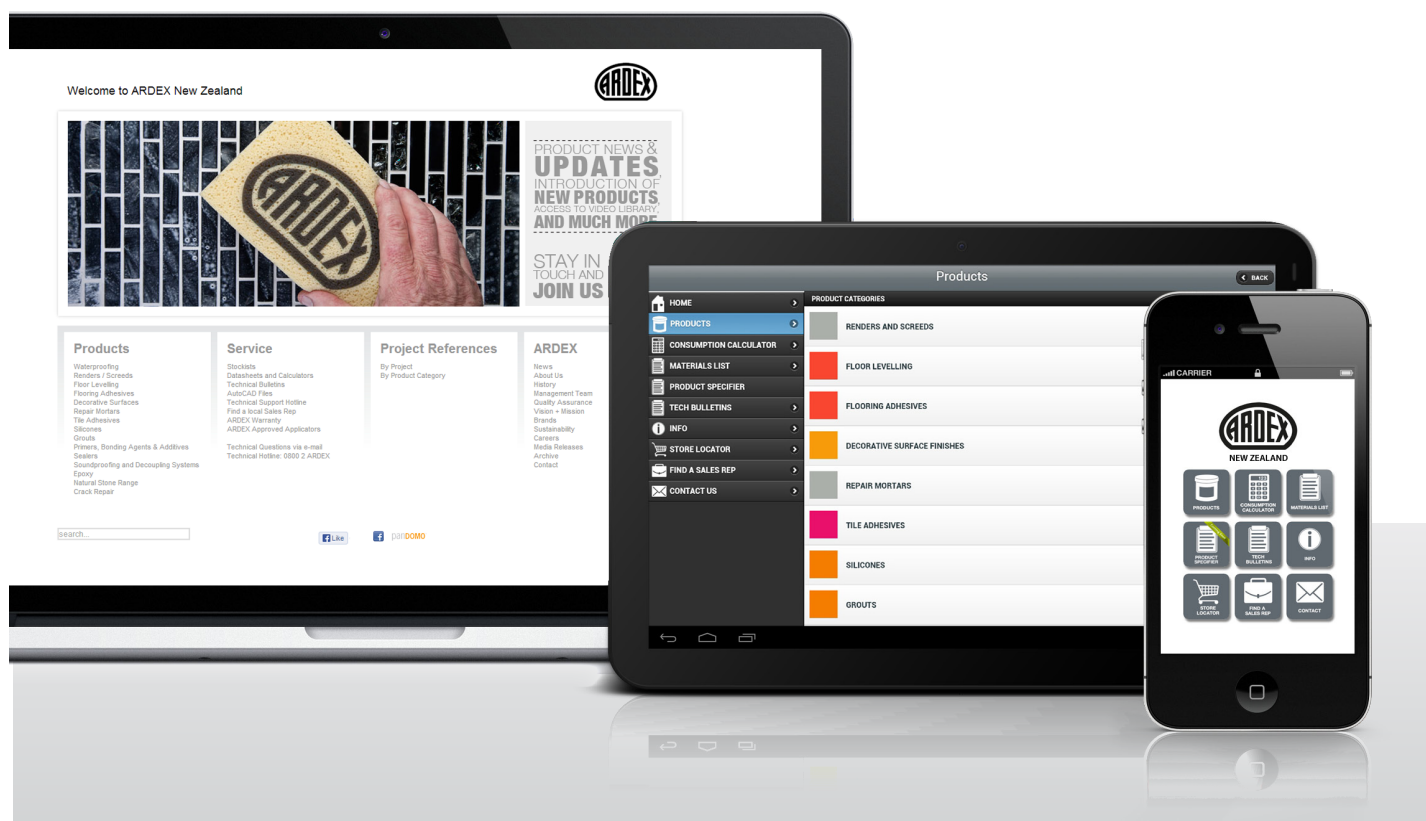
iTunes

(search for "ARDEX New Zealand")



Google Play Store

(search for "ARDEX New Zealand")



ARDEX LOCATIONS

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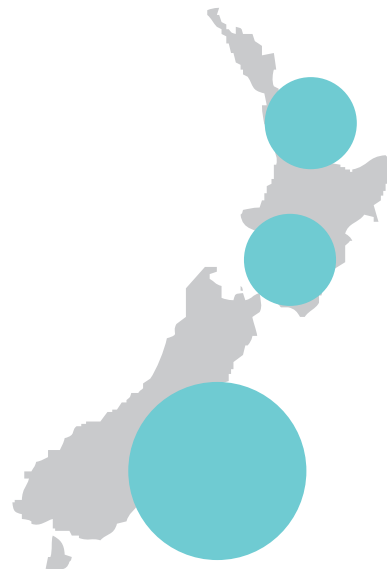
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www.ardex.co.nz



Approved Applicators

For a list of Ardex approved Applicators
phone your nearest Ardex branch or
visit our website **www.ardex.co.nz**





Butynol® Membranes

2	Butynol® Colour Range
3-12	Butynol® & Butyseal® BRANZ Appraisal
3-36	Butynol® Roofing
37-42	Butyseal®
43-44	Butynol® Shingles
45-46	Bonding/Seam Primer
47-50	Butynol® Sealant
51-54	Waterproofing Decoupling Mat

ARDEX Butynol® Colour Range



Colours shown may vary from actual material samples.
Please check actual colour of material before ordering.
Should your project require another colour please contact us
with your plans.



ARDEX Butynol®

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

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.



BRANZ Appraised

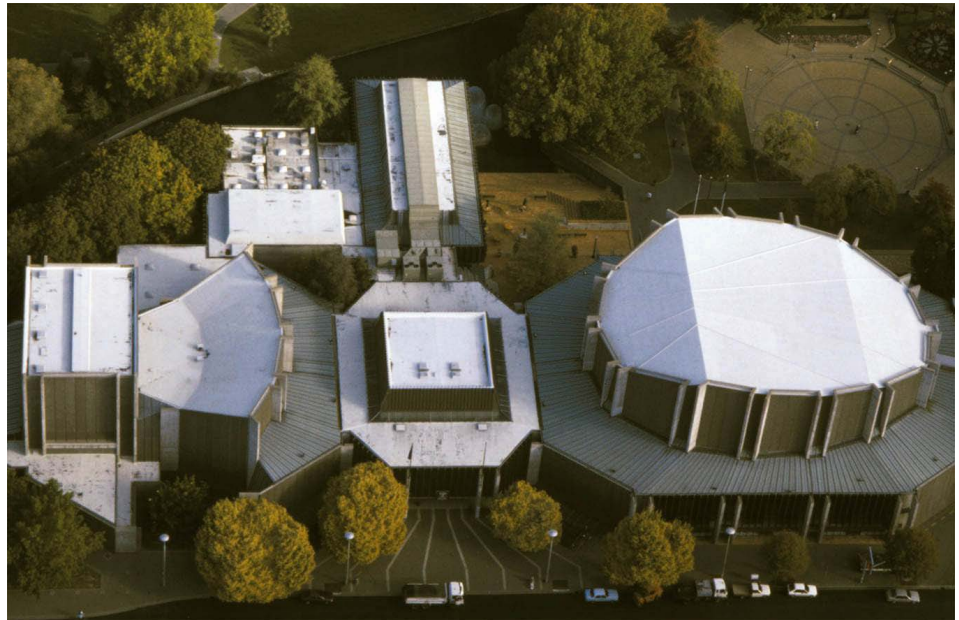
Appraisal No. 436 [2011]

BUTYNOL® AND BUTYSEAL ROOFING MEMBRANE SYSTEMS

Appraisal No. 436 [2011]

This Appraisal replaces BRANZ
Appraisal No. 436 [2005]

Amended 12 May 2017



1mm Butynol laid in 1972. The main auditorium roof is still in service after 39 years. Some of the other low slope roofs are due to be upgraded with new Butynol during current building refurbishment.

BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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BRANZ

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Product

- 1.1 Butynol® and Butyseal Roofing Membrane Systems are synthetic rubber waterproofing membranes designed to be used on roofs and decks.
- 1.2 The membranes are supplied as single-ply, flexible synthetic rubber sheet in roll form. The products are installed as single layer systems.

Scope

- 2.1 Butynol® and Butyseal Roofing Membrane Systems have been appraised for use as waterproofing membranes 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 or Strandsarking [roofs only]; and,
 - with decks that have a maximum size of 40 m².
- 2.2 The Butynol® and Butyseal Roofing Membrane Systems have also been appraised for use as roof and deck waterproofing membranes for external reinforced concrete, plywood and Strandsarking [roofs only] for buildings within the following scope:
 - up to 3 storeys with a maximum height from ground to eaves of 10 m 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,
 - subjected to maximum wind pressures [refer Paragraph 8.1]; 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 Appraisal.
- 2.5 The membranes must be installed by ARDEX New Zealand Limited approved applicators.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Butynol® and Butyseal Roofing Membrane Systems, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years. Butynol® and Butyseal Roofing Membrane Systems meet this requirement. See Paragraph 10.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.1 and E2.3.2. Roofs, Decks and balconies incorporating Butynol® and Butyseal Roofing Membrane Systems meet these requirements. See Paragraphs 13.1 – 13.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Butynol® and Butyseal Roofing Membrane Systems meet this requirement and will not present a health hazard to people.

- 3.2 This Appraisal 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 New Zealand Limited 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 17.86 metres long. Each roll is packed in polythene wrapper trademarked 'Butynol®' with thickness identified. Gauges available are 1.0, 1.5 and 2.25 mm in black and 1.5 mm in six colours.
- **Butyseal Membrane** - All membranes are single-ply, flexible synthetic rubber membranes with polypropylene filaments welded to the underside. They are supplied in rolls nominally 1.4 metres wide by 17.86 metres long. Gauges available are 1.0, 1.5 and 2.25 mm in black, 1.2 mm in Dove Grey 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.
- **Solvent WA98** - A clean up solvent for WA 98 Adhesive.
- **Seam Primer** - A water resistant primer adhesive, used with seam tape for all Butynol laps.
- **Seam Tape** - Uncured cold gum tape used for all Butynol laps. Supplied in 50 mm x 30.5 metre rolls.
- **Flashing Tape** - A malleable tape for moulding gussets, pipe flashings and awkward situations. Supplied in widths of 50-100 mm x 5 metres long.
- **Butynol Sealant CA20P** - A specially designed and formulated sealant for sealing Butynol® flashings into chases. Supplied in 375 mm tubes.
- **ARDEX Release Tape** - This is a pressure sensitive tape between two silicone release backings. One release backing is removed to allow the tape to be applied over all plywood joints. The other release backing is left in place to provide an unbonded area under the membrane which allows for substrate movement.
- **Detail Tape** - A semi-cured detail/flashing tape 30.4 m x 150 mm.
- **Overlay Tape** - A cured self-adhesive joint tape 30.4 m x 150 mm.

Handling and Storage

- 5.1 Handling and storage of all materials whether on or off site is under the control of the ARDEX New Zealand Limited approved applicators. 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® and Butyseal Roofing Membrane Systems. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

- 7.1 Butynol® and Butyseal Roofing Membrane Systems are 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 1.0 mm thickness product is designed for use on roofs and gutters, and will accommodate light traffic; the 1.5 mm is for walk out decks and high maintenance areas; and the 2.25 mm is a heavy duty product that is custom made on request. The 1.2 mm is available in Butyseal for use on roofs.
- 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, 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 AS/NZS 1170. 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 m² as covered by the scope of this Appraisal. Butynol® and Butyseal Roofing Membrane Systems are suitable for use on decks larger than 40 m². These decks are the subject of specific design and are outside the scope of this Appraisal.

Structures

- 8.1 Butynol® and Butyseal Roofing Membrane Systems fully bonded are suitable for use in areas subject to maximum wind pressure of 3 kPa Ultimate Limit State subject to the limitations of the substrates.

Substrates

Plywood

- 9.1 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.

Strandsarking

- 9.2 Strandsarking must be installed in accordance with the manufacturer's instructions and BRANZ Appraisal No. 946 [2016].

Concrete

- 9.2 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

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

Maintenance

- 11.1 No maintenance of the membrane is normally required provided significant substrate movement does not occur.
- 11.2 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.
- 11.3 Drainage outlets must be maintained to operate effectively.

Prevention of Fire Occurring

- 12.1 Separation or protection must be provided to Butynol® and Butyseal Roofing Membrane Systems from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 13.1 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.
- 13.2 When installed in accordance with this Appraisal and the Technical Literature, Butynol® and Butyseal Roofing Membrane Systems will prevent the penetration of water and will therefore meet code compliance with Clause E2.3.2. The membranes are impervious to water and will give a weathertight roof, roof deck or balcony.
- 13.3 The minimum fall to roofs is 1 in 30, decks and balconies 1 in 40 and gutters 1 in 100 with no cross seams in the gutter in accordance with NZBC Acceptable Solution E2/AS1 Paragraph 8.5.1. All falls must slope to an outlet. Inadequate falls will allow moisture to collect and may increase the risk of deterioration of the membranes. *[Note: Where possible a minimum fall of 1 in 60 in gutters is preferred.]*
- 13.4 Roof, deck and balcony falls must be built into the substrate and not created with mortar screeds applied over the membranes.
- 13.5 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.
- 13.6 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.
- 13.7 Penetrations and upstands of the membrane must be raised above the level of any possible flooding caused by blockage of deck and balcony drainage.
- 13.8 The design of details not covered by the Technical Literature is subject to specific weathertightness design and is outside the scope of this Appraisal.
- 13.9 Butynol® and Butyseal Roofing Membrane Systems are 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.

Water Supplies

- 14.1 Water is not contaminated by Butynol® and Butyseal Roofing Membrane Systems. The first 25 mm of rainfall from a newly installed Butynol® and Butyseal Roofing Membrane Systems roof must be discarded before drinking water collection starts. This is to remove residues which may have developed in the processes involved in the production of Butynol® and Butyseal Roofing Membrane Systems.
- 14.2 Note that all water collected off roof surfaces made from any material is considered to be non-potable due to possible contamination from other sources. Water collection in this way can only be considered potable if it has been passed through a suitable sterilization system. Sterilization systems have not been assessed and are outside the scope of this Appraisal.

Installation Information

Installation Skill Level Requirement

- 15.1 Installation of the membranes must be completed by approved applicators, approved by ARDEX New Zealand Limited.
- 15.2 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 New Zealand Limited Technical Literature and this Appraisal.

Preparation of Substrates

- 16.1 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.
- 16.2 Concrete substrates can be checked for dryness by using a hygrometer, as set out in BRANZ Bulletin No. 585. The relative humidity of the concrete must be 75% or less before membrane application.
- 16.3 The moisture content of a timber substructure must be a maximum of 20% and plywood or Strandsarking sheets must be dry at time of membrane application. This will generally require plywood or Strandsarking sheets to be covered until just before the membrane is laid, to prevent rain wetting.
- 16.4 In cases of extreme absorbency a priming coat of 50/50 solution of WA98 and adhesive solvent may be required, consult with the ARDEX New Zealand Limited if in doubt.

Membrane Installation

- 17.1 The membranes must be installed in accordance with the Technical Literature.
- 17.2 All joints in plywood and Strandsarking, and junctions of plywood and Strandsarking with other materials shall have 25 mm wide ARDEX Release Tape applied before installation of the Butynol.
- 17.3 The membranes must be unrolled without tension onto the prepared substrate and allowed to 'relax' for at least 20 minutes prior to installation.
- 17.4 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 all Butynol laps must be completed using ARDEX Seam Tape and Seam Primer.

Inspections

- 18.1 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

- 19.1 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

- 20.1 Tests have been carried out on the membranes 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.
- 20.2 Water vapour permeability tests have been undertaken by BRANZ in accordance with ASTM E96.
- 20.3 The adhesives, primers and seam tapes used with Butynol® and Butyseal Roofing Membrane Systems meet the performance requirements of NZBC Acceptable Solution E2/AS1, Paragraph 8.5.4 [c].
- Results and test methods have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

- 21.1 An assessment was made of the durability of the Butynol® and Butyseal Roofing Membrane Systems by BRANZ technical experts using NZBC B2/VM1 History of Use.
- 21.2 Site visits have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.
- 21.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

- 22.1 The manufacture of the Butynol® and Butyseal Roofing Membrane Systems 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 membranes manufacturer is the subject of AS/NZS ISO 9001: 2008 Certificate by Telarc Limited.
- 22.2 The quality of manufacture of the products is the responsibility of ARDEX New Zealand Limited.
- 22.3 The quality of supply of the products to the market is the responsibility of ARDEX New Zealand Limited.
- 22.4 Quality on site is the responsibility of the ARDEX New Zealand Limited approved applicators.
- 22.5 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 New Zealand Limited and this Appraisal.

Sources of Information

- AS/NZS 2269: 2012 Plywood – Structural.
- ASTM E 96-02 Water vapour transmission of materials in sheet form, American Society of Testing Materials, Philadelphia, 1992.
- BRANZ Appraisal No. 946 [2016] Strandsarking for Low Slope Membrane Roofs. NZS 3101: 2006 Concrete structures standard.
- NZS 3604: 2011 Timber-framed buildings.
- Acceptable Solutions and Verification Methods for New Zealand Building Code, External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 [Amendment 7, 01 January 2017].
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.
- Good Practice Guide, Membrane Roofing, BRANZ, October 2015.



The new Christchurch Airport Terminal has been covered with 1.5mm Dove Grey Butynol.

Amendments

Amendment No. 1, dated 15 July 2011.

This Appraisal has been amended to align the minimum fall requirements as specified in Acceptable Solution E2/AS1.

Amendment No. 2, dated 31 January 2012.

This Appraisal has been amended to update clause changes as required by the introduction of NZS 3604: 2011 and NZBC Acceptable Solution E2/AS1 Third Edition, Amendment 5.

Amendment No. 3, dated 27 August 2012.

This Appraisal has been amended to include an additional product.

Amendment No. 4, dated 19 June 2013.

This Appraisal has been amended to update clause changes as required by the introduction of NZBC Fire Clauses C1 – C6 Protection from Fire and A3 Building Importance Levels.

Amendment No. 5, dated 08 August 2016.

This Appraisal has been amended to match Appraisal Holder marketing protocol.

Amendment No. 6, dated 12 May 2017.

This Appraisal has been amended to add Strandsarking as a suitable substrate, update the marketing name for Butynol® HD Membranes to Butyseal, and remove ECO Butynol® Membranes.



In the opinion of BRANZ, **Butynol® and Butyseal Roofing Membrane Systems** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **ARDEX New Zealand Limited**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - 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. **ARDEX New Zealand Limited:**
 - 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.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty 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 **ARDEX New Zealand Limited**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **ARDEX New Zealand Limited** or any third party.

For BRANZ



Pieter Burghout

Chief Executive

Date of Issue:

23 May 2011

ARDEX Butynol®

BRANZ Appraised, E2/AS1 Acceptable Solution



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°C . (Rubber Technology–Morton)

Butynol® is marketed by ARDEX as a warranted roofing, decking 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°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°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 (g/m ² 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 x 103
Cal/cm/sec/deg C.

Conductivity Data on 1mm Butynol sheeting

Resistance/m² $\Omega/\text{m}^2 = 0.6816$ 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 and 1.2mm–For roofs, gutters and decks with protection.

1.2mm–For roofs.

1.5mm–For roofs, gutters and walk out decks.

2.25mm Heavy Duty

Factory welded panels in all gauges can be custom made.

PACKAGEING

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 25m² except 2.25mm gauge which is 12m²

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. Available in solvent and water based. Supplied in 20L steel/plastic pails (approx. 20kg). 4 and 1 litre cans.

ARDEX Butynol®

BRANZ Appraised, E2/AS1 Acceptable Solution

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

Recommended for all Butynol® laps.

Supplied by ARDEX in 50mm x 30.5m rolls (6 to a carton).

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.

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. All plywood joints should be taped with ARDEX Release tape.

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.

EXTERNAL MOISTURE

Roofs, decks and balconies must be designed and constructed to shed precipitated moisture. The minimum falls to roofs is 1 in 30, decks and balconies 1 in 40 and gutters 1 in 100.

BUILDING TO NZBC ACCEPTABLE SOLUTION E2/AS1

NZBC Acceptable Solution E2/AS1 limits the size of decks to 40m² as covered by the scope of Appraisal No. 436. Butynol® Roofing Membrane is suitable for use on decks larger than 40m². These decks are the subject of specific design and are outside the scope of E2/AS1.

CLEANING WEATHERED BUTYNOL®

Use sugar soap to remove oxidation and restore surface.

Wind blown dirt is more noticable on low slope roofs, particularly on black Butynol®.

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.

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

PAINTING OVER BUTYNOL®

Use ARDEX WPM 908. 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 most purpose groups. When adhered to a non-combustible substrate or timber (Plywood) 18mm thick is acceptable.

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 ARDEX Applicator in accordance with ARDEX's specifications, a material warranty for up to 20 years (covering the Membrane, adhesive and tape) is available upon completion of the work including full payment.

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.

JOINING NEW BUTYNOL® TO EXISTING BUTYNOL®

Use sugar soap to remove oxidation and restore the surface of the existing Butynol® before application. Adhere new Butynol to existing Butynol® using ARDEX Seam Primer and ARDEX Seam Tape to give a 50mm overlap.

BUTYNOL® SEALANT

Available in tubes for caulking guns.

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)

WA98S - Solvent for clean up of WA98 adhesive.

Seam Primer - A water resistant primer, used with seam tape for general 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. Seam tape and seam primer **MUST** be used for all Butynol® joints.
4. Do not use in temperatures less than 6°C.

BRANZ Appraised, E2/AS1 Acceptable Solution

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. 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 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 ARDEX Release tape applied before application of Butynol®.

PLYWOOD QUALITY

Plywood to be installed in accordance with the plywood manufacturer's recommendation to provide a suitable surface for membrane.

Problems with plywood quality may effect long term membrane performance.

Please check with your plywood supplier.

We have duplicated the position of one supplier below.

- Face checks in plywood do not affect the structural integrity of the panel as they are confined to the surface veneer and are strictly aesthetic in nature.
- As face checking occurs naturally Carter Holt Harvey Wood products does not consider them to be a manufacturing or product fault.

Source: Specifications and Installation Guide Carter Holt Harvey.

Laying on plywood with face checking as above should be avoided and surface corrected if possible.

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

SUBSTRATE SPECIFICATION (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm.

Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

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.

ROOF VENTILATION

The most important precaution to observe with low slope roofs is that no construction moisture is enclosed. Low slope or flat roof structures are generally slow drying because of their impermeable cladding. All timbers should be below 20% moisture before being enclosed.

No amount of ventilation will cope with moisture problems created by drying timbers.

If there is a reason to believe that there is moisture trapped in the roof structure ARDEX can provide our standard one way substrate ventilators or our lo rise one way ventilators to provide a better visual appearance.

Soffit ventilation is the most effective way to provide effective roof cavity ventilation. Careful placement of the soffit ventilation to avoid gutters etc, will provide a natural airflow as well as cooling to a low slope membrane clad roof.

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.

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.

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.

For cavity ventilation - seek advice from an ARDEX Representative.

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.

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 or timber.

(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 bonding.

ARDEX seam primer shall be used in conjunction with ARDEX seam tapes for all laps.

When conditions are experienced that are outside the temperature and/or moisture ranges recommended 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 Release 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 40m² as covered by the scope of Appraisal No. 436 (2011). Butynol® Roofing Membrane is suitable for use on decks larger than 40m². These decks are the subject of specific design.

Full ARDEX specifications also available on Masterspec.

ARDEX Butynol®

BRANZ Appraised, E2/AS1 Acceptable Solution

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 joints 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

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.

Tiles may also be adhered to a removeable layer of ARDEX DS60 to comply with (E2 7.3.1.1) with the ability to lift the top surface off when necessary.

(Refer Optima page 41)

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.

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 or WPM 09A (solvent free). 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.

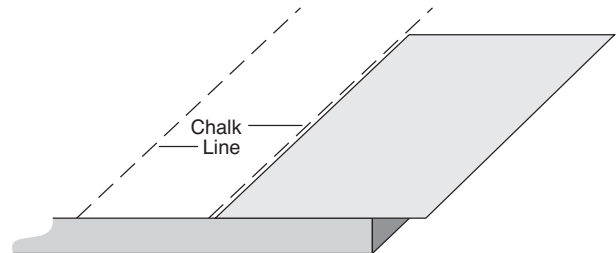
Butynol® shall not be laid under tension.

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

BUTYNOL® LAYING METHOD

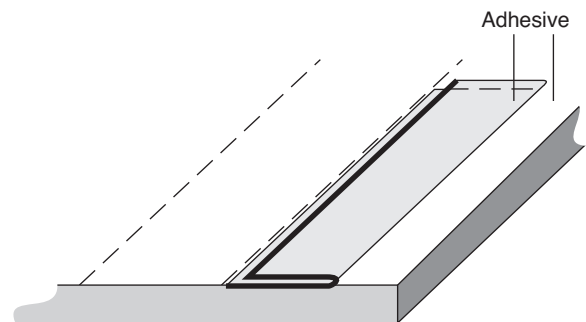
STEP 1

Accurately place sheet. Mark spacing with chalk line.



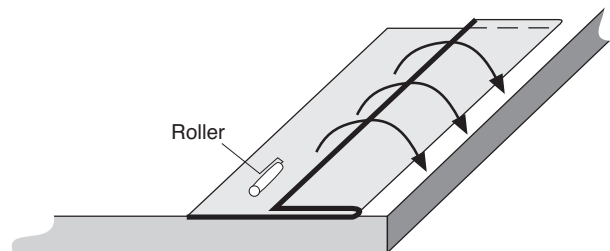
STEP 2

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.

ARDEX Butynol®

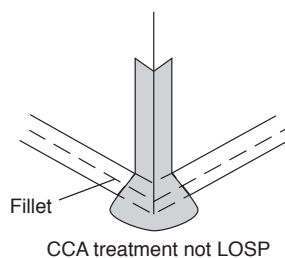
BRANZ Appraised, E2/AS1 Acceptable Solution

EXTERNAL CORNERS

To comply with Acceptable Solution E2/AS1 Figure 57.

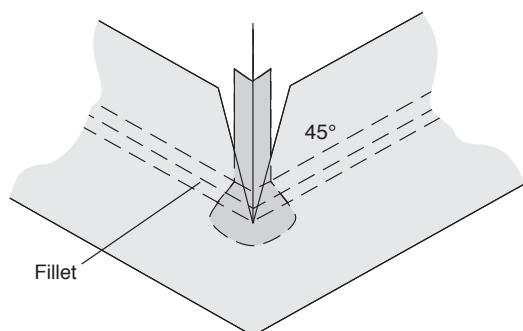
STEP 1

Bond 100mm flashing to corner as shown.



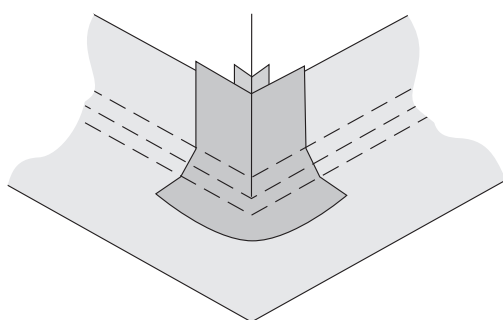
STEP 2

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.

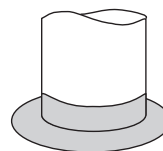


NOTE: Fillets must be used on all internal corners.

FLASHING - EXISTING PIPE

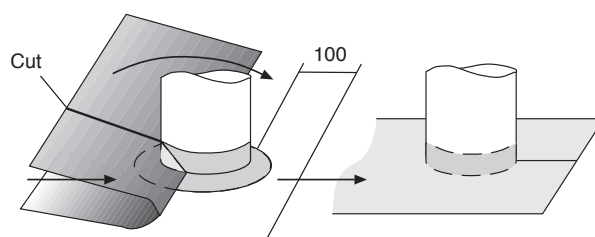
STEP 1

Under flash pipe with 100mm Butynol® flashing tape.



STEP 2

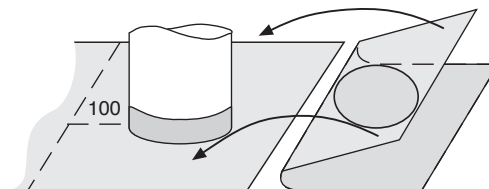
Bond Butynol® to 100mm past pipe. N.B. When flashing black Butynol® use Butynol® or detail tape.



STEP 3

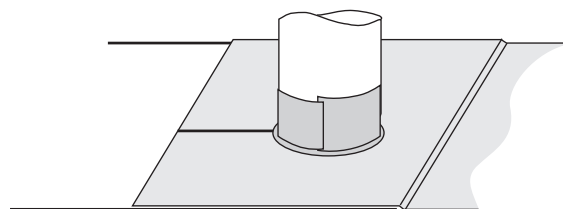
Bond continuation of Butynol® to overlap base sheet and beyond pipe 100mm.

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.

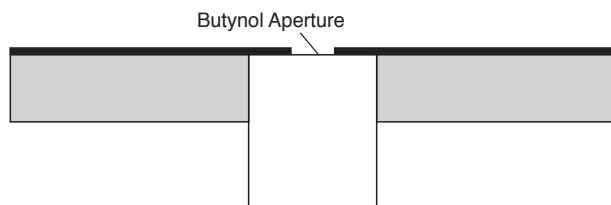


N.B. Flashing tape MUST NOT be left exposed. Cover strip must be Butynol®. When detail tape is used a cover strip of Butynol® is not required.

FLASHING - NEW PIPE

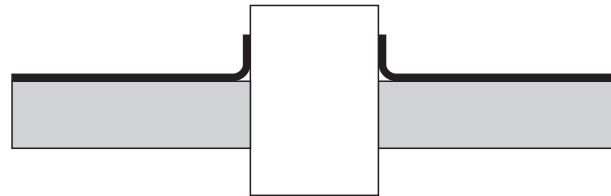
STEP 1

Cut smaller diameter hole than pipe.



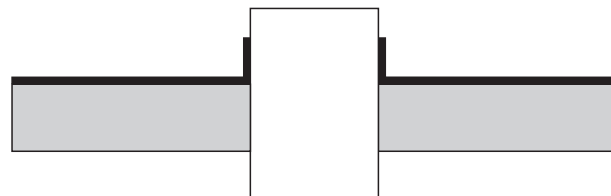
STEP 2

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



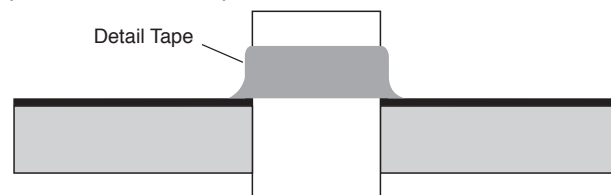
STEP 3

Pull pipe down to eliminate void.



STEP 4

After pulling pipe down approximately 1cm to sharpen corner, tape upstanding Butynol® to pipe using seam primer and detail tape.



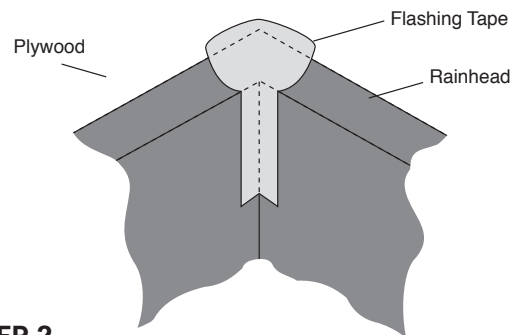
N.B. If flashing tape is used it **MUST NOT** be left exposed. A cover strip of Butynol® must be applied over the flashing tape to finish.

INTERNAL CORNERS FOR RAINHEADS

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

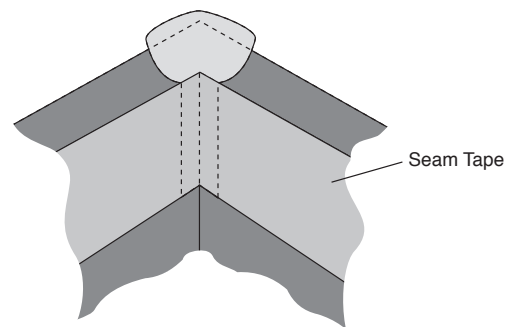
STEP 1

Apply Flashing Tape over Rainhead and Plywood.



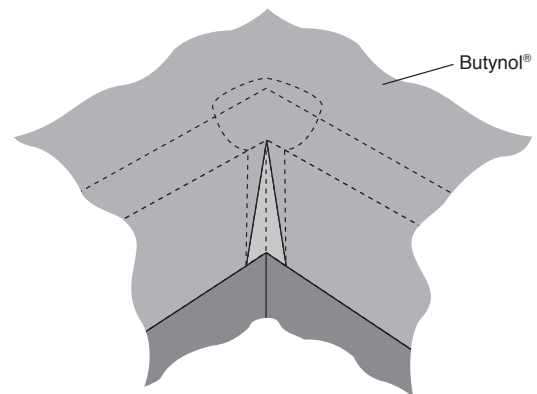
STEP 2

Run Seam Tape along all four vertical sides of Rainhead.



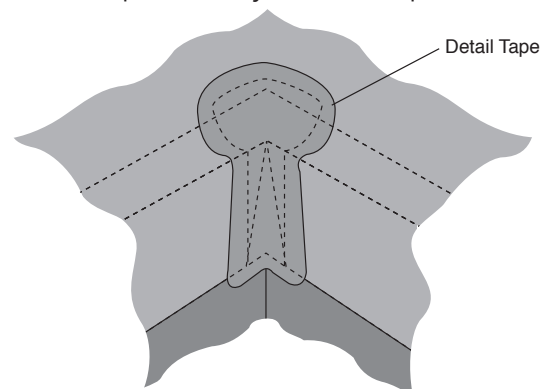
STEP 3

Cut Butynol® sheet to fit into corners.



STEP 4

Cover corner point with layer of detail tape.

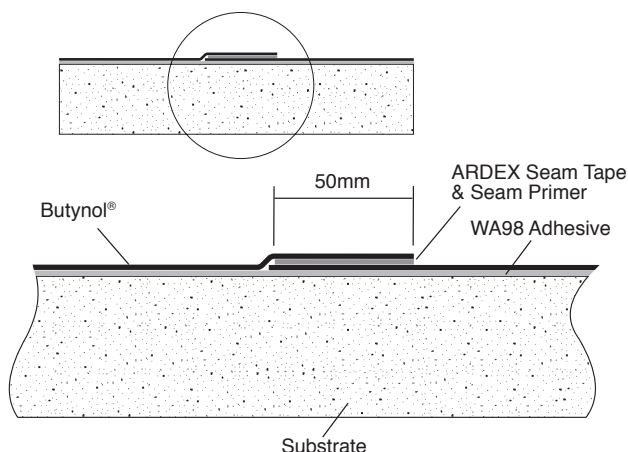


ARDEX Butynol®

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BONDING THE LAPS

Seam tape and seam primer must be used for all Butynol® joints.

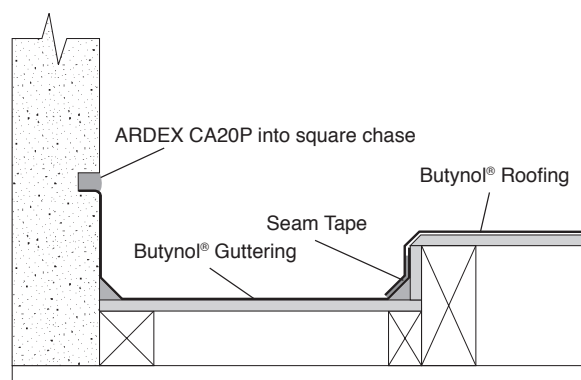


1. The top lap is positioned and the bottom sheet marked to indicate the edge of the top sheet.
2. The top sheet is folded back.
3. The ARDEX Seam Primer is then applied to the Butynol® in the area marked on the bottom sheet and 50mm in from the edge on the top sheet. The ARDEX Seam Primer is applied 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.

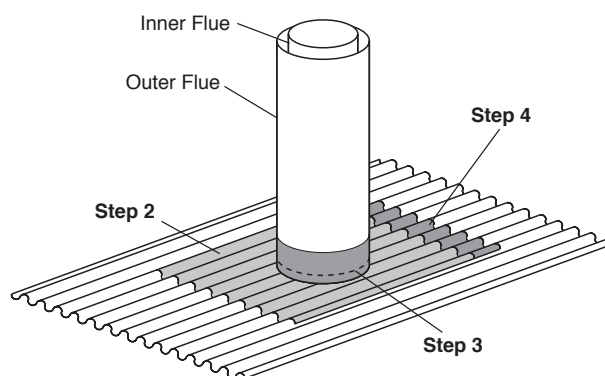
FORMING LAPS FOR GUTTERS

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.



FLUE FLASHING



Step 1

Measure Butynol® to suit size of pipe. Cut a smooth round hole at least 20mm smaller than diameter at flue penetration. Refer to table 21 of E2/AS1.

Step 2

Fix Butynol® Flashing onto roofing with WA 98 adhesive ensuring membrane is relaxed into roofing profile.

Step 3

Apply collar of Detail Tape sealed with Seam Primer onto 20mm Butynol® upstand.

Step 4

Apply flashing strip of Detail Tape sealed with Seam Primer onto Butynol® top edge and roofing ensuring feather edge is on the upside.

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.

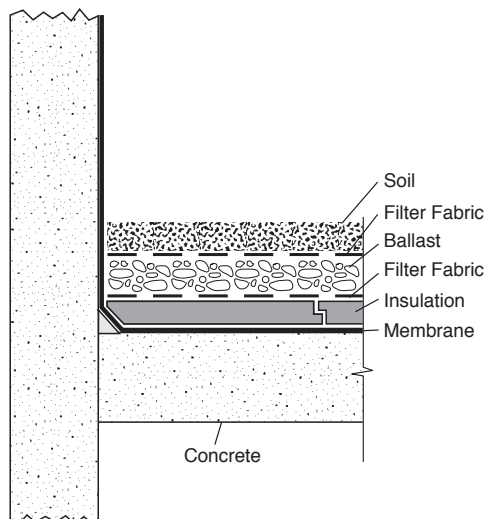
If possible a water test should be carried out prior to the application of ballast.

Note: Minimum pitch 2.0° to comply.

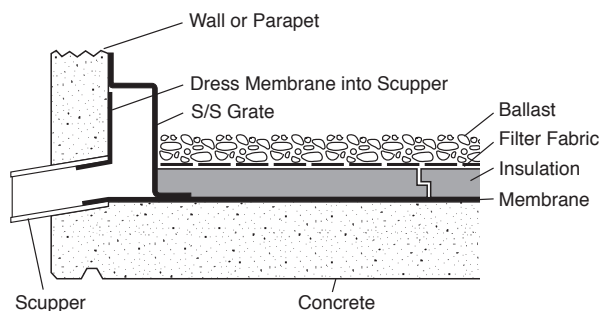
Refer NZBC Clause E2/AS1 External Moisture 8.5.1 (a).

Butynol® can be laid with zero pitch if compliance can be obtained. Lap may be welded in factory or on site if required.

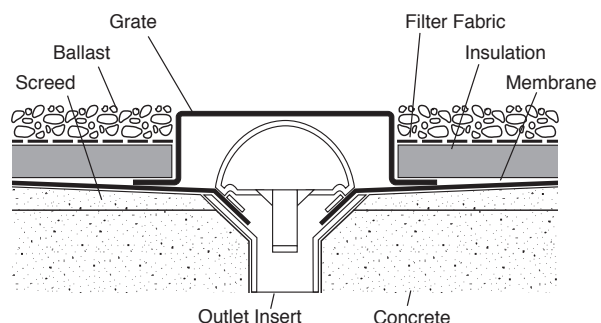
TYPICAL BALLASTED/GARDEN ROOF DETAIL



SCUPPER ROOF OUTLET

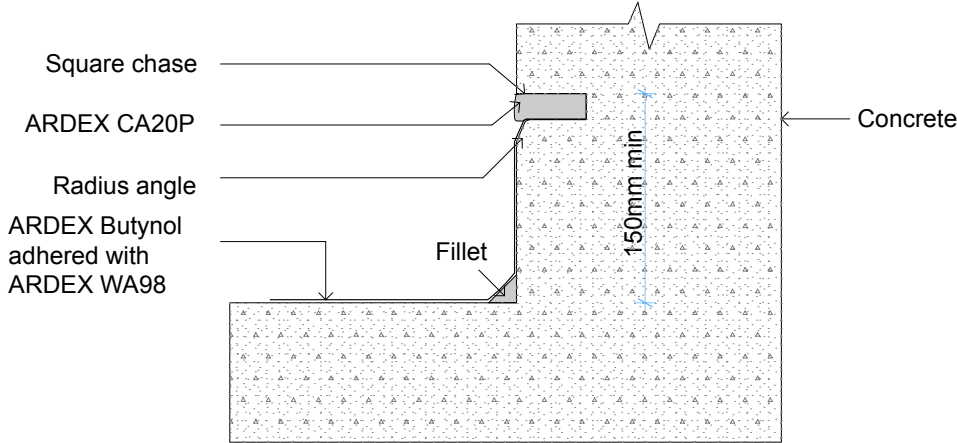



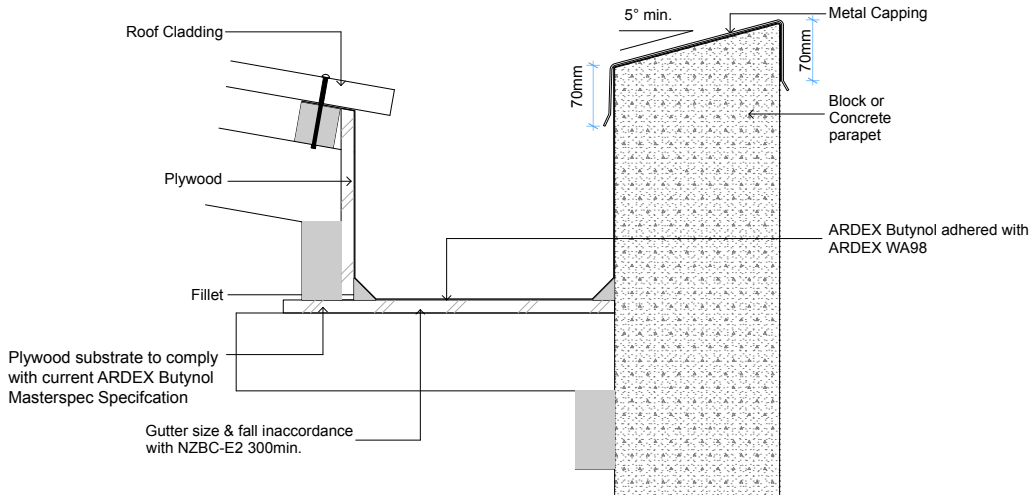

SCUPPER ROOF OUTLET & GRAVEL RETAINER

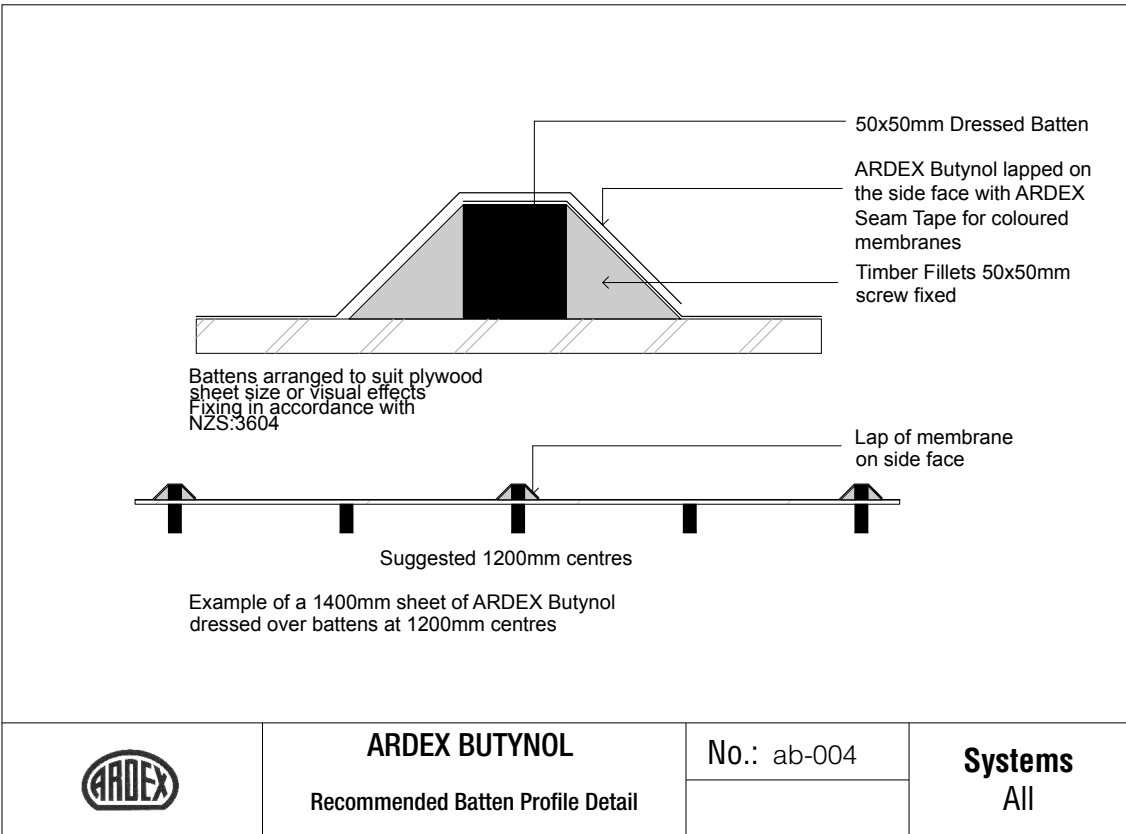
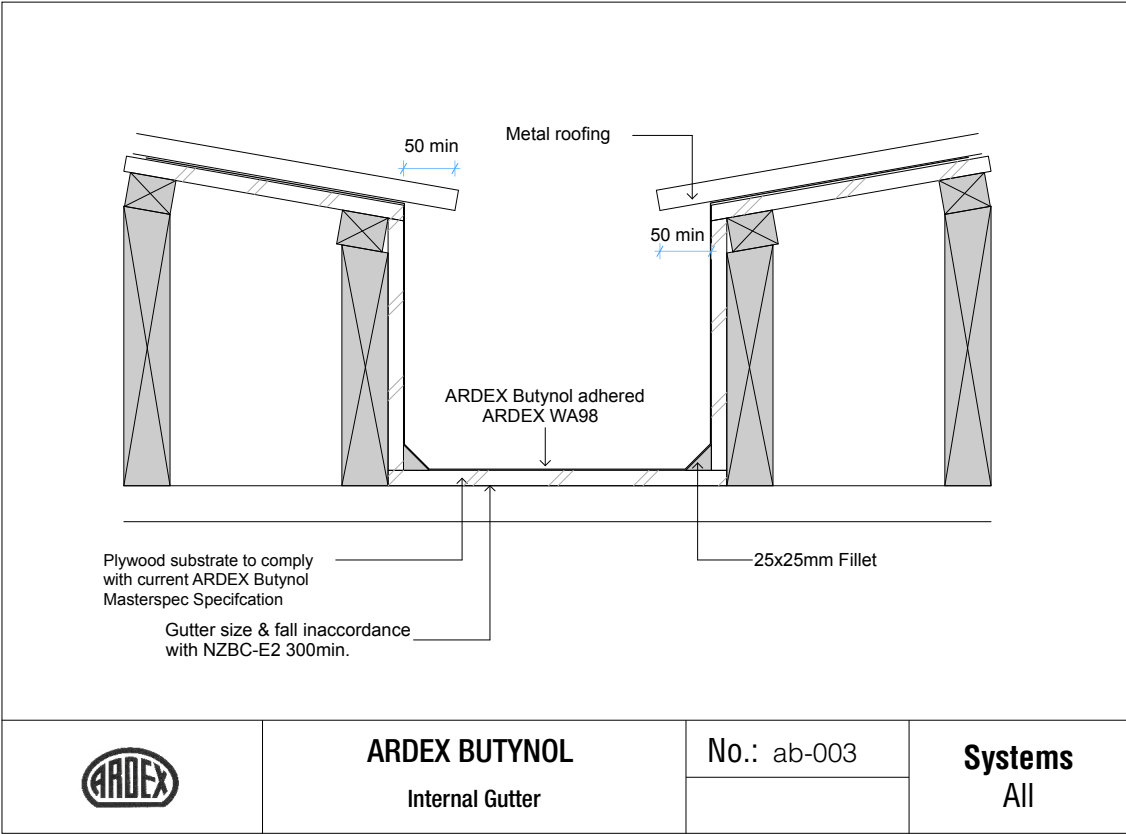


ARDEX Butynol®

BRANZ Appraised, E2/AS1 Acceptable Solution

 <p>Square chase</p> <p>ARDEX CA20P</p> <p>Radius angle</p> <p>ARDEX Butynol adhered with ARDEX WA98</p> <p>Fillet</p> <p>150mm min</p> <p>Concrete</p> <p>ARDEX Butynol is adhered with ARDEX WA98 Adhesive into square chase and finished with ARDEX CA20P Sealant</p>			
	ARDEX BUTYNOL Flashing into Concrete Walls	No.: ab-001	Systems All

 <p>Roof Cladding</p> <p>Plywood</p> <p>Fillet</p> <p>Plywood substrate to comply with current ARDEX Butynol Masterspec Specification</p> <p>Gutter size & fall in accordance with NZBC-E2 300min.</p> <p>5° min.</p> <p>70mm</p> <p>70mm</p> <p>Metal Capping</p> <p>Block or Concrete parapet</p> <p>ARDEX Butynol adhered with ARDEX WA98</p>			
	ARDEX BUTYNOL Boxed Gutter and Parapet Downturn	No.: ab-002	Systems All



ARDEX Butynol®

BRANZ Appraised, E2/AS1 Acceptable Solution

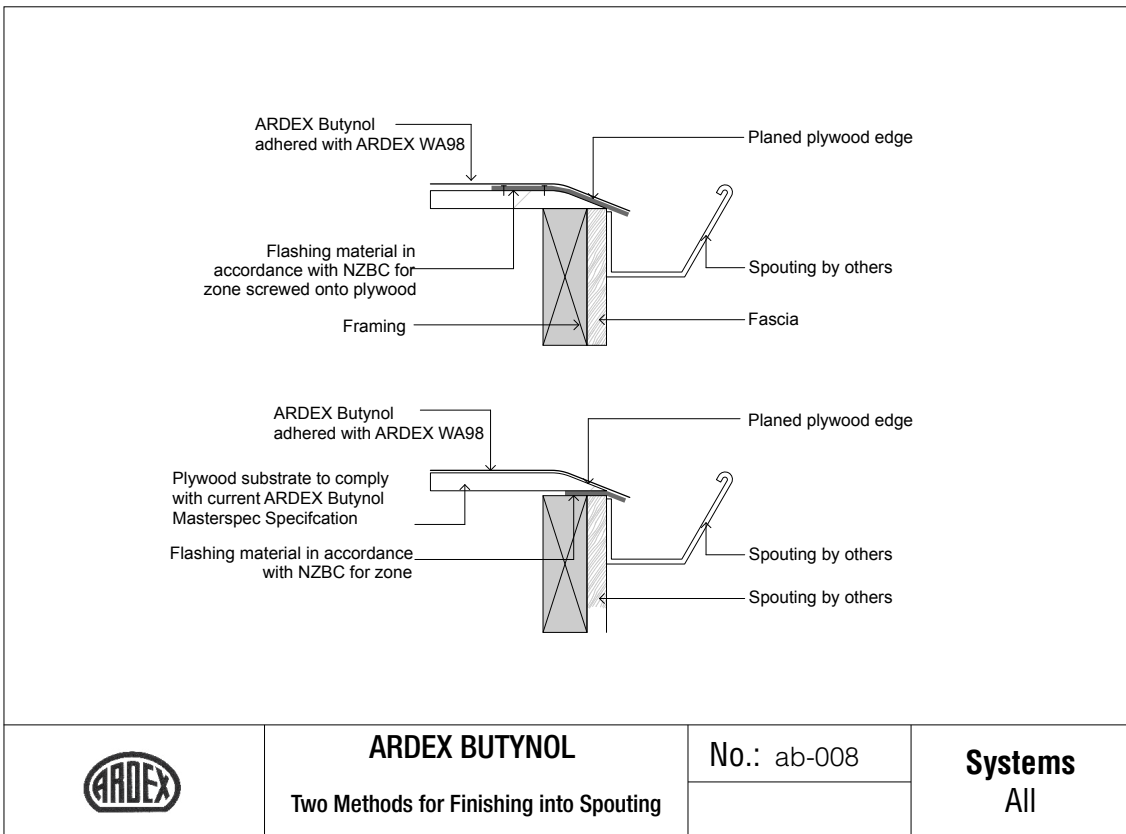
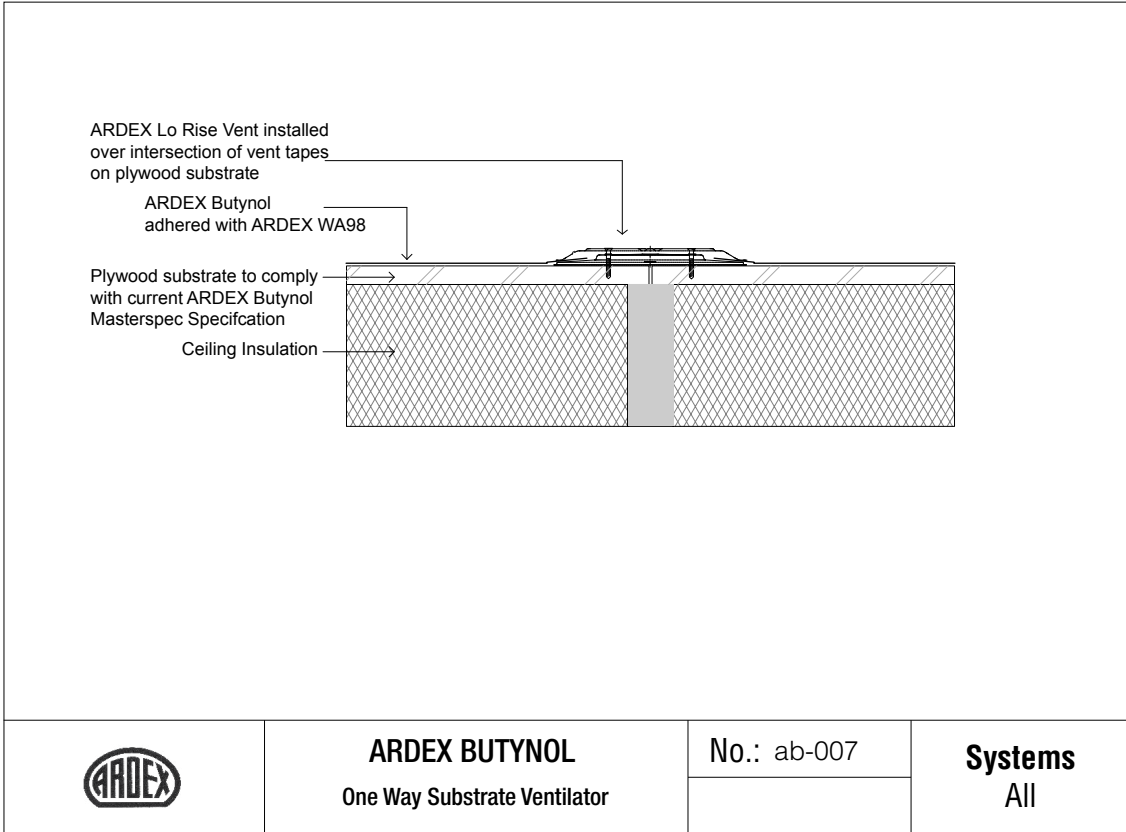
Without cutting ARDEX Butynol simply fold a 'pig's ear' corner as shown. The angle fold should be behind the main sheet.

NOTE: Fillets must be used on all internal corners

	ARDEX BUTYNOL Internal Corners	No.: ab-005	Systems All

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

	ARDEX BUTYNOL Taping Substrate Sheets	No.: ab-006	Systems All



ARDEX Butynol®

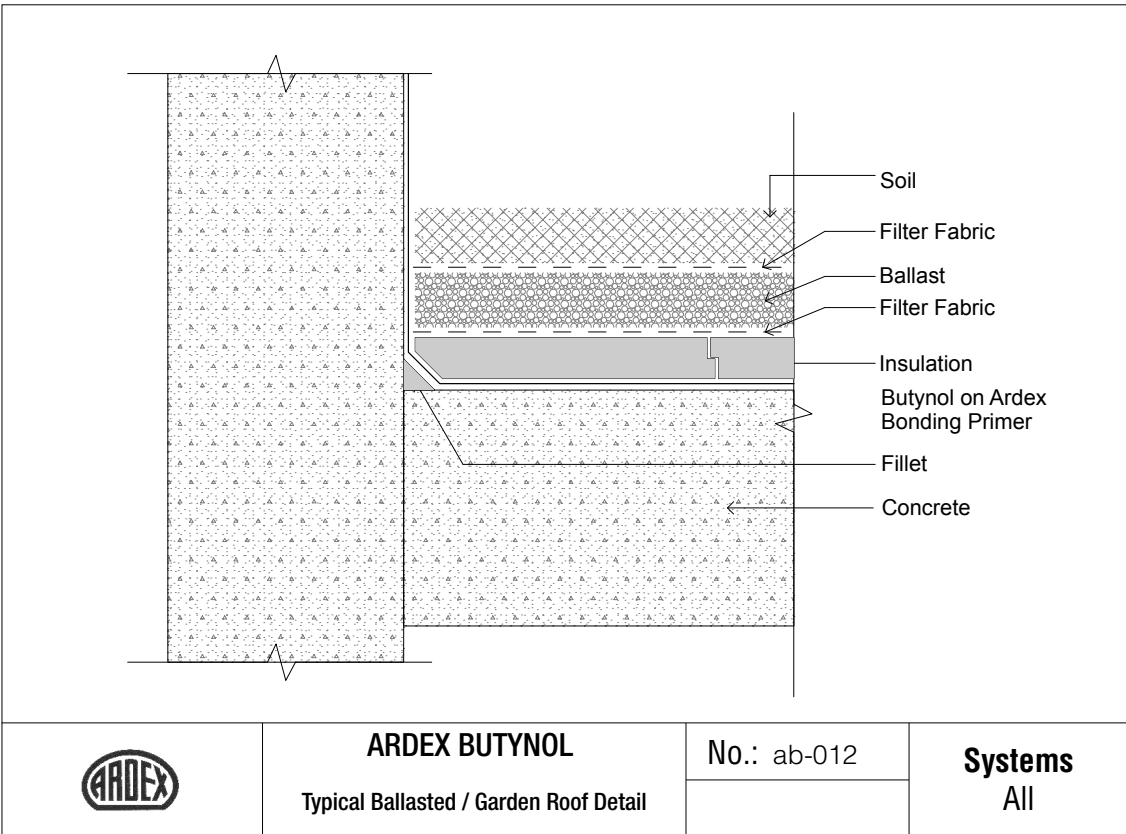
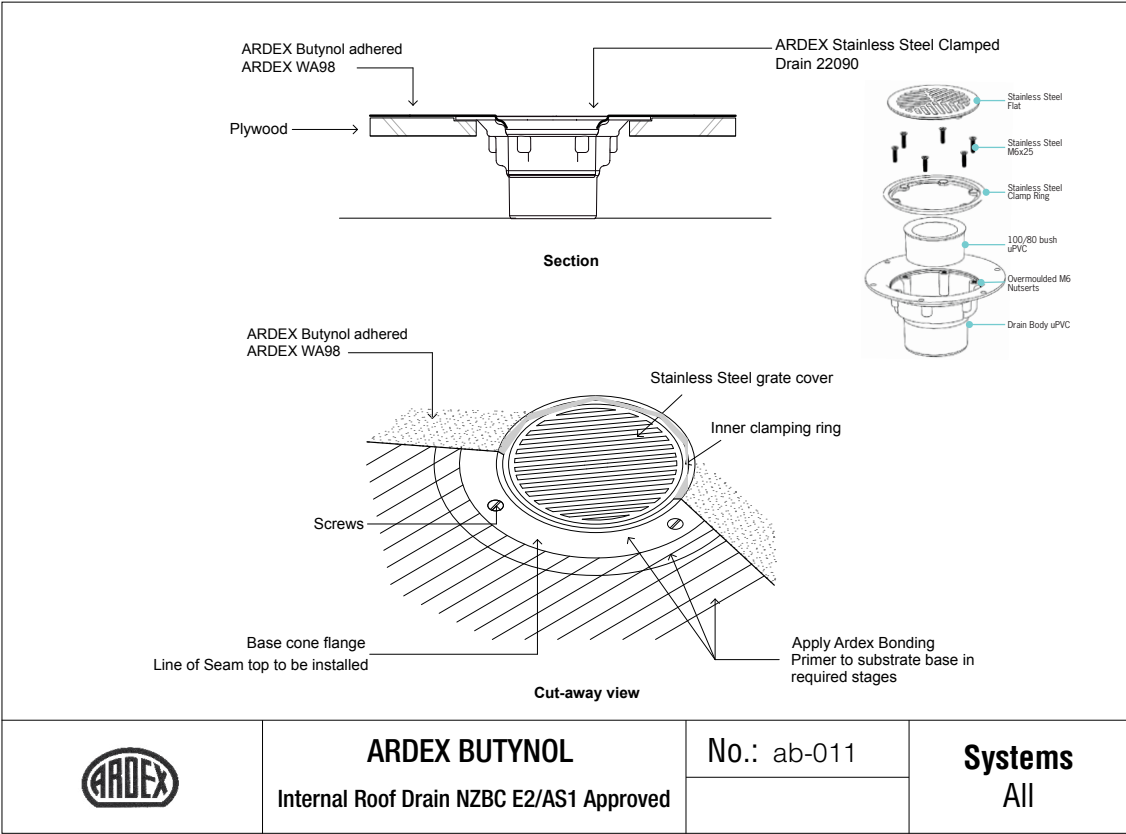
BRANZ Appraised, E2/AS1 Acceptable Solution

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

	ARDEX BUTYNOL Roofing penetration In Membrane	No.: ab-009	Systems All

NOTE: Z = variable according to windzone

	ARDEX BUTYNOL Scupper Outlet	No.: ab-010	Systems All



ARDEX Butynol®

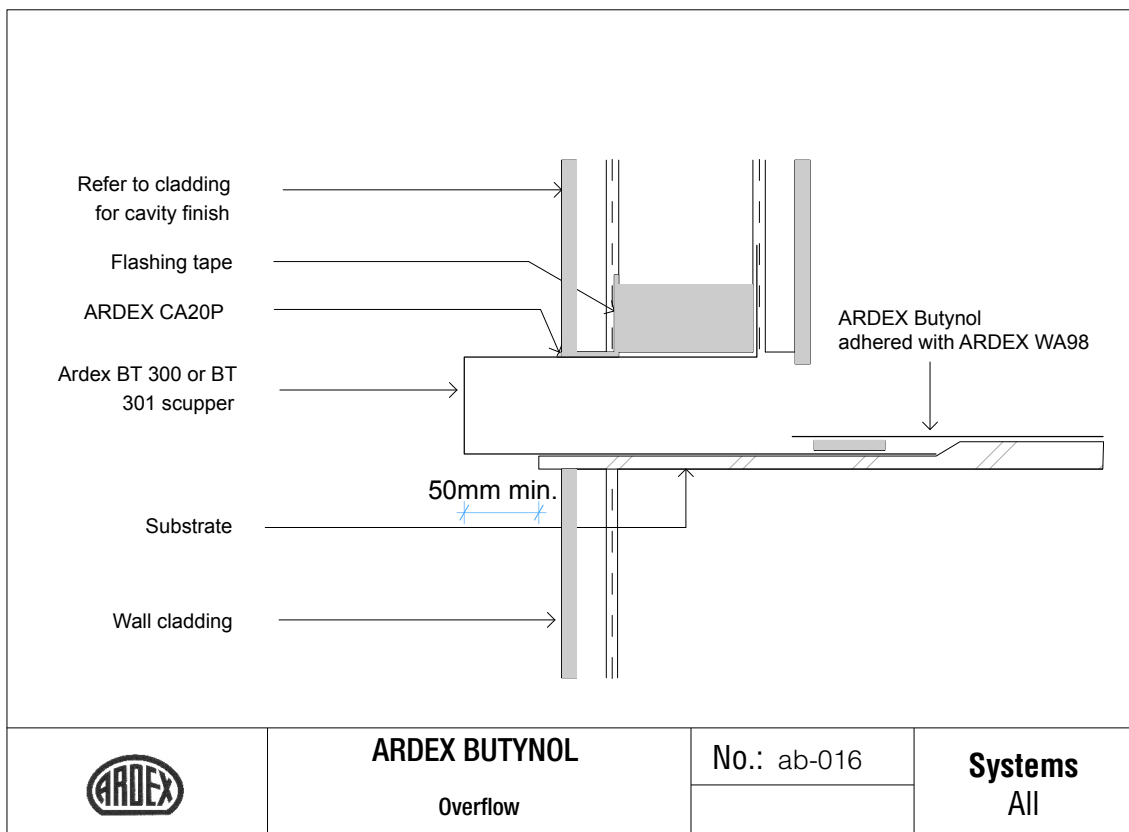
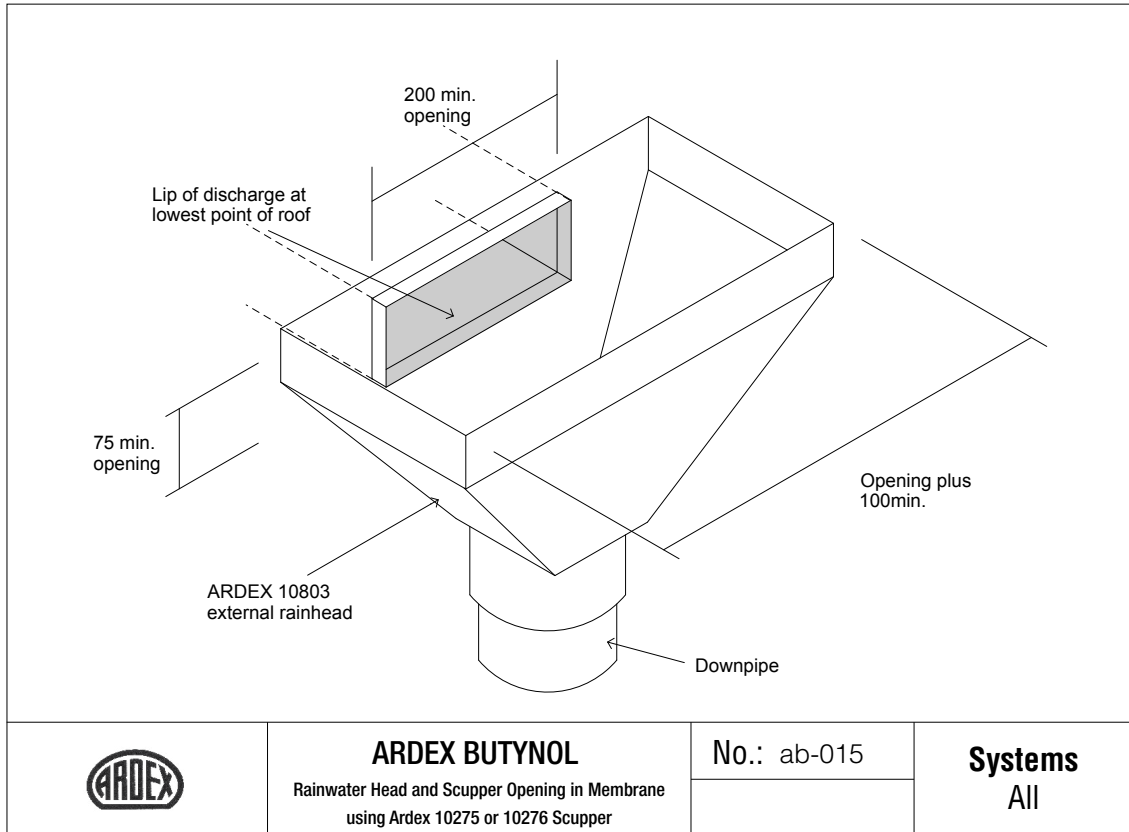
BRANZ Appraised, E2/AS1 Acceptable Solution

Labels: Wall or Parapet, Dress Membrane into Scupper, S/S Grate, Ballast, Filter Fabric, Insulation, Butynol on Ardex Bonding Primer, Concrete, Scupper

	ARDEX BUTYNOL Scupper Roof Outlet	No.: ab-013	Systems All

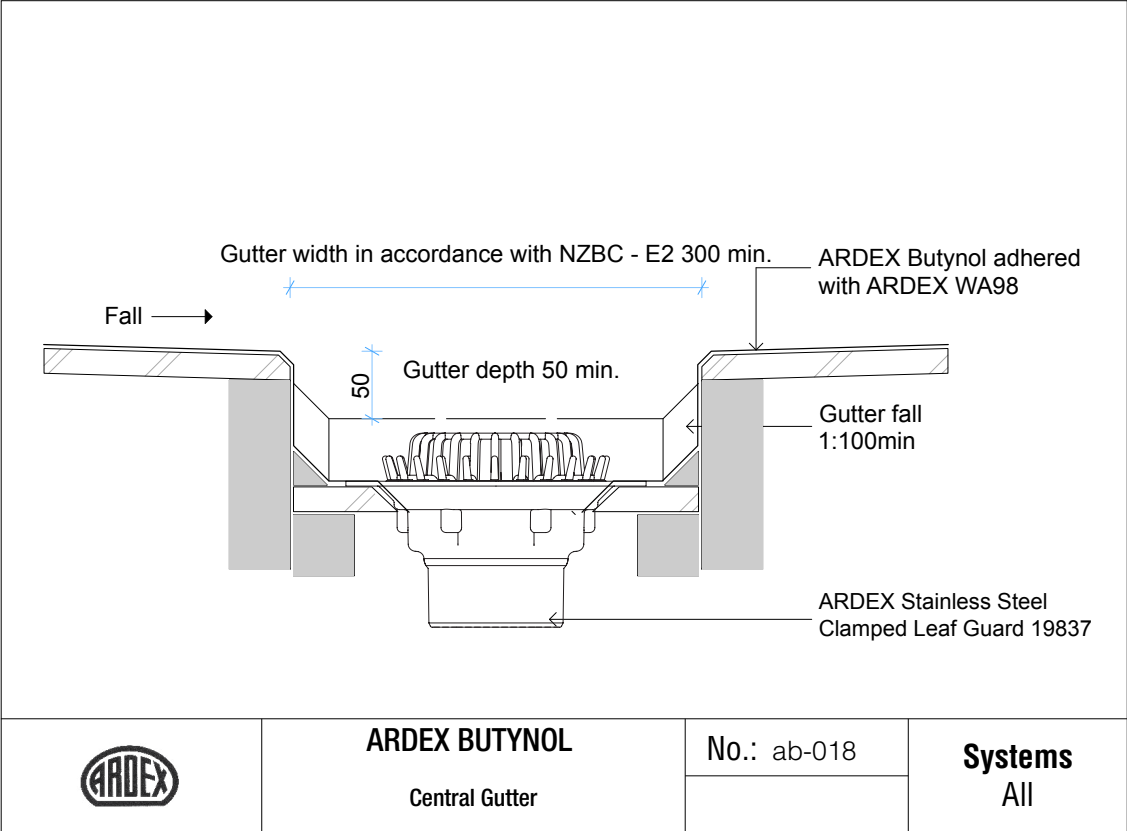
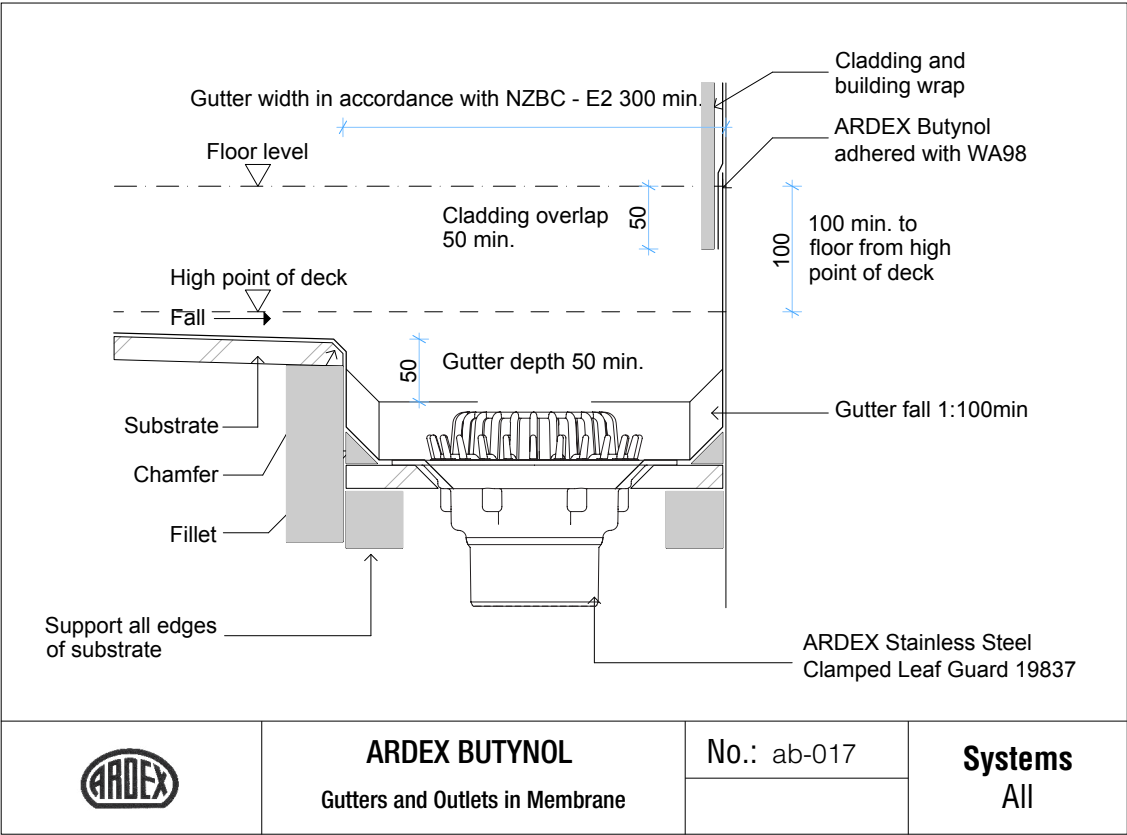
Labels: Grate, Ballast, Filter Fabric, Insulation, Butynol on Ardex Bonding Primer, Screed, Concrete, Outlet Insert

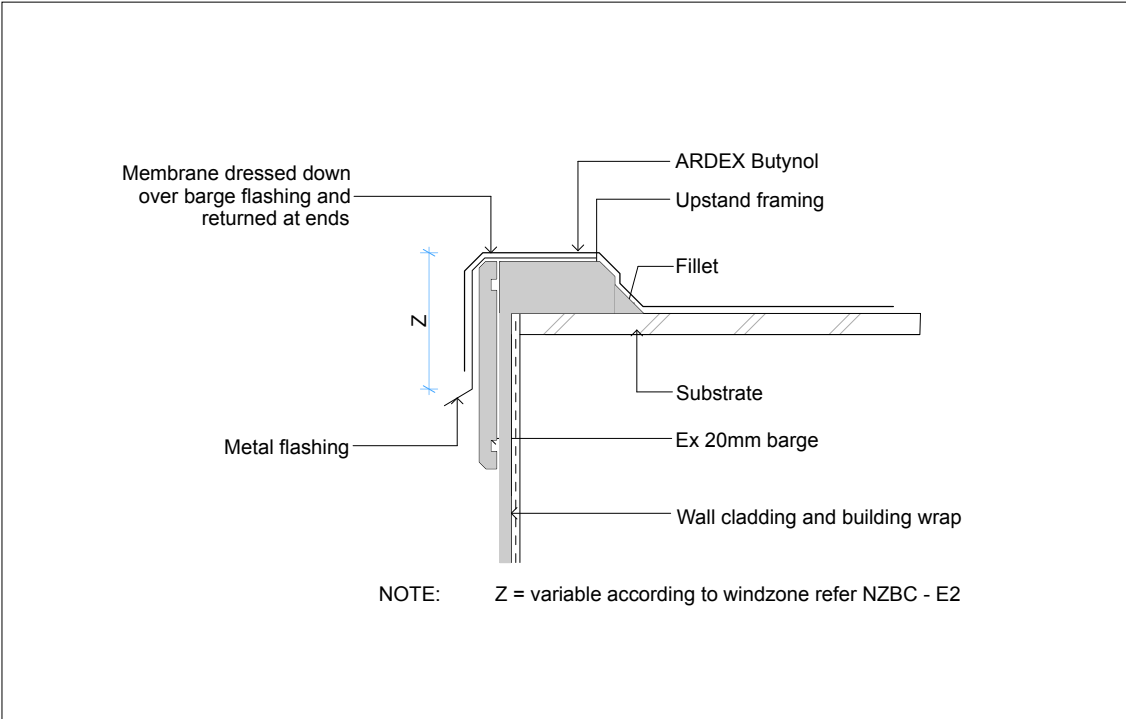
	ARDEX BUTYNOL Scupper Roof Outlet + Gravel Retainer	No.: ab-014	Systems All




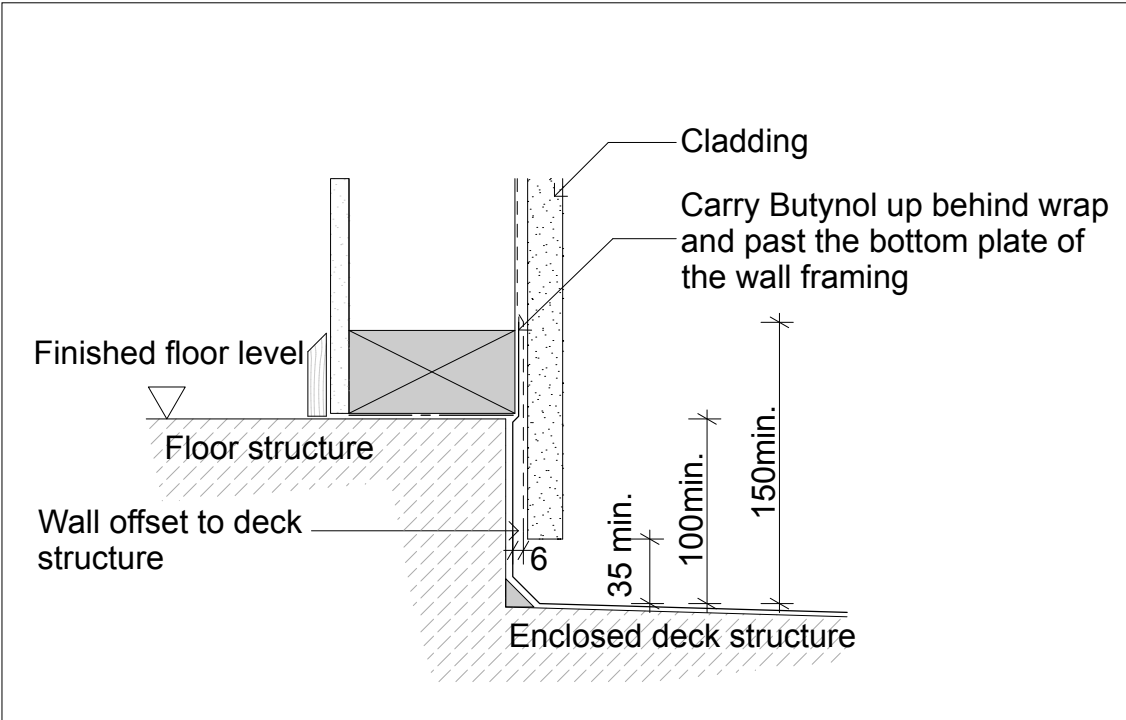
ARDEX Butynol®


BRANZ Appraised, E2/AS1 Acceptable Solution





	ARDEX BUTYNOL Eave and Verges in Butynol. E2/AS1 Figure 61	No.: ab-019	Systems All



	ARDEX BUTYNOL Direct fix Threshold at Wall Eave and Verges in Butynol. E2/AS1 Figure 67	No.: ab-020	Systems All

ARDEX Butynol®

BRANZ Appraised, E2/AS1 Acceptable Solution

Cavity threshold at wall

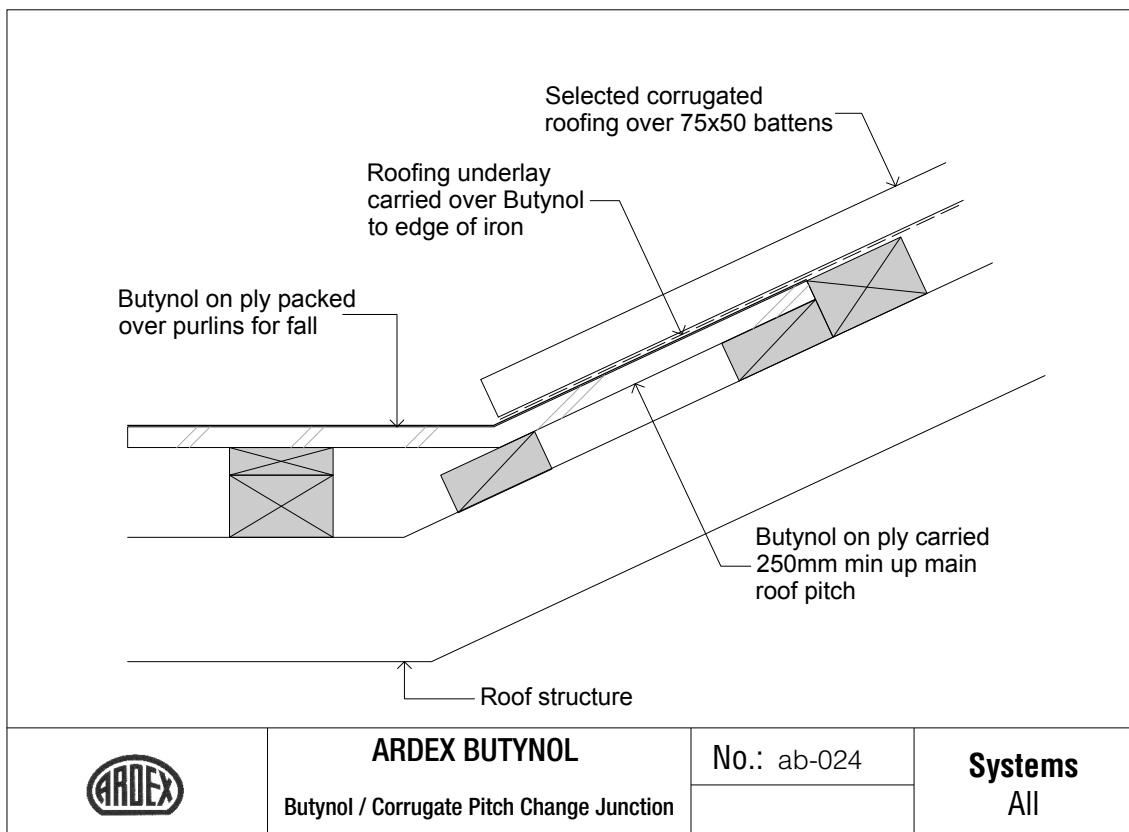
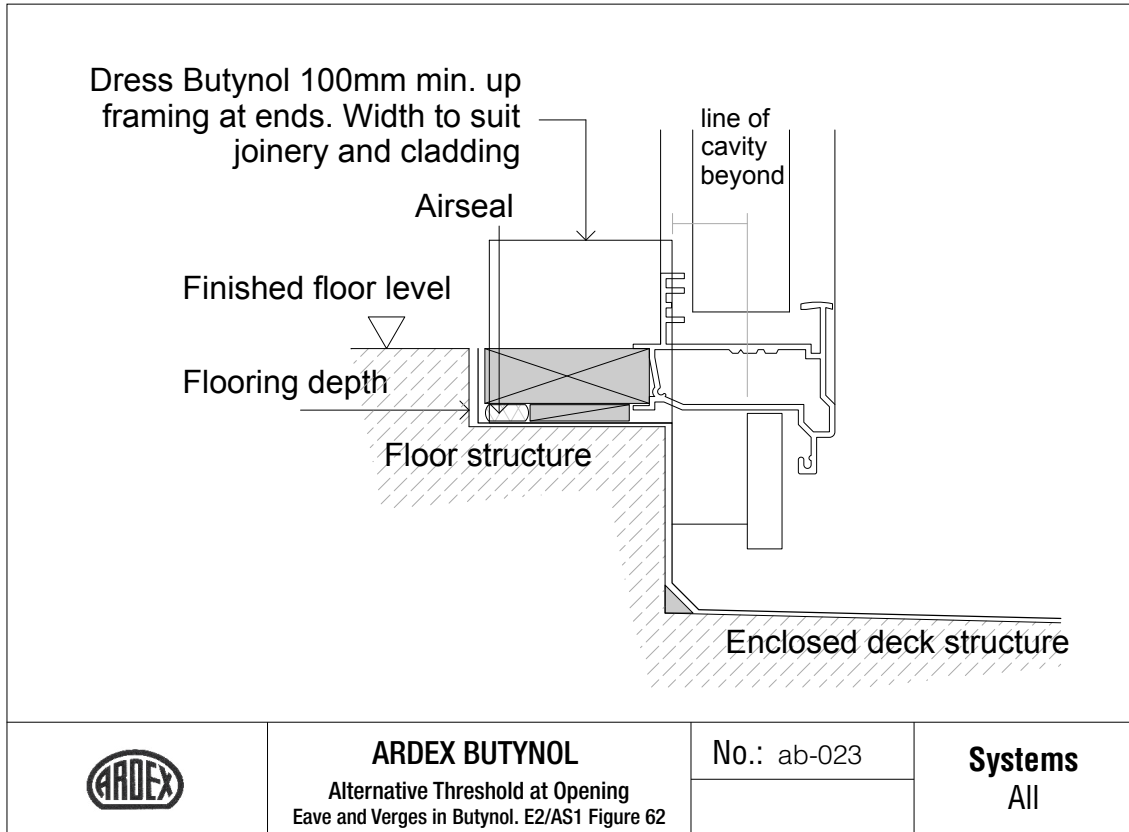
NOTE:

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

	ARDEX BUTYNOL Cavity Threshold at Wall Eave and Verges in Butynol. E2/AS1 Figure 62	No.: ab-021	Systems All

Dress Butynol 100mm min. up framing at ends. Width to suit joinery and cladding

	ARDEX BUTYNOL Direct Fix Threshold at Opening Eave and Verges in Butynol. E2/AS1 Figure 62	No.: ab-022	Systems All





ARDEX BUTYSEAL

BRANZ Appraised

E2/AS1 Acceptable Solution

Excellent resistance to atmospheric agents

Resistant to chemical attacks

High puncture resistance

Ability to be used over a wide range of substrates

Can be adhered directly to failed bitumen

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ARDEX BUTYSEAL

DESCRIPTION

ARDEX BUTYSEAL is a high performance synthetic rubber membrane based on the Genuine Butynol technology combined with a backing having polypropylene filaments welded to the underside.

SPECIFICATION

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

BUTYSEAL MATERIAL SPECIFICATIONS

Our requirements for long term warranty necessitate that BUTYSEAL meets these typical technical requirements for the membrane component: Specific Gravity to ASTM D297 1.20±0.05 Hardness IRHD to ASTM D1415 65±5 Tensile Strength to ASTM D412 8.3 MPa min Modulus at 300% elongation to ASTM D412 4.15 MPa min Elongation at break to ASTM D412 300% min Heat Ageing (7 days at 115° C) Tensile Retention to ASTM D412 70% min Elongation Retention to ASTM D412 70% min Tear Strength to ASTM D624 26kN/m Ozone Resistance to ASTM D1149 No visible cracks (7 days at 40°C in 50pphm ozone) Water Absorption to ASTM D471 1.65% (by mass) 0.72% (by volume) Water Permeability to ASTM E96-92 Vapour Flow Resistance (MNs/g) 12414 Vapour Flow Rate (g/m2d) 0.013 Note: Interesting comparable figures for water permeability are – Polythene 156, Asphalt 1830, P.V.C. 4900. K Values on 1mm Butyl sheeting K Value (Thermal Conductivity) 7.4 x 10⁻³ Cal/cm/ sec/deg C. Conductivity Data on 1mm Butyl sheeting Resistance/ m2Ω /m2 = 0.6816 on 9.3 volts.

SPECIAL FEATURES OF BUTYSEAL

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

PACKAGING

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

Gauges: ARDEX BUTYSEAL 1.5mm Total thickness including fleece 2.0mm

ADHESIVES AND SOLVENTS

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

OVERLAY TAPE

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

DETAIL TAPE

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

BUTYSEAL SEALANT

ARDEX CA20P Grey, White and Black 300ml.

EXTERNAL MOISTURE

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

FIRE RATING

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

PRODUCT WARRANTY

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

ARDEX BUTYSEAL

SUBSTRATE SPECIFICATION (Plywood)

To conform to Acceptable Solution E2/AS1 plywood shall be either a minimum of 17 mm complying with AS/NZS 2269, or at least CD Structural Grade plywood with the sanded C face upwards, and H3.2 with Waterborne CCA treatment and kiln dried after treatment. Plywood panels shall be laid with staggered joints (brick bond), the edge of sheets shall be supported with dwangs or framing, unless a structurally tested tongue-in-groove edge provides equivalent support. The maximum recommended span in E2/AS1 is 400mm in each direction. However specific design may allow 17.5mm plywood or greater to be laid on 400mm purlins with nogs or dwangs at 600mm or even 1200mm centres. Plywood shall be laid with the face grain at right angles to the supports. A 20mm triangular fillet shall be used at the base of any 90° upstand. External edges shall be chamfered with a minimum radius of 5mm. Plywood shall be fixed with 10g x 50mm stainless steel countersunk head screws, eg Hylton Parker No 24639 or No 12923 for Steel Purlins, with 3mm gaps between all sheets, at 150mm centres on edges, and 200mm in the body of the sheets. All joints in the plywood and junctions of plywood with other materials shall have 25mm polyethylene release tape applied before application of BUTYSEAL. Closed-in construction spaces under BUTYSEAL roofs and decks shall have adequate ventilation to prevent the accumulation of moisture under BUTYSEAL. There should be a minimum gap of 20mm between the underside of the substrate and any insulation. For roof or deck areas over 40m², roof vents will be required.

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

SUBSTRATE SPECIFICATION (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm.

Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

SUBSTRATE SPECIFICATION (Concrete)

Old concrete must be clean from any contaminants prior to application. For further substrate types please consult ARDEX Technical Department. ARDEX BUTYSEAL gives the Designer or Specifier of Membrane Systems the opportunity to provide clients with a time proven waterproofing system that acts as permanent venting of the substrate, and most importantly can be applied to new substrates or over existing membrane systems, avoiding excessive cost and disruption to the client normally associated with such an exercise. ARDEX BUTYSEAL assists in ventilating substrates permanently by allowing moisture drawn from the substrate to dissipate through the fibre backing of the membrane to perimeter flashings, or to strategically positioned Vapour Release Vents. ARDEX BUTYSEAL with its fibre backing has high resistance to mechanical damage, puncture and tear.

The fibre backing allows the membrane to take up minor undulations in the substrate, particularly useful when applied over existing membrane systems. ARDEX BUTYSEAL may be applied over various substrates such as built-up roof systems, malthoid, liquid membranes and earth formed dams. Substrate bonding is achieved with a variety of specially developed adhesives. ARDEX BUTYSEAL can be applied to XPS using suitable adhesives. Contact ARDEX for details. ARDEX BUTYSEAL can be applied onto Polyurethane Foams, providing an instantly suitable substrate with insulation properties. Consult ARDEX for details.

ROOF VENTILATION

The most important precaution to observe with low slope roofs is that no construction moisture is enclosed. Low slope or flat roof structures are generally slow drying because of their impermeable cladding. All timbers should be below 20% moisture before being enclosed.

No amount of ventilation will cope with moisture problems created by drying timbers.

If there is a reason to believe that there is moisture trapped in the roof structure ARDEX can provide our standard one way substrate ventilators or our lo rise one way ventilators to provide a better visual appearance.

Soffit ventilation is the most effective way to provide effective roof cavity ventilation. Careful placement of the soffit ventilation to avoid gutters etc, will provide a natural airflow as well as cooling to a low slope membrane clad roof.

Closed-in construction spaces under Butynol® roofs and decks shall have adequate ventilation to prevent the

ARDEX BUTYSEAL

ARCHITECTURAL SPECIFICATIONS

1. Introduction

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

2. Scope

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

3. Contractors

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

4. Workmanship

When requested, the roofing contractors shall supply the main contractor with written warranties covering the waterproofing properties of the rubber membrane and joining tapes etc., along with their 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 Lap tapes and other accessories as specified by the manufacturer for use with the selected membrane. Adhesives shall be as detailed in the accessories section of the manual.

6. Acceptable Substrates

• Structural concrete • Plywood • Modified bitumen roofs • Malthoid • Tongue and grooved or butt joined sarking • Polyurethane foams • Nuralite • Nuraply. Before applying ARDEX BUTYSEAL the substrate should be cleared of any sharp protrusions or penetrations that may risk the integrity of the rubber membrane in application. For substrates not listed, please contact ARDEX Technical services.

7. Membrane Application

1. Check that substrate is in a suitable condition as stated above. If in doubt contact your local ARDEX representative.
2. Tape any large cracks or voids with suitable width self adhesive tape. Ensure the existing membrane is fixed securely to the substrate. Any large areas that have separated from the substrate should be either removed or nailed back into place.
3. Prime the substrate if required with the selected adhesive cut back 50% with its solvent.

4. Position the membrane and allow to relax where it is to be laid, allowing for the side laps to be in the correct position for adhesive application.

5. Fold back half the sheet that is to be applied.

6. Apply ARDEX BUTYSEAL adhesive (WA98) to the substrate surface and if a contact adhesive is used to the ARDEX BUTYSEAL membrane as well. The contact adhesive (WA98) must be sprayed on both the substrate and the membrane to ensure proper adhesion.

7. Fold over and adhere working progressively towards the edge of the sheet. Wrinkles can be smoothed out with a soft bristle broom, but do not stretch the sheet.

8. Fold back other edge, adhering the other half of the sheet in the same manner as the first half.

9. Bonding the laps

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

9.2 The top sheet is folded back.

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

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

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

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

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

9.8 Roll the completed seam.

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

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

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

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

ARDEX BUTYSEAL

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

8. Maintenance

No specific maintenance is required. Annual inspection for any damage and to ensure clear gutters is recommended.

NOTE: Butynol HD is a registered Trade Mark of Ardex New Zealand Ltd.

DISCLAIMER

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them. © ARDEX New Zealand Ltd. All aforementioned products are the trade marks of ARDEX New Zealand Ltd.



ARDEX Butynol® Shingles

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ARDEX Butynol® Shingles

LAYING ARDEX BUTYNOL® DIAMOND SHINGLES

Setting Out

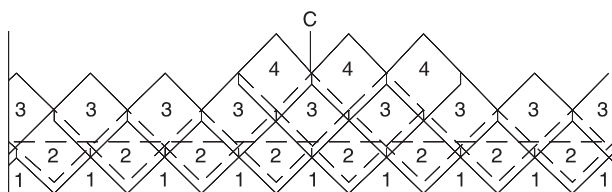
1. Mark the substrate horizontally with a chalk line 350mm up from bottom.
2. Mark a vertical line, top to bottom, and centre of the roof.
3. Mark off 300mm vertical spacings from the centre vertical line (both sides).

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 8.82m².



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.

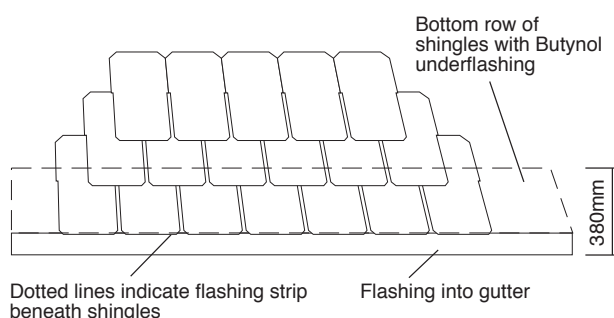
Laying

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 3.57m².

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



Standard Shingles

Approximately 580x290mm, 50% overlap of the shingle below.

Raumati Shingle

Approximately 540x270mm. A 280x75mm fillet is required to complete the seal.



ARDEX Bonding/ Seam Primer

Solvent Based Primer

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ARDEX Bonding/Seam Primer

Solvent Based Primer

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 5-8m²/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.



ARDEX CA 20 P

Multipurpose Construction Adhesive and Sealant (Butynol® Sealant)

Can be used underwater, ideal for minor repair applications

Extremely versatile - bonds a wide range of materials including metal, glass, wood, ceramics and plastic

Use to seal expansion and connection joints

Extremely flexible

High initial tack and bond strength

Neutral curing system - free of solvents, water and isocyanates

Can be over painted

Shrinkage free drying

Single component Silane Modified Polymer (SMP)

Internal and external, wall and floor

Low VOC content - meets Green Building Council of Australia Green Star IEQ-13 requirements

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

ARDEX CA 20 P

Multipurpose Construction Adhesive and Sealant (Butynol® Sealant)

DESCRIPTION

ARDEX CA 20 P has been specially designed and formulated for sealing Butynol® flashings into chases. ARDEX CA 20 P has excellent sealing and adhesive properties to Butynol® and a variety of building components.

ARDEX CA 20 P is a one component, silane modified polymer adhesive and neutral curing sealant which hardens in reaction with moisture. ARDEX CA 20 P is extremely flexible, with a high initial tack and good bond strength, making it suitable for a wide range of applications. It is ideal as a general shower, kitchen and bathroom repair adhesive and sealant for replacing tiles, fitting accessories such as soap holders and finishing off joints. Its shrinkage free drying and ability to be used internally and externally on walls and floors adds to the versatility of ARDEX CA 20 P.

It can be used in underwater applications, either applied to the immersed substrate or to the item to be fixed, making it ideal when minor repairs and alterations need to be carried out.

USE

ARDEX CA 20 P is ideal for bonding most construction materials including glass, tiles, ceramics, wood, plastic and metal. It can also be used for repairing areas of loose tiles, carpet or vinyl, for fixing decorative, acoustic and thermal insulation panels as well as decorative beams and sections, also for fixing skirting boards, cable ducts, mirrors, bathroom and shower accessories, and door handles.

ARDEX CA 20 P can be used for elastic joints between wood, plastic, metal and ceramic materials or for sealing expansion and connection joints.

ARDEX recommend a trial application to optimise the conditions for particular applications.

TO (Substrates)

Include concrete, wall panels, timber, waterproofing membranes, glazed and unglazed ceramic tiles, aluminium, plastics, metal, glass, fibreglass and polystyrene foam.

SUBSTRATE PREPARATION

In general, the substrate or joint must be clean, firm and free of dust, dirt, oil, grease, curing compounds, old adhesive residues, paints, coatings, bitumen, tar, release agents and other barrier materials.

APPLICATION

Remove aluminium seal at the bottom of the cartridge, pierce the protective membrane at the tapered nozzle, attach and trim nozzle to required size and place cartridge in applicator gun.

When using ARDEX CA 20 P at low temperatures, it is advisable to pre-warm the cartridge in warm water.

Do not apply ARDEX CA 20 P at temperatures below 5°C or above 35°C.

Apply ARDEX CA 20 P in stripes to the substrate or to the item to be fixed. Press the items firmly together within 7-10 minutes after application (at a temperature of 20°C) and before skinning of the adhesive starts. If using the product for spot fixing repairs, ensure that the maximum distance between glue points is 25 to 30cm and observe the weight of the item being fixed.

The drying time depends on the substrate, climatic conditions and the materials being fixed. Higher humidity will shorten the open time, while lower humidity will extend the open time.

Close open cartridges and reuse as soon as possible. Note: Always remove a small layer of any skinned adhesive before reusing.

If in doubt about characteristics, carry out a trial application. Spillage can be removed when wet using a clean cloth. If the material has dried then scraping with a blade will be required.

PACKAGING

ARDEX CA 20 P is packed in a metal cartridge - 310ml net volume.

SHELF LIFE

ARDEX CA 20 P has a shelf life of not less than 12 months when stored in the original, unopened packaging, in a dry place at 23°C and 50% relative humidity.

Pay attention to the following:

ARDEX CA 20 P achieves a good bond underwater. We recommend a trial application to ensure a good bond is achieved. The long-term stability when fixed underwater may vary depending on application.

ARDEX CA 20 P can be over painted after drying with most commonly used paints; due to the vast range of paints and coatings on the market we recommend a small test area prior to proceeding.

Do not use ARDEX CA 20 P for chemical resistant applications, use ARDEX epoxy grouts.

Fixing onto fibreglass, with or without grinding the glaze, is recommended only for small repair applications,

especially in swimming pools.

SAFETY PRECAUTIONS

Use in well ventilated ares. Avoid skin and eye contact. If uncured material makes contact with the eye, flush with clean water for 15 minutes and seek medical advice.

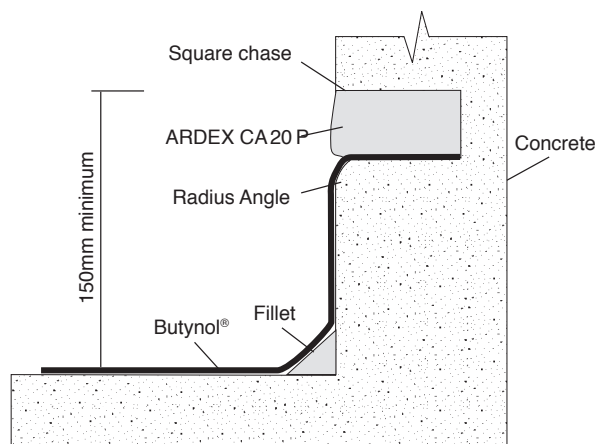
In case of skin contact, first wipe the skin with a dry cloth then wash with soap and water. If respiratory discomfort is experienced, move to an area for fresh air. If swallowed, drink plenty of water in small portions, do not induce vomiting and seek medical advice. Keep out of reach of children.

Contact ARDEX for specific applications and material safety data sheet.

TECHNICAL DATA

Material Base	Silane Modified Polymer
Colour	White paste
Specific Gravity	approx 1.45kg/litre
Application Properties (@ 23°C, 50% RH)	
Application Temperature	5°C to 35°C
Skinning/Open Time	approx 7-10 minutes
Curing Time	3-4mm/24 hours
Shrinkage	<1%
Temperature Resistance	-40°C to +90°C (short term of 15-20 minutes up to +200°C)
Practical Expansion	25%
Material Requirement	30-40ml/m
Hardness, Shore A	approx 40
Mechanical Properties	AS 4992
Shear Adhesion Strength	>2MPa
Tensile Adhesion Strength	1.0N/mm ²

FLASHING INTO CONCRETE WALLS



Butynol® is glued into square chase and finished with ARDEX CA 20 P.



ARDEX DS 60 Plus

Waterproofing Decoupling Mat

Rubber Membrane Waterproofing System

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April 2013

ARDEX DS 60 Plus

Rubber Membrane Waterproofing System

SPECIFICATION

ARDEX DS 60 Plus is made up of synthetic rubber with properties which resist ageing from heat, sunlight and ozone and is heat weldable. Polypropylene filaments are welded onto both sides of the membrane for better wetting by water based adhesives. It has excellent gas impermeability and toughness and remains flexible at low temperatures.

Laps and corners are to be heat formed and/or welded. Tiling can be done directly on the membrane after 60 minutes with many ARDEX tiling adhesives like X77, X56 STS8/E90, Quickbond/Abalastic, 2 part Optima or ABAFLEX.

DS 60 Plus is marketed by ARDEX as a warranted undertile waterproofing product using solvent free adhesives and fixed by their trained and experienced approved Applicators.

DS 60 Plus MATERIAL SPECIFICATIONS

ArDEX requirements for long term warranty necessitate that the DS 60 Plus meets these typical technical

Specific Gravity to ASTM D297	1.30±0.05
Hardness IRHD to ASTM D1415	65±5
Tensile Strength to ASTM D412	4.86 MPa min
Elongation at break to ASTM D412	300% min
Water Absorption to ASTM D471 (for 1mm Butynol®)	1.65% (by mass) 0.72% (by volume)
Water Permeability to ASTM E96-92	
Vapour Flow Resistance (for 1mm Butynol®)	12414 (MNs/g)
Vapour Flow Rate (for 1mm Butynol®)	0.013 (g/m2d)

requirements:

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): 7.4×10^{-3} Cal/cm/sec/deg C.

DS 60 Plus GAUGES

Standard 0.5mm – For undertile waterproofing

RESISTANCE

DS 60 Plus resists tearing, flex cracking, bubbling and abrasion. It is extremely strong, has a long life and is versatile.

PACKAGING

In rolls of nominal 1.4m width and 20m long. Each roll is packed in polythene wrapper trademarked DS 60 Plus.

SUBSTRATE SPECIFICATION

Plywood & Timber

Substrates must be dry when DS 60 Plus is applied. The plywood and timber substructure shall have a maximum moisture content of 20% when DS 60 Plus is adhered.

NOTE: The use of LOSP (Light Organic Solvent Preservative)

treated plywood must NOT be used under Undertile Butynol® in any circumstances or conditions.

SUBSTRATE SPECIFICATION (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm.

Strandsarking sheets shall be laid with staggered joints.(brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an ArDEX release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

OTHER SUBSTRATE TYPES

Fibre cement compressed sheet, closed cell polyurethane foam, wet wall linings i.e. Gib Aqualine, VillaBoard.

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

ADHESIVES FOR USE WITH DS 60 Plus

WPM 750 Adhesive

A specially formulated water based adhesive for most applications. plastic containers.

Catalyst

Catalyst to assist adhesion in adverse conditions.

DURABILITY

DS 60 Plus when fixed according to ARDEX instruction will meet the NZBC requirements of B2.3.1(b) 15 years. Refer BRANZ Appraisal Certificate No 727 2011.

PRODUCT WARRANTY

When laid by an approved Applicator in accordance with ARDEX's specifications, a material warranty for up to 20 years 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.

ARDEX DS 60 Plus

Rubber Membrane Waterproofing System

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 the contract or the approved Applicator.

TYPICAL ARCHITECTURAL DS 60 Plus SPECIFICATION

1. Preliminary

Refer to the Preliminary & 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 the DS 60 Plus in wet areas.

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 waterproofing experts conversant with and specialising in the supply and fixing of this materials 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 customers 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 DS 60 Plus Membrane

a. Shall be 0.5mm thick DS 60 Plus in all wet area surfaces, where membrane is to be overlaid with tiles.

6.2 Adhesives

Shall be recommended by ARDEX specially formulated for DS 60 Plus and suitable for the particular application and the relevant temperature and conditions applicable.

7. Laying of DS 60 Plus

The DS 60 Plus installer shall check the substrate before laying any membrane to ensure that the surface is completely sound, screw fixed to specifications: screw heads flush, sheets spaced to provide for thermal movement or shock.

8. Completion

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

9. Extent of Work

Observe the foregoing specification and supply and lay DS 60 Plus sheeting to all wet areas as shown and detailed in the drawing and in accordance with AS/NZS3740. Failure to comply with the above specifications will result in all warranties being null and void.

LAYING SPECIFICATION

The sub-contractor for the work called for in this trade will be a Company of Person approved by ARDEX.

The approved installer shall examine all drawings and provide for the surface to which DS 60 Plus 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.

On completion the installer 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.

INSTALLATION

Roll out ARDEX DS 60 Plus and cut to the measured length. Smooth ARDEX DS 60 Plus on contact to minimise air entrapment beneath the membrane.

Floor sheets of ARDEX DS 60 Plus must extend up the wall at least 150mm. Make sure the DS 60 Plus is laid tightly into all corners. Wall sheets of DS 60 Plus should overlap the 150mm upstand. Weld seams and laps with the a suitable hot air welding gun. Roll with a rubber roller to ensure seams and laps are secure.

Walls, internal corners & transitions

Apply the DS 60 Plus membrane 1800mm up the walls or to a height of 150mm above the shower rose. For unenclosed showers the membrane must extend a minimum of 1500mm out from the shower rose.

PROTECTION

ARDEX DS 60 Plus is not suitable as a trafficable surface.

ARDEX DS 60 Plus is compatible with undertile heating systems. For electric undertile heating, the wire must be covered by a thin screed prior to laying the membrane.

It is the responsibility of the main building contractor to ensure all sub-trades likely to be working in the vicinity of the membrane are aware that a waterproofing membrane has been installed and all care must be taken to protect the membrane from damage. The tiler must lay tiles in accordance with best practice guidelines.



EPDM Membranes

3-8	Episeal EPDM Fibre Backed Roofing
9-21	CAD Drawings



ARDEX WPM 2000EP

Episeal EPDM Roofing E2/AS1 Acceptable Solution

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

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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	±2% max
(168 hrs @ 240°F) (D1204)	
Ozone Resistance	No cracks at 7x
(168 hrs/100PPHM/104°F/40°C	magnification
50% ext.) (D1149)	
Water Absorption	+2/-2% max
(168 hrs @ 70°C) (D471)	
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 46.5m² (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 40m², 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 (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm.

Strandsarking sheets shall be laid with staggered joints (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex

release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

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

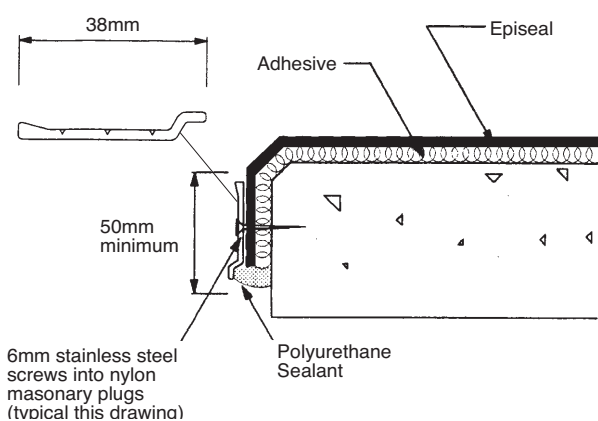
Before applying Ardex Episeal the substrate should be cleared of any sharp protrusions or penetrations that may risk the integrity of the rubber membrane in application.

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.

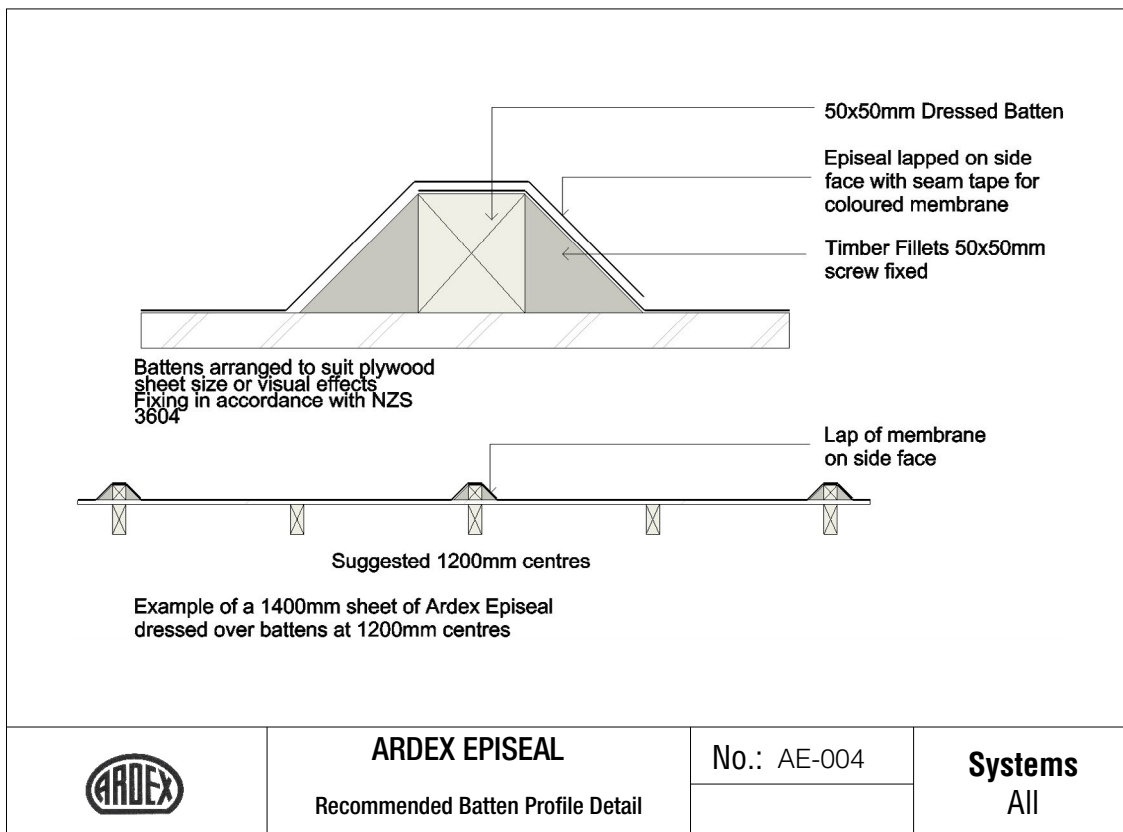
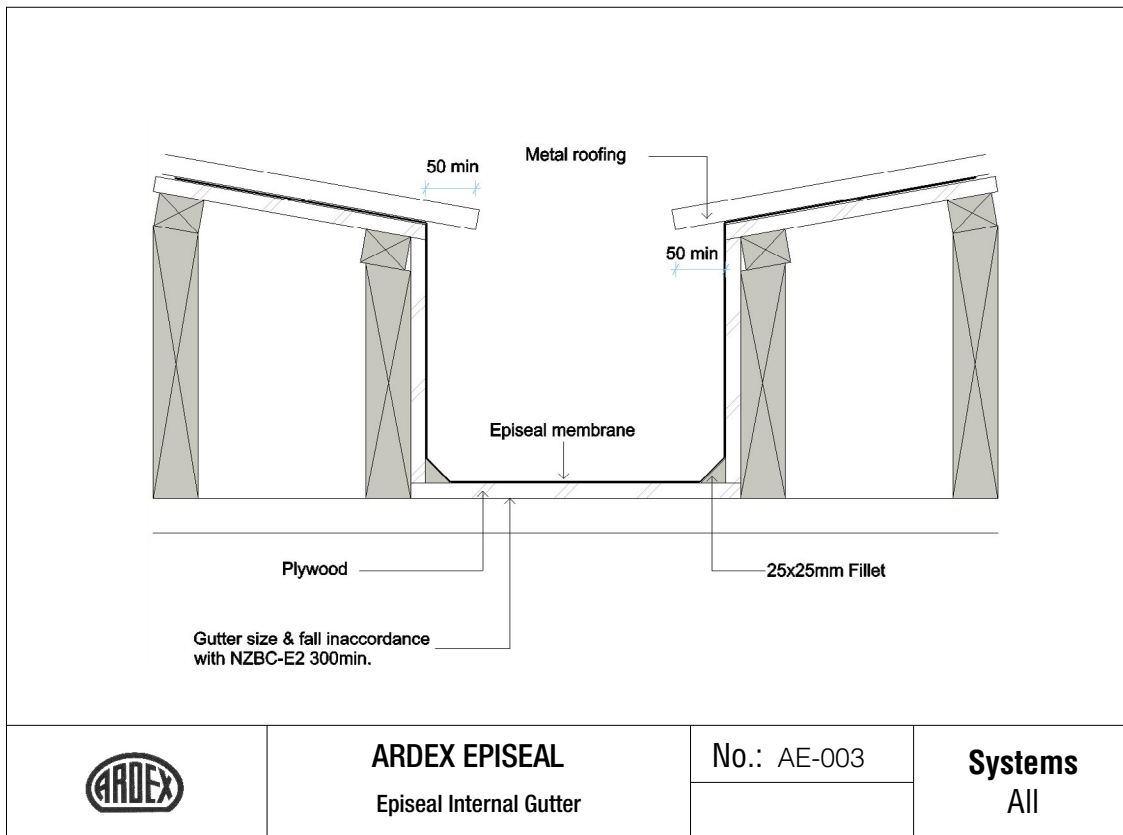
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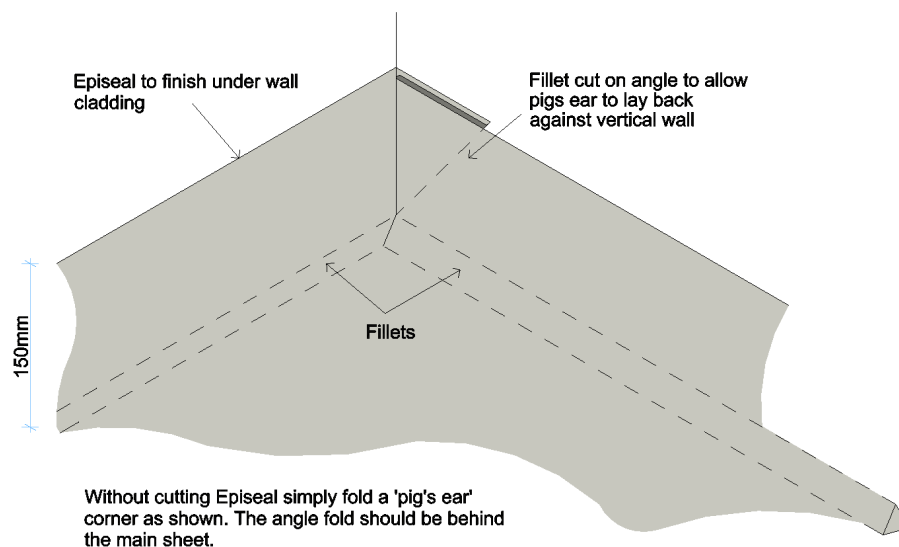




Drawings Version 1.1

Episeal EA-001 > EA023





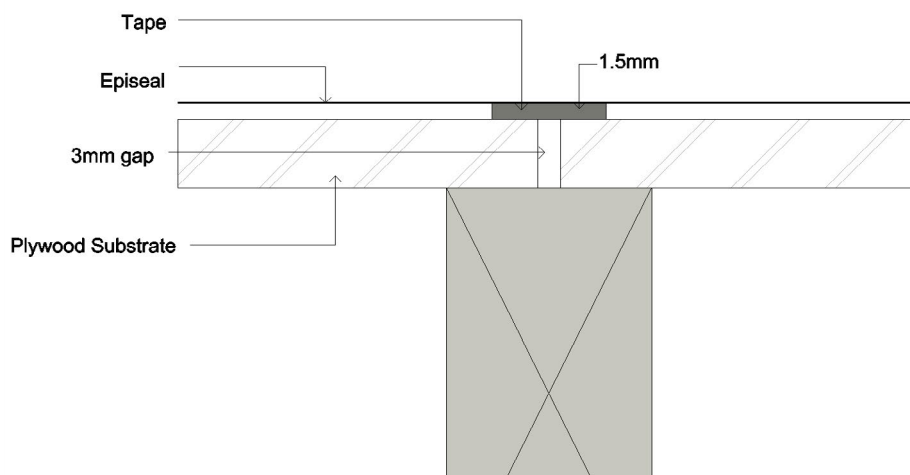
NOTE: Fillets must be used on all internal corners



ARDEX EPISEAL
Episeal Internal Corners

No.: AE-005

Systems
All



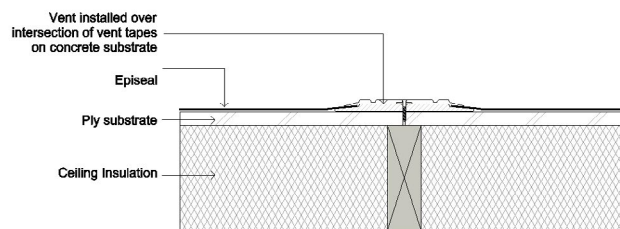
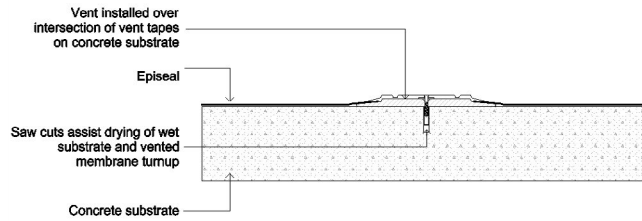
All joints between substrate sheets of Ply should be taped to prevent stressing of the Episeal in case of marked timber movement.



ARDEX EPISEAL
Taping Substrate Sheets

No.: AE-006

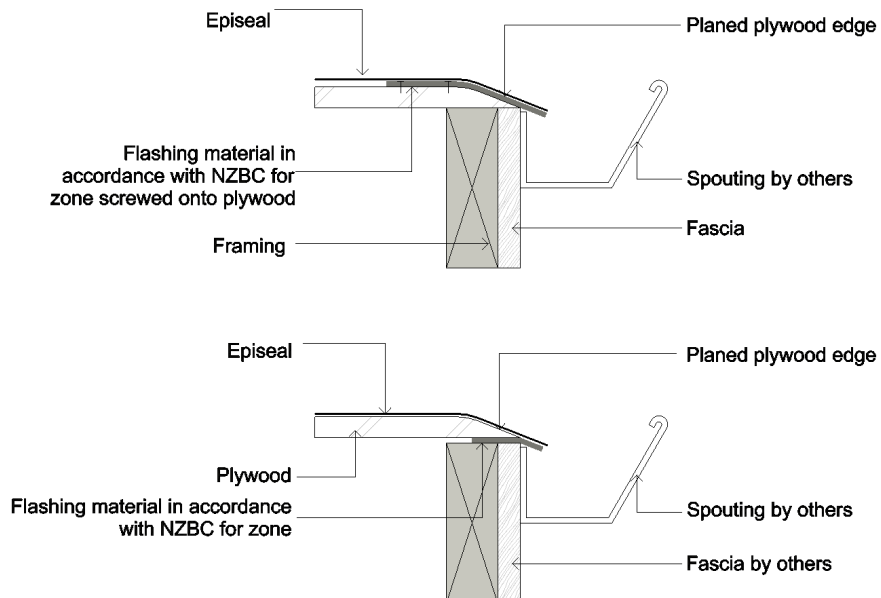
Systems
All



ARDEX EPISEAL
One Way Substrate Ventilator

No.: AE-007

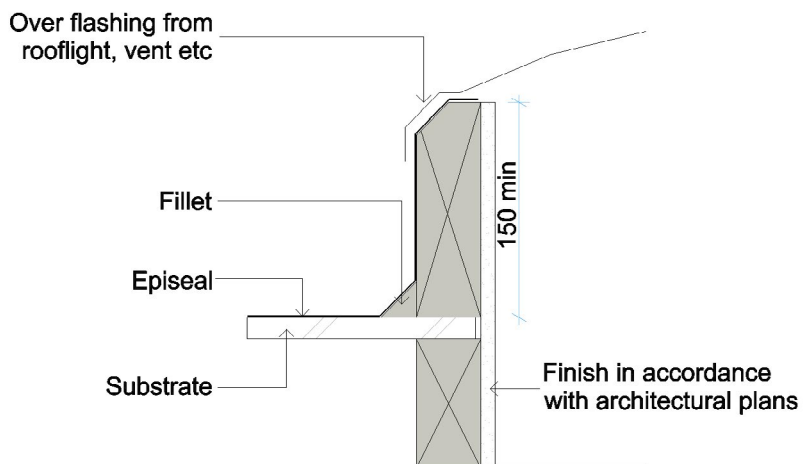
Systems
All



ARDEX EPISEAL
Two Methods for Finishing into Spouting

No.: AE-008

Systems
All



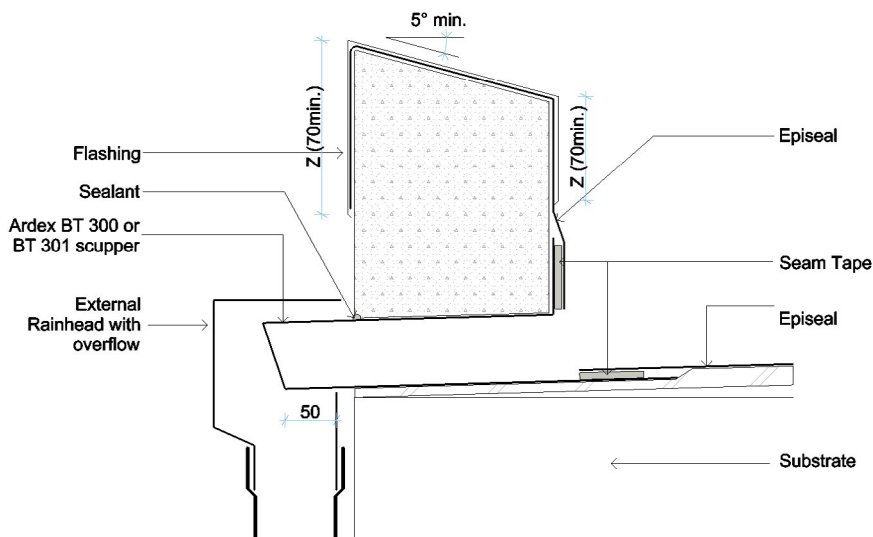
NOTE: 1 For maximum penetration size of 1200x1200mm
2 External corners to be formed as shown



ARDEX EPISEAL
Roofing penetration in Membrane

No.: AE-009

Systems
All



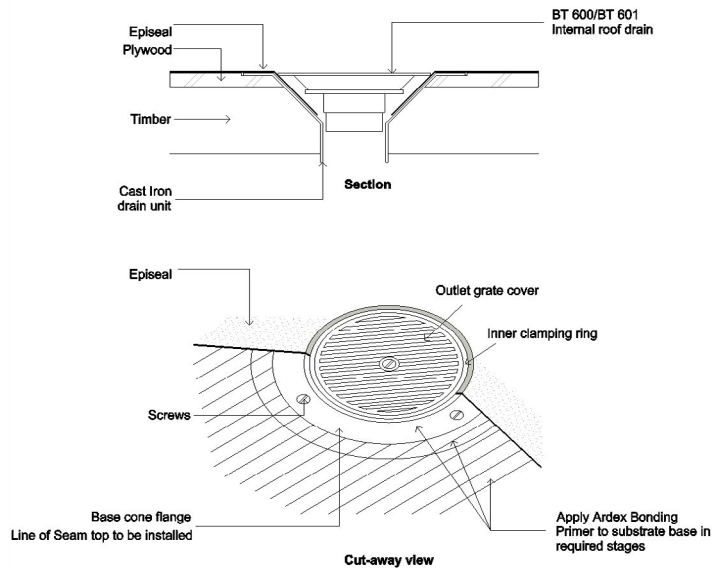
NOTE: Z = variable according to windzone



ARDEX EPISEAL
Episeal Scupper Outlet

No.: AE-010

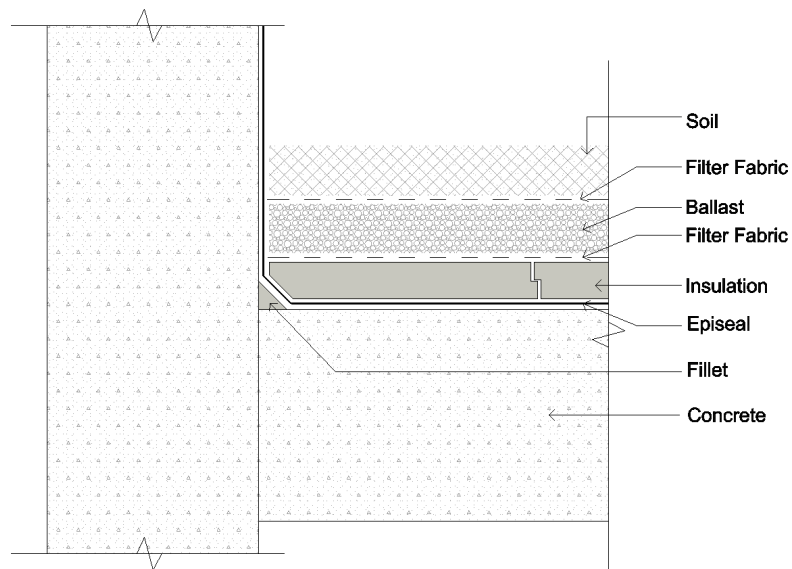
Systems
All



ARDEX EPISEAL
Episeal Internal Roof Drain
NZBC E2/ AS1 Approved

No.: AE-011

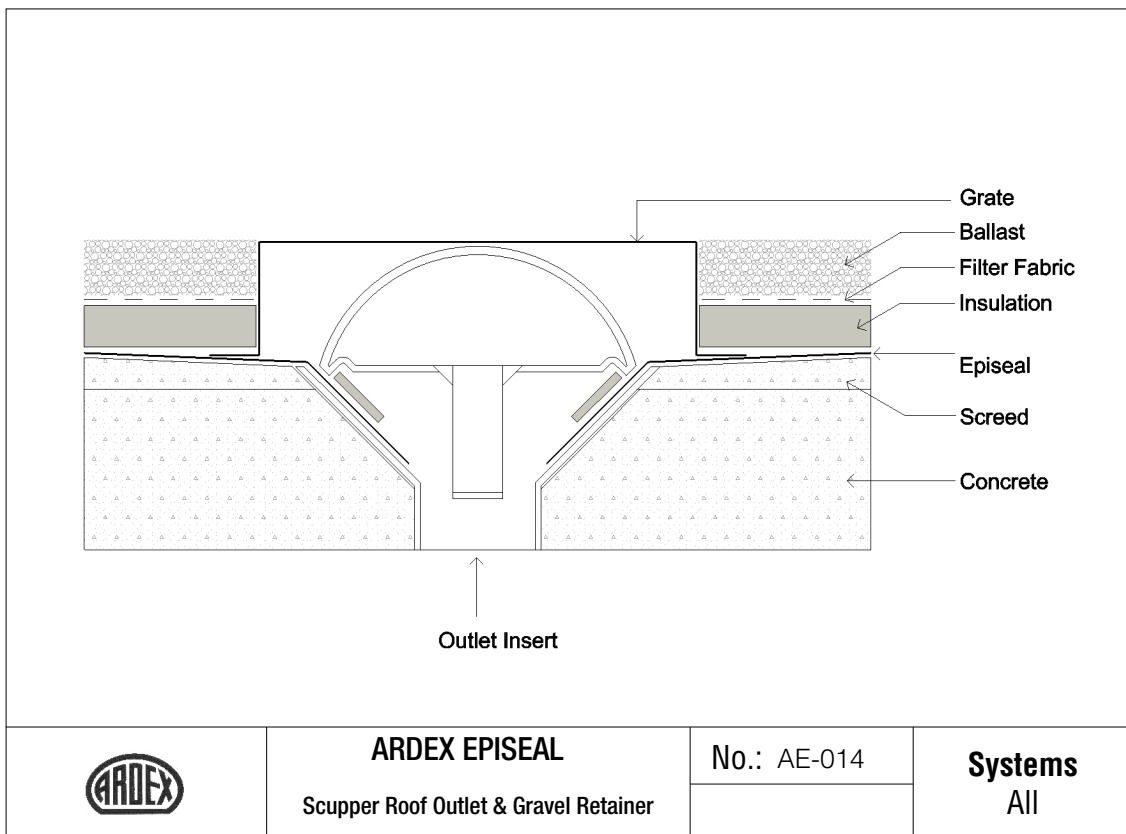
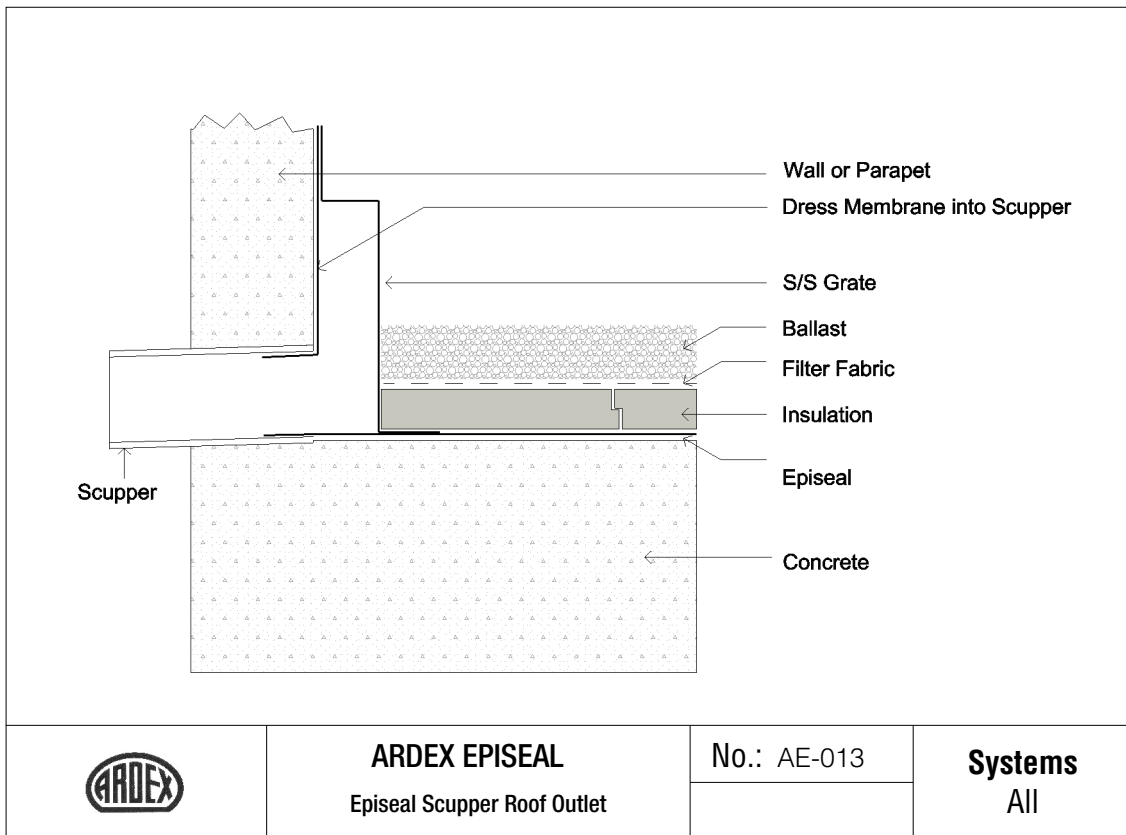
Systems
All

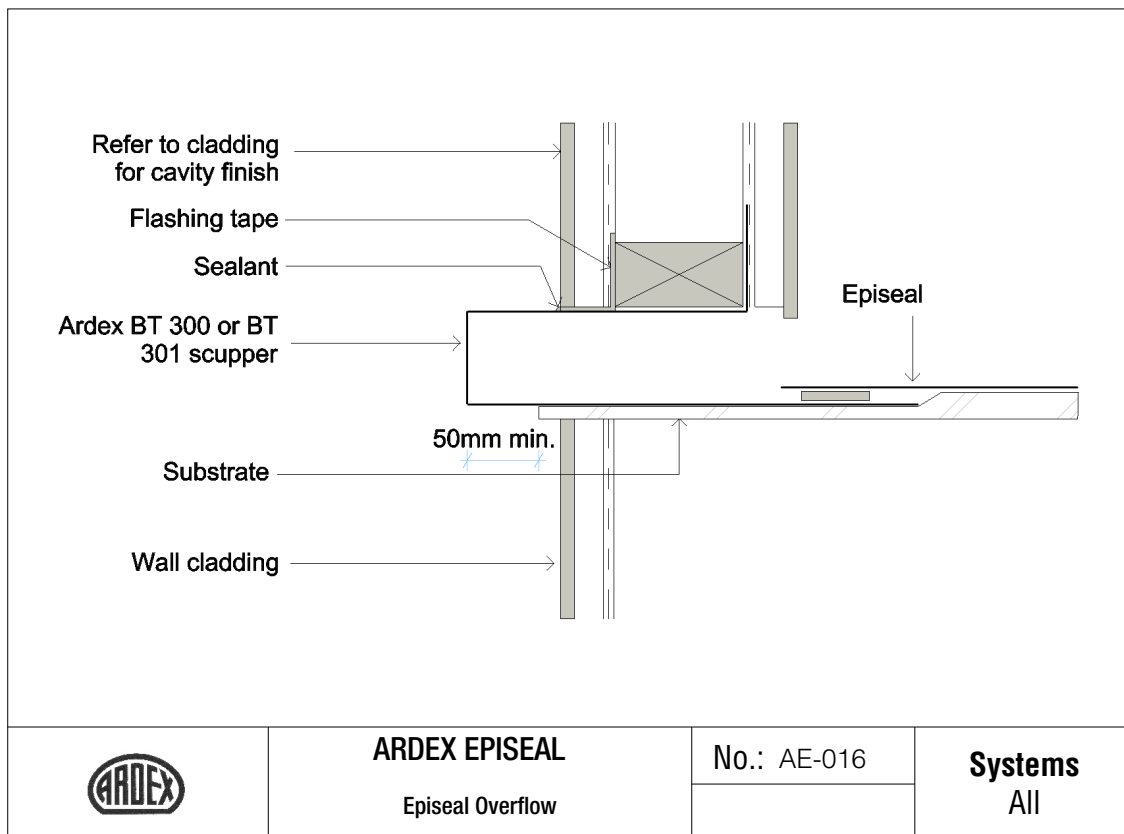
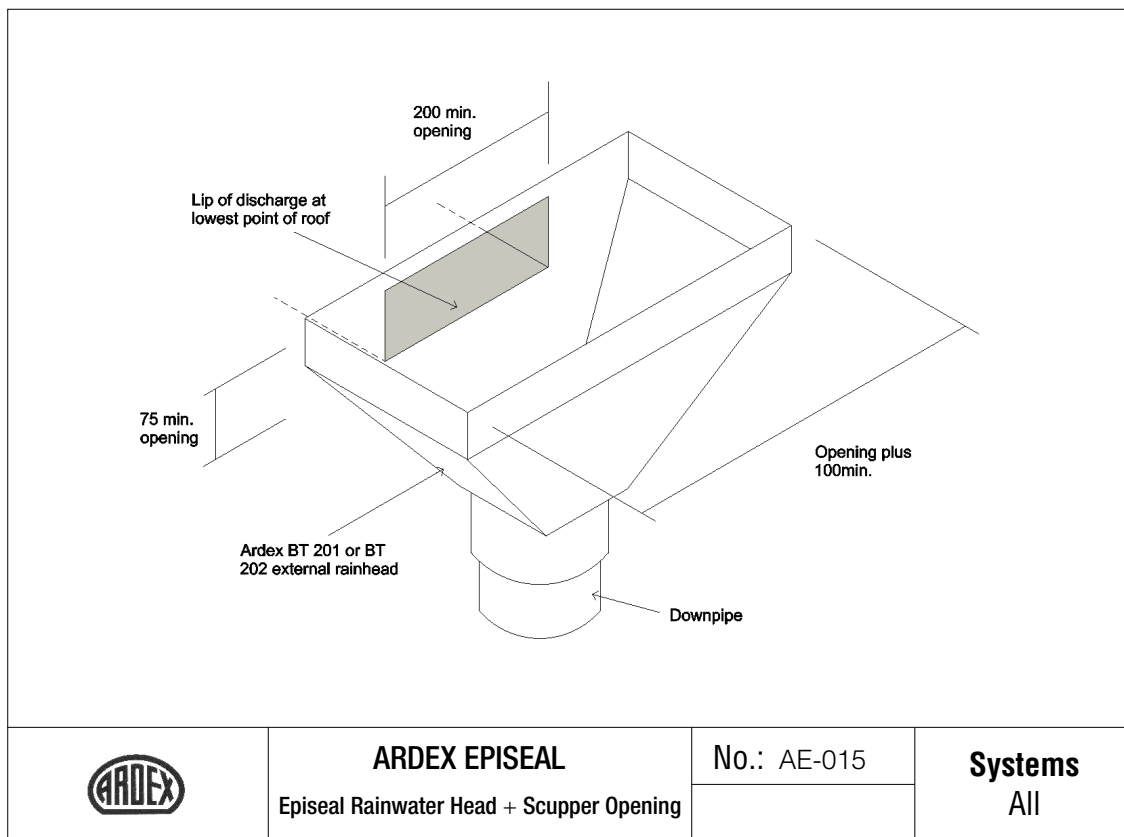


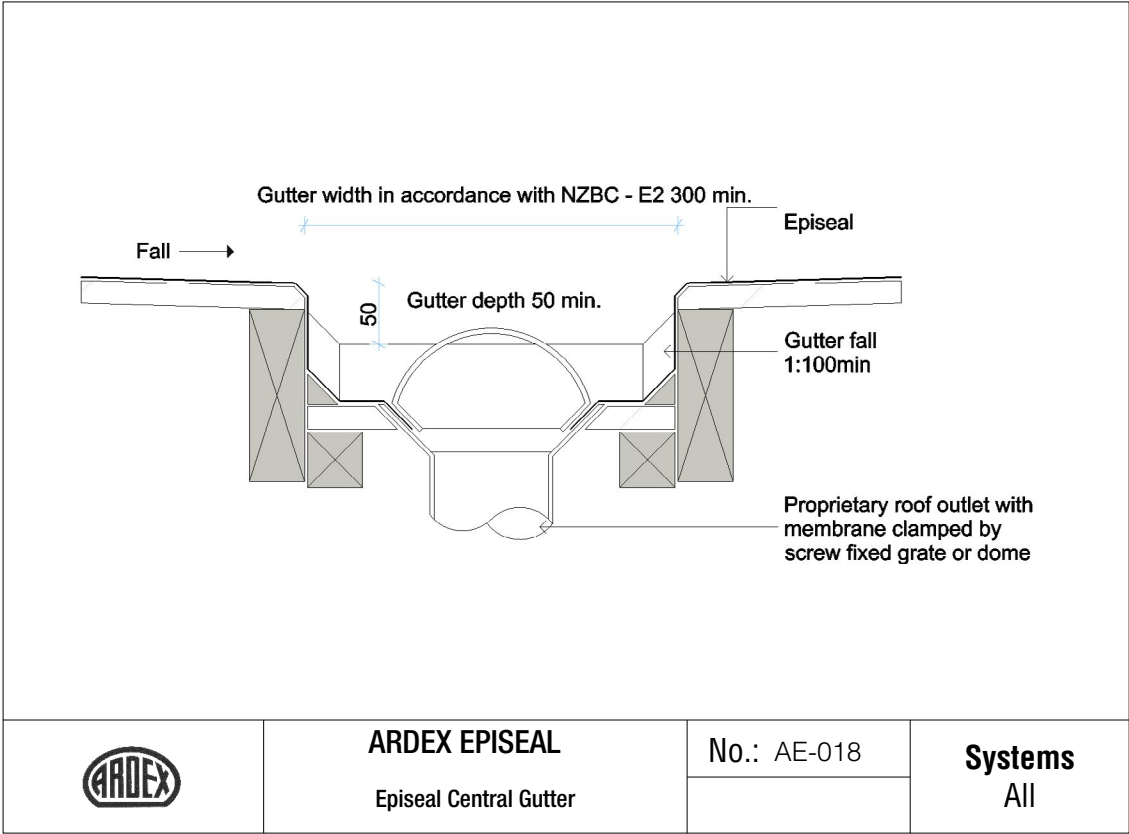
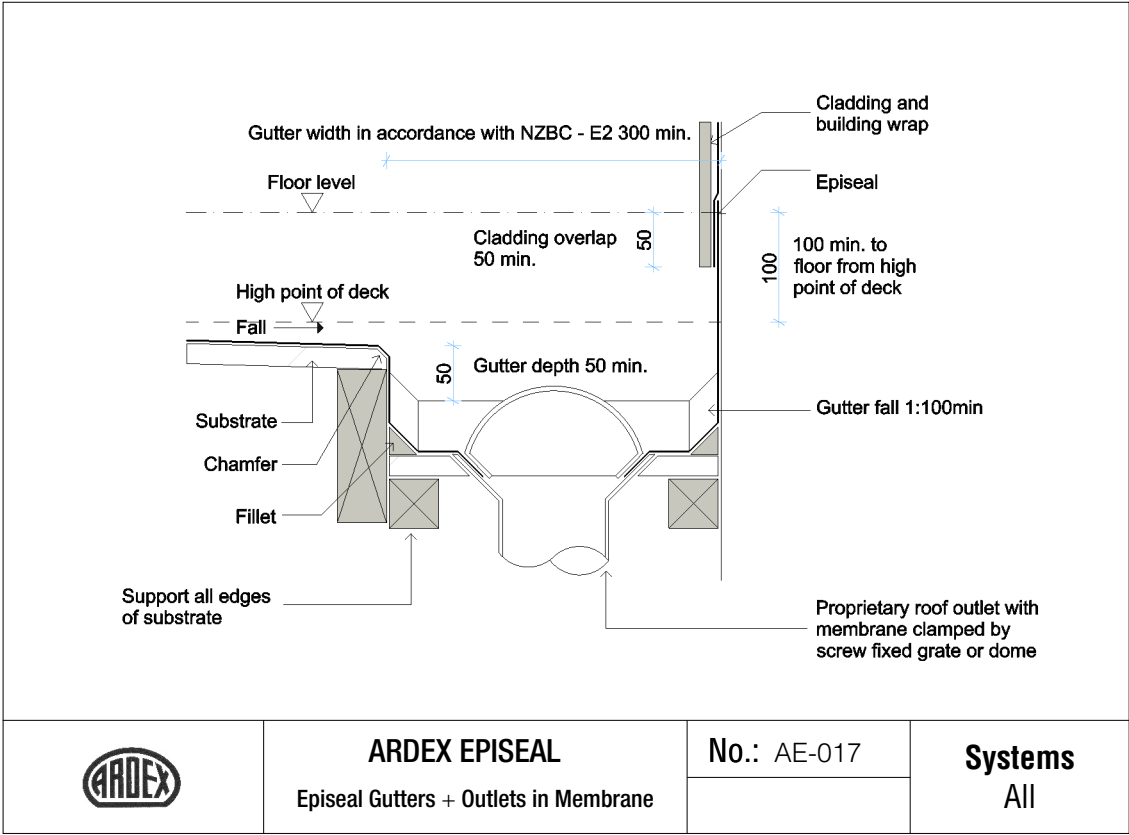
ARDEX EPISEAL
Episeal Ballasted / Garden Roof Detail

No.: AE-012

Systems
All



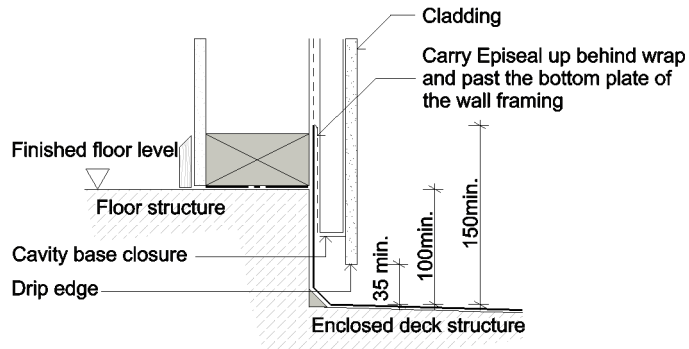




	ARDEX EPISEAL Episeal Eaves + Verges	No.: AE-019	Systems All

	ARDEX EPISEAL Episeal Direct Fix Threshold at Wall	No.: AE-020	Systems All

Cavity threshold at wall



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

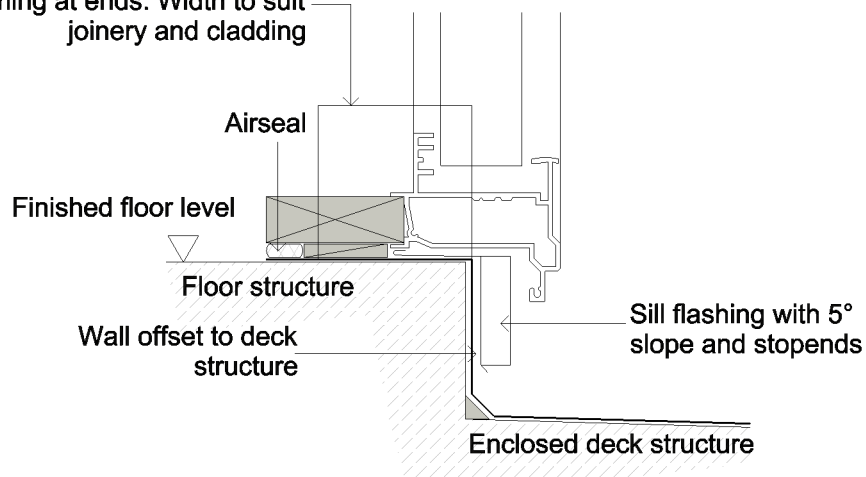


ARDEX EPISEAL
Episeal Cavity threshold at Wall

No.: EA-021

Systems
All

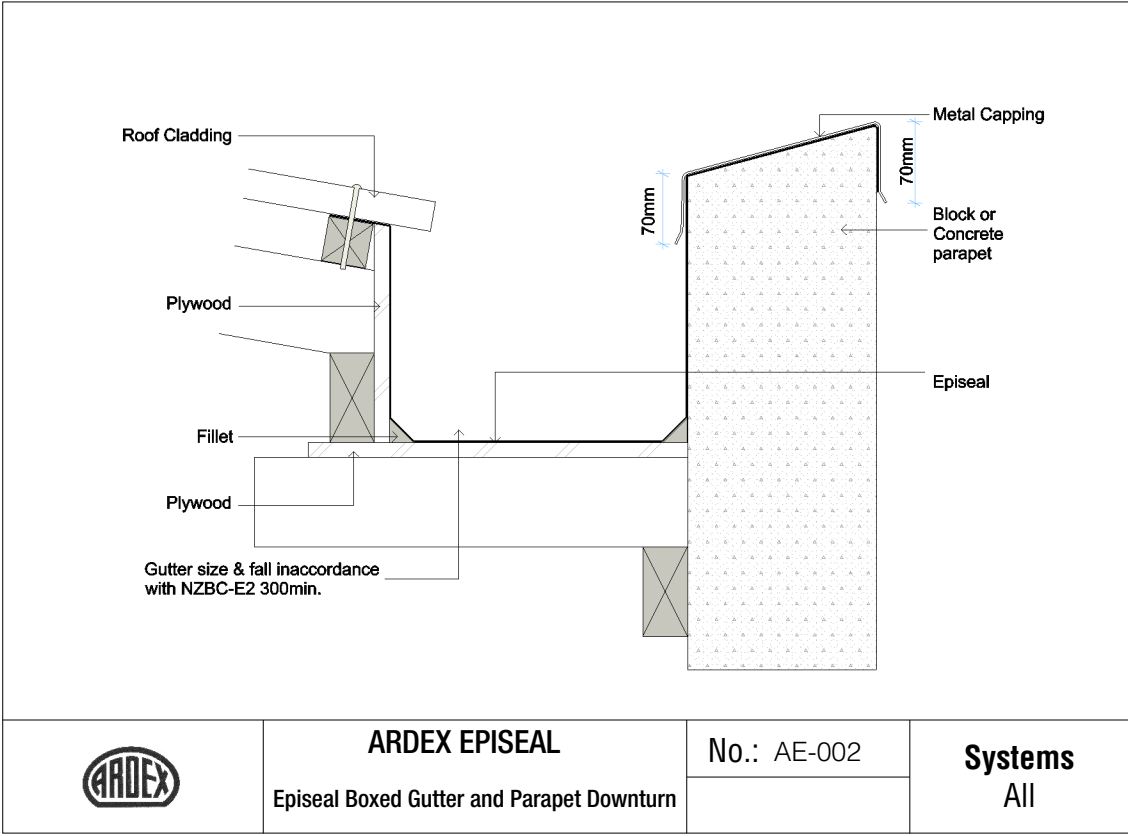
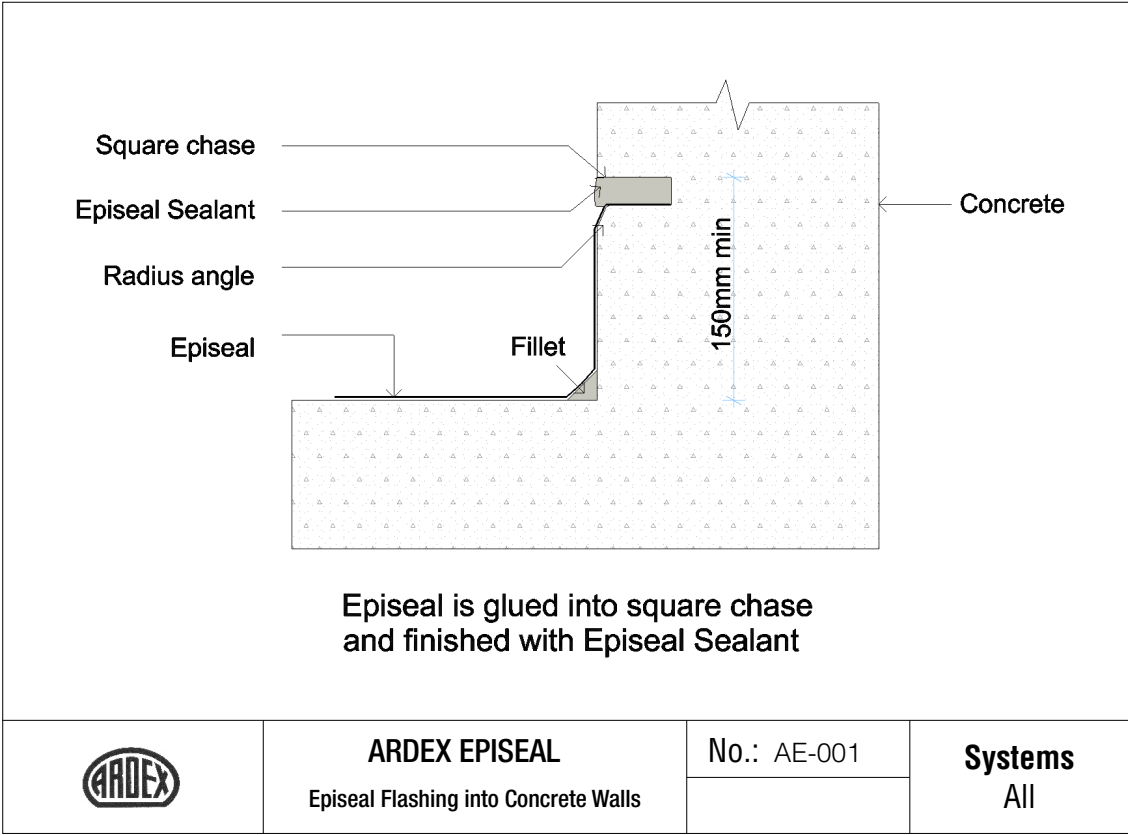
Dress Episeal 100mm min. up framing at ends. Width to suit joinery and cladding



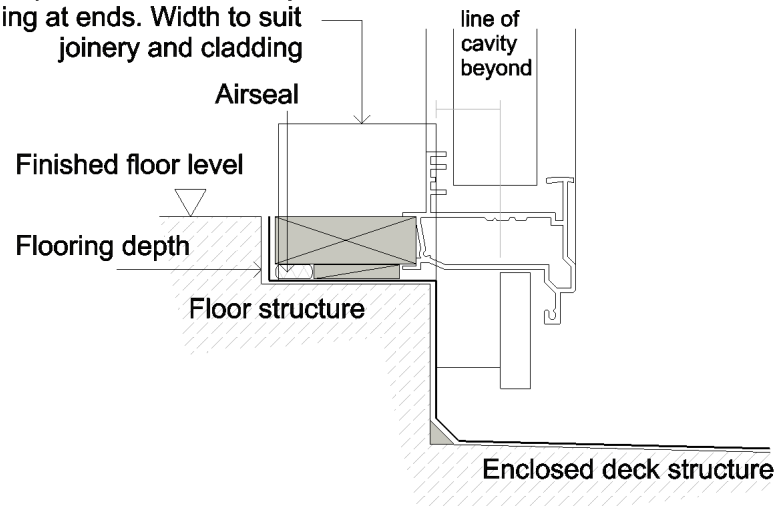
ARDEX EPISEAL
Episeal Direct Fix threshold at Opening

No.: EA-022

Systems
All



Dress Episeal 100mm min. up
framing at ends. Width to suit
joinery and cladding



ARDEX EPISEAL
Episeal Alternative threshold at Opening

No.: AE-023

Systems
All



Weldtec

2-6	WPM750 & WPM 1000 BRANZ Appraisal
7-10	WPM750 Undertile
11-12	WPM1000 Undertile & Deck



BRANZ Appraised

Appraisal No.727 [2011]

BRANZ Appraisals

Technical Assessments of products
for building and construction

**BRANZ
APPRAISAL
No. 727 (2011)**

Amended 9 July 2013

**ARDEX UNDERTILE
SHEET MEMBRANE
(WPM 750 AND
WPM 1000)**

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Christchurch

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Product

1.1 Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) is a synthetic rubber membrane for use in internal wet areas to be covered with ceramic or stone tiles.



Scope

2.1 Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) has been appraised for use as waterproofing membrane for internal wet areas of buildings, within the following scope:

- on floor substrates of concrete, plywood, compressed fibre cement sheet and fibre cement sheet tile underlay, and on wall substrates of concrete, concrete masonry, wet area fibre cement sheet lining systems and wet area plasterboard lining systems; and,
- when protected from physical damage by ceramic or stone tile finishes; and,
- where floors are designed and constructed such that deflections do not exceed 1/360th of the span.

2.2 The use of Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) on concrete slabs where hydrostatic or vapour pressure is present from below is outside the scope of this Appraisal.

2.3 Movement and control joints in the substrate must be carried through to the tile finish. 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 Appraisal.

2.4 The ceramic or stone tile finishes are outside the scope of this Appraisal.

2.5 The membrane must be installed by trained applicators, approved by Ardex New Zealand Limited.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years. Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) meets this requirement. See Paragraph 9.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.6. Interior wet area floors and walls incorporating Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) will meet this requirement. See Paragraphs 11.1- 11.6.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) meets this requirement and will not present a health hazard to people.

This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

Technical Specification

4.1 Materials supplied by Ardex New Zealand Limited are as follows:

Ardex Undertile Sheet Membrane (WPM 750)

- A single ply synthetic rubber membrane with polypropylene filaments welded to both sides, this enables better wetting out by water based adhesives. It is supplied as a 0.75 mm thick, 1.4m wide x 20m long roll.

Ardex Undertile Sheet Membrane (WPM 1000)

- A single ply synthetic rubber membrane with polypropylene filaments welded to both sides, this enables better wetting out by water based adhesives. It is supplied as a 1.2 mm thick, 1.4 m wide x 20 m long roll.

Ardex WPM 09A – Solvent Free Adhesive

- A solvent free adhesive for bonding Undertile Butynol (WPM 750 and WPM 1000) to all substrates. It is supplied in 15l containers.

Ardex WPM 09C – Catalyst

- A solvent free catalyst for Ardex WPM 09A Solvent free Adhesive to speed up adhesive cure in adverse conditions. It is supplied in 5l containers.

Ardex Clamp Waste Outlet

- A floor waste outlet designed to clamp the membrane and supplied as part of the system. The plumbing aspects of the floor waste outlet has not been assessed by BRANZ and are outside the scope of this Appraisal.

Preformed Corners and Profile

- Preformed corners and a right angle profile are available. The corners are 60 mm x 60 mm x 60 mm and the right angle profile is 150 mm x 70 mm with the length made to order.

Handling and Storage

5.1 All materials must be stored inside, up off concrete floors, in dry conditions, out of direct sunlight and out of freezing conditions.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000). The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

7.1 Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) is for use in buildings where an impervious waterproof membrane is required to floors and walls to prevent damage to building elements and adjoining areas.

7.2 The membrane must be protected from physical damage by the application of ceramic or stone tile finishes.

7.3 Movement and control joints may be required depending on the shape and size of the building or room, and the tile finish specified. Design guidelines can be found in the BRANZ "Good Practice Guide Tiling".

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 AS/NZS 1170. Timber framing systems supporting the substrates must be constructed such that deflections do not exceed 1/360th of the span. Where NZS 3604 is used, the allowable joist spans given in Table 7.1 shall be reduced by 20%. In all cases framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and all sheet edges are fully supported.

7.5 Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) must not be used to bridge or cover over existing expansion, control, construction, cold or saw cut joints.

Substrates

Plywood

8.1 Plywood must be a minimum of 17 mm thick complying with AS/NZS 2269, CD Grade Structural with sanded C face upwards and treated to H3 (CCA treated). LOSP treated plywood must not be used. The plywood must be supported with dwangs or framing with a maximum span of 400 mm in each direction and fixed with 10 g x 50 mm stainless steel countersunk head screws at 150 mm centres on the edges and 200 mm through the body of the sheets.

Fibre Cement Compressed Sheet / Fibre Cement Sheet Tile Underlay

8.2 Fibre cement compressed sheet must be manufactured to comply with the requirements of AS 2908.2 and must be specified by the manufacturer as being suitable for use as a wet area substrate. Fibre cement sheet tile underlay must be suitable for use in internal wet areas. Installation must be in accordance with the instructions of the manufacturer.

Concrete and Concrete Masonry

8.3 Concrete and concrete masonry substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101, concrete slab-on-ground to NZS 3604, and concrete masonry to NZS 4229 and NZS 4230.

Wet Area Wall Linings

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

8.5 Fibre cement sheet manufactured to comply with the requirements of AS 2908.2 and must be specified by the manufacturer as being suitable for use in wet areas.

Durability

Serviceable Life

9.1 Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000), when subjected to normal conditions of environment and use, is expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tile finishes with a design service life of 15-25 years.

Maintenance

10.1 No maintenance of the membranes will be required provided significant substrate movement does not occur and the tile finish remains intact. Regular checks must be made of the tiled areas to ensure they are sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately by repairing the tiles, grouts and sealants.

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

10.3 Drainage outlets must be maintained to operate effectively, and ceramic or stone tile finishes must be kept clean.

Internal Moisture

11.1 Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) is impervious to water and when appropriately designed and installed will avoid the likelihood of water penetrating behind linings or entering concealed spaces.

11.2 Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) is suitable for use to contain accidental overflow to meet NZBC Clause E3.3.2. A means of Code Compliance for overflow is given in NZBC Acceptable Solution E3/AS1 Paragraph 2.

11.3 Surfaces must be finished with ceramic or stone tile finishes. A means of Code Compliance to NZBC Clause E3.3.3 and E3.3.4 is given in NZBC Acceptable Solution E3/AS1 Paragraph 3.1.1 (b), 3.1.2 (b) and 3.3.1 (b).

11.4 Falls in showers and shower areas must be a minimum of 1 in 50. In unenclosed showers, falls must extend a minimum of 1500 mm out from the shower rose. Floor wastes must be provided and the floor must fall to the outlet.

11.5 The waterproofing membrane must completely cover shower bases, and for unenclosed showers it must extend a minimum of 1500 mm out from the shower rose. Further design guidance on waterproofing wet areas, including waterproofing walls and junctions can be obtained from AS 3740, BRANZ "Good Practice Guide Tiling", and flooring and wallboard manufacturers.

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

Installation Information

Installation Skill Level Requirement

12.1 Installation of the membrane must be completed by Ardex New Zealand Limited trained and approved applicators that have experience in the application of waterproofing membranes and understand waterproofing principles.

12.2 Installation of substrates must be completed by tradespersons with an understanding of internal wet area construction, in accordance with instructions given within the Ardex New Zealand Limited Technical Literature and this Appraisal.

Preparation of Substrates

13.1 Substrates must be dry, clean and stable, with surfaces that are even and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents before installation commences.

13.2 The relative humidity of the concrete must be 75% or less before membrane application. Concrete substrates can be checked for dryness by using a hygrometer as set out in BRANZ Bulletin No. 424. The plywood and timber substructure shall have a maximum moisture content of 20%.

13.3 All voids, cracks, holes, joints and excessively rough areas must be filled to achieve an even and uniform surface. Junctions of substrate abutments, such as at wall/floor and wall/wall junctions greater than 3 mm must be detailed and installed as set out in the Technical Literature.

Membrane Installation

14.1 Installation must not be undertaken where the substrate surface temperature is below 5°C or above 35°C.

14.2 The membrane must be applied as per the Technical Literature.

14.3 Adhesive application can be made by brush, roller or sprayer.

14.4 Clean up of the adhesive may be undertaken with water.

Tiling

15.1 The installed membrane must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.

15.2 Tiling must be undertaken in accordance with AS 3958.1 and BRANZ "Good Practice Guide Tiling". The compatibility of the tile adhesive must be confirmed with Ardex New Zealand Limited.

Inspections

16.1 Critical areas of inspection 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

17.1 Safe use and handling procedures for the membranes are provided in the Technical Literature. The materials must be used in conjunction with the relevant Material Safety Data Sheet.

Basis of Appraisal

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

Tests

18.1 The following testing of Ardex Undertile Sheet Membrane (WPM 750) has been undertaken by various organisations:

- Testing to AS/NZS 4858: 2004.
- Testing for cyclic movement, adhesion to substrates, resistance to aging, resistance to water, resistance to chemicals and water absorption.

The above test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

19.1 An assessment was made of the durability of the Ardex Undertile Sheet Membrane (WPM 750 and WPM 1000) by BRANZ technical experts.

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

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

Quality

20.1 The manufacture of the membrane has been examined by BRANZ and details regarding the quality and composition of the materials were obtained by BRANZ and found to be satisfactory.

20.2 The quality management system of the membrane's manufacturer has been assessed and found to be satisfactory.

20.3 The quality of manufacture of the membrane is the responsibility of the manufacturer.

20.4 The quality of supply of the membrane system materials to the market is the responsibility of Ardex New Zealand Limited.

20.5 Quality on site is the responsibility of the Ardex New Zealand limited approved and trained applicators.

20.6 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 New Zealand Limited and this Appraisal.

20.7 Building owners are responsible for the maintenance of the tiling or stone finishing systems in accordance with the instructions of Ardex New Zealand Limited Ltd.

Sources of Information

- AS 2908.2: 2000 Cellulose-cement products - flat sheet.
- AS 3740: 2010 Waterproofing of wet areas within residential buildings.
- AS 3958.1: 1991 Guide to the installation of ceramic tiles.
- AS/NZS 1170: 2002 Structural design actions.
- AS/NZS 4858: 2004 Wet area membranes.
- AS/NZS 2269: 2008 Plywood - Structural.
- NZS 3101: 1995 The design of concrete structures.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 4229: 1999 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230: 1990 Code of practice for the design of masonry structures.
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.
- Good Practice Guide Tiling, BRANZ, March 2004.
- Good Practice Guide Membrane Roofing, BRANZ , October 2003.



BRANZ

In the opinion of BRANZ, **Ardex WPM 750 and WPM 1000 Undertile Butynol Wet Area Membrane** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Ardex New Zealand Limited**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - 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. **Ardex New Zealand Limited:**
 - 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.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty 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 **Ardex New Zealand Limited**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Ardex New Zealand Limited** or any third party.

For BRANZ

P Burghout
Chief Executive

Amendment No. 1, dated 9 July 2013.

This Appraisal has been amended to include Ardex Undertile Sheet Membrane (WPM 1000).

Date of issue: 12 August 2011



ARDEX WPM 750

ARDEX WPM 750

Heat welded Waterproofing System

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

ARDEX WPM 750

Undertile Membrane Waterproofing System

ARDEX WPM 750 SPECIFICATION

ARDEX WPM 750 is made up of synthetic rubber with properties which resist ageing from heat, sunlight and ozone and is heat weldable. Polypropylene filaments are welded onto both sides of the membrane for better wetting by water based adhesives. It has excellent gas impermeability and toughness and remains flexible at low temperatures.

Laps and corners are to be heat formed and/or welded. Tiling can be done directly on the membrane after 60 minutes with common ARDEX tiling adhesives like X77, X56 STS8/E90, Quickbond/Abalastic, 2 part Optima or ABAFLEX.

ARDEX WPM 750 is marketed by ARDEX as a warranted undertile waterproofing product using solvent free adhesives and fixed by their trained and experienced approved Applicators.

ARDEX WPM 750 GAUGES

Standard 0.5mm – For undertile waterproofing

RESISTANCE

ARDEX WPM 750 resists tearing, flex cracking, bubbling and abrasion. It is extremely strong, has a long life and is versatile.

PACKAGING

Rolls of nominal 1.4m x 20m long. Rolls are packed in polythene wrapper trademarked ARDEX WPM 750.

SUBSTRATE SPECIFICATION

Plywood & Timber Substrates must be dry when ARDEX WPM 750 is applied. The plywood and timber substructure shall have a maximum moisture content of 20% when ARDEX WPM 750 is adhered.

NOTE: The use of LOSP (Light Organic Solvent Preservative) treated plywood must NOT be used under ARDEX WPM 750 in any circumstances or conditions.

SUBSTRATE SPECIFICATION (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm. Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

OTHER SUBSTRATE TYPES

Fibre cement compressed sheet, closed cell polyurethane foam, wet wall linings i.e. Gib Aqualine, VillaBoard.

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 WPM 300 HydrEpoxy System (consult ARDEX Technical Department for details)

Old Concrete

Must be clean from any contaminants prior to application

ADHESIVES FOR USE WITH ARDEX WPM 750

WPM 750 Adhesive

The standard contact brushing, spray grade and rolling solvent free adhesive for fixing to the substrate. Supplied in 20L plastic containers.

WPM 09C

Catalyst to assist adhesion in adverse conditions.

DURABILITY

ARDEX WPM 750 when fixed according to ARDEX instruction will meet the NZBC requirements of B2.3.1(b) 15 years.

Refer BRANZ Appraisal Certificate No 727.

PRODUCT WARRANTY

When laid by an approved Applicator in accordance with ARDEX's specifications, a material warranty for up to 20 years 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 the contract or the approved Applicator.

TYPICAL ARCHITECTURAL ARDEX WPM 750 SPECIFICATION

1. Preliminary

Refer to the Preliminary & 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 the ARDEX WPM 750 in wet areas.

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 waterproofing experts conversant with and specialising in the supply and fixing of this materials 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 customers 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 ARDEX WPM 750 Membrane

Shall be 0.5mm thick ARDEX WPM 750 in all wet area surfaces, where membrane is to be overlaid with tiles.

6.2 Adhesives

Shall be recommended by ARDEX specially formulated for ARDEX WPM 750 and suitable for the particular application and the relevant temperature and conditions applicable.

7. Laying of ARDEX WPM 750

The ARDEX WPM 750 installer shall check the substrate before laying any membrane to ensure that the surface is completely sound, screw fixed to specifications: screw heads flush, sheets spaced to provide for thermal movement or shock.

8. Completion

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

9. Extent of Work

Observe the foregoing specification and supply and lay ARDEX WPM 750 sheeting to all wet areas as shown and detailed in the drawing and in accordance with AS/NZS3740. Failure to comply with the above specifications will result in all warranties being null and void.

LAYING SPECIFICATION

The sub-contractor for the work called for in this trade will be a Company or Person approved by ARDEX. The approved installer shall examine all drawings and provide for the surface to which ARDEX WPM 750 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. On completion the installer 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.

INSTALLATION

Roll out ARDEX WPM 750 and cut to the measured length. Smooth ARDEX WPM 750 on contact to minimise air entrapment beneath the membrane. Floor sheets of ARDEX WPM 750 must extend up the wall at least 150mm. Make sure the ARDEX WPM 750 is laid tightly into all corners. Wall sheets of ARDEX WPM 750 should overlap the 150mm upstand. Weld seams and laps with the Leister Triac S Hot Air Gun. Roll with a rubber roller to ensure seams and laps are secure.

Walls, internal corners & transitions

Apply the ARDEX WPM 750 membrane 1800mm up the walls or to a height of 150mm above the shower rose. For unenclosed showers the membrane must extend a minimum of 150mm out from the shower rose.

PROTECTION

ARDEX WPM 750 is not suitable as a trafficable surface.

ARDEX WPM 750 is compatible with undertile heating systems. For electric undertile heating, the wire must be laid under the membrane.

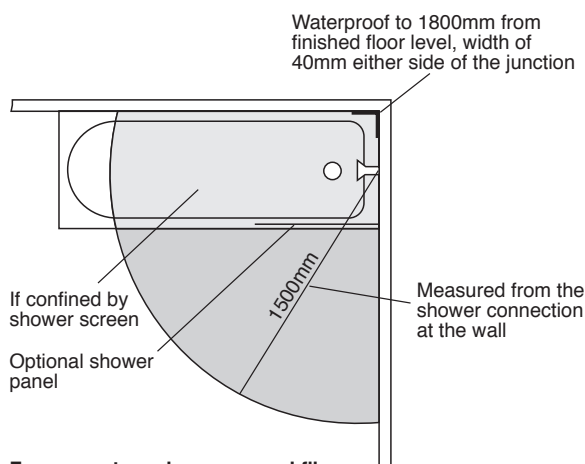
It is the responsibility of the main building contractor to ensure all sub-trades likely to be working in the vicinity of the membrane are aware that a waterproofing membrane has been installed and all care must be taken to protect the membrane from damage. The tiler must lay tiles in accordance with best practice guidelines.

ARDEX WPM 750

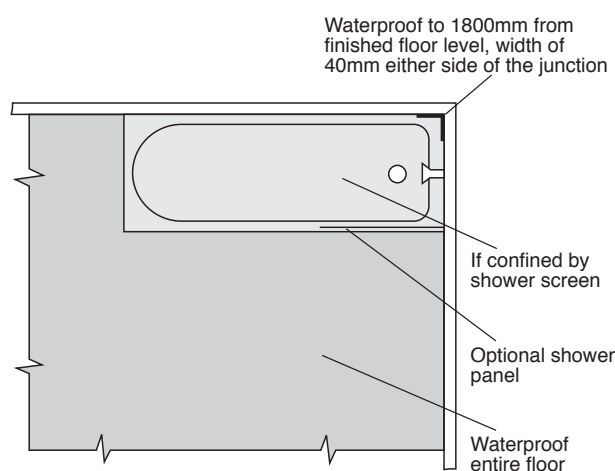
ARDEX WPM 750 - Rubber Membrane Waterproofing System

LAYING ARDEX WPM 750 IN BATHROOM WET AREAS in accordance with AS/NZS 3740

Extent of treatment of wet areas - shower area over bath - unenclosed shower

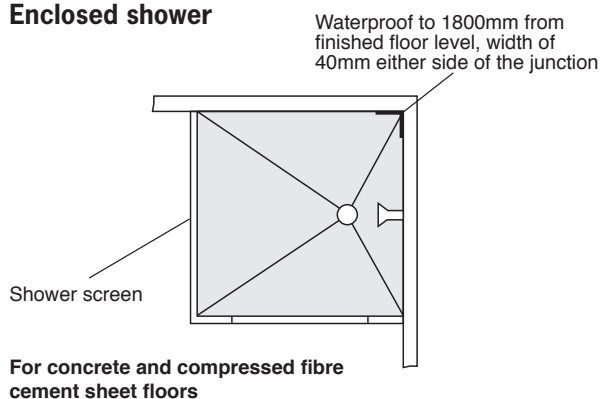


For concrete and compressed fibre cement sheet floors

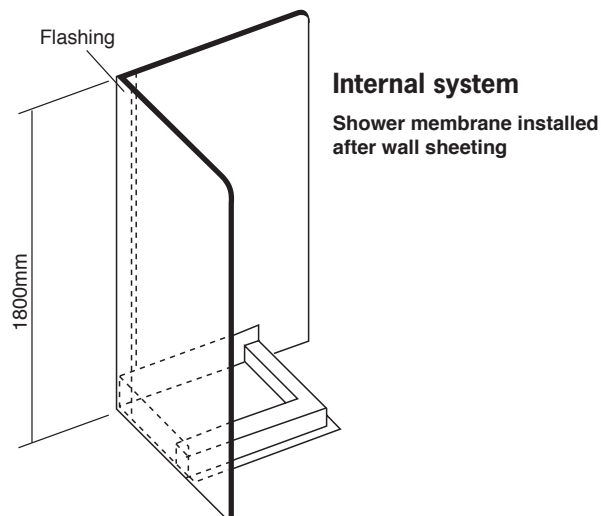
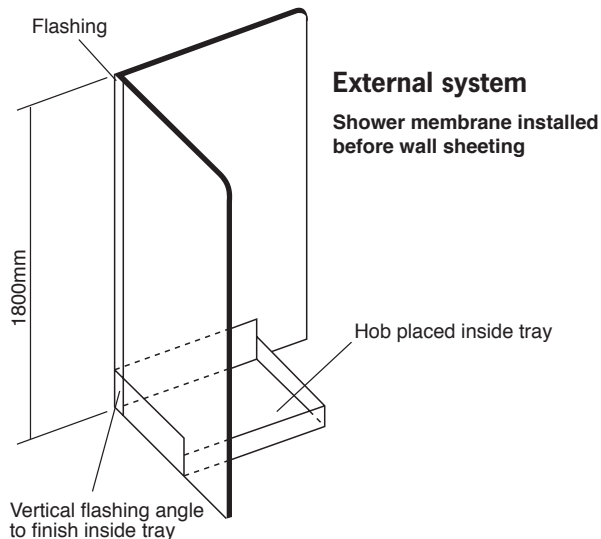


For timber floors including particleboard, plywood and other flooring materials apply ARDEX WPM 750 waterproofing membrane to entire floor

Enclosed shower



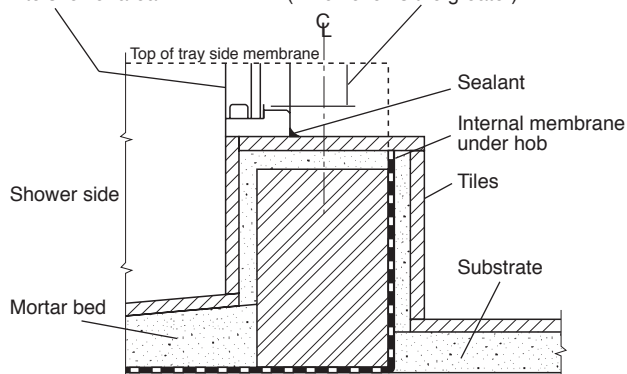
TYPICAL SHOWER CONSTRUCTION



TYPICAL HOB CONSTRUCTION

The shower screen to be installed so as to be flush with the shower area side of the hob or overhanging into shower area

For showers with hobs and stepdowns ARDEX WPM 750 to be applied to minimum height of 150mm above finished level of the floor or 25mm above maximum retained water level (whichever is the greater)





ARDEX WPM 1000

Weldable Waterproofing Membrane

Versatile rubber waterproofing membrane

Heat weld laps and seams

Easy installation

Suitable for underground tanking, roofs, decks,
under-tiles, canal and pond linings

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Internet: www.ardex.co.nz

ARDEX WPM 1000

Weldable Waterproofing Membrane

DESCRIPTION

ARDEX WPM 1000 Weldable Waterproofing Membrane is a versatile rubber membrane that can be heat welded. It is suitable for waterproofing underground tanking, rooftops, decks, undertile, canal and pond linings.

ARDEX WPM 1000 is made up of synthetic rubber with properties which resist ageing from heat, sunlight and ozone and is heat weldable. Polypropylene filaments are welded onto both sides of the membrane for better wetting by water based adhesives. It has excellent gas impermeability and toughness and remains flexible at low temperatures.

Laps and corners are to be heat formed and/or welded. Tiling can be done directly on the membrane after 60 minutes with common ARDEX tiling adhesives like X77, X56 STS8/E90, Quickbond/Abalastic, 2 part Optima or ABAFLEX.

MATERIAL SPECIFICATIONS

ARDEX requirements for long term warranty necessitate that the ARDEX WPM 1000 meets these typical technical requirements:

TEST	SPEC
Gauge – 1.0mm & 1.5mm	+0.15
Specific Gravity	1.26
Tensile Strength (MPa) Min	6.00
300% Modulus (MPa) Min	4.00
Elongation at Break (%) Min	300%
Tear Die (kN/m) Min	26.25
Hardness (° IRHD)	75 ± 5
Tensile Retained Min %	70
Elongation at Break Retained Min %	70
Water Vapour Transmission g/(day.m ²)	0.11
Ozone Resistance to ASTM D1149 - 7 days at 40°C in 50pphm ozone	No visible cracks

GAUGES

Standard 1.0mm

RESISTANCE

ARDEX WPM 1000 resists tearing, flex cracking, bubbling and abrasion. It is extremely strong, has a long life and is versatile.

PACKAGING

In rolls of nominal 1.4m width and 20m long. Each roll is packed in polythene wrapper trademarked ARDEX WPM 1000.

ADHESIVES FOR USE WITH ARDEX WPM 1000

ARDEX WPM 09A - The standard contact brushing, spray grade and rolling solvent free adhesive for fixing to the substrate. Supplied

in 20L plastic containers.

ARDEX WPM 09C - Catalyst to assist adhesion in adverse conditions.

ARDEX WA98 - Solvent Based waterproofing adhesive.

ARDEX WPM 642 - Water Based Adhesive

DURABILITY

ARDEX WPM 1000 when fixed according to ARDEX instruction will meet the NZBC requirements of B2.3.1(b) 15 years.

SUBSTRATE SPECIFICATION

Plywood & Timber

Substrates must be dry when ARDEX WPM 1000 is applied. The plywood and timber substructure shall have a maximum moisture content of 20% when ARDEX WPM 1000 is adhered.

NOTE: LOSP (Light Organic Solvent Preservative) treated plywood must NOT be used under ARDEX WPM 1000 in any circumstances or conditions.

SUBSTRATE SPECIFICATION (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm.

Strandsarking sheets shall be laid with staggered joints.(brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

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

OTHER SUBSTRATE TYPES

Fibre cement compressed sheet, closed cell polyurethane foam, wet wall linings i.e. Gib Aqualine, VillaBoard.

INSTALLATION

Roll out ARDEX WPM 1000 and cut to the measured length. Smooth ARDEX WPM 1000 on contact to minimise air entrapment beneath the membrane.

Floor sheets of ARDEX WPM 1000 must extend up the wall at least 150mm. Make sure the ARDEX WPM 1000 is laid tightly into all corners. Wall sheets of ARDEX WPM 1000 should overlap the 150mm upstand. Weld seams and laps with the Leister Triac S Hot Air Gun. Roll with a rubber roller to ensure seams and laps are secure.

Walls, internal corners & transitions

Apply the ARDEX WPM 1000 membrane 1800mm up the walls or to a height of 150mm above the shower rose. For unenclosed showers the membrane must extend a minimum of 1500mm out from the shower rose.

PROTECTION

ARDEX WPM 1000 is not suitable as a trafficable surface. ARDEX WPM 1000 is compatible with undertile heating systems. For electric undertile heating, the wire must be covered with a thin screed prior to laying the membrane.

It is the responsibility of the main building contractor to ensure all sub-trades likely to be working in the vicinity of the membrane are aware that a waterproofing membrane has been installed and all care must be taken to protect the membrane from damage. The tiler must lay tiles in accordance with best practice guidelines.



Tanking Membranes

3-10 Self Adhesive SBS Membrane Shelterseal 3000X

- 3 Shelterseal 3000x
- 7 Shelterseal 5000HD

11-26 Torch Applied Tanking Membrane

- 11 WPM 195
- 19 WPM 196

27-34 WeldTec Below Ground Tanking Membrane

- 27 WPM 1500

35-38 Polymeric Hydrophilic Rubber Joints

- 35 SW WPM 1950
 - 37 SEA WPM 1955
-



ARDEX Tanking Range

**Do you have a ROOF TOP GARDEN or a planter box on your roof?
Is there a living space below?**

ARDEX ROOT REPELL

A butyl based single ply membrane between two polyester layers. The membrane has welded seam with a root inhibitor to prevent plant roots penetrating the waterproof layer.

Do you have a building built into the side of a bank or dirt or backfill against the side of an occupied room?

Shelterseal 3000X

This is self-adhesive SBS bitumen based waterproofing membrane with a High Density Polyethylene backing. It has a 50 year durability and a BRANZ Appraisal. Use at grade or just below. Use with drainage at the lowest point and drain coil to your nearest storm water outlet. Does your project have living or storage areas below the water table. Would ground water seeping through your building be a night mare?

Ardex WPM1500

This is a New Zealand made purpose built tanking membrane with a butyl base and weld able seams. It has excellent adhesion to wet concrete so can be used in a pre-applied installation. Easily repaired it can survive the toughest of building environments. Fully bonded to you substrate or cast against wet concrete.

Is your project in a tough neighbourhood?? Is there geothermal activity in the vicinity? Does the thought of joining waterproofing sheets below the ground keep you awake at night?

Ardex WPM195 & WPM196

Ardex is able to offer two membranes from the same system.

WPM195 is a torch applied SBS modified bitumen sheet with high resistance to geothermal gas and chemical attack. It has excellent -20°C cold flexibility a sign of high polymer content and an excellent long life expectation. European CE certification ensures the product has been built for tanking not modified from a roofing range.

WPM196 is a torch applied SBS modified bitumen sheet with all of the excellent features contained in the WPM195 but it comes with a mineral chip surface. This gives excellent protect in the bottom of a basement pour against damage from the placement of steel reinforcement or other trades.

The mineral chip finish give a unique key to freshly poured concrete and remains adhered to the surface when boxing is removed.

Not all tanking is the same or can be considered for all projects.

These four membranes are sure to cover the specific needs of your project.

Further details can be found on the Ardex New Zealand website

www.ardex.co.nz



ARDEX WPM 3000X

Shelterseal 3000X

Self Adhesive SBS Membrane

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ARDEX WPM 3000X

Shelterseal 3000X

Self Adhesive SBS Membrane



PRODUCT DESCRIPTION

ARDEX WPM 3000X (Shelterseal 3000X) is a “peel and stick” bituminous/asphalt damp proof membrane protected by a cross laminated high-density polyethylene film.

ARDEX WPM 3000X (Shelterseal 3000X) is made from two structural components

Bitumen/asphalt compound modified with SBS and high tack resins

This special compound has been formulated to make the product easy to install. The membrane can be adjusted should it initially be placed in the wrong position, as the adhesive on the sheet achieves final adhesion only after a few minutes.

Protective film

This is hot-laminated to the bituminous/asphalt compound and gives the membrane its mechanical and physical characteristics, such as heat stability, shape, chemical resistance, etc.

FEATURES/BENEFITS

Cold Application: installed without the use of open flames. Ideal for installation in restricted spaces.

Chemical resistance: the protective polymer film is highly resistant to acids, alkalis and other pollutants.

Flexibility and adaptability: this membrane will adapt easily to irregularly shaped surfaces, and will stretch up to 9% without breaking or cracking.

Self sealing: the membrane self seals on contact maintaining its watertightness.

Constant thickness: the membrane is manufactured using high-tech machinery which constantly monitors its thickness, and ensures that the films and synthetic materials are manufactured to the highest specifications and quality control requirements.

ACCEPTABLE SUBSTRATES

- Concretes, renders and screeds
- Fibre cement sheets
- Structural or marine plywood
- Polystyrene blocks

For use over other substrates including existing membranes contact ARDEX.

TYPICAL APPLICATIONS

- Planter boxes
- Foundations
- Below-ground applications
- Retaining walls

BASIC APPLICATION INSTRUCTIONS

Surface Preparation

Surfaces to which the ARDEX WPM 3000X (Shelterseal 3000X) systems are installed must be properly prepared prior to installation. All surfaces must be clean, dry, smooth, free of sharp edges, loose or foreign materials, oil, grease, and other materials that may damage the membrane. If concrete has moisture on surface use gas torch to dry and warm before priming.

Priming

Prior to the application of the membrane all prepared surfaces (except polystyrene blocks) should be primed with ARDEX WPM 240 or WPM 247 (Shelter Primer) at a rate of 5-6m² per litre and allowed to dry.

Membrane Installation

Starting at the lowest point, the membrane must be installed in accordance with the Technical Literature. Sheet edges must be overlapped a minimum of 60mm as marked on the sheets. End laps must be a minimum of 100mm, with upper sheets lapped over lower sheets. Internal and external corners of single layer systems must be reinforced with an extra layer of membrane 300mm wide. Where two layer systems are specified lap joints must be staggered. Protection material must be installed before backfilling. Backfilling must commence immediately after the membrane is installed to ensure the membrane is not left exposed to sunlight or UV radiation.

Installation of the membranes must be completed by ARDEX approved applicator, who have experience in the application of self-adhesive membranes.

Two Layer DPM System

In critical areas a specifier may require a second layer of ARDEX WPM 3000X (Shelterseal 3000X) to be applied with laps staggered to the first layer.

PLASTERING OVER SHELTERSEAL

Coat affected area with ARDEX WPM 179 (Refer to page 45). Let coating dry then apply a second coat of ARDEX WPM 179. While still wet broadcast dry sand onto the surface. Let Dry. When dry, plaster area with normal plaster system.

This is to cover any Shelterseal that is finished above ground due to slope of site. It is not intended to cover roofing applications.

SAFETY DATA

ARDEX WPM 240 (Shelter Primer) is solvent based and classified as Dangerous Goods Class 3 Packaging Group II material. It is highly flammable and should be used with appropriate safety equipment. Avoid inhalation or contact with eyes.

First Aid: If swallowed do not induce vomiting, contact a doctor or Poisons Information Centre immediately. In case of contact with eyes rinse thoroughly with water.

Spills & Leaks: Restrict access to area. Prevent material entering sewers and restricted areas. If possible cover liquid with earth, sand or absorbent material. Flush area with water.

Fire: Eliminate all sources of ignition. Firefighters should wear full protective clothing and self contained breathing apparatus with full face mask. Use dry chemicals foam or carbon dioxide to extinguish fire.

STORAGE

All rolls of ARDEX WPM 3000X (Shelterseal 3000X) whether palletised or loose should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

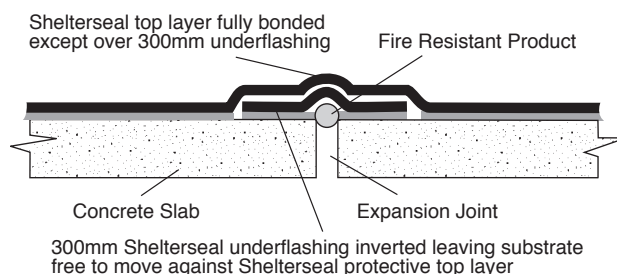
Roll size: 1m x 20m Roll weight: Approx 30kg

Other products: Shelter Primer 5 litres and 20 litres

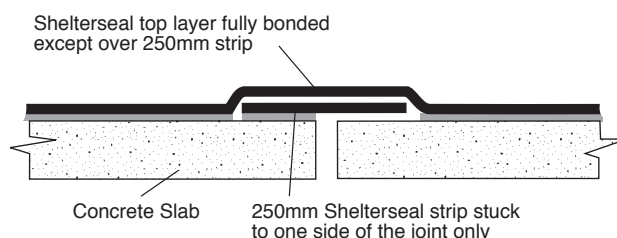
TECHNICAL PERFORMANCE DATA

Properties	Typical Values	Test Method
Thickness	1.5mm	UNI 8202
Weight	1.6kg	UNI 8202
Tensile strength long	4.35N/mm	ASTM D 638
Tensile strength trans	5.69N/mm	ASTM D 638
Longitudinal elongation of membrane	435%	ASTM D 638
Transverse elongation of membrane	380%	ASTM D 638
Tearing resistance long	83.01N	8202/9
Tearing resistance trans	73.74N	8202/9
Adhesion to primed concrete	4.9N/mm	ASTM D 1000
Adhesion to steel	5.8N/mm	ASTM D 1000
Puncture resistance	246N/65mm	ASTM E 154
Vapour transmission rate	0.3g/m/24hrs	ASTM E 96
Cold flexibility	-30°C	ASTM D 146
Environmental resistance	Conform	ASTM D 543

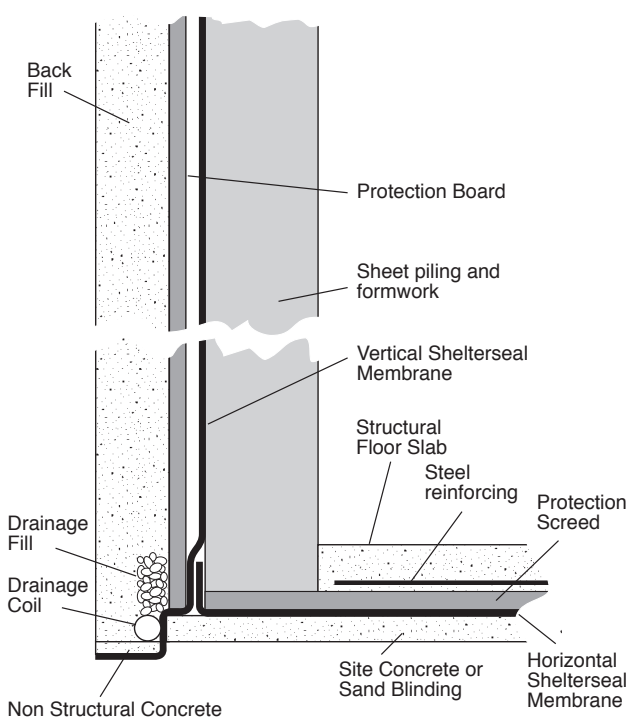
EXPANSION JOINT



CONSTRUCTION JOINT



BELOW GROUND DETAIL



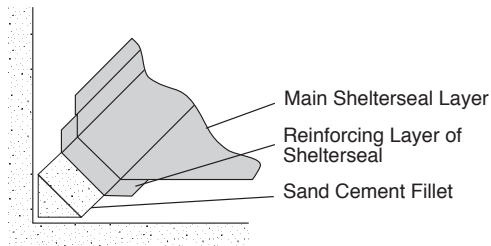
Typical details do not indicate number of layers required

ARDEX WPM 3000X

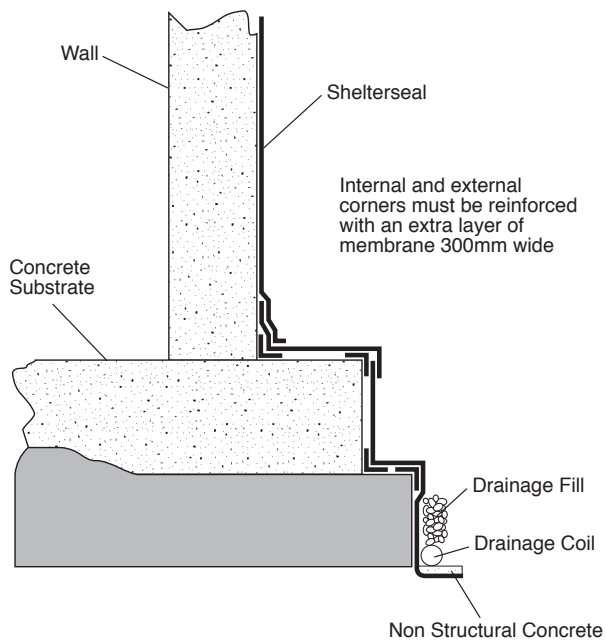
Shelterseal 3000X

Self Adhesive SBS Membrane

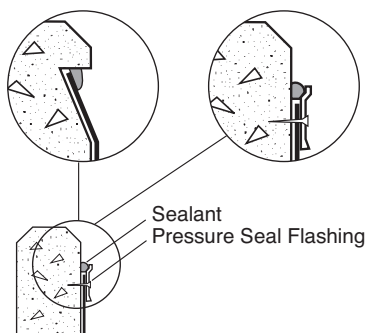
TYPICAL TURN UP DETAIL



REINFORCING OF CORNERS



FINISHING DETAIL OPTIONS





ARDEX WPM 5000HD

Shelterseal 5000HD

Self Adhesive SBS Membrane

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ARDEX WPM 5000HD

Shelterseal HD

Self Adhesive SBS Membrane



PRODUCT DESCRIPTION

ARDEX WPM 5000HD (Shelterseal HD) is an industrial strength “peel and stick” bituminous/asphalt membrane. ARDEX WPM 5000HD (Shelterseal HD) is reinforced with a layer of polypropylene mesh giving the product exceptionally high mechanical characteristics.

ARDEX WPM 5000HD (Shelterseal HD) is made from two structural components:

- Bitumen/asphalt compound modified with SBS and high tack resins
- A protective polypropylene mesh hot laminated to the bituminous/asphalt compound. This gives the membrane its mechanical and physical characteristics, such as heat and shape stability, chemical and puncture resistance

FEATURES/BENEFITS

Cold Application Installed without the use of open flames. Ideal for installation in restricted spaces.

High durability Polypropylene mesh reinforcement layer provides tough, puncture resistant finish.

Constant thickness The membrane is manufactured using the highest quality materials, standards and sheet manufacturing techniques.

Slip free surface Membrane provides an ideal, safe working surface.

ACCEPTABLE SUBSTRATES

- Concrete, renders and screeds
- Fibre cement sheets
- Structural or marine plywood

For use over other substrates including existing membranes contact ARDEX

TYPICAL APPLICATIONS

- Parking decks & car parks
- Vehicular traffic structures
- Expansion joints
- Underneath clay tiles or asphalt shingles
- Any applications where the waterproofing must have high mechanical characteristics

BASIC APPLICATION INSTRUCTIONS

Surface Preparation

Surfaces to which the ARDEX WPM 5000HD (Shelterseal HD) systems are installed must be properly prepared prior to installation. All surfaces must be clean, dry, smooth, free of sharp edges, loose or foreign materials, oil, grease, and other materials that may damage the membrane. If concrete has moisture on surface use gas torch to dry and warm before priming.

Priming

Prior to the application of the membrane all prepared surfaces except polystyrene block should be primed with ARDEX WPM 240 (Shelter Primer) at a rate of 5-6m² per litre and allowed to dry.

Membrane Installation

Starting at the lowest point, the membrane must be installed in accordance with the Technical Literature. Sheet edges must be overlapped a minimum of 60mm as marked on the sheets. End laps must be a minimum of 100mm, with upper sheets lapped over lower sheets. Internal and external corners of single layer systems must be reinforced with an extra layer of membrane 300mm wide. Where two layer systems are specified lap joints must be staggered. Protection material must be installed before backfilling. Backfilling must commence immediately after the membrane is installed to ensure the membrane is not left exposed to sunlight or UV radiation.

Installation of the membranes must be completed by tradespersons who have experience in the application of self-adhesive membranes.

Applying asphalt directly over ARDEX WPM 5000HD (Shelterseal HD)

The asphalt should be applied as soon as possible after the ARDEX WPM 5000HD (Shelterseal HD) membrane has been installed. ARDEX recommend applying a minimum 50mm compacted overlay for carpark areas. The topping should be applied at a temperature of between 120-150°C.

PLASTERING OVER SHELTERSEAL

Coat affected area with ARDEX WPM 179 (Refer to page 45). Let coating dry then apply a second coat of ARDEX WPM 179. While still wet broadcast dry sand onto the surface. Let Dry. When dry, plaster area with normal plaster system.

SAFETY DATA

ARDEX WPM 240 (Shelter Primer) is solvent based and classified as Dangerous Goods Class 3 Packaging Group II material. It is highly flammable and should be used with appropriate safety equipment. Avoid inhalation or contact with eyes.

First Aid: If swallowed do not induce vomiting, contact a doctor or Poisons Information Centre immediately. In case of contact with eyes rinse thoroughly with water.

Spills & Leaks: Restrict access to area. Prevent material entering sewers and restricted areas. If possible cover liquid with earth, sand or absorbent material. Flush area with water.

Fire: Eliminate all sources of ignition. Firefighters should wear full protective clothing and self contained breathing apparatus with full face mask. Use dry chemicals foam or carbon dioxide to extinguish fire.

STORAGE

ARDEX WPM 5000HD (Shelterseal HD) is supplied in white cardboard cartons. All rolls should be stored in a vertical position, covered area protected against UV radiation.

PACKAGING

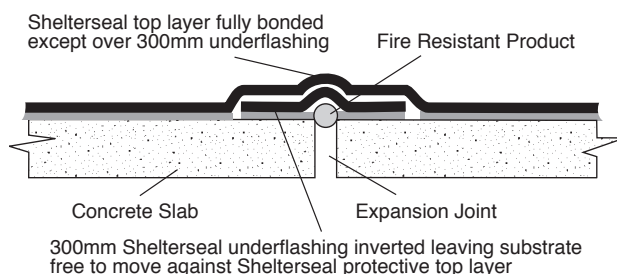
Roll size: 1m x 20m Roll weight: Approx 30kg

Other products: Shelter Primer 5 litres and 20 litres

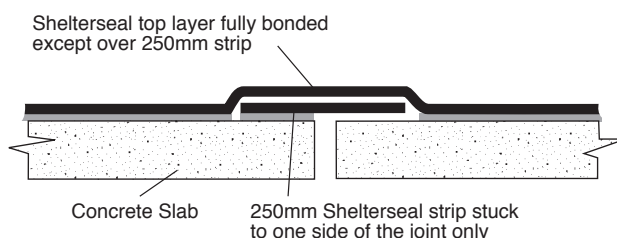
TECHNICAL PERFORMANCE DATA

Properties	Typical Values	Test Method
Thickness	1.5mm	UNI 8202
Weight	1.6kg	UNI 8202
Colour	Black	
Softening point	110°C	
Temperature resistance (maximum)	150°C	
Tensile strength (longitudinal)	152kg/8cm	
Tensile strength (transverse)	124kg/8cm	
Elongation (longitudinal)	32%	ASTM D638
Elongation (transverse)	21%	ASTM D638
Tearing (longitudinal)	350N	UNI 8202/9
Tearing (transverse)	300N	UNI 8202/9
Adhesion to primed concrete	4.9 N/mm	ASTM D1000
Adhesion to steel	5.8 N/mm	ASTM D1000
Puncture resistance	220 N/65mm	ASTM E 154
Vapour transmission rate	0.3g/m/24hrs	ASTM E 96
Cold flexibility	-30°C	ASTM D 146

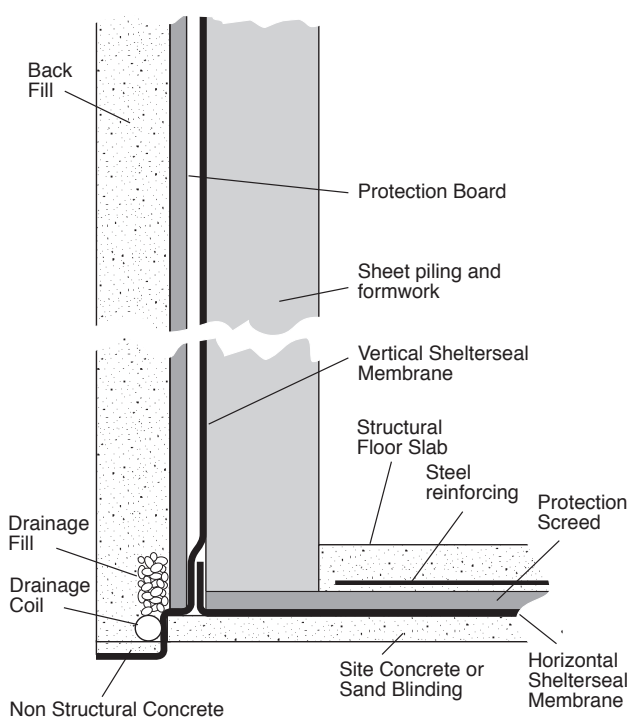
EXPANSION JOINT



CONSTRUCTION JOINT



BELOW GROUND DETAIL



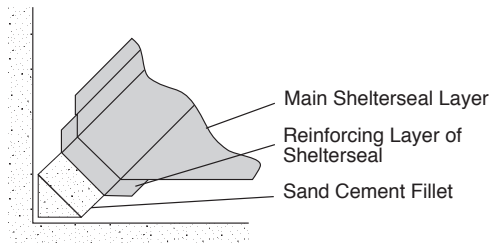
Typical details do not indicate number of layers required

ARDEX WPM 5000HD

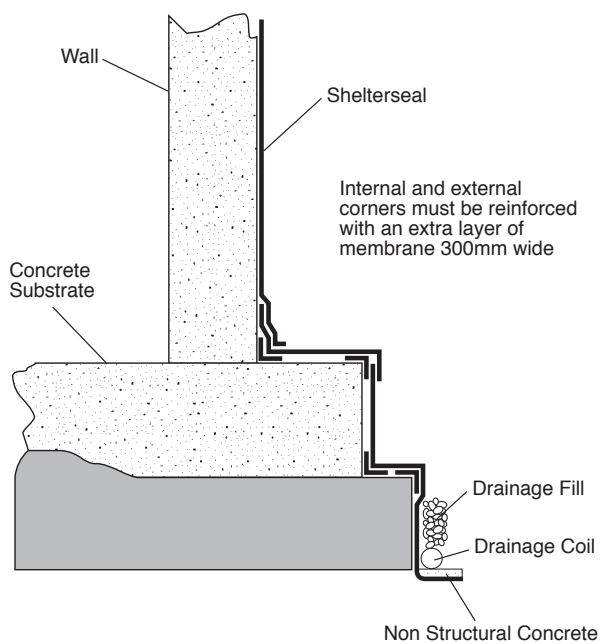
Shelterseal HD

Self Adhesive SBS Membrane

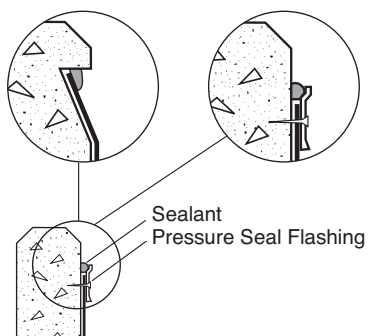
TYPICAL TURN UP DETAIL



REINFORCING OF CORNERS



FINISHING DETAIL OPTIONS





ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

Modified Bitumen Tanking Membrane

CE Certification

CodeMark Certification (No. AQ-021216-CMNZ)

Positive Vapour Barrier

High Resistance to Thermal Ageing

High Resistance to Cracking

Excellent Elongation and Flexibility

4mm Gauge

Sand Finish



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Email: info@ardexnz.com
www.ardex.co.nz

ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

PRODUCT DESCRIPTION

ARDEX WPM 195 is a high performance Styrene-Butadiene-Styrene (SBS) bituminous compound modified with adhesive elastoplastic polymers its excellent quality is highlighted by two indicators: cold flexibility and high adhesiveness. ARDEX WPM 195 is suitable for application in all climatic zones, with excellent cold flexibility (-20° C) enables an easy application and allows the membrane to be ideally suited to be applied in areas with harsh climates.

The exceptional elongation properties of SBS combined with the strength and dimensional stability of the reinforcing provides an excellent waterproofing membrane in below ground applications. ARDEX WPM 195 is coated with a sanded polymeric film PE/PP, while the bottom surface is embossed and protected by a heat sensitive polythene film.

ARDEX WPM 195 also has the European CE certification for use as a tanking membrane.

FEATURES/BENEFITS

- Complies with BS EN 13969:2004
- European CE certification - GB06/69203
- CodeMark Certification (No. AQ-021216-CMNZ)
- Excellent resistance to atmosphere agents
- Excellent resistance to Geothermal Gas including Hydrogen Sulphide
- High flexibility during application at sub-zero temperature with no physical strains
- High malleability
- Accommodates structural movements
- Resistant to chemical attacks
- Withstand thermal shocks
- Proven performance in colder regions
- Good elongation and flexibility

USES

ARDEX WPM 195 is used as a single layer or multi-layer membrane in horizontal or vertical applications for waterproofing for below ground tanking. It is primarily applied to the outside of a sub-structure of a building, such as a foundation or basement to prevent water ingress.

Other forms of tanking where ARDEX 195 can be used include under floor slabs, behind masonry walls, the lining of substrates of in situ or precast concrete; retaining walls, lift shafts, tunnels, living roofs and planter boxes.

ARDEX WPM195 membrane must be protected from UV.

SURFACE PREPARATION

Substrates need to be clean, smooth, dry and free of sharp edges, loose or foreign materials, oil, grease and other materials that may damage the membrane. All surface voids greater than 5mm wide shall be properly filled with an acceptable fill material.

Confirm concrete structures are specifically engineered to meet the requirements of the NZBC B1/VM1, 3.0 Concrete.

Ensure concrete substrate has been allowed to cure for at least 28 days before commencing application. The relative humidity of concrete substrates must be 75% or less before membrane application to NZBC E2/AS1, 10.0 Construction moisture. Take a measurement using a hygrometer to verify concrete has sufficiently dried when necessary. This process is essential.

The above criteria do not apply if ARDEX WPM 195 is loose-laid on lean site concrete.

ARDEX do not recommend the use of curing compounds; however, when used ensure all traces of compound are gone or removed. Concrete to be finished to NZS 3114, U3 with a light trowel texture. The concrete to have all ridges and protrusions stoned flush.

INSTALLATION

The application of ARDEX WPM 195 should be carried out by an approved ARDEX Applicator.

Installation shall be undertaken in accordance with all relevant technical information related to the selected installation method, including information contained within the ARDEX specification.

Prior to the application of ARDEX WPM 195 the surface may require priming with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 195 is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 195 may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX.

STORAGE

All rolls of ARDEX WPM195 should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 8m

Roll weight: Approximately 40kg

Rolls per pallet: 25

ARDEX HYDRO STOP

Please refer to Ardex 1950 and Ardex 1955 for data sheets on standard and sea water activated Hydrophilic Rubber Water Stops.

ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

TECHNICAL CHARACTERISTICS

CHARACTERISTIC	TEST METHOD	UNITS	NOMINAL VALUES	TOLERANCES
Visible defects	EN 1850-1	visible	Without defects	
Length	EN 1848-1	m	8 -1%	MLV
Width	EN 1848-1	m	1 -1%	MLV
Straightness	EN 1848-1	mm	20 mm x 8 m	MLV
Thickness	EN 1849-1	mm	4	±
Watertightness (A)	EN 1928	kPa	60	MLV
Shear resistance longitudinal / transversal	EN 12317-1	N/50 mm	650 / 450	± 20%
Water vapour transmission proprieties Method A	EN 1931	μ / Sd (m)	120.000 / 480	-20.000
Tensile Strength Longitudinal / Transversal	EN 12311-1	N/50 mm	750 / 550	± 20%
Elongation at break Longitudinal / Transversal	EN 12311-1	%	45 / 45	- 15 absolut
Resistance to impact	EN 12691	mm	900	MLV
Resistance to static loading Method A	EN 12730	Kg	15	MLV
Resistance to tearing (nail shank)	EN 12310-1	N	180 / 180	- 30%
Dimensional stability Longitudinal / Transversal	EN 1107-1 met. A	%	± 0,3 %	MLV
Flexibility at low temperature	EN 1109	°C	-20	MLV
Flow resistance at elevated temperature	EN 1110	°C	90	MLV
Durability of water-tightness against artificial ageing	EN 1296 / EN 1928	kPa	60	MLV
Durability of water-tightness against chemicals	EN 1847 / EN 1928	Kpa	60	MLV
Change in mass on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	0.29	MDV
Change in Tensile Strength on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	-9.6	MDV
Change in Elongation on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	7.2	MDV

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0800 227 339 (New Zealand)

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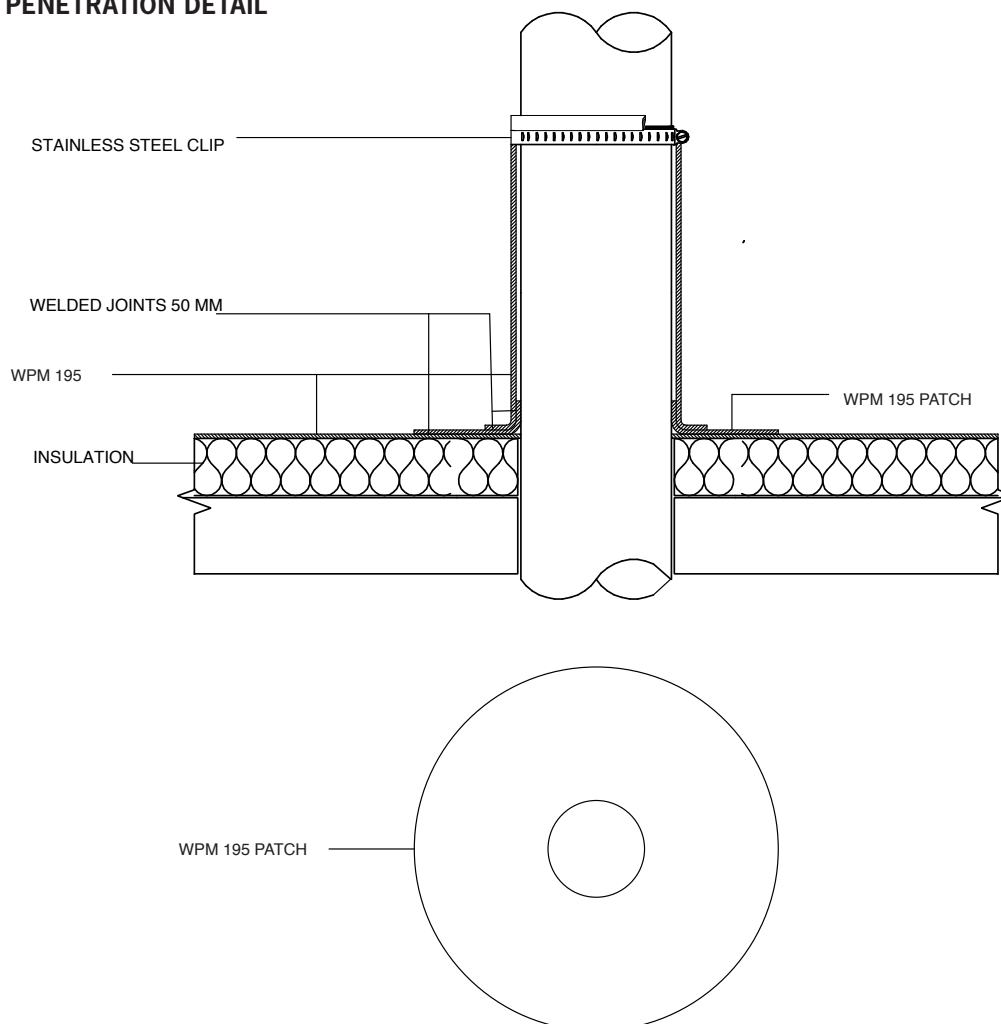
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ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

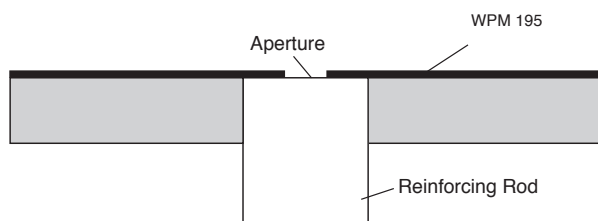
PIPE PENETRATION DETAIL



FLASHING - REINFORCING RODS

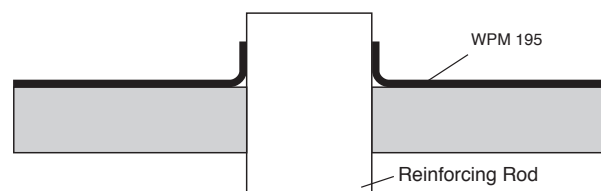
STEP 1

Cut smaller diameter hole than Reinforcing Rod.



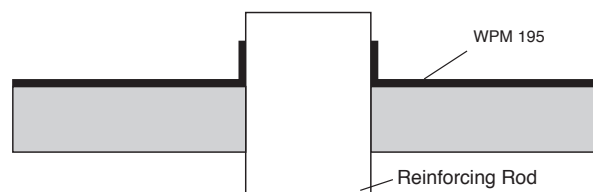
STEP 2

Rod is raised through smaller diameter hole in WPM 195, forcing edge upwards to create



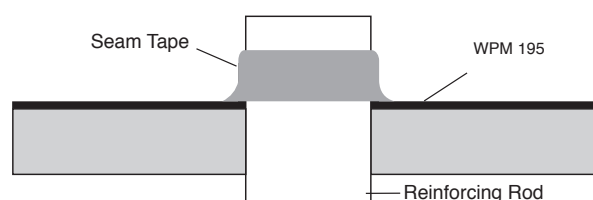
STEP 3

Roll Patch down to eliminate void.

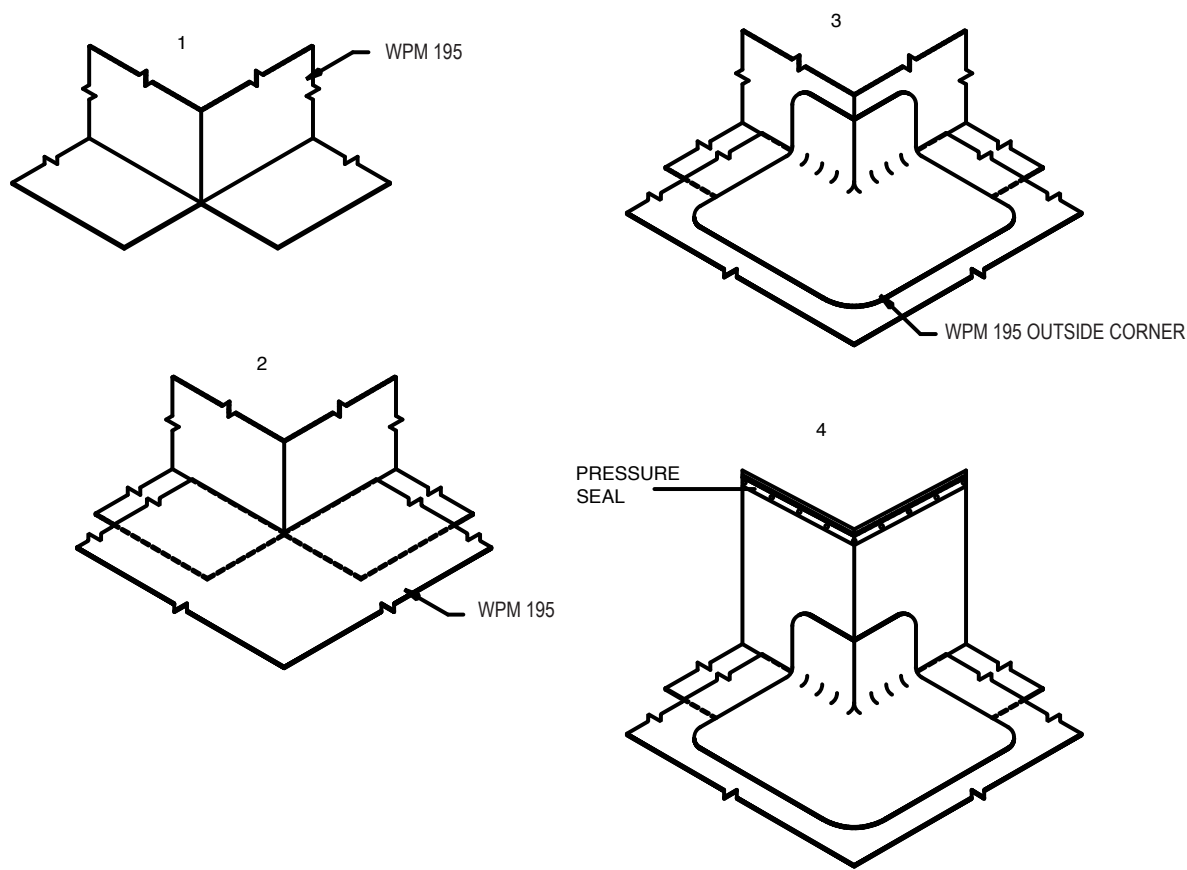


STEP 4

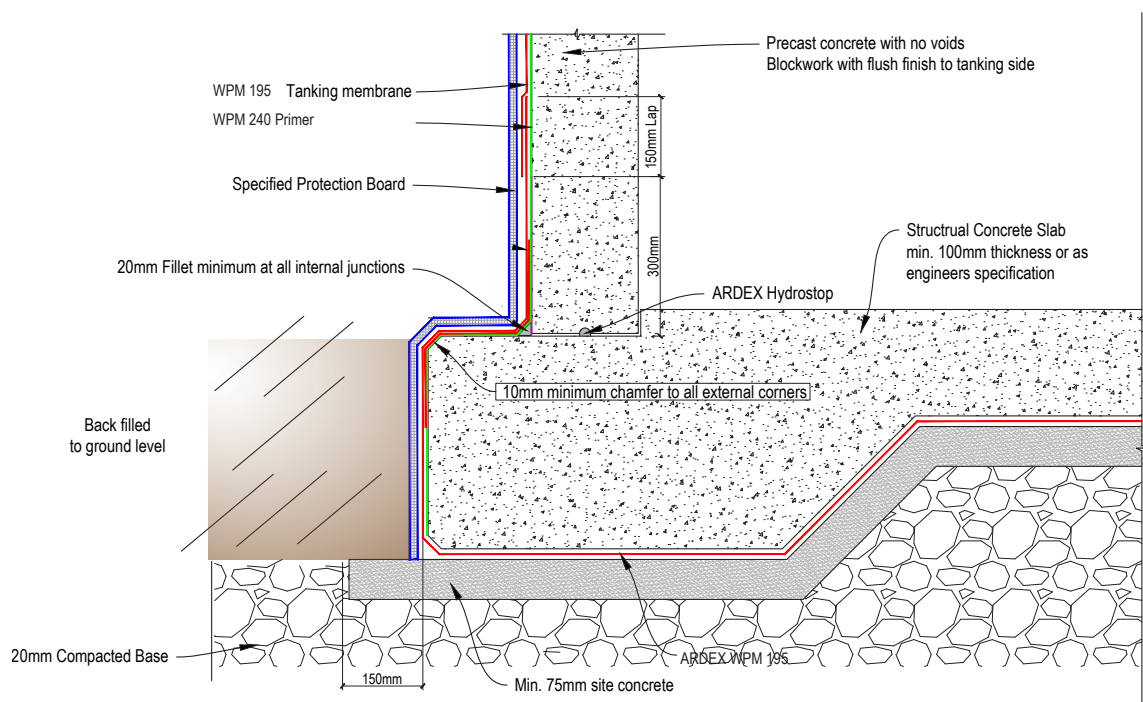
Form upstand with WPM 195 to rod.



CORNER DETAILING / SQUARE PENETRATIONS



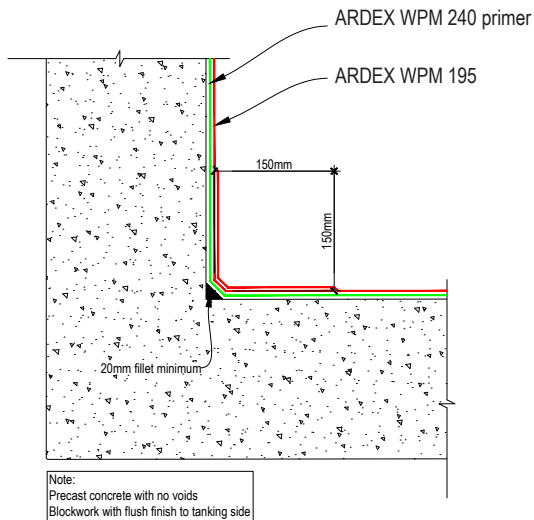
FOOTING JUNCTION



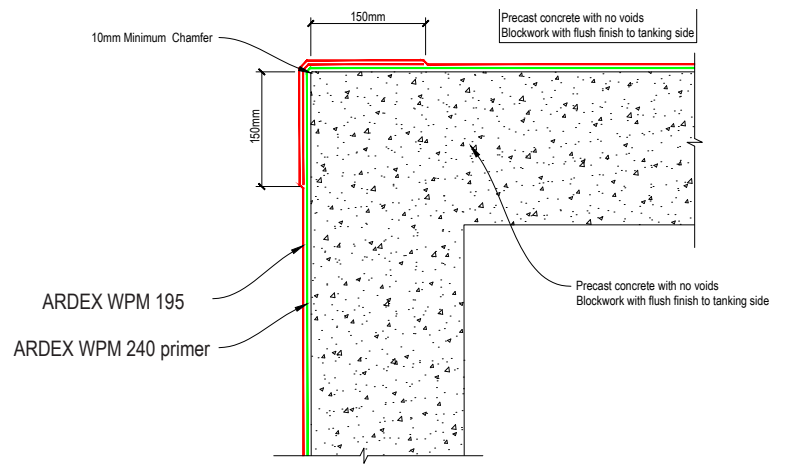
ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

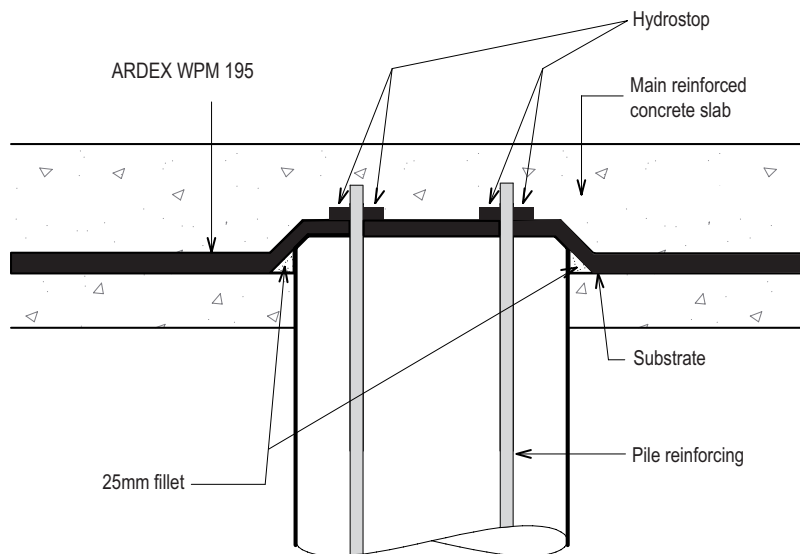
INTERNAL CORNER



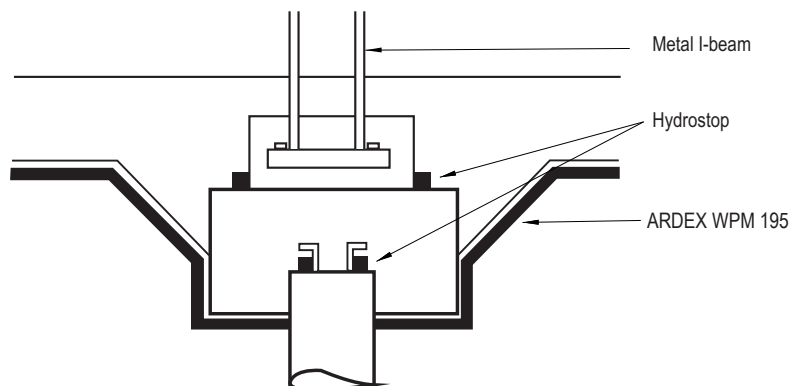
EXTERNAL CORNER



PILE CAP



PILE CAP



STANDARD PIPE DETAIL

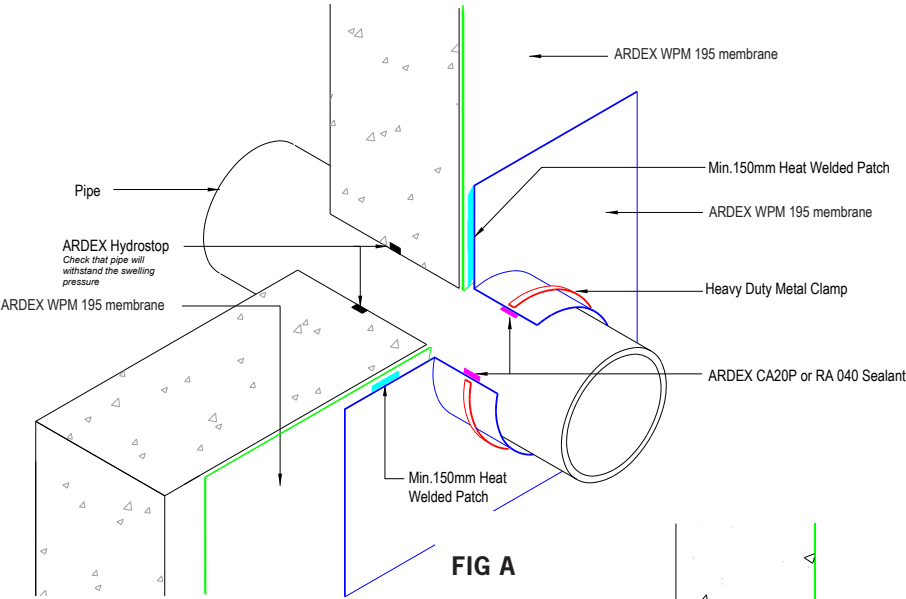


FIG A

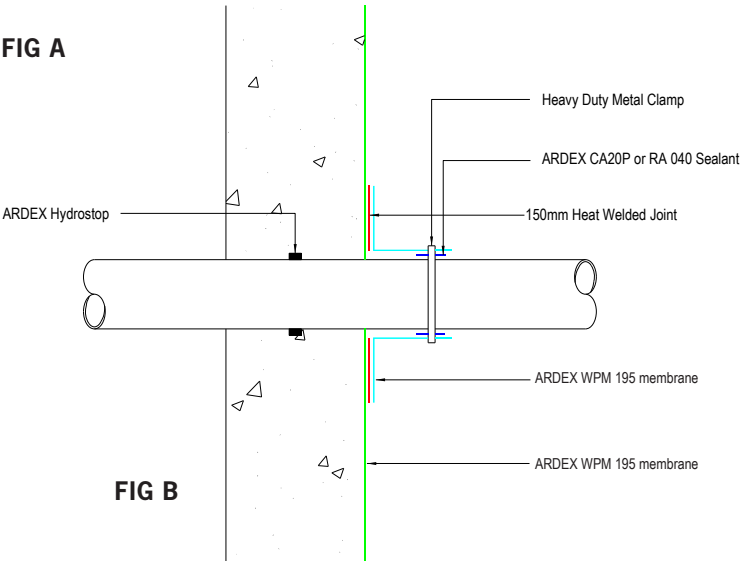
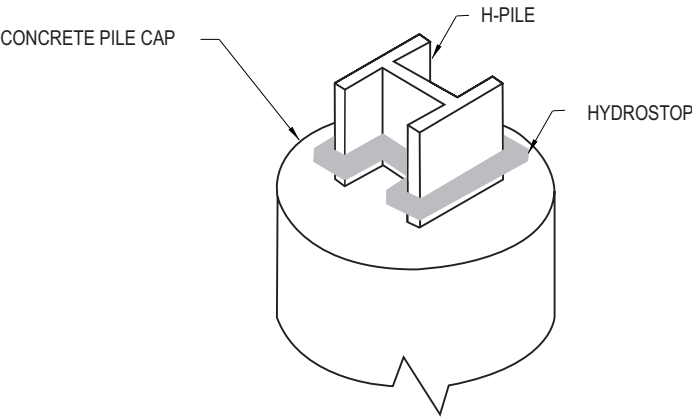
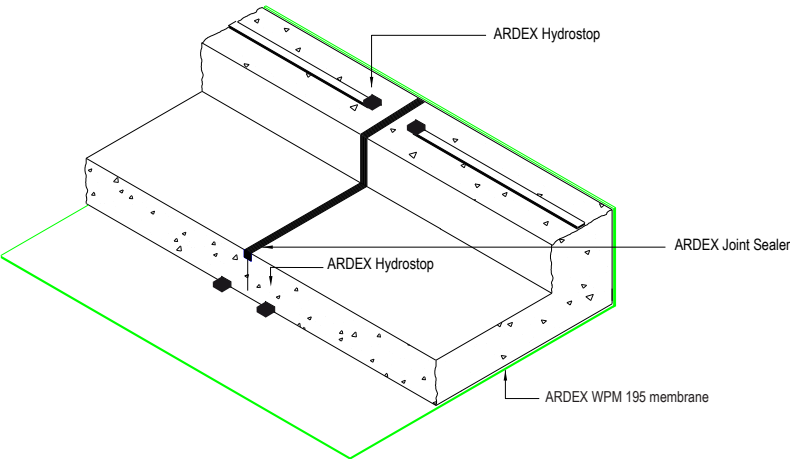


FIG B

PILE CAP-HYDROSTOP



WATERSTOP & PVC JOINT CONNECTION



ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

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ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

Modified Bitumen Tanking Membrane

CE Certification

CodeMark Certification (No. AQ-021216-CMNZ)

Positive Vapour Barrier

High Resistance to Thermal Ageing

High Resistance to Cracking

Excellent Elongation and Flexibility

4mm Gauge

Mineral Chip Finish



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ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

PRODUCT DESCRIPTION

ARDEX WPM 196 is a high performance Styrene-Butadiene-Styrene (SBS) bituminous compound modified with adhesive elastoplastic polymers its excellent quality is highlighted by two indicators: cold flexibility and high adhesiveness. ARDEX WPM 196 is suitable for application in all climatic zones, with excellent cold flexibility (-20° C) enables an easy application and allows the membrane to be ideally suited to be applied in areas with harsh climates.

The exceptional elongation properties of SBS combined with the strength and dimensional stability of the reinforcing provides an excellent waterproofing membrane in below ground applications. ARDEX WPM 196 is coated with a mineral chip - sand, polymeric film PE/PP, while the bottom surface is embossed and protected by a heat sensitive polythene film.

ARDEX WPM 196 also has the European CE certification for use as a tanking membrane.

FEATURES/BENEFITS

- Complies with BS EN 13969:2004
- European CE certification - GB06/69203
- CodeMark Certification (No. AQ-021216-CMNZ)
- Excellent resistance to atmosphere agents
- Excellent resistance to Geothermal Gas including Hydrogen Sulphide
- High flexibility during application at sub-zero temperature with no physical strains
- High malleability
- Accommodates structural movements
- Resistant to chemical attacks
- Withstand thermal shocks
- Proven performance in colder regions
- Good elongation and flexibility

USES

ARDEX WPM 196 is used as a single layer or multi-layer membrane in horizontal or vertical applications for waterproofing for below ground tanking. It is primarily applied to the outside of a sub-structure of a building, such as a foundation or basement to prevent water ingress.

Other forms of tanking where ARDEX WPM 196 can be used include under floor slabs, behind masonry walls, the lining of substrates of in situ or precast concrete; retaining walls, lift shafts, tunnels, living roofs and planter boxes.

SURFACE PREPARATION

Substrates need to be clean, smooth, dry and free of sharp edges, loose or foreign materials, oil, grease and other materials that may damage the membrane. All surface voids greater than 5mm wide shall be properly filled with an acceptable fill material.

Confirm concrete structures are specifically engineered to meet the requirements of the NZBC B1/VM1, 3.0 Concrete.

Ensure concrete substrate has been allowed to cure for at least 28 days before commencing application. The relative humidity of concrete substrates must be 75% or less before membrane application to NZBC E2/AS1, 10.0 Construction moisture. Take a measurement using a hygrometer to verify concrete has sufficiently dried when necessary. This process is essential.

The above criteria do not apply if ARDEX WPM 196 is loose-laid on lean site concrete.

ARDEX do not recommend the use of curing compounds; however, when used ensure all traces of compound are gone or removed. Concrete to be finished to NZS 3114, U3 with a light trowel texture. The concrete to have all ridges and protrusions stoned flush.

INSTALLATION

The application of ARDEX WPM 196 should be carried out by an approved ARDEX Applicator.

Installation shall be undertaken in accordance with all relevant technical information related to the selected installation method, including information contained within the ARDEX specification.

Prior to the application of ARDEX WPM 196 the surface may require priming with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 196 is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 196 may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX.

STORAGE

All rolls of ARDEX WPM 196 should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 8m

Roll weight: Approximately 40kg

Rolls per pallet: 25

ARDEX HYDRO STOP

Please refer to Ardex 1950 and Ardex 1955 for data sheets on standard and sea water activated Hydrophilic Rubber Water Stops.

ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

TECHNICAL CHARACTERISTICS

CHARACTERISTIC	TEST METHOD	UNITS	NOMINAL VALUES	TOLERANCES
Visible defects	EN 1850-1	visible	Without defects	
Length	EN 1848-1	m	8 -1%	MLV
Width	EN 1848-1	m	1 -1%	MLV
Straightness	EN 1848-1	mm	20 mm x 8 m	MLV
Thickness	EN 1849-1	mm	4	±
Watertightness (A)	EN 1928	kPa	60	MLV
Shear resistance longitudinal / transversal	EN 12317-1	N/50 mm	650 / 450	± 20%
Water vapour transmission proprieties Method A	EN 1931	μ / Sd (m)	120.000 / 480	-20.000
Tensile Strength Longitudinal / Transversal	EN 12311-1	N/50 mm	750 / 550	± 20%
Elongation at break Longitudinal / Transversal	EN 12311-1	%	45 / 45	- 15 absolut
Resistance to impact	EN 12691	mm	900	MLV
Resistance to static loading Method A	EN 12730	Kg	15	MLV
Resistance to tearing (nail shank)	EN 12310-1	N	180 / 180	- 30%
Dimensional stability Longitudinal / Transversal	EN 1107-1 met. A	%	± 0,3 %	MLV
Flexibility at low temperature	EN 1109	°C	-20	MLV
Flow resistance at elevated temperature	EN 1110	°C	90	MLV
Durability of water-tightness against artificial ageing	EN 1296 / EN 1928	kPa	60	MLV
Durability of water-tightness against chemicals	EN 1847 / EN 1928	Kpa	60	MLV
Change in mass on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	0.29	MDV
Change in Tensile Strength on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	-9.6	MDV
Change in Elongation on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	7.2	MDV

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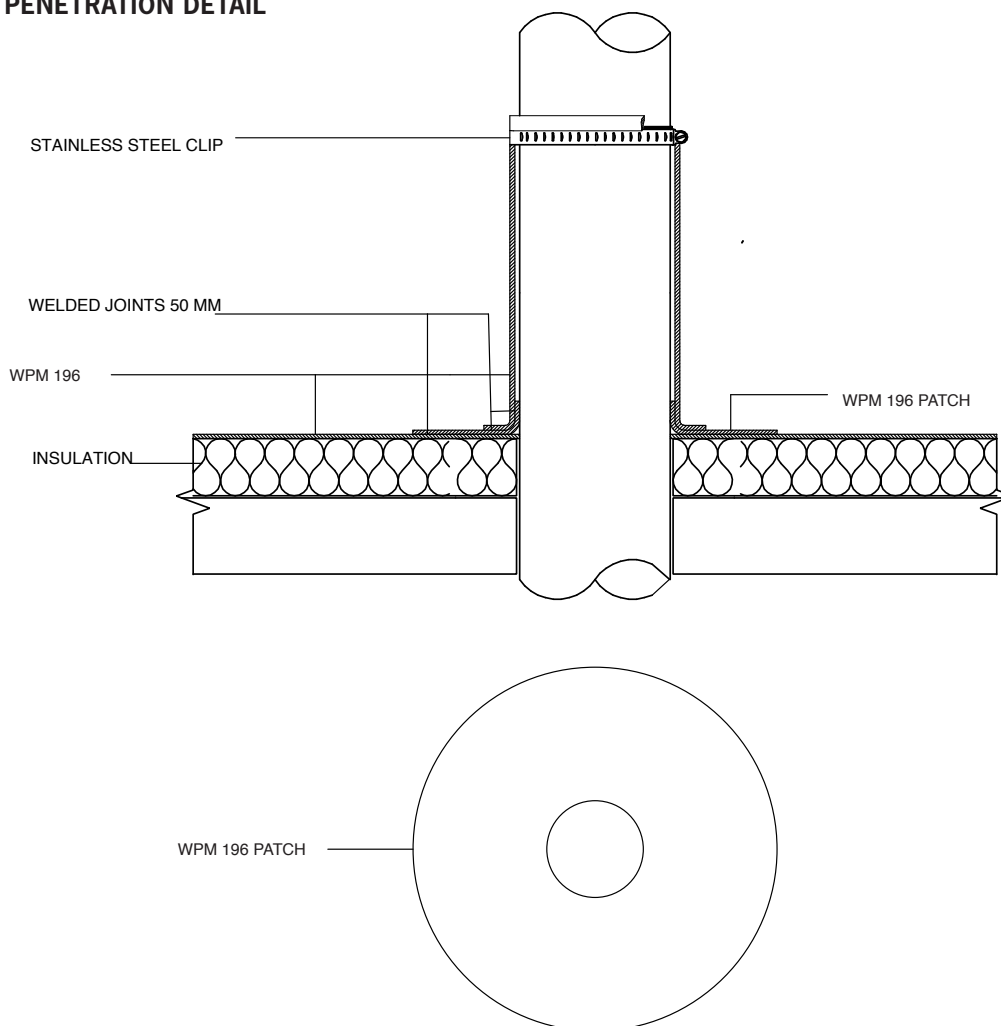
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ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

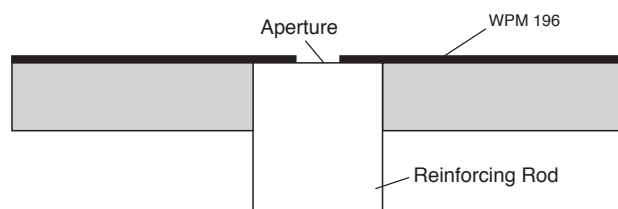
PIPE PENETRATION DETAIL



FLASHING - REINFORCING RODS

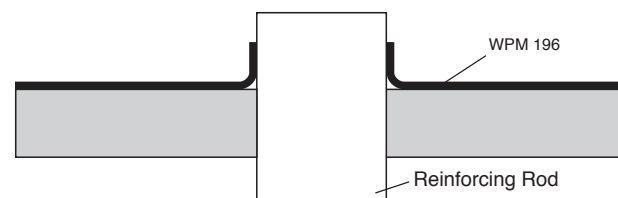
STEP 1

Cut smaller diameter hole than Reinforcing Rod.



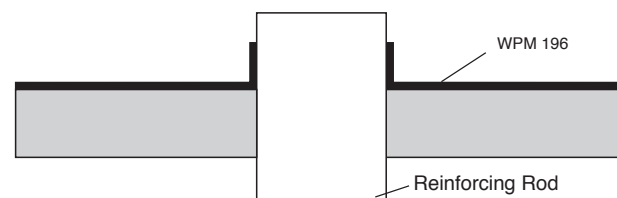
STEP 2

Rod is raised through smaller diameter hole in WPM 196, forcing edge upwards to create



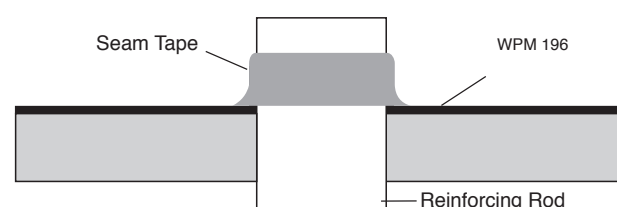
STEP 3

Roll Patch down to eliminate void.

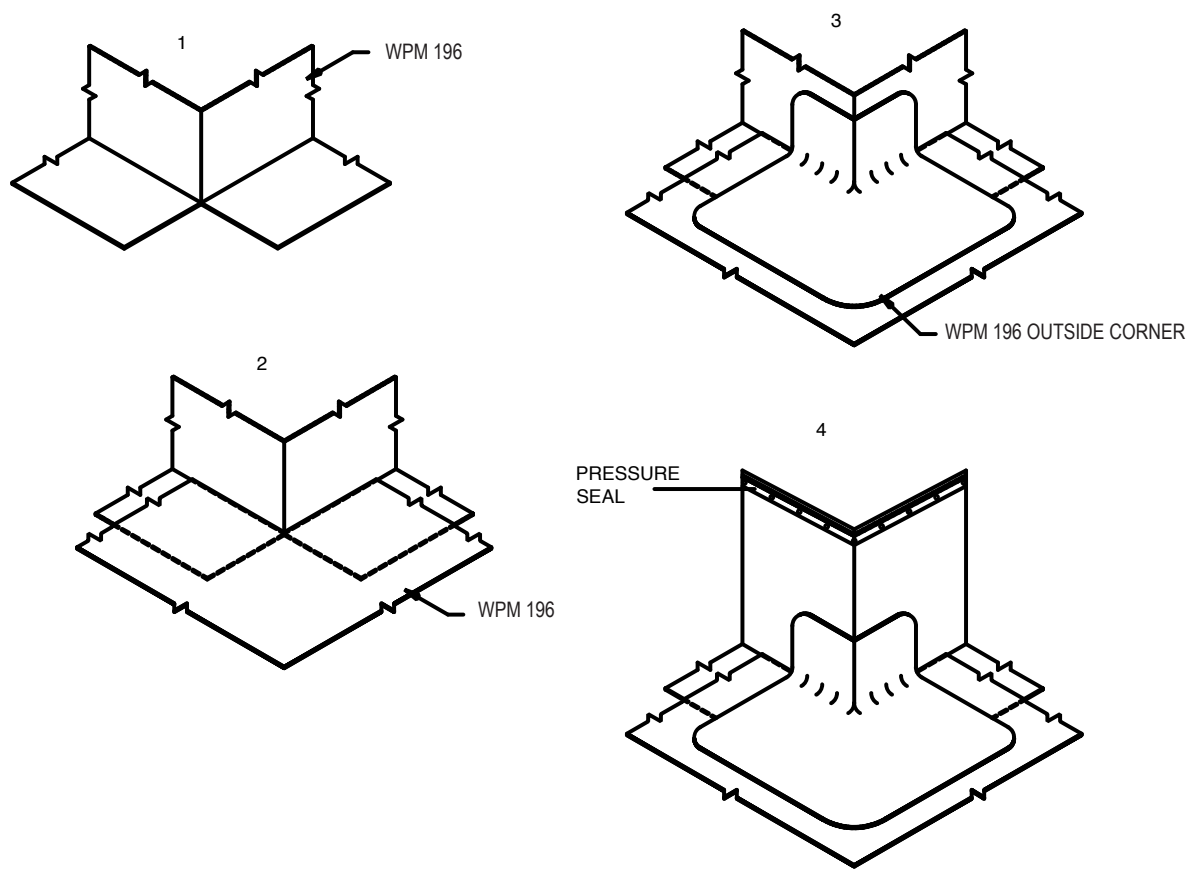


STEP 4

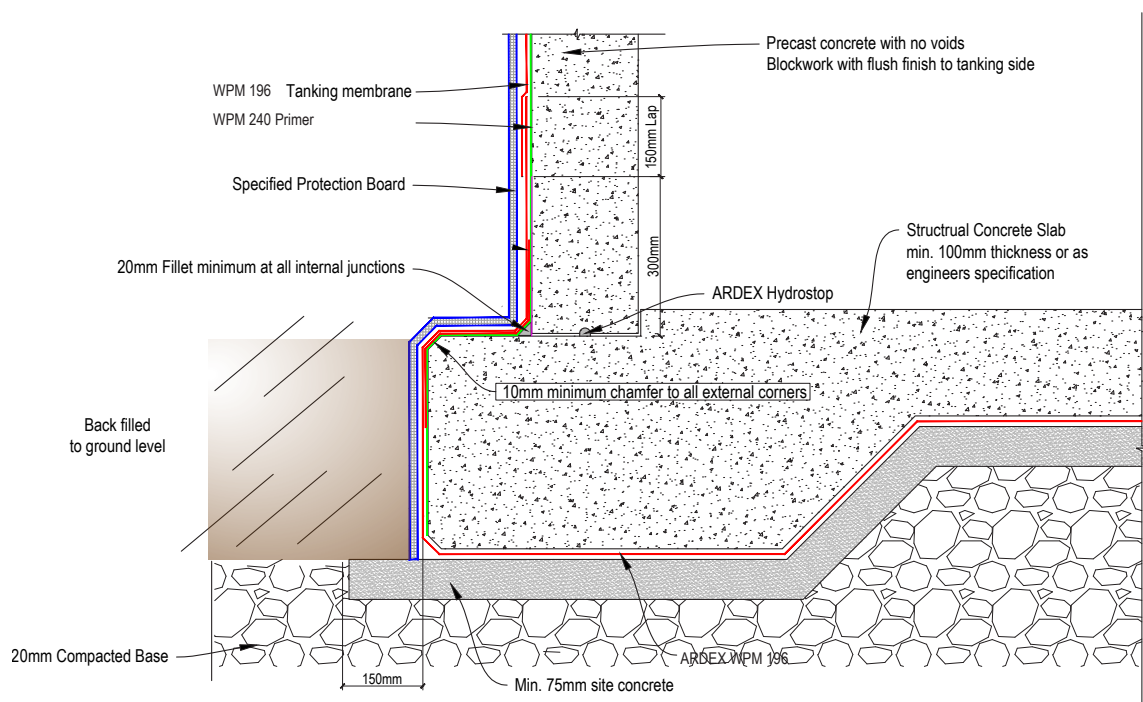
Form upstand with WPM 196 to rod.



CORNER DETAILING / SQUARE PENETRATIONS



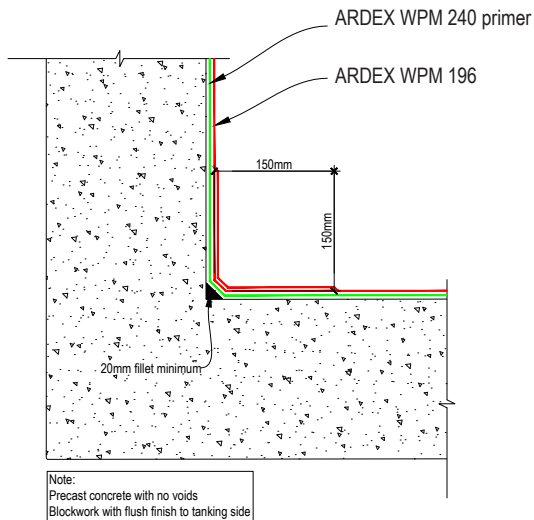
FOOTING JUNCTION



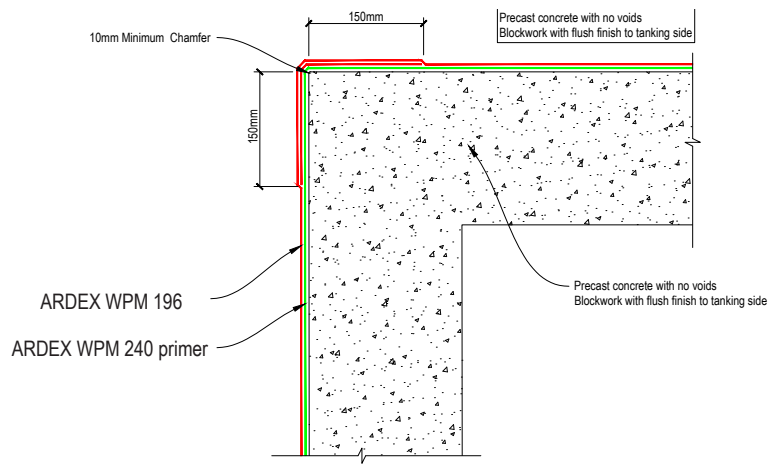
ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

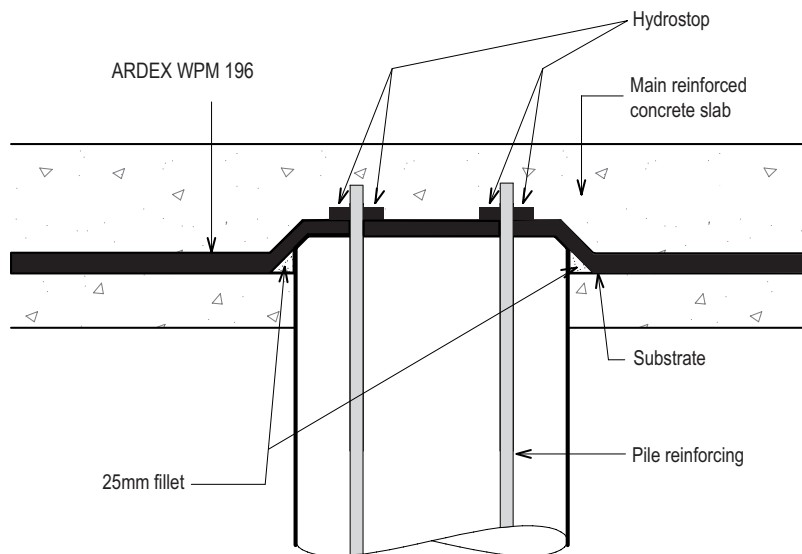
INTERNAL CORNER



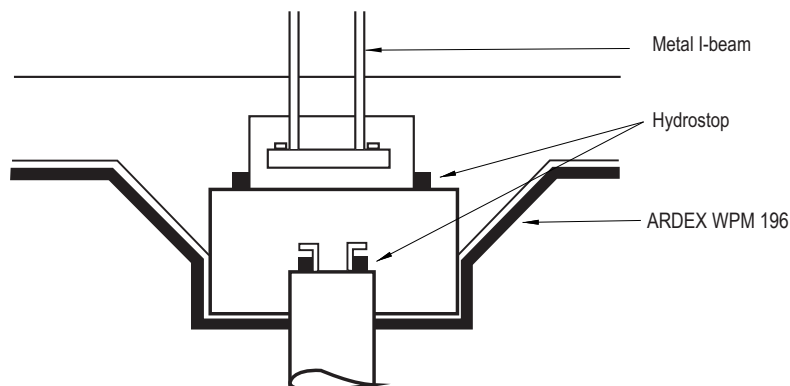
EXTERNAL CORNER



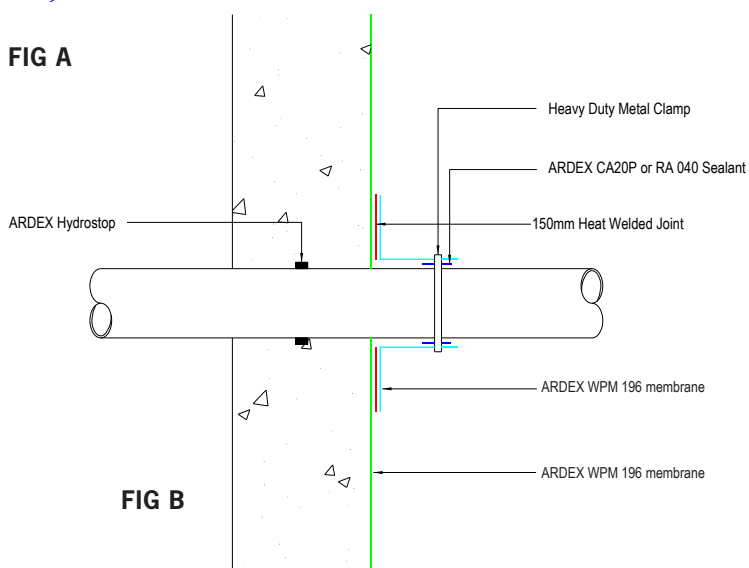
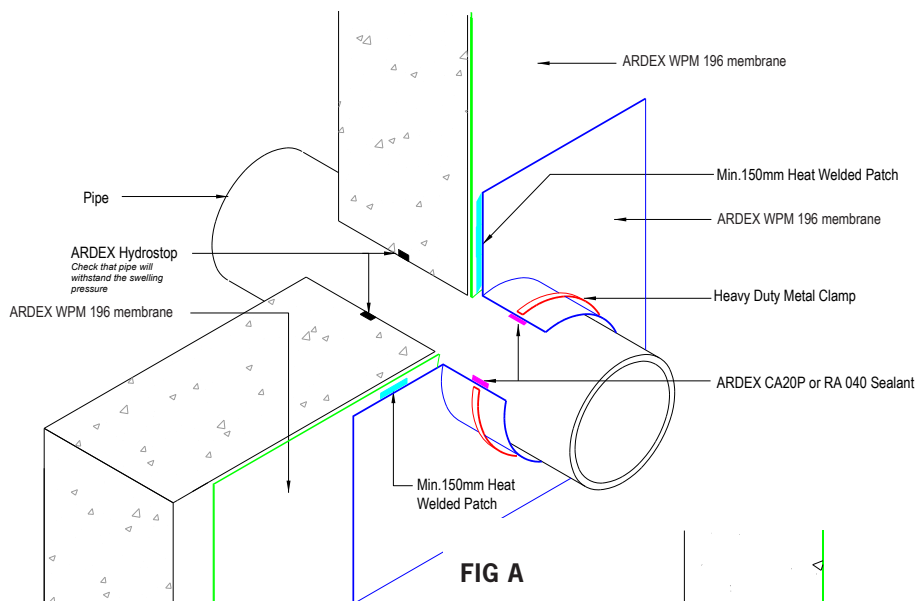
PILE CAP



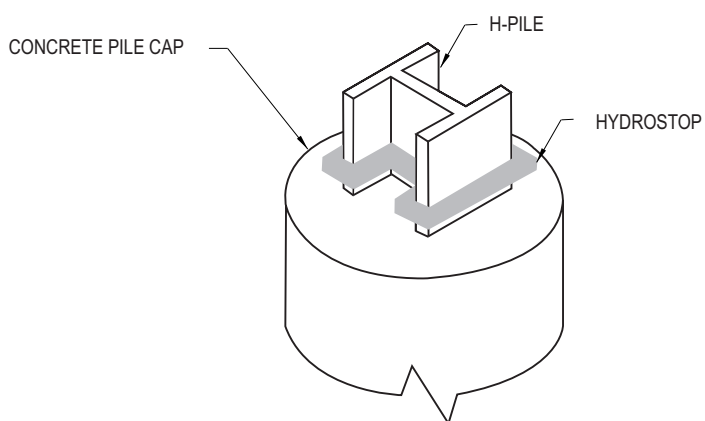
PILE CAP



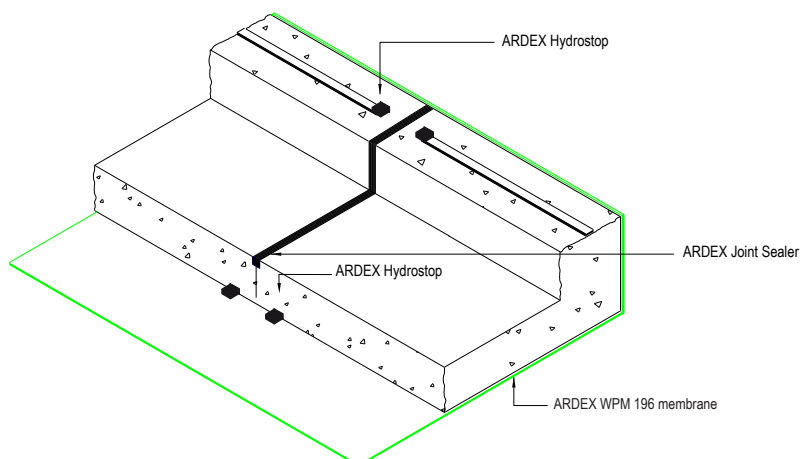
STANDARD PIPE DETAIL



PILE CAP-HYDROSTOP



WATERSTOP & PVC JOINT CONNECTION



ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

Toll Free Technical Services:

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ARDEX WPM 1500

WeldTec Below Ground Tanking Membrane

Weldable Waterproofing Membrane Suitable for Below Ground Tanking

Suitable for tanking foundations, basements and other below ground waterproofing applications

Bonds to wet concrete to give high lateral water migration resistance

Very good moisture, radon and methane gas barrier

High resistance to chemicals and hydrostatic head

Compatible with steel and metals

Not reliant on confining pressures, hydration or tape systems

WeldTec technology to create very strong, watertight laps and detailing using hot air gun

Forms a unique, continuous waterproofing membrane

High elongation – excellent crack bridging capabilities

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ARDEX WPM 1500

WeldTec Below Ground Tanking Membrane

DESCRIPTION

ARDEX WPM 1500 is a fleece-lined, weldable tanking membrane for below ground applications.

USE

ARDEX WPM 1500 is used as a single layer or multi-layer membrane in horizontal or vertical applications for waterproofing for below ground tanking. It is primarily applied to the outside of a sub-structure of a building, such as a foundation or basement to prevent water ingress.

Other forms of tanking where ARDEX WPM 1500 can be used include under floor slabs, behind masonry walls, the lining of substrates of in situ or precast concrete; retaining walls, lift shafts, tunnels, living roofs and planter boxes.

ARDEX WPM 1500 must be protected from UV.

DURABILITY

ARDEX WPM 1500 when fixed according to ARDEX instruction will meet the New Zealand Building Code requirements of B2.3.1 (a) 50 years.

MATERIAL SPECIFICATIONS

ARDEX requirements for long term warranty necessitate that the ARDEX WPM 1500 meets these typical technical requirements listed below in Table 1.

GAUGES

Standard 1.5 mm

RESISTANCE

ARDEX WPM 1500 resists tearing, flex-cracking, bubbling and abrasion. It is extremely strong, has a long life and is versatile.

PACKAGING

ARDEX WPM 1500 is packaged in rolls of nominal 1.4 m width and 20 m long. Each roll is packed in a polythene wrapper trademarked ARDEX WPM 1500.

ADHESIVES FOR USE WITH ARDEX WPM 1500

ARDEX WA 98 - Solvent Based waterproofing adhesive.

INSTALLATION

The application of ARDEX WPM 1500 should be carried out by an approved ARDEX Applicator.

Installation shall be undertaken in accordance with all relevant technical information related to the selected installation method, including information contained within the ARDEX specification.

Acceptable substrates to which ARDEX WPM 1500 is to be installed must be properly prepared prior to membrane installation.

Physical Properties

Parameter	ARDEX WPM 1500	Test Method
Colour	Grey/Black	
Thickness	1.5 mm	
Width	1.40 m	
Roll Length	20 m	
Low Temperature Flexibility	Pass at -29°C	ASTM D1970
Elongation	500% typical	ASTM D412
Tensile Strength	8 MPa	ASTM D412
Puncture Resistance	600 N	ASTM E96 B
Peel Adhesion to Concrete	0.87 N/mm	ASTM D903 modified
Lap Peel Adhesion	7 N/mm	ASTM D1876
Permeance to Water Vapour Transmission	0.04 g/dm ²	ASTM E96 B
Radon Diffusion Coefficient	1.6 x 10 ⁻¹¹ m ² /s	K124/02/95
Water-Tightness to Liquid Water	Pass	EN 1928
Durability of Water-Tightness Against Chemicals	Pass	EN 1847 and EN 1928
Resistance to Tear (Nail Shank)	351 N	EN 12310-1
Bitumen Compatability	Pass	EN 1548 and EN 1928
Joint Strength	380 N/50mm	EN 12317-2
Lateral Water Migration Resistance	Max. 85 psi (60 m of hydrostatic head pressure)	STM D 5385 Modified1
Resistance to Hydrostatic Head	Pass at 100 psi (70 m of hydrostatic head pressure)	ASTM D 5385 Modified2

1. Lateral water migration resistance is tested by casting concrete against membrane with a hole and subjecting the membrane to hydrostatic head pressure with water. The test measures the resistance of lateral water migration between the concrete and the blind side waterproofing membrane.
2. Hydrostatic head tests are performed by casting concrete against the membrane with a lap. Before the concrete sets a 3 mm spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to a pressure of 100 psi which is the limit of the apparatus.

All surfaces must be dry, clean, smooth, and free of sharp edges, loose or foreign materials, oil, grease and other materials which may damage the membrane.

- A. Substrate examination: Examine substrates, areas, and conditions, with the applicator present, for compliance with requirements and other conditions affecting performance.
- 1. For applications over blinding, a concrete mud-slab, compacted subgrade or vertical soil retention system, verify that compacted sub-grade or concrete mud-slab is smooth and sound; and ready to receive the ARDEX WPM1500 below grade membrane.
- 2. Verify that vertical soil retention systems are prepared using drainage composite, plywood, shotcrete or other approved means to achieve a uniform, sound and continuous substrate ready to receive the ARDEX WPM 1500 below grade membrane.
- 3. Proceed with installation only after unsatisfactory conditions have been corrected.

ARDEX WPM 1500 is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by using a Leister Triac S Hot Air Gun hand welder, or Leister Twinny Combi-Welder.

ARDEX WPM 1500 may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX.

INSTALLATION - VERTICAL

Apply the membrane with the black side towards the substrate. Mechanically fasten the membrane vertically using flat headed fixings appropriate to the substrate. The membrane may be installed in any convenient length. Secure the top of the membrane using a batten or fixing 50 mm below the top edge. Use fixings at typically 600 mm centres to secure the membrane flat against the substrate.

Fixings can be made through the selvedge; this allows firmly welded and rolled overlaps, which are covered by the subsequent sheet of ARDEX WPM 1500. Any exposed fixings should be patched by heat welding a patch of ARDEX WPM 1500 with a Leister Triac S Hot Air Gun.

REMOVAL OF FORMWORK

ARDEX WPM 1500 membranes can be applied to removable single and double sided formwork, slab perimeter formwork, pile caps, etc. Once concrete is poured the formwork must remain in place until the concrete has gained sufficient compressive strength to

develop the surface bond with ARDEX WPM 1500.

A minimum concrete compressive strength of 10 N/mm² is recommended prior to stripping formwork supporting WPM 1500 membranes. Premature stripping may result in loss of adhesion between the membrane and concrete.

Roll out ARDEX WPM 1500 and cut to the measured length. Smooth ARDEX WPM 1500 on contact to minimise air entrapment beneath the membrane.

Floor sheets of ARDEX WPM 1500 must extend up the wall at least 300mm. Make sure the ARDEX WPM 1500 is laid tightly into all corners. Wall sheets of ARDEX WPM 1500 should overlap the 300mm upstand. Weld seams and laps with the Leister Triac S Hot Air Gun or Leister Twinny Combi-Welder. Roll with a rubber roller to ensure seams and laps are secure.

PROTECTION

ARDEX WPM 1500 is not suitable as a trafficable surface. It is the responsibility of the main building contractor to ensure all sub-trades likely to be working in the vicinity of the membrane are aware that a waterproofing membrane has been installed and all care must be taken to protect the membrane from damage.

SAFETY PRECAUTIONS

ARDEX WPM 1500 is not classified as dangerous goods

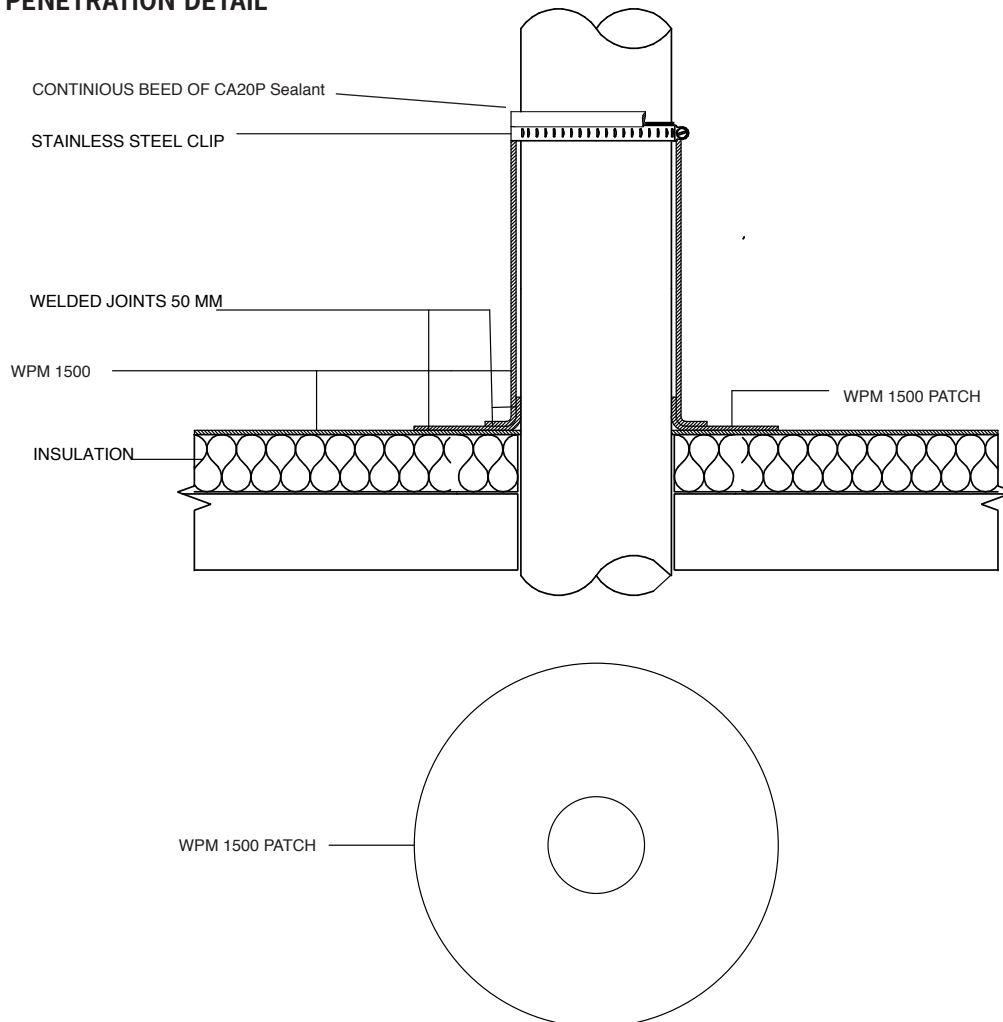
ARDEX HYDRO STOP

Please refer to Ardex 1950 and Ardex 1955 for data sheets on standard and sea water activated Hydrophilic Rubber Water Stops.

ARDEX WPM 1500

WeldTec Below Ground Tanking Membrane

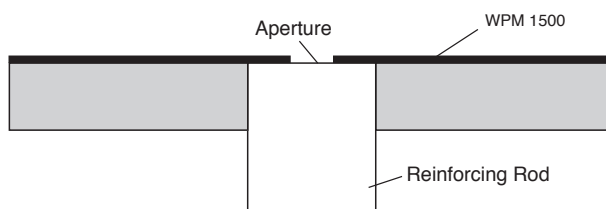
PIPE PENETRATION DETAIL



FLASHING - REINFORCING RODS

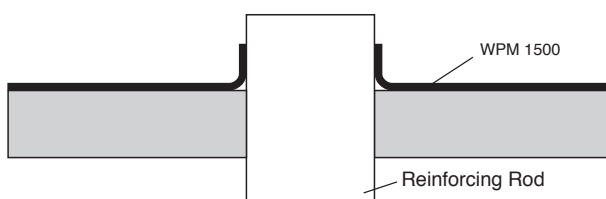
STEP 1

Cut smaller diameter hole than Reinforcing Rod.



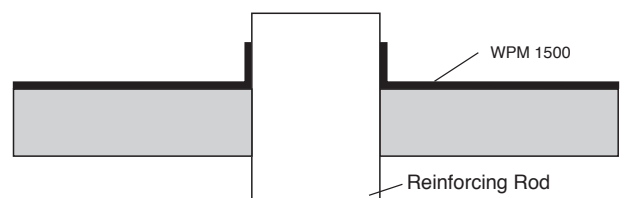
STEP 2

Rod is raised through smaller diameter hole in WPM 1500, forcing edge upwards to create



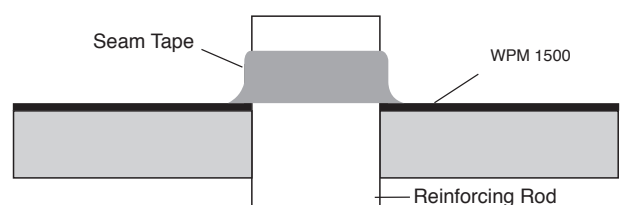
STEP 3

Roll Patch down to eliminate void.

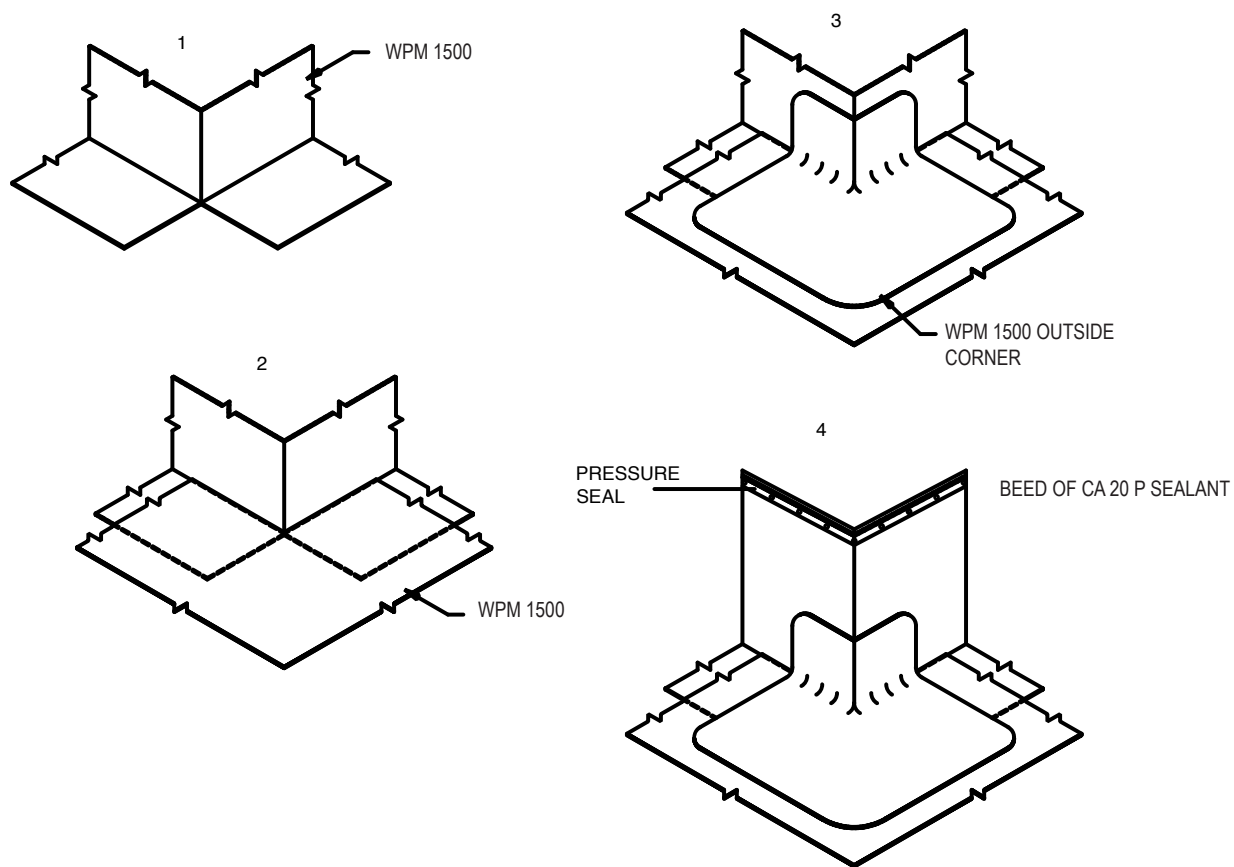


STEP 4

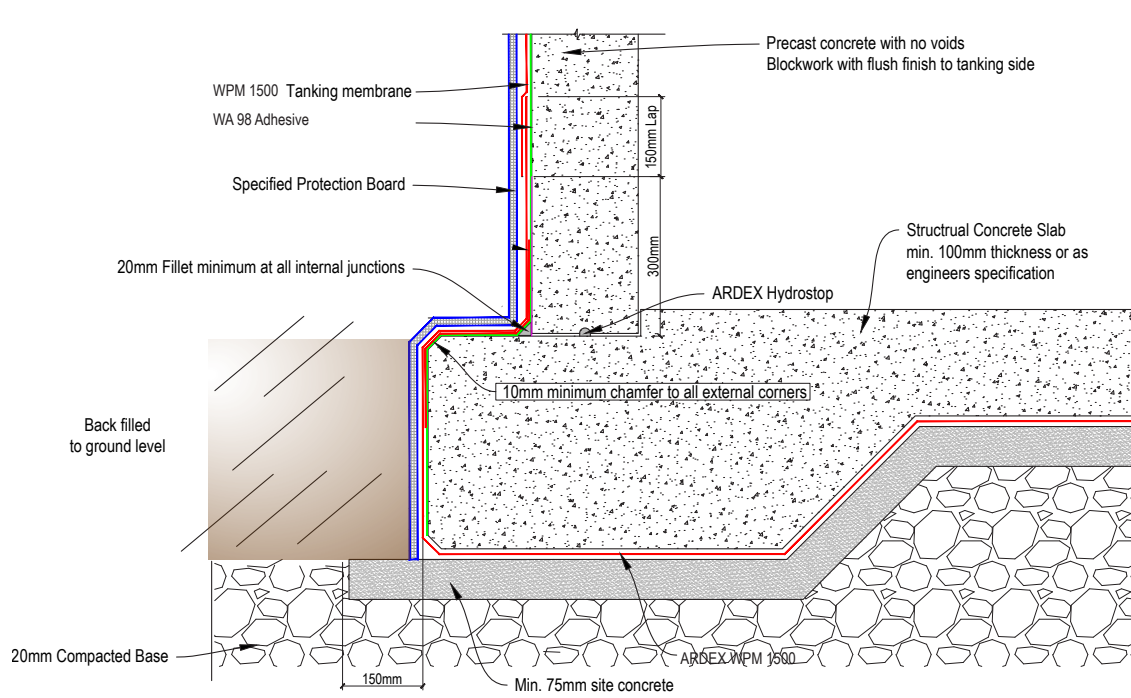
Tape upstanding WPM 1500 to rod using seam primer and seam tape.



CORNER DETAILING / SQUARE PENETRATIONS



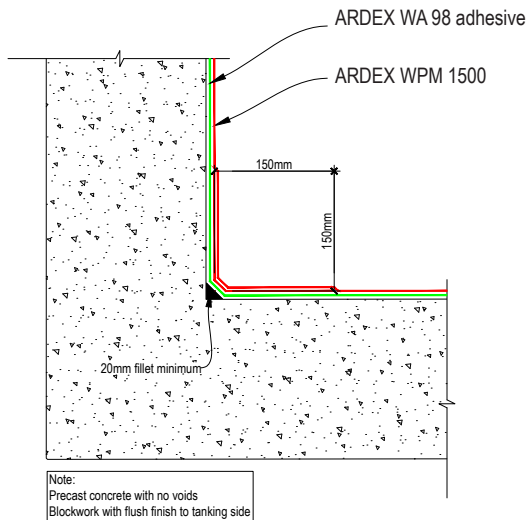
FOOTING JUNCTION



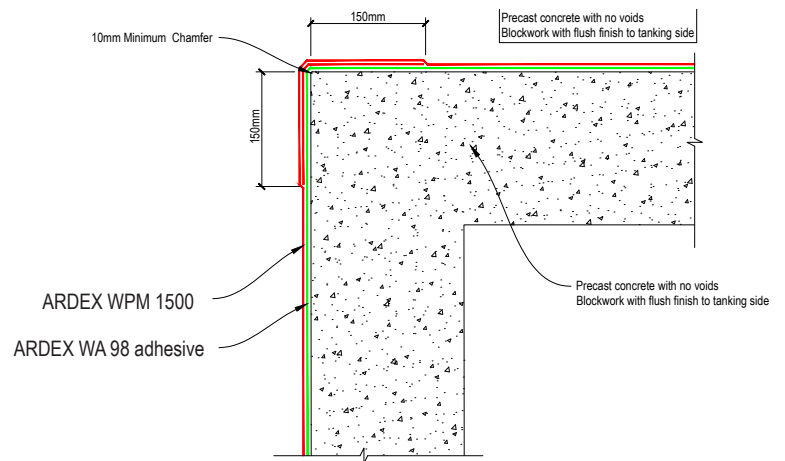
ARDEX WPM 1500

WeldTec Below Ground Tanking Membrane

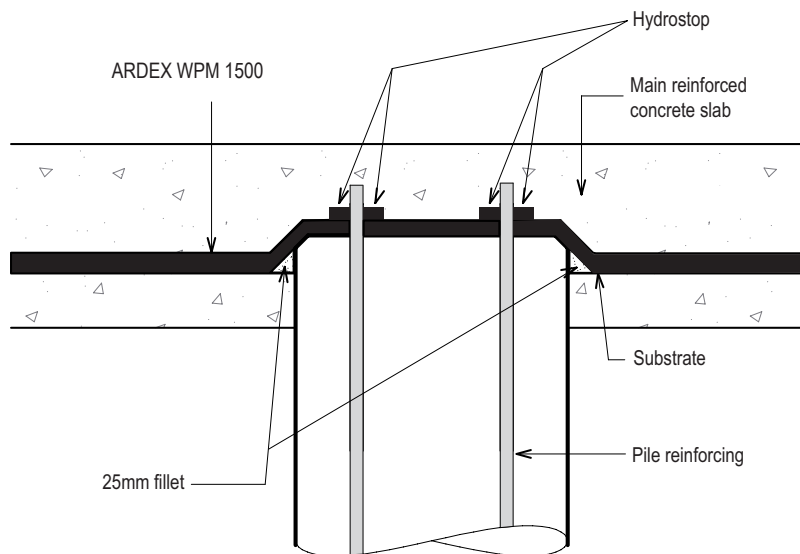
INTERNAL CORNER



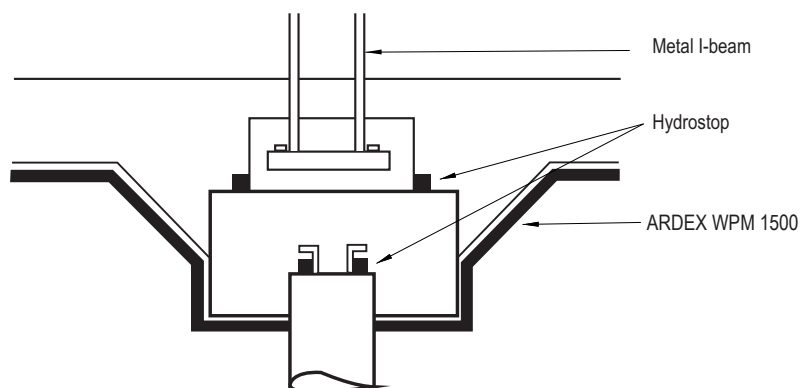
EXTERNAL CORNER



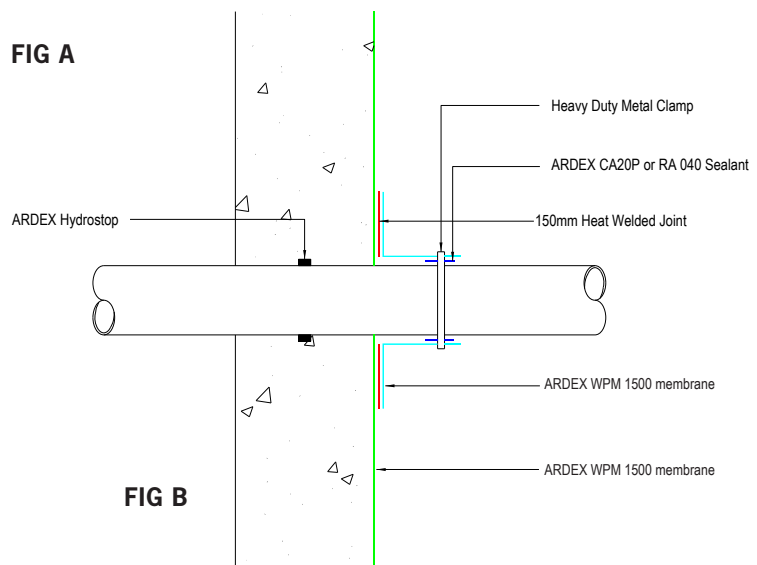
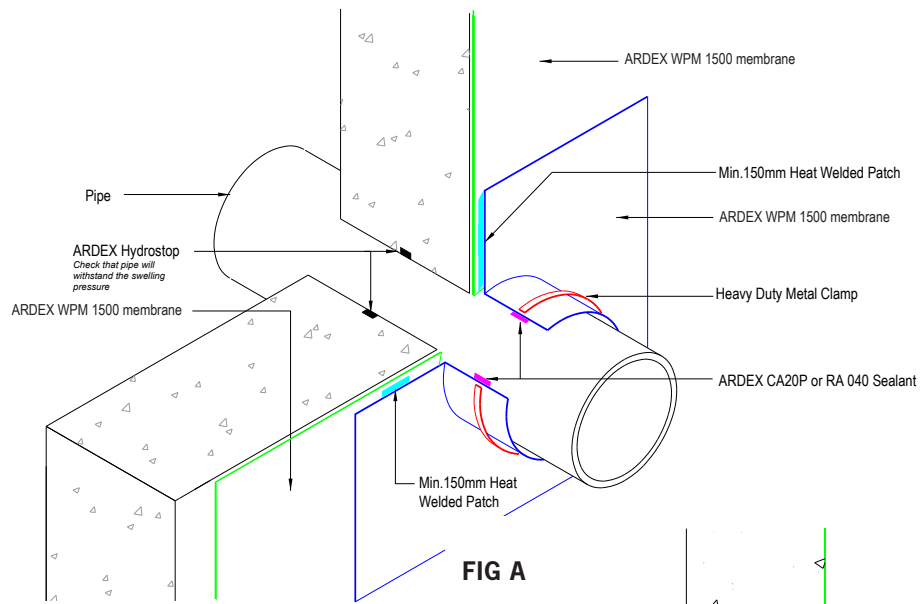
PILE CAP



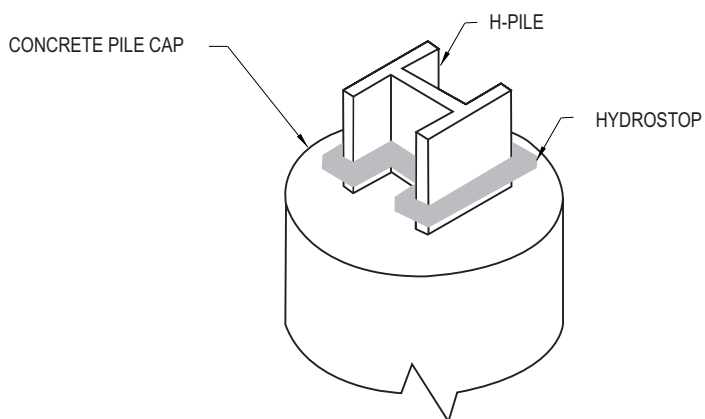
PILE CAP



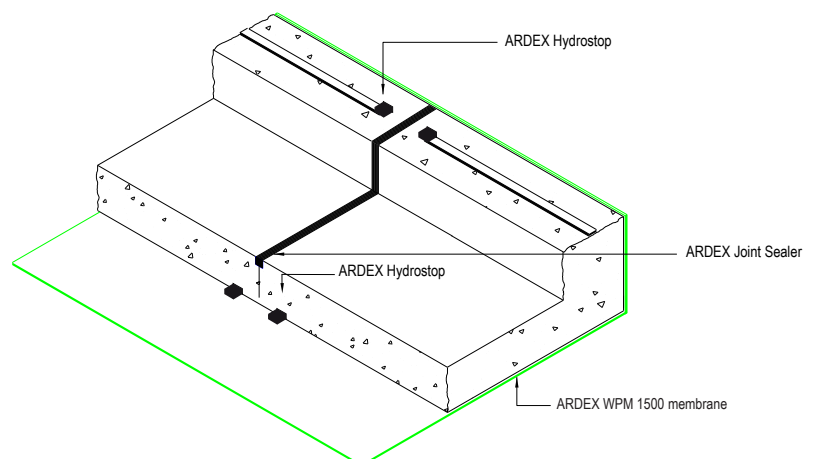
STANDARD PIPE DETAIL



PILE CAP-HYDROSTOP



WATERSTOP & PVC JOINT CONNECTION



ARDEX WPM 1500

WeldTec Below Ground Tanking Membrane

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DISCLAIMER

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ARDEX HYDROSTOP SW WPM 1950

Polymeric Hydrophilic Rubber Joints

Non-greasy, non-sticky, odourless and non-toxic

Excellent for application to rough concrete surfaces

No premature expansion; allows concrete to gain strength before expansion

Easy to install by bonding, nailing or casting into joint faces with the aid of ARDEX CA20P.

Solves detailing problems in construction.

Excellent performance - Swelling properties unaffected by long term cyclic wetting and drying; limited loss of integrity of waterstop

Sustains effective seal in wet conditions

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ARDEX HYDROSTOP SW WPM 1950

Polymeric Hydrophilic Rubber Joints

DESCRIPTION

Thanks to its particular chemical composition, ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint remains unaltered over time even at maximum expansion, is dimensionally stable even after numerous hydration and de-hydration cycles while maintaining its ability to increase its volume.

In its maximum expansion, in all its sections, ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint is mechanically strong and elastic. The swelling process is controlled and designed to be compatible with fresh concrete.

The expansion is due to the increase in volume of the ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint components, such as butyl rubber, polyethylene aggregated by high cohesion polymeric binders.

APPLICATION INSTRUCTIONS

ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint must be applied to the support with nails or cement adhesives to remain attached to the support in the early stages of concrete casting. For maximum performance ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint should be placed between the reinforcing bars or in a support with raised edge of at least 8/10 cm. The joints are realized by matching sideways the rubber strip for at least 5 cm, while avoiding overlapping. The application surface should be clean, compact, properly vibrated and free of any irregularities.

BENEFITS

ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint is non-greasy, non-sticky, odorless and non-toxic. Thanks to its ductility it can be used in all conditions and, apart from the nails or adhesive, needs no additional support also in the vertical laying.

PACKAGING

Normally the ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint is protected in impermeable packs in cardboard boxes with 6 rolls 8mt long in a box, giving a total of 48 lineal meters. Profiles and sizes are those normally used in the construction site; profiles with particular sections are available on request:

SW WPM 1950 20mm x 10mm x 8mt roll. 6 rolls per carton equals 48 lineal metres per box

LIMITATIONS

In case of contact with high salt content water, ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint, preliminary expansion tests must be carried out. For further information please contact our technical service.

SAFETY PRECAUTIONS

There is no health hazards associated with ARDEX Hydrostop SW WPM 1950 in normal use.

Technical Data

Specific weight	ISO 1183	1,26 kg/dm ³
Operating temperature	ISO 458/2	about +4 °C
Max. expansion		% 350
Hardness	ISO 868	60 shore A
Load at break	ISO 527	25 N/mm ²
Elongation at break	ISO 527	300 %
Durability		unlimited
Sections	various	

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ARDEX HYDROSTOP SEA WPM 1955

Polymeric Hydrophilic Rubber Joints

Specifically designed for marine environments

Non-greasy, non-sticky, odourless and non-toxic

Excellent for application to rough concrete surfaces

No premature expansion; allows concrete to gain strength before expansion

Easy to install by bonding, nailing or casting into joint faces with the aid of ARDEX CA20P.

Solves detailing problems in construction.

Excellent performance - Swelling properties unaffected by long term cyclic wetting and drying; limited loss of integrity of waterstop

Sustains effective seal in wet conditions

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ARDEX HYDROSTOP SEA WPM 1955

Polymeric Hydrophilic Rubber Joints

DESCRIPTION

Thanks to its particular chemical composition, ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint remains unaltered over time even at maximum expansion, is dimensionally stable even after numerous hydration and de-hydration cycles while maintaining its ability to increase its volume.

USED IN APPLICATIONS IN BRACKISH AND MARINE WATER

In its maximum expansion, in all its sections, ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint is mechanically strong and elastic. The swelling process is controlled and designed to be compatible with fresh concrete. First expansion occurs after 6/12 hours, while second expansion occurs after 24/36 hours.

COMPOSITION

The expansion is due to the increase of volume in the ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint components, such as butyl rubber, polyethylene aggregated by high cohesion polymeric binders.

APPLICATION INSTRUCTIONS

ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint, whose standard section size is 10x20mm, but can also be supplied in different sizes, must be applied to the support with nails or cement adhesives to remain attached to the support in the early stages of concrete casting. For maximum performance ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint should be placed between the reinforcing bars or in a support with raised edge of at least 8/10 cm. The joints are realized by matching sideways the rubber strip for at least 5 cm, while avoiding overlapping. The application surface should be clean, compact, properly vibrated and free of any irregularities.

BENEFITS

ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint is non-greasy, non-sticky, odorless and non-toxic. Thanks to its ductility it can be used in all conditions and, apart from the nails or adhesive, needs no additional support also in the vertical laying.

PACKAGING

Normally the ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint is protected in impermeable packs in cardboard boxes with 6 rolls 8mt long in a box, giving a total of 48 lineal meters. Profiles and sizes are those normally used in the construction site; profiles with particular sections are available on request:

SEA WPM 1955 20mm x 10mm x 8mt roll. 6 rolls per carton equals 48 lineal metres per box.

Guarantees

ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint in its various sections is manufactured with the best materials available on the market to obtain a top quality product.

All information reported on this data sheet correspond to our present level of technical and scientific knowledge studied in laboratory and tested on the site.

There can be changes attributable to environmental or application differences, or to the particular state of the material where to install the joint.

Therefore, information given in this sheet is not a guarantee on results, just warranty on the product quality.

SAFETY PRECAUTIONS

There is no health hazards associated with ARDEX Hydrostop SEA WPM 1955 in normal use.

Technical Data

Specific weight	ISO 1183	1,27 kg/dm ³
Operating temperature	ISO 458/2	about +3 °C
Max. expansion		% 350
Hardness	ISO 868	45 shore A
Load at break	ISO 527	30 N/mm ²
Elongation at break	ISO 527	500 %
Expansion		200 %
Sections	various	

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TPO Roofing Membrane

3-11 TPO Roofing Membranes

4-8 TPO BRANZ Appraisal

13-56 Installation Details

- 13 Lap Splices
 - 19 Base Tie-Ins
 - 25 Corners
 - 31 Penetrations
 - 37 Drains
 - 41 Expansion Joints
 - 45 Roof Edges
 - 51 Terminations
-



BRANZ Appraised

Appraisal No. 728 [2011]

ARDEX TPO ROOFING MEMBRANE SYSTEM USING WPM 615 AND WPM 612

Appraisal No. 728 [2011]

Amended 12 May 2017



The roof of the Scenic Circle Aurum Hotel, Queenstown.

BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes are single ply, adhesive fixed, polyester weft reinforced, thermoplastic polyolefin [TPO] waterproofing sheet membranes for building roofs.

Scope

- 2.1 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes have been appraised as a roof waterproofing membranes on buildings within the following scope:
- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan areas; and,
 - with building structures designed and constructed to meet the requirements of the NZBC; and,
 - with roof supporting structures of timber framing with substrates of plywood or Strandsarking; and,
 - with substrates of suspended concrete slabs; and,
 - situated in NZS 3604 Wind Zones, up to, and including Extra High.
- 2.2 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes have also been appraised for use as a roof waterproofing membranes on specifically designed buildings within the following scope:
- with building structures designed and constructed to comply with the NZBC; and,
 - with roof supporting structures of timber framing with substrates of plywood or Strandsarking; and,
 - with substrates of suspended concrete slab; and,
 - subjected to maximum wind pressures [Refer Paragraph 8.1]; and,
 - with the weathertightness design of all junctions being the subject of specific design by the designer.

Note: The design of these junctions has not been appraised by BRANZ and is outside the scope of this Appraisal.

- 2.3 Roofs waterproofed with ARDEX WPM 615 and WPM 612 TPO Roofing Membranes must be designed and constructed in accordance with the following limitations:
- nominally flat, curved or pitched roofs constructed to drain water to gutters and drainage outlets complying with the NZBC; and,
 - constructed to suitable falls [Refer Paragraph 13.3]; and,
- 2.4 The use of ARDEX WPM 615 and WPM 612 TPO Roofing Membranes on roofs with an integral roof garden has not been assessed by BRANZ and is outside the scope of this Appraisal.
- 2.5 The design and construction of the substrate and movement and control joints is specific to each building, and therefore is the responsibility of the building designer and building contractor and is outside the scope of this Appraisal.
- 2.6 The membranes must be installed by ARDEX New Zealand Limited approved applicators.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, ARDEX WPM 615 and WPM 612 TPO Roofing Membranes, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 [b] 15 years. ARDEX WPM 615 and WPM 612 TPO Roofing Membranes meet this requirement. See Paragraph 10.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.1, E2.3.2 and E2.3.6. Roofs incorporating ARDEX WPM 615 and WPM 612 TPO Roofing Membranes meet these requirements. See Paragraphs 13.1 – 13.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. ARDEX WPM 615 and WPM 612 TPO Roofing Membranes meet this requirement and will not present a health hazard to people.

- 3.2 This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

Technical Specification

- 4.1 Materials supplied by ARDEX New Zealand Limited are as follows:

- **ARDEX WPM 615 TPO Roofing Membrane** is a fully adhered roofing system based on a thermoplastic polyolefin [TPO] sheet, with non-halogenated flame retardants laminated around a polyester weft reinforcement. It is supplied in grey or white in rolls 1.5 mm thick, 2.0 m wide and 30.5 m long.
- **ARDEX WPM 612 TPO Roofing Membrane** is a fully adhered roofing system based on a thermoplastic polyolefin [TPO] sheet, with non-halogenated flame retardants laminated around a polyester weft reinforcement. It is supplied in rolls 1.14 mm thick, 2.0 m wide and 30.5 m long.
- **ARDEX WPM 623 – TPO Flashing** is a non reinforced TPO membrane designed to be used in situation where a pre-moulded accessory is not available. It is supplied as a 0.61 m x 15.25 m roll in colours of white and grey.
- **ARDEX TPO Inside/Outside Corners** are made from a flexible non reinforced TPO and are specifically designed for flashing inside or outside corners. They are supplied as a 76 mm x 76 mm x 82 mm corner with a 12.7 mm radius on all edges of the raised corner, in colours of white or grey.
- **ARDEX TPO Universal and Large Pipe Flashing** are TPO membrane flashings, designed for flashing of round penetrations. The universal is used for flashing round penetrations with an outside diameter of 25.4 mm to 152.4 mm; the large is used for flashing round penetrations with an outside diameter of 101.6 mm to 203.2 mm. They are supplied in colours of white and grey.
- **ARDEX TPO QuickSeam Flashing** is a non reinforced TPO membrane laminated to a white cured seaming tape for flashing metal roof edging profiles and other details as indicated by ARDEX New Zealand Limited. It is supplied as a 0.14 m x 30.5 m roll, in white.
- **ARDEX WPM 649 – Solvent based contact adhesive** for bonding ARDEX TPO membranes to approved insulations, wood, metal, masonry and other acceptable substrates. It is supplied as a yellow colour in 18.9 litre pails.
- **ARDEX WPM 651 – TPO Cut Edge Sealant** is a polymer based sealant designed to seal cut edges of ARDEX TPO membranes where the scrim reinforcement is exposed. It is supplied as white or grey in cartons of 4 bottles.
- **ARDEX WPM 657 – TPO General Purpose Sealant** is a high quality sealant with excellent adhesion to a variety of surfaces, used as a termination bar caulk and cut edge/seam sealant. It is supplied in cartridges, coloured white.
- **ARDEX WPM 659 – TPO Pourable Sealant** is a two component polyurethane sealer designed to seal around small pipe penetration, clusters of pipes, I beams etc in a penetration pocket detail. It is supplied in 3.78 litre packs and is coloured black.

- **ARDEX All Purpose Fasteners** are specifically designed for mechanical attachment of the ARDEX TPO membranes to steel, plywood and timber decks. They are supplied as 32 mm long screws, coloured red.
- **ARDEX HD Seam Plate** are specifically designed to be used for the attachment of ARDEX TPO membranes to approved substrates using ARDEX All Purpose Fasteners. They are supplied as 60.3 mm diameter plates.
- **ARDEX Pressure Seal** is designed for termination of ARDEX TPO membranes against smooth walls in all roofing situation. They are supplied as 3.1 m x 35 mm x 2.2 mm thick bars.

Handling and Storage

- 5.1 Handling and storage of all materials whether on or off site is under the control of the ARDEX New Zealand Limited approved applicators. Dry storage must be provided for all products and the rolls of membrane must be lying down on pallets.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for ARDEX WPM 615 and WPM 612 TPO Roofing Membranes. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

- 7.1 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes are for use on roofs where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas.
- 7.2 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes can be adversely affected by contact with bituminous materials or polystyrene insulation. ARDEX New Zealand Limited should be contacted for advice in either of these situations.
- 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 AS/NZS 1170. 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.
- 7.5 Where regular foot traffic is envisaged i.e. maintenance of lift equipment, a walkway over the membrane should be used to ensure the membrane is protected. ARDEX WPM 615 and WPM 612 TPO Roofing Membranes are designed for limited, irregular pedestrian access only.

Structure

- 8.1 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes fully bonded are suitable for use in areas subject to maximum wind pressure of 3 kPa Ultimate Limit State subject to the limitations of the substrate.

Substrates

Plywood

- 9.1 Plywood must be treated to H3 [CCA treated]. LOSP treated plywood must not be used. 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.

Strandsarking

- 9.2 Strandsarking must be installed in accordance with the manufacturer's instructions and BRANZ Appraisal No. 946 [2016].

Concrete

- 9.3 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

- 10.1 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes when subjected to normal conditions of environment and with proper maintenance can expect to have a serviceable life of at least 15 years.

Maintenance

- 11.1 Maintenance requirements of the membrane are provided by the membrane supplier.
11.2 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.
11.3 Drainage outlets must be maintained to operate effectively.

Prevention of Fire Occurring

- 12.1 Separation or protection must be provided to ARDEX WPM 615 and WPM 612 TPO Roofing Membranes from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 13.1 Roofs 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.
13.2 When installed in accordance with this Appraisal and the Technical Literature, ARDEX WPM 615 and WPM 612 TPO Roofing Membranes will prevent the penetration of water and will therefore meet code compliance with NZBC Clause E2.3.2. The membrane is impervious to water and will give a weathertight roof.
13.3 The minimum fall for roofs is 1 in 30 and for gutters is 1 in 100. All falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the membrane. *[Note: Where possible, BRANZ recommends falls in gutter to be 1 in 60.]*
13.4 Roof falls must be built into the plywood or Strandsarking substrate.
13.5 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 roof does not drain to an external gutter or spouting.
13.6 Penetrations and upstands of the membrane must be raised above the level of any possible flooding caused by blockage of roof drainage.
13.7 The design of details not covered by the Technical Literature is subject to specific weathertightness design and is outside the scope of this Appraisal.
13.8 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes are impermeable; therefore a means of dissipating construction moisture must be provided in the building design and construction to meet code compliance with NZBC Clause E2.3.6.

Installation Information

Installation Skill Level Requirement

- 14.1 Installation of the membranes must be completed by approved applicators, approved by ARDEX New Zealand Limited.
- 14.2 Installation of substrates must be completed by tradespersons with an understanding of roof construction, in accordance with instructions given within the ARDEX New Zealand Limited Technical Literature and this Appraisal.

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. 585. 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 the plywood or Strandsarking sheet must be dry at time of membrane application. This will generally require plywood or Strandsarking sheets to be covered until just before the membrane is laid, to prevent rain wetting.

Membrane Installation

- 16.1 The installation of this membrane system is very complex and limited to trained applicators only. The ARDEX New Zealand Limited Applicators Manual should be referred in all instances for the correct procedures.

Inspections

- 17.1 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 Technical Literature 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.

Basis of Appraisal

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

Tests

- 19.1 Testing has been carried out on the membrane by various organisations for tensile strength, elongation, joint peel and shear strength, cold bending after UV aging, static load resistance, water pressure resistance, water vapour permeability, shear / joint strength, adhesion to plywood, peel adhesion, resistance to aging, resistance to impact, resistance to frost, resistance to freeze/thaw, elongation, seam strength, breaking strength, low temperature brittleness point, water absorption and resistance to UV.
- 19.2 Results and test methods have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

- 20.1 A durability opinion has been given on ARDEX WPM 615 and WPM 612 TPO Roofing Membranes by BRANZ technical experts.
- 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 ARDEX WPM 615 and WPM 612 TPO Roofing Membranes has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 21.2 The quality of supply of the product to the market is the responsibility of ARDEX New Zealand Limited.
- 21.3 Quality on site is the responsibility of the ARDEX New Zealand Limited approved applicators.
- 21.4 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 New Zealand Limited and this Appraisal.

Sources of Information

- AS/NZS 1170: 2002 Structural Design action – general principles.
- AS/NZS 2269: 2012 Plywood – structural.
- BRANZ Appraisal No. 946 [2016] Strandsarking for Low Slope Membrane Roofs.
- BRANZ Good Practice Guide, Membrane Roofing, October 2015.
- NZS 3101: 2006 Concrete structures standard.
- NZS 3604: 2011 Timber-framed buildings.
- Acceptable Solutions and Verification Methods for New Zealand Building Code, External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 [Amendment 7, 01 January 2017].
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 31 January 2012.

This Appraisal has been amended to update clause changes as required by the introduction of NZS 3604: 2011 and NZBC Acceptable Solution E2/AS1 Third Edition, Amendment 5.

Amendment No. 2, dated 24 May 2013.

This Appraisal has been amended to update the gutter fall requirements.

Amendment No. 3, dated 30 October 2013.

This Appraisal has been amended to update clause changes as required by the introduction of NZBC Fire Clauses C1 – C6 Protection from Fire and A3 Building Importance Levels.

Amendment No. 4, dated 08 August 2016.

This Appraisal has been amended to match Appraisal Holder marketing protocol.

Amendment No. 5, dated 16 January 2017.

This Appraisal has been amended to clarify the scope.

Amendment No. 6, dated 12 May 2017.

This Appraisal has been amended to update the Technical Specification, update the Appraisal name and add Strandsarking as a suitable substrate.



In the opinion of BRANZ, the **ARDEX TPO Roofing Membrane System, using WPM 615 and WPM 612** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **ARDEX New Zealand Limited**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - 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. **ARDEX New Zealand Limited:**
 - 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.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty 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 **ARDEX New Zealand Limited**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **ARDEX New Zealand Limited** or any third party.

For BRANZ



Pieter Burghout

Chief Executive

Date of Issue:

18 May 2011



ARDEX WPM 612 TPO

Roofing Membrane

BRANZ Appraised No. 728

CodeMark No. AQ-040516-CMNZ

E2/AS1 Alternate Solution

Eco Friendly Membrane – Heat reflective and energy efficient roof membrane

No toxic emissions – No plasticisers or chlorinated ingredients

Lightweight Membrane – Offering a high variety of installation options for low slope roofing applications

ARDEX Australia Pty Ltd

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Seven Hills NSW 2147
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ARDEX WPM 612 TPO

1.14mm Roofing Membrane



DESCRIPTION

ARDEX WPM 612 (TPO Roofing Membrane) is a flexible Thermoplastic Polyolefin roofing membrane made from the incorporation of a ethylene propylene rubber into a polypropylene matrix and produced with polyester weft inserted reinforcement.

PREPARATION

Roofing structure needs to be stable enough to support the temporary loading. Substrates need to be clean, smooth, dry and free of sharp edges, loose or foreign materials, oil, grease and other materials that may damage the membrane. All surface voids greater than 5mm wide shall be properly filled with an acceptable fill material.

APPLICATION

Place ARDEX WPM 612 (TPO Roofing Membrane) as close as possible to its final position. Inspect the wrapper and ARDEX WPM 612 (TPO Roofing Membrane) roll for damage before and during the installation.

Unroll ARDEX WPM 612 (TPO Roofing Membrane) and prior to any attachment, cutting or welding, allow each panel to relax a minimum of 30 minutes. Cut a cross-shaped opening above every drain to evacuate excess ponding water, in case of sudden rainfall.

ARDEX WPM 612 (TPO Roofing Membrane) panels shall be installed in a fashion so that field and flashing splices are installed to shed water. Straight cuts are very important for a neat and easy application.

Allow ample material for splicing determined by the type of seam and tie-ins.

Temporary ballasting during installation may be required to keep the membrane in place until it is secured to the substrate. Suggested temporary ballasting includes sand bags and other non-abrasive materials such as rubber tyres, etc. Never leave the project without temporary ballasting loose laid sheets.

COVERAGE

The dimensions of the membrane are calculated to cover the substrate, including seam overlaps (75mm for standard seams – 150mm for seams with mechanical anchoring in the seam) and upstands. Provide an additional length (150mm) at upstands for easy manipulation.

PHYSICAL CHARACTERISTICS

- Excellent durability and tear and puncture resistance
- High chemical, (micro) bacterial, UV and weathering resistance
- No plasticisers or chlorinated ingredients
- Avoid contact with oil and petroleum based products, grease and hot bitumen

TECHNICAL CHARACTERISTICS

Property	Test Method	Value
Watertightness	EN 1928 (A)	Pass
Tensile strength (both directions)	EN 12311-2	≥800 MPa
Elongation at reinforcement break	EN 12311-2	≥ 20%
Resistance to static loading (EPS & concrete)	EN 12730 (B)	≥ 25kg
Resistance to impact (EPS & concrete)	EN 12691	≥ 10mm
Tear resistance L/T	EN 12310-2	≥ 400 / 400 N
Joint peel resistance	EN 12316-2	≥ 100 N/50mm
Joint shear resistance	EN 12317-2	≥ 800 N/50mm
UV exposure	EN 1297	Pass
Foldability at low temperature	EN 495-5	≥ -45°C
External fire performance	EN 13501-5	B _{ROOF} (t1)
Reaction to fire	EN 13501-1	E
Root resistance	pr EN 13948	Pass

PACKAGING

Thickness 1.14mm

Width 3.05m (2.0m rolls available on indent)

Length 30.5m

Weight 1.24 kg/m²

STORAGE

Store away from sources of puncture and physical damage. Store away from ignition sources and open flame. Unlimited Shelf Life.

PRECAUTIONS

Exercise caution when lifting, moving, transporting, storing or handling membrane rolls to avoid sources of punctures and possible physical damage.

Contact ARDEX Technical Services Department for specific recommendations regarding chemical or waste product compatibility with ARDEX WPM 612 TPO Roofing Membrane).

ARDEX WPM 612 TPO

1.14mm Roofing Membrane

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. 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 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 ARDEX Release tape applied before application of Butynol®.

PLYWOOD QUALITY

Plywood to be installed in accordance with the plywood manufacturer's recommendation to provide a suitable surface for membrane.

Problems with plywood quality may effect long term membrane performance.

Please check with your plywood supplier.

We have duplicated the position of one supplier below.

- Face checks in plywood do not affect the structural integrity of the panel as they are confined to the surface veneer and are strictly aesthetic in nature.
- As face checking occurs naturally Carter Holt Harvey Wood products does not consider them to be a manufacturing or product fault.

**Source: Specifications and Installation Guide
Carter Holt Harvey.**

Laying on plywood with face checking as above should be avoided and surface corrected if possible.

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

SUBSTRATE SPECIFICATION (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm.

Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

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 WPM 612 TPO

1.14mm Roofing Membrane

ENVIRONMENTALLY FRIENDLY

Heat Reflective

The light colour results in a heat reflective index of 70% and retains a high proportion of this through its service life due to the colour fastness and retention of the membrane.

No Toxic Emissions

The membrane system's chlorine-free, non-halogenated and plasticiser-free formulation in combination with the hot-air welded seaming method produce no emissions harmful to the environment.

Bacteria Propagation Resistant

ARDEX TPO Roofing Membrane exhibits excellent resistance to the propagation of discolouring bacteria that reduces the heat reflectivity and energy efficiency.

Low Carbon Footprint

ARDEX TPO membrane can also be easily recycled and has a lower production footprint than comparable systems.

GREEN ROOF SYSTEM

Due to ever increasing concern for the environment, green roofs are becoming a regular part of our landscape. ARDEX TPO Roofing Membranes have successfully passed the FLL test for root penetration resistance in green roofs. It is an ideal membrane for combination with extensive green roof systems using lightweight and low maintenance sedum vegetation.

The ecological benefits of a green roof system are numerous:

Reduction of the urban heat island effect

Prevents reflection of the heat into the surrounding atmosphere. Plant transpiration resulting in cooling the atmosphere.

Reduction of energy costs

Excellent natural insulation properties to help keep the cold out in winter and the heat out in summer.

Storm water management

Through water retention and increased evaporation.

New habitats for plants & animals

Green roofs create a natural habitat for local wildlife.

Improved air quality

Purification of the air by filtering dusts and pollutants and converting CO₂ into oxygen.

Reduction of noise pollution

Excellent sound insulators reducing the noise pollution from external sources.

ACCESSORIES

ARDEX WPM 623 - TPO Flashing

Non reinforced TPO membrane to be used in situation where a pre-moulded accessory is not available. Supplied as a 0.61m x 15.25m roll in white or grey.

ARDEX TPO Inside/Outside Corners

Flexible non reinforced TPO specifically designed for flashing inside or outside corners. Supplied as a 76mm x 76mm x 82mm corner with a 12.7mm radius on all edges of the raised corner, in white or grey.

ARDEX TPO Universal and Large Pipe Flashing

Supplied in white or grey.

ARDEX TPO QuickSeam Flashing

Non reinforced TPO membrane laminated to a white cured seaming tape for flashing metal roof edging profiles and other details. Supplied as a 0.14m x 30.5m roll, in white.

ARDEX 649 - Contact Adhesive

Contact adhesive for bonding ARDEX WPM 612 TPO membrane to wood, metal and other acceptable substrates. It is supplied as a yellow colour in 18.9 litre pails.

ARDEX WPM 651 - TPO Cut Edge Sealant

Polymer based sealant designed to seal cut edges of ARDEX WPM 612 TPO membrane where the scrim reinforcement is exposed. White or grey in cartons of 4 bottles.

ARDEX WPM 657 - TPO General Purpose Sealant

High quality sealant with excellent adhesion to a variety of surfaces, used as a termination bar caulk and cut edge/seam sealant. Supplied in cartridges, coloured white.

ARDEX WPM 659 - TPO Pourable Sealant

A two component polyurethane sealer to seal around small pipe penetrations, clusters of pipes, I beams etc in a penetration pocket detail. In 3.78 litre packs, coloured white.

ARDEX All Purpose Fasteners

Are specifically designed for mechanical attachment of the ARDEX TPO membrane to steel, plywood and timber decks. They are supplied as 32mm long screws, coloured red.

ARDEX HD Seam Plate

To be used for the attachment of the ARDEX TPO membranes to approved substrates using ARDEX All Purpose Fasteners. 60.3mm diameter plates.

ARDEX Pressure Seal

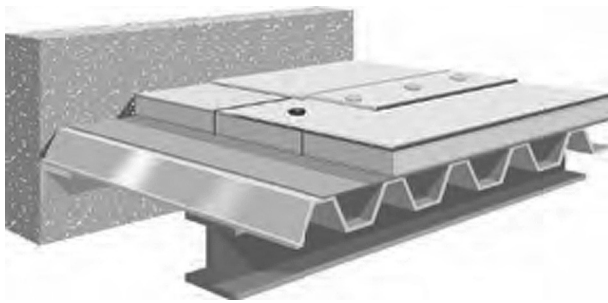
Designed for termination of ARDEX TPO membrane against smooth walls in all roofing situations. supplied as 3.1m x 35mm x 2.2mm thick bars.

ARDEX WPM 612 TPO

1.14mm Roofing Membrane

INSTALLATION OPTIONS

ARDEX can offer a variety of installation options for both renovation and new built applications.



MECHANICALLY ATTACHED

The ARDEX TPO Mechanically Attached System is a lightweight system, suitable for roofs that cannot carry the additional load of ballast, where the roof deck is suitable for mechanical attachment.

System Features

- Adaptable to unusual roof configurations
- High wind uplift performance
- Low material costs
- Lightweight ideal for installation to metal roofs over insulation.

Ideal for installation to metal roofs over insulation.



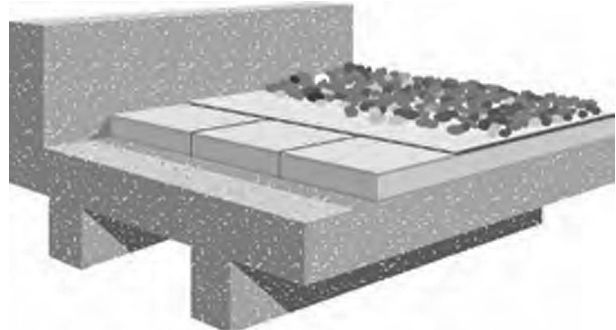
FULLY ADHERED

The ARDEX TPO Fully Adhered System is a lightweight system with outstanding design flexibility. It is suitable for contoured roofs with irregular shape and any roof with limited load bearing capacity, provided the substrate is compatible with adhesives.

System Features

- Applicable on any slope
- Applicable to unusual roof configurations
- Lightweight
- High wind uplift performance

Ideal for installation to concrete and masonry roofs.



BALLASTED & LANDSCAPED

The ARDEX TPO Ballasted System is the most economical TPO roofing system available and is suitable for a wide variety of buildings.

System Features

- Excellent choice for Green roofs
- Fewer seams
- Large choice of compatible substrates
- Faster installation
- Low installation costs
- Excellent fire rating

Suitable for light/medium traffic decks and roofs.

FOR LATEST UPDATES AND ADDITIONAL INFO

Please consult our website at www.ardex.co.nz Testing results and/or copies of Approval Documents for above are available upon request.

ARDEX Australia Pty Ltd

Technical Services Toll Free: 1800 224 070

ARDEX New Zealand Ltd

Technical Services Toll Free: 0800 227 339

DISCLAIMER

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand & Australian Standards, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them. All aforementioned products are the trade marks of ARDEX New Zealand Ltd.



ARDEX WPM 615

TPO Roofing Membrane

BRANZ Appraised

E2/AS1 Acceptable Solution

Eco Friendly Membrane – Heat reflective and energy efficient roof membrane

No toxic emissions – No plasticisers or chlorinated ingredients

Lightweight Membrane – Offering a high variety of installation options for low slope roofing applications

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ARDEX WPM 615

TPO Roofing Membrane



DESCRIPTION

ARDEX WPM 615 (TPO Roofing Membrane) is a flexible Thermoplastic Polyolefin roofing membrane made from the incorporation of an ethylene propylene rubber into a polypropylene matrix and produced with polyester weft inserted reinforcement.

PREPARATION

Roofing structure needs to be stable enough to support the temporary loading. Substrates need to be clean, smooth, dry and free of sharp edges, loose or foreign materials, oil, grease and other materials that may damage the membrane. All surface voids greater than 5mm wide shall be properly filled with an acceptable fill material.

APPLICATION

Place ARDEX WPM 615 (TPO Roofing Membrane) as close as possible to its final position. Inspect the wrapper and ARDEX WPM 615 (TPO Roofing Membrane) roll for damage before and during the installation. Unroll ARDEX WPM 615 (TPO Roofing Membrane) and prior to any attachment, cutting or welding, allow each panel to relax a minimum of 30 minutes. Cut a cross-shaped opening above every drain to evacuate excess ponding water, in case of sudden rainfall. ARDEX WPM 615 (TPO Roofing Membrane) panels shall be installed in a fashion so that field and flashing splices are installed to shed water. Straight cuts are very important for a neat and easy application. Allow ample material for splicing determined by the type of seam and tie-ins.

Temporary ballasting during installation may be required to keep the membrane in place until it is secured to the substrate. Suggested temporary ballasting includes sand bags and other non-abrasive materials such as rubber tyres, etc. Never leave the project without temporary ballasting loose laid sheets.

COVERAGE

The dimensions of the membrane are calculated to cover the substrate, including seam overlaps (75mm for standard seams – 150mm for seams with mechanical anchoring in the seam) and upstands. Provide an additional length (150mm) at upstands for easy manipulation.

PHYSICAL CHARACTERISTICS

- Excellent durability and tear and puncture resistance
- High chemical, (micro) bacterial, UV and weathering resistance
- No plasticisers or chlorinated ingredients
- Avoid contact with oil and petroleum based products, grease and hot bitumen
- Colour: grey is available, with white on request

TECHNICAL CHARACTERISTICS

Property	Test Method	Value
Watertightness	EN 1928 (A)	Pass
Tensile strength (both directions)	EN 12311-2	≥800 MPa
Elongation at reinforcement break	EN 12311-2	≥ 20%
Resistance to static loading (EPS & concrete)	EN 12730 (B)	≥ 25kg
Resistance to impact (EPS & concrete)	EN 12691	≥ 10mm
Tear resistance L/T	EN 12310-2	≥ 400 / 400 N
Joint peel resistance	EN 12316-2	≥ 100 N/50mm
Joint shear resistance	EN 12317-2	≥ 800 N/50mm
UV exposure	EN 1297	Pass
Foldability at low temperature	EN 495-5	≥ -45°C
External fire performance	EN 13501-5	B _{ROOF} (t1)
Reaction to fire	EN 13501-1	E
Root resistance	pr EN 13948	Pass

PACKAGING

Thickness 1.5mm
Width 2.00m
Length 30.5m
Weight 1.54 kg/m²

STORAGE

Store away from sources of puncture and physical damage. Store away from ignition sources and open flame. Unlimited Shelf Life.

PRECAUTIONS

Exercise caution when lifting, moving, transporting, storing or handling membrane rolls to avoid sources of punctures and possible physical damage.

Contact ARDEX Technical Services Department for specific recommendations regarding chemical or waste product compatibility with ARDEX WPM 615 (TPO Roofing Membrane).

ARDEX WPM 615

TPO Roofing Membrane

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. 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 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 ARDEX Release tape applied before application of Butynol®.

PLYWOOD QUALITY

Plywood to be installed in accordance with the plywood manufacturer's recommendation to provide a suitable surface for membrane.

Problems with plywood quality may effect long term membrane performance.

Please check with your plywood supplier.

We have duplicated the position of one supplier below.

- Face checks in plywood do not affect the structural integrity of the panel as they are confined to the surface veneer and are strictly aesthetic in nature.
- As face checking occurs naturally Carter Holt Harvey Wood products does not consider them to be a manufacturing or product fault.

**Source: Specifications and Installation Guide
Carter Holt Harvey.**

Laying on plywood with face checking as above should be avoided and surface corrected if possible.

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

SUBSTRATE SPECIFICATION (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm.

Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

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.

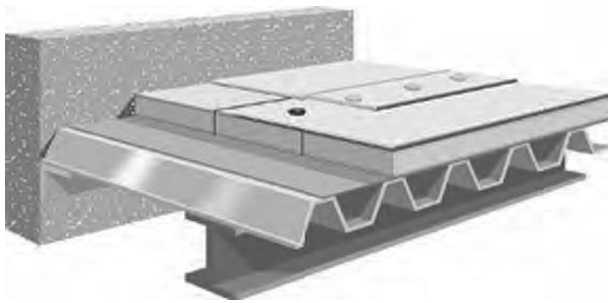
For further substrate types please consult ARDEX Technical Department.

ARDEX WPM 615

TPO Roofing Membrane

INSTALLATION OPTIONS

ARDEX is offering a variety of installation options for both renovation and new built applications.



MECHANICALLY ATTACHED

The ARDEX TPO Mechanically Attached System is a lightweight system, suitable for roofs that cannot carry the additional load of ballast, where the roof deck is suitable for mechanical attachment.

System Features

- Adaptable to unusual roof configurations
- High wind uplift performance
- Low material costs
- Lightweight ideal for installation to metal roofs over insulation.

Ideal for installation to metal roofs over insulation.



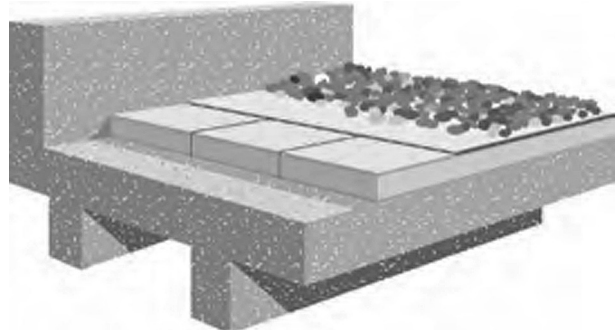
FULLY ADHERED

The ARDEX TPO Fully Adhered System is a lightweight system with outstanding design flexibility. It is suitable for contoured roofs, roofs with irregular shape and any roof with limited load bearing capacity, provided the substrate is compatible with adhesives.

System Features

- Applicable on any slope
- Applicable to unusual roof configurations
- Lightweight
- High wind uplift performance

Ideal for installation to concrete and masonry roofs.



BALLASTED & LANDSCAPED

The ARDEX TPO Ballasted System is the most economical TPO roofing system available and is suitable for a wide variety of buildings.

System Features

- Excellent choice for Green roofs
- Fewer seams
- Large choice of compatible substrates
- Faster installation
- Low fire rating
- Low installation costs

Suitable for light/medium traffic decks and roofs.

FOR LATEST UPDATES AND ADDITIONAL INFO

Please consult our website at www.ARDEX.com. Testing results and/or copies of Approval Documents for above are available upon request.

ARDEX WPM 615

TPO Roofing Membrane

ENVIRONMENTALLY FRIENDLY

Heat Reflective

White colour results in a heat reflective index of 70% and retains a high proportion of this through its service life due to the colour fastness and retention of the membrane.

No Toxic Emissions

The membrane system's chlorine-free, non-halogenated and plasticiser-free formulation in combination with the hot-air welded seaming method produce no emissions harmful to the environment.

Bacteria Propagation Resistant

TPO Roofing Membrane exhibits excellent resistance to the propagation of discolouring bacteria that reduces the heat reflectivity and energy efficiency.

Low Carbon Footprint

The TPO membrane can also be easily recycled and has a lower production footprint than comparable systems.

GREEN ROOF SYSTEM

Due to ever increasing concern for the environment, green roofs are becoming a regular part of our landscape. TPO Roofing Membrane has successfully passed the FLL test for root penetration resistance in green roofs. It is an ideal membrane for combination with extensive green roof systems using lightweight and low maintenance sedum vegetation.

The ecological benefits of a green roof system are numerous:

Reduction of the urban heat island effect

Prevents reflection of the heat into the surrounding atmosphere. Plant transpiration resulting in cooling the atmosphere.

Reduction of energy costs

Excellent natural insulation properties to help keep the cold out in winter and the heat out in summer.

Storm water management

Through water retention and increased evaporation.

New habitats for plants & animals

Green roofs create a natural habitat for local wildlife.

Improved air quality

Purification of the air by filtering dusts and pollutants and converting CO₂ into oxygen.

Reduction of noise pollution

Excellent sound insulators reducing the noise pollution from external sources.

ACCESSORIES

ARDEX WPM 623 - TPO Flashing

Non reinforced TPO membrane to be used in situation where a pre-moulded accessory is not available. Supplied as a 0.61m x 15.25m roll in white or grey.

ARDEX TPO Inside/Outside Corners

Flexible non reinforced TPO specifically designed for flashing inside or outside corners. Supplied as a 76mm x 76mm x 82mm corner with a 12.7mm radius on all edges of the raised corner, in white or grey.

ARDEX TPO Universal and Large Pipe Flashing

Supplied in white or grey.

ARDEX TPO QuickSeam Flashing

Non reinforced TPO membrane laminated to a white cured seaming tape for flashing metal roof edging profiles and other details. Supplied as a 0.14m x 30.5m roll, in white.

ARDEX 649 - Solvent based Bonding Adhesive

Solvent based contact adhesive for bonding ARDEX WPM 615 TPO membrane to wood, metal and other acceptable substrates. It is a grey colour and in 18.9 litre pails.

ARDEX WPM 651 - TPO Cut Edge Sealant

Polymer based sealant designed to seal cut edges of ARDEX WPM 615 TPO membrane where the scrim reinforcement is exposed. White or grey in cartons of 4 bottles.

ARDEX WPM 657 - TPO General Purpose Sealant

High quality sealant with excellent adhesion to a variety of surfaces, used as a termination bar caulk and cut edge/seam sealant. Supplied in cartridges, coloured white.

ARDEX WPM 659 - TPO Pourable Sealant

A two component polyurethane sealer to seal around small pipe penetrations, clusters of pipes, I beams etc in a penetration pocket detail. In 3.78 litre packs, coloured white.

ARDEX All Purpose Fasteners

Are specifically designed for mechanical attachment of the ARDEX TPO membrane to steel, plywood and timber decks. They are supplied as 32mm long screws, coloured red.

ARDEX HD Seam Plate

To be used for the attachment of the ARDEX TPO membranes to approved substrates using ARDEX All Purpose Fasteners. 60.3mm diameter plates.

ARDEX Pressure Seal

Designed for termination of ARDEX TPO membrane against smooth walls in all roofing situations. Supplied as 3.1m x 35mm x 2.2mm thick bars.



ARDEX WPM 649

TPO Bonding Adhesive

Designed for bonding TPO membrane to approved substrates

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Seven Hills NSW 2147
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Email: technicalservices@ardexaustralia.com
Internet: www.ardexaustralia.com

ARDEX New Zealand Ltd
32 Lane St, Woolston
Christchurch, 8241
Ph: 0800 227 339
Fax: (03) 3849 779
Email: info@ardexnz.com
Internet: www.ardex.co.nz

ARDEX WPM 649

TPO Bonding Adhesive

DESCRIPTION

ARDEX WPM 649 TPO Bonding Adhesive is a solvent based contact adhesive designed specifically for bonding ARDEX WPM 615 TPO membranes to approved insulations in addition to wood, metal, masonry and other acceptable substrates.

PREPARATION

1. Stir the adhesive thoroughly to achieve a uniform mix with no sediment on the bottom and no marbling evident before and during use.
2. Apply ARDEX WPM 649 Bonding Adhesive at about the same time to both the exposed underside of the sheet and the substrate to which it will be adhered so as to allow approximately the same drying time. Apply ARDEX WPM 649 Bonding Adhesive evenly avoiding areas of accumulation.
3. Apply the ARDEX WPM 649 Bonding Adhesive with a solvent resistant paint roller, and roll the adhesive onto the mating surfaces. When applying ARDEX WPM 649 Bonding Adhesive, ensure complete uniform coverage of both surfaces that will be adhered. Care must be taken not to apply Bonding Adhesive over seam areas.
4. ARDEX WPM 649 Bonding Adhesive can be dispensed by means of power rollers or industrial spray equipment. Other equipment may be used as recommended by the manufacturer for application of this adhesive. Note: Spray applied bonding adhesive requires back-rolling with a 230mm wide solvent resistant roller (medium nap) to insure 100% coverage of the adhesive on the substrate and membrane.
5. Allow Bonding Adhesive to flash off until tacky. Touch down on the Bonding Adhesive surface with a clean, dry finger to be certain that the adhesive does not string. As you are touching the adhesive, pushing straight down to check for stringing, also push forward on the adhesive at an angle to ensure that the adhesive solvents have flashed off and are ready throughout its thickness. If either motion exposes wet areas or sticking when the finger is lifted, then it is not ready for mating. Flash off time will vary depending on ambient conditions.
6. Starting at the fold, roll the previously coated portion of the sheet into the coated substrate slowly and evenly so as to minimize wrinkles.
7. To ensure proper contact, compress the bonded half of the sheet to the substrate with a stiff push broom using heavy pressure immediately after mating.
8. Contact your ARDEX Technical Services on 1800 224 070 for specific application information.

COVERAGE

A coverage rate of 1.10 – 1.47m² per litre may be obtained depending on the substrate. Some insulation surfaces are more uneven and porous and will result in a lower coverage rate while smooth non-porous substrates will result in higher coverage rates. Rates are based on roller application to both mating surfaces. Very porous substrates (rough wood, concrete block) may require two coats of Bonding Adhesive, to ensure proper adhesion. This can be determined by testing a small area. Check by adhering a small piece of membrane to the porous substrate to verify the bonding strength.

APPROVED POWER EQUIPMENT

Garlock 25ST Roller Boss Power Roller

4 hp Honda Engine, 4 CFM Compressor, 25 gal pressurized supply tank (20 gal for material; 60 – 80 psi), Up to 100 psi rating, 2 – ¾" x 30' supply hoses with swivels, 2 – 18" roller head assemblies.

Garlock 2120 Commander Sprayer

18 hp Kohler Engine, 4500 psi Rating, 5 Gallon per Minute Flow, 1200 psi Pressure (minimum), Pump Displacement 45:1, GPM Rating: up to 5 gpm, ½" x 100' hose, 2" Intake pipe with screen, 5 or 55 gal drum containers, Graco Spray Tips: .023 to .031 diameter hose.

Garlock Twin Gun Airless Sprayer

6.5 hp Honda Engine, 3000 psi Rating, Pump Displacement 30:1, GPM Rating: up to 1 gpm, Up to 400' of single ½" diameter hose, Up to 200' of dual ½" diameter hose, ¾" Intake pipe with screen, 5 or 55 gal drum containers, Bulk tank containers, Graco Spray Tips: .019 to .025 diameter hose (1850 psi operating pressure).

Graco Spray Equipment

P70EC4-70 – 70:1 Xtreme Sprayer Package w/Heavy Duty car, Hopper package, w/NXT motor and Data Track, Xtreme-Duty high pressure hose, 3/8" x 50', 7250 psi, with ¼" x 6' whip hose, XTR-7 applicator with XHD821-825 tips.

PRECAUTIONS

Review applicable Material Safety Data Sheet prior to using. Flammable. Keep away from fire and open flame and other possible ignition sources during storage and use. Do not smoke when using. Harmful or fatal if swallowed. Avoid prolonged inhalation.

Avoid prolonged contact with skin. Gloves should be worn (OSHA approved). Avoid eye contact by wearing safety goggles with side shields. Thinning is not allowed. Do not use for splicing. Use only in well ventilated areas. Cover tightly when not in use. Recommended cleaner is Toluene (while fluid).

TECHNICAL DATA

Base:	A blend of Polychloroprene and SBR rubbers
Colour:	Yellow
Solvents:	A blend of acetone, hexane, toluene and xylene
Viscosity:	3,300 – 3,800 cps, with R.V.F. spindle @ 10 rpm
Weight/Gallon:	6.6 – 7.4 lb/gal
Specific Gravity:	0.7909-0.8868

PACKAGING/STORAGE/SHELF LIFE

Packaging:	18.9L pail
Storage:	Store in original unopened containers at temperatures between 15 – 25°C. If exposed to lower temperatures, restore to room temperature prior to use. Do not allow to freeze.
Shelf Life:	12 months if stored in above mentioned conditions. Shelf life will be shortened if exposed to elevated temperatures for a prolonged period of time.

GUARANTEE

ARDEX Australia Pty Ltd (“we” or “us”) guarantees this product (“our goods”) is free from manufacturing defects and will perform to any applicable specification published by us for 10 years from the date of purchase. Our liability under this guarantee is limited at our option to replacement of the product, repair of any damage to the immediate surface or area of application of the product, or compensation, in each case if we are satisfied loss or damage was due to a breach of this guarantee.

This guarantee does not apply if damage or loss is due to failure to follow published instructions or any act or circumstance beyond our control, including shade variations and efflorescence. If you wish to make a claim under this guarantee you must notify us (ARDEX Australia Pty Ltd, 20 Powers Road Seven Hills NSW 2147; Toll Free: 1800 224 070; Email: techinfo@ardexaustralia.com) and provide evidence of your purchase of the product within 30 days of any alleged loss or damage occurring. We reserve the right to ask you for satisfactory evidence of any alleged loss or damage. Any claim under this guarantee is at your cost.

This guarantee is in addition to any rights or remedies you may have as a “consumer” under the Australian Consumer Law and to that extent you need to be aware that: “Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure”.

DISCLAIMER

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable Australian Standard, our instructions and recommendations are only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice building regulations or industry guidelines may affect specific installation recommendations.

The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

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ARDEX New Zealand Ltd

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July 2014



TPO Installation Details

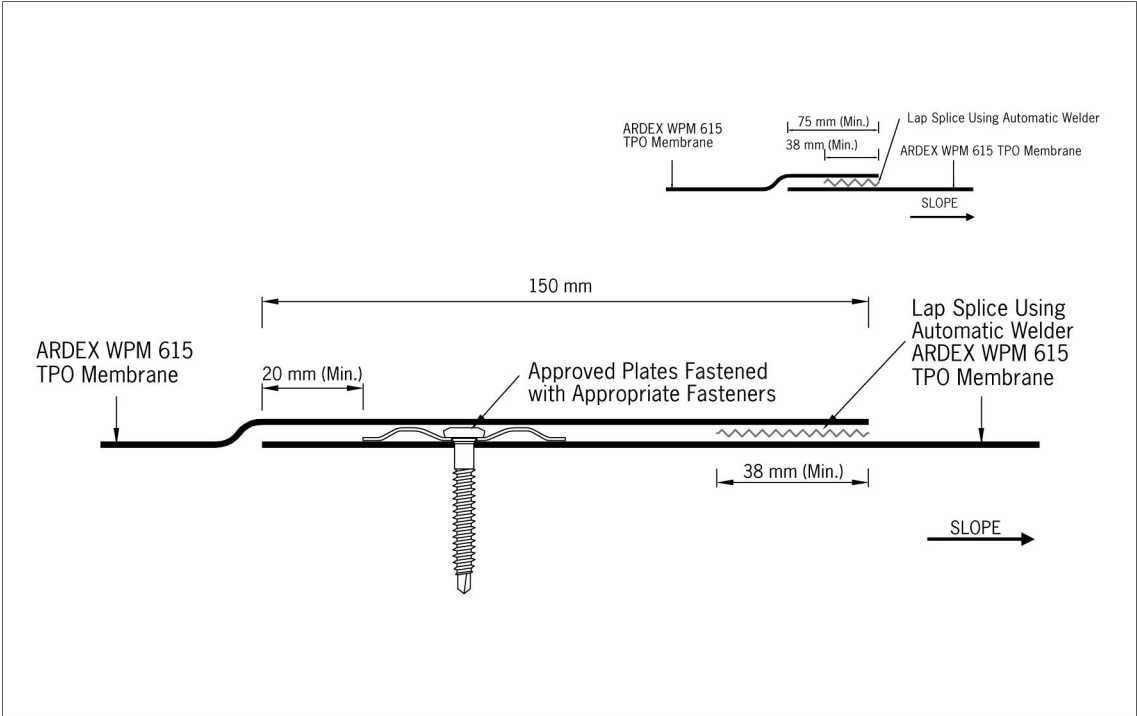
Lap Splices

No	ARDEX TPO Detail	Systems
T-LS-1	Lap Splice using Automatic Welder	All
T-LS-2	Lap Splice using Hand Welder	All
T-LS-3	Lap Splice Fastener Layout	MAS
T-LS-4	Lap Splice T-joint with Unsupported Flashing	All
T-LS-5	Lap Splice T-joint with Unsupported Flashing	All
T-LS-6	Lap Splice at Curb Or Wall Flashing	All
T-LS-7	Cut Edge Treatment Application	All
T-LS-8	Lap Splice at 4 T-crossing Membranes	MAS

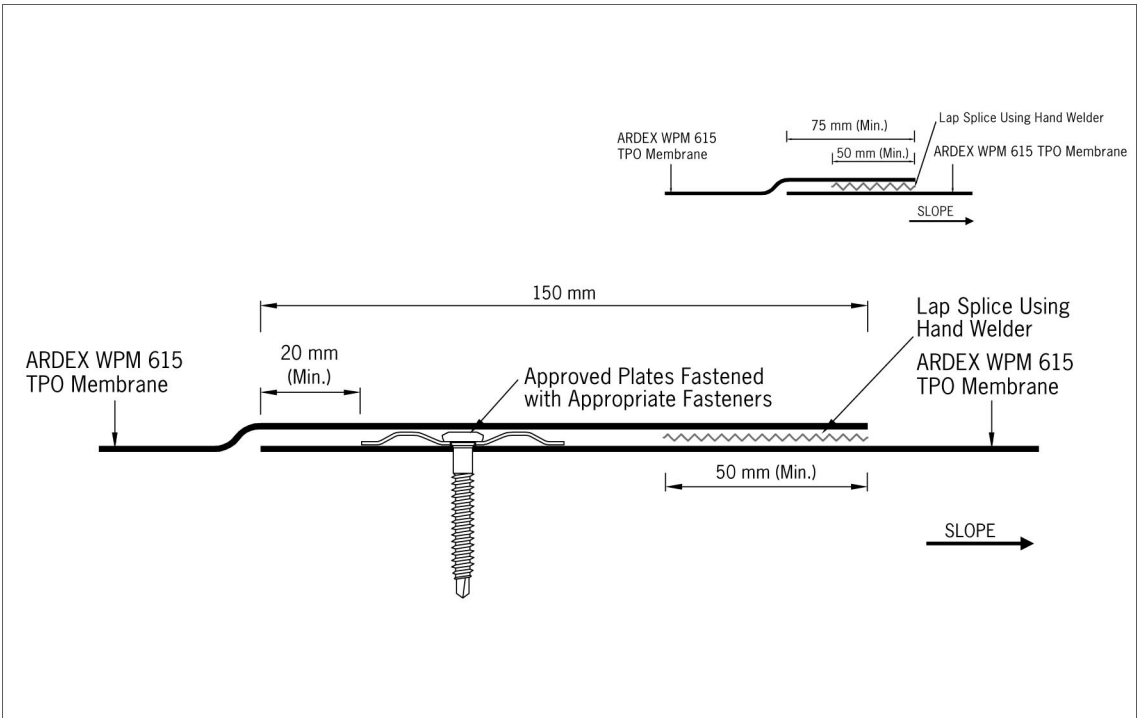
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TPO Installation Details

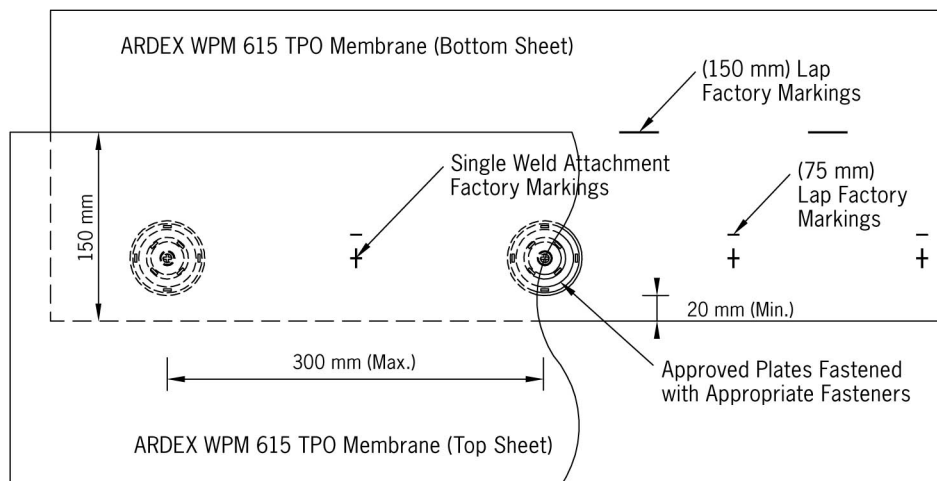
Lap Splices



	ARDEX TPO Lap Splice Using Automatic Welder	No.: T - LS - 1	Systems All
		09/2009	



	ARDEX TPO Lap Splice Using Hand Welder	No.: T - LS - 2	Systems All
		09/2009	

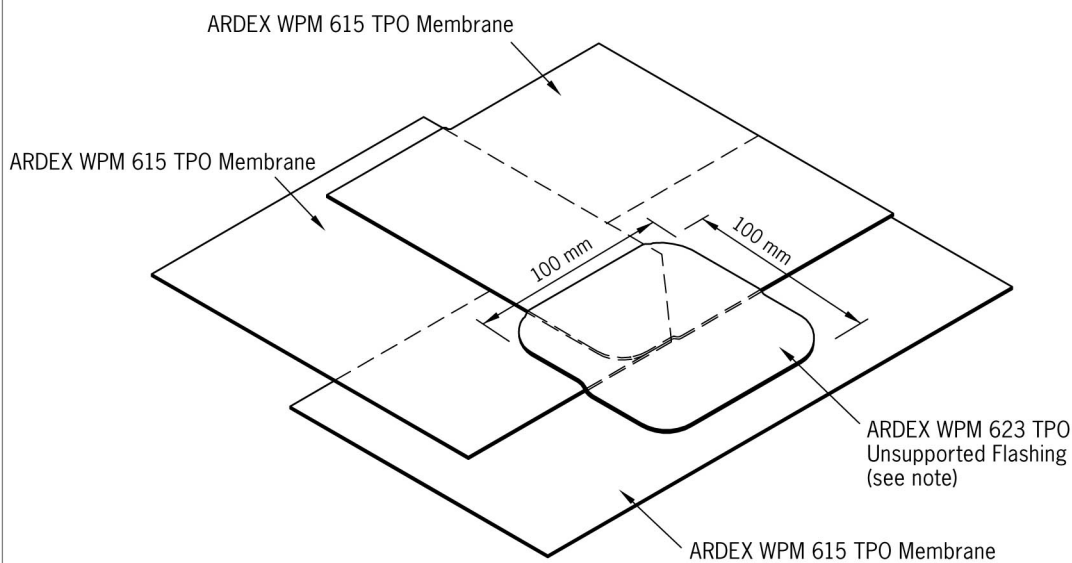


ARDEX TPO
Lap Splice Fastener Layout

No.: T - LS - 3

09/2009

Systems
All



Note: T-joint with ARDEX TPO Unsupported Flashing required for 1.52 mm membrane only.



ARDEX TPO
Lap Splice T-joint With Unsupported Flashing

No.: T - LS - 4

09/2009

Systems
All

TPO Installation Details

Lap Splices

ARDEX WPM 615 TPO Membrane

ARDEX WPM 623 TPO Unsupported Flashing (see note)

ARDEX WPM 615 TPO Membrane

ARDEX WPM 615 TPO Membrane

Note: T-joint with ARDEX TPO Unsupported Flashing required for 1.52 mm membrane only.

	ARDEX TPO Lap Splice T-joint with Unsupported Flashing	No.: T - LS - 5	Systems All
		09/2009	

ARDEX WPM 615 TPO Membrane

ARDEX WPM 615 TPO Membrane

ARDEX WPM 623 TPO Unsupported Flashing (see notes)

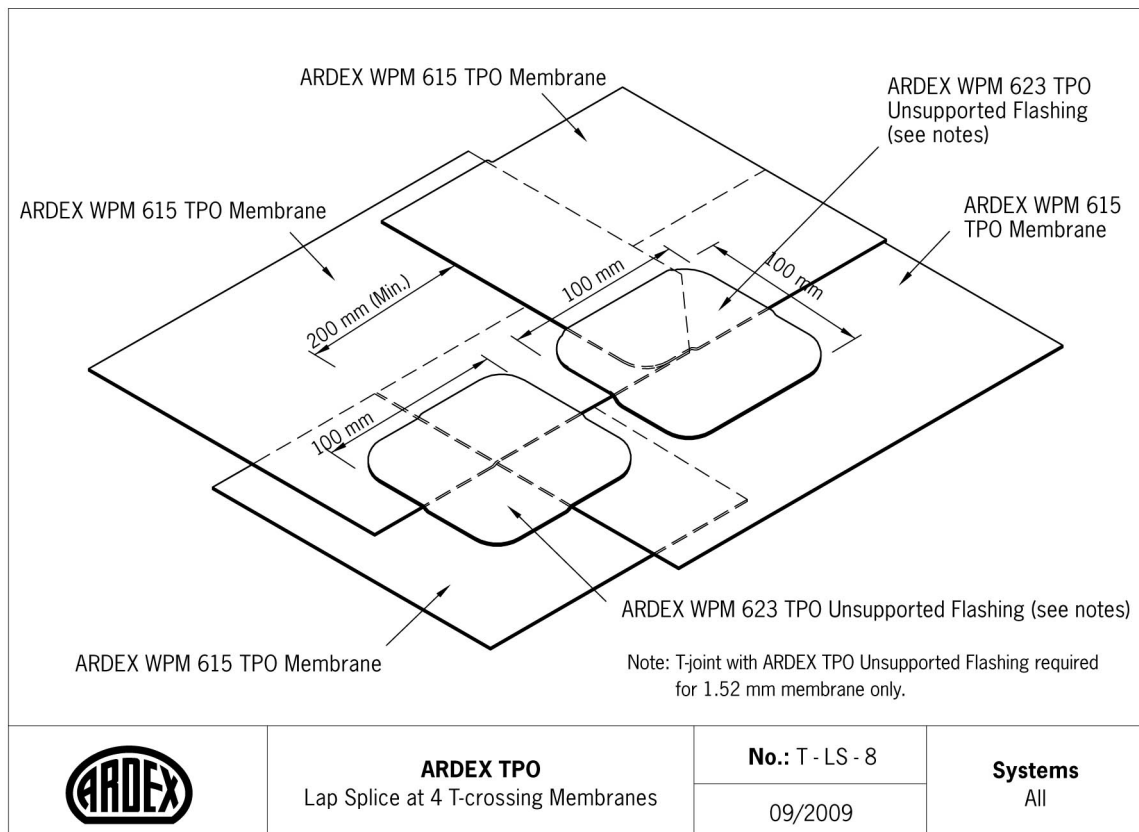
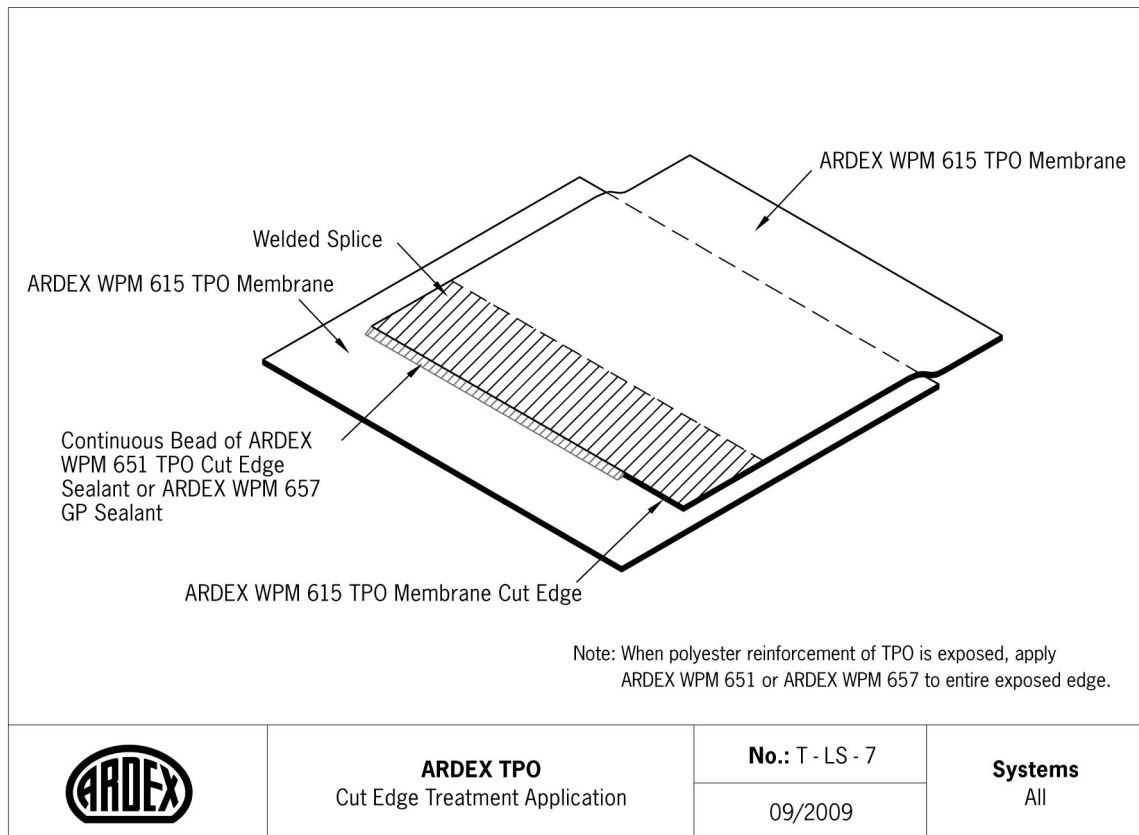
ARDEX WPM 615 TPO Membrane

ARDEX WPM 623 TPO Unsupported Flashing

ARDEX WPM 615 TPO Membrane

Note: T-joint with ARDEX TPO Unsupported Flashing required for 1.52mm membrane only.

	ARDEX TPO Lap Splice at Curb Or Wall Flashing	No.: T - LS - 6	Systems All
		09/2009	





TPO Installation Details

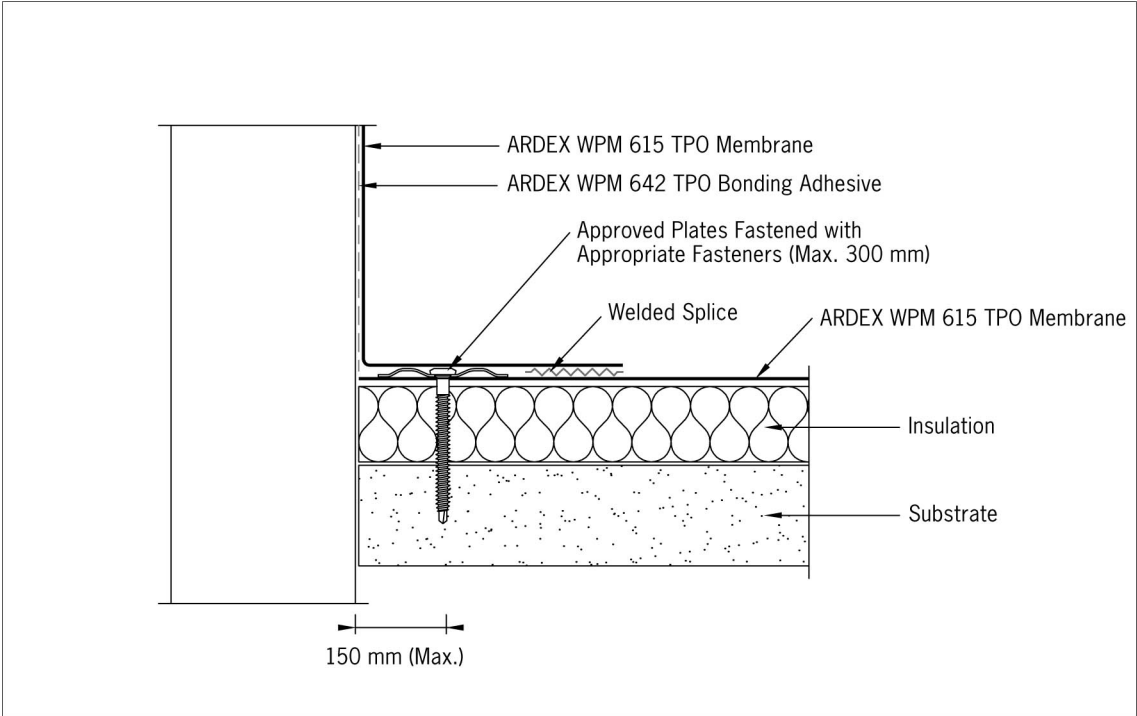
Base Tie-Ins

No	ARDEX TPO Detail	Systems
T-BT-1	Base Tie-In with Plates Fastened to Deck	All
T-BT-2	Base Tie-In with Plates Fastened to Vertical Surface	All
T-BT-3	Base Tie-In with TPO Coated Metal	All
T-BT-4	Base Tie-In with TPO Coated Metal (with brake)	All
T-BT-5	Base Tie-In with Securement at Inside Corner	All
T-BT-6	Base Tie-In with Securement at Outside Corner	All
T-BT-7	TPO Coated Metal Splice	All
T-BT-8	Base Tie-In at Upstand with existing Fillet	All

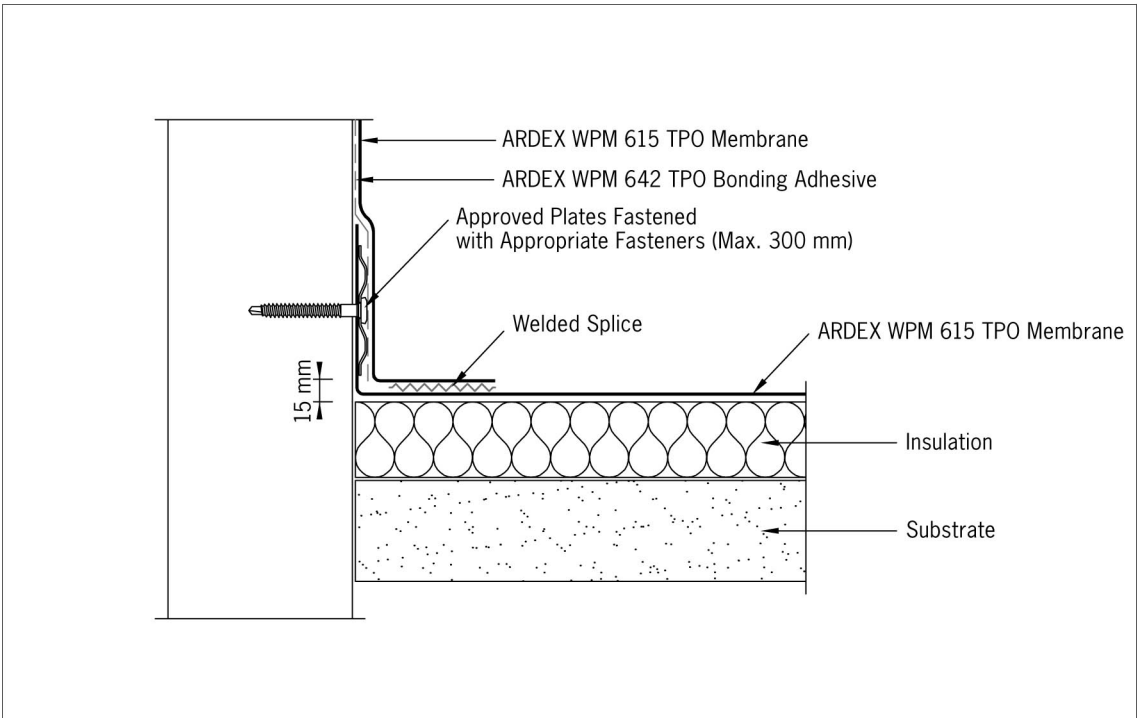
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TPO Installation Details

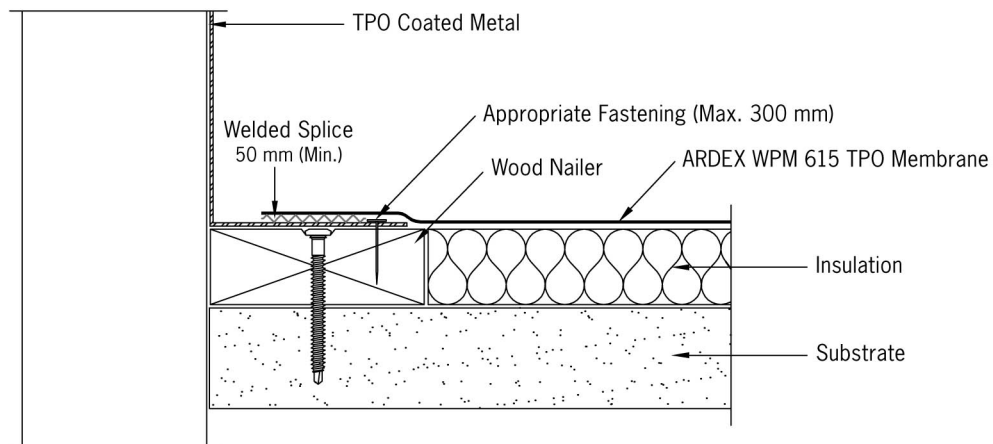
Base Tie-Ins



	ARDEX TPO Base Tie-In with Plates Fastened to Deck	No.: T - BT - 1	Systems All
		09/2009	



	ARDEX TPO Base Tie-In with Plates Fastened to Vertical Surface	No.: T - BT - 2	Systems All
		09/2009	

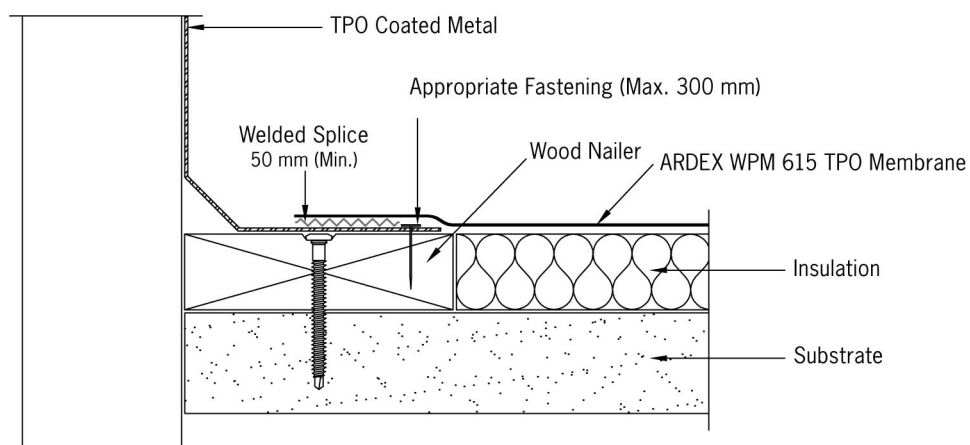


ARDEX TPO
Base Tie-In with TPO Coated Metal

No.: T - BT - 3

09/2009

Systems
All



ARDEX TPO
Base Tie-In with
TPO Coated Metal (With Brake)

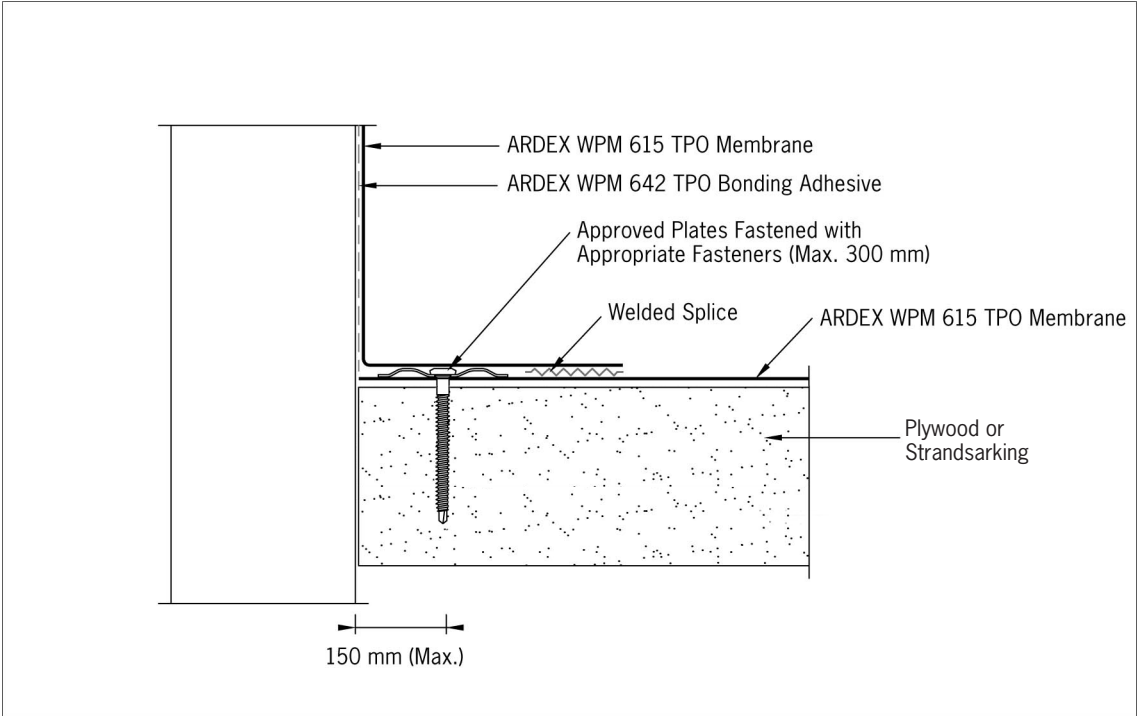
No.: T - BT - 4


09/2009

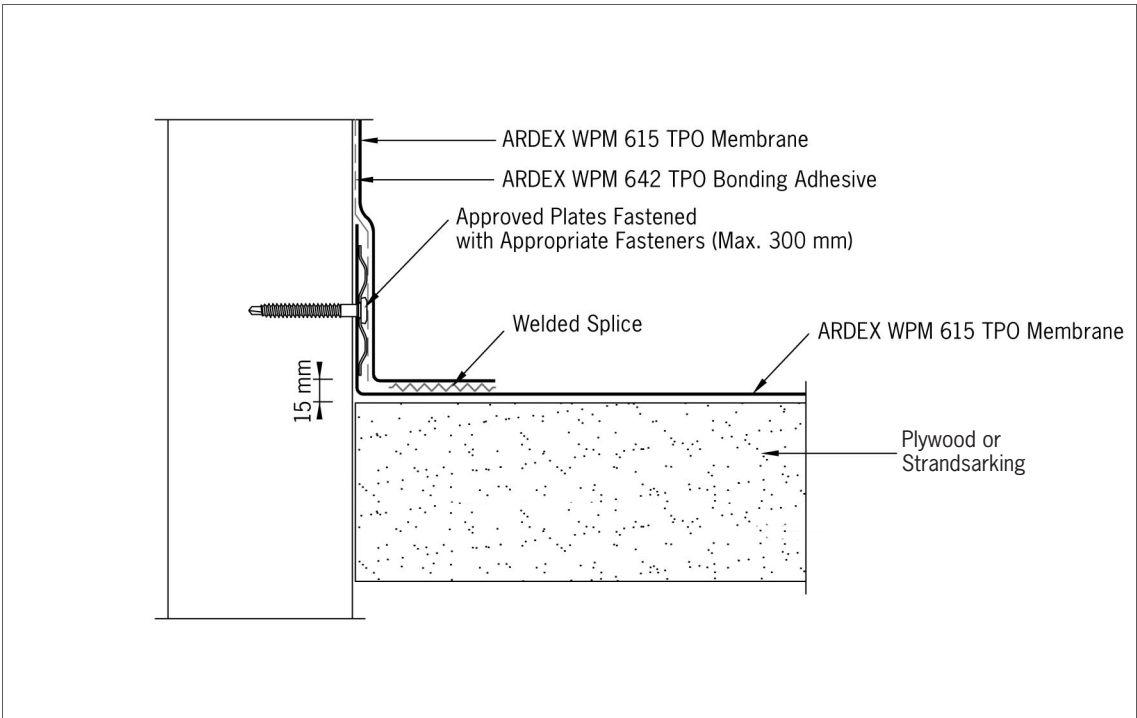
Systems
All


TPO Installation Details

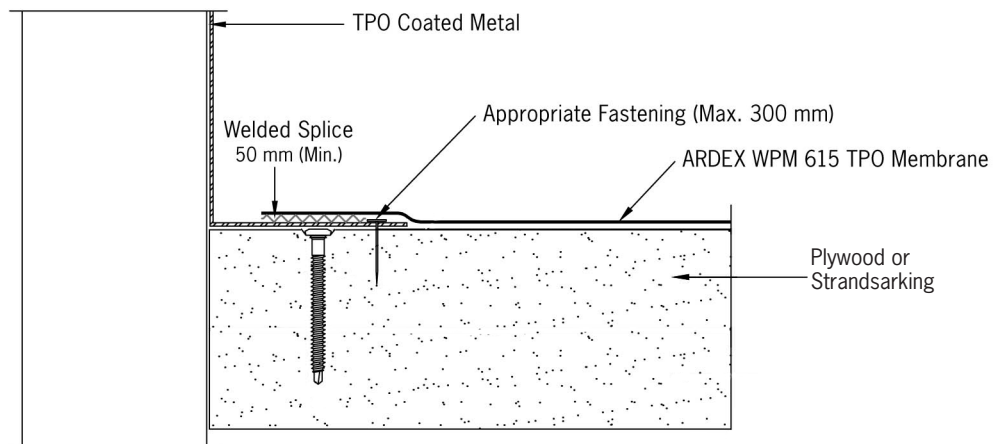
Base Tie-Ins



	ARDEX TPO Base Tie-In with Plates Fastened to Deck	No.: T - BT - 5	Systems All
		09/2009	



	ARDEX TPO Base Tie-In with Plates Fastened to Vertical Surface	No.: T - BT - 6	Systems All
		09/2009	

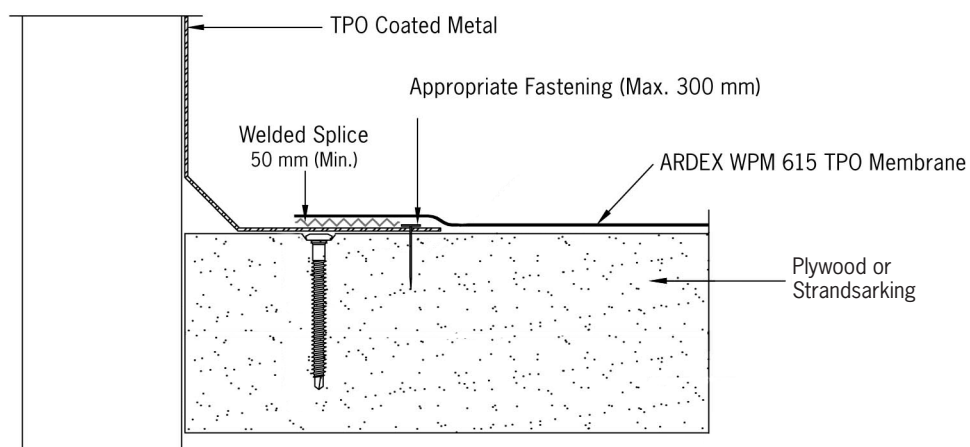


ARDEX TPO
Base Tie-In with TPO Coated Metal

No.: T - BT - 7

09/2009

Systems
All



ARDEX TPO
Base Tie-In with
TPO Coated Metal (With Brake)

No.: T - BT - 8

09/2009

Systems
All

TPO Installation Details

Base Tie-Ins

Wall/Uprstand Attachment

150 mm (Max.)

150 mm (Max.)

15 mm (Min.)

ARDEX WPM 615 TPO Membrane

Deck Attachment

150 mm (Max.)

150 mm (Max.)

ARDEX WPM 615 TPO Membrane

Note: Base Flashings and Terminations not shown for clarity.
Refer to appropriate termination & Base Tie-In details.

	ARDEX TPO Base Tie-In with Securement at Inside Corner	No.: T - BT - 5	Systems All
		09/2009	

Wall/Uprstand Attachment

150 mm (Max.)

150 mm (Max.)

15 mm (Min.)

ARDEX WPM 615 TPO Membrane

Deck Attachment

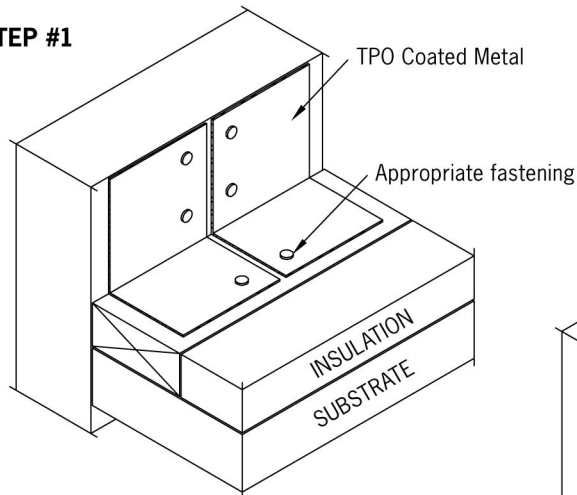
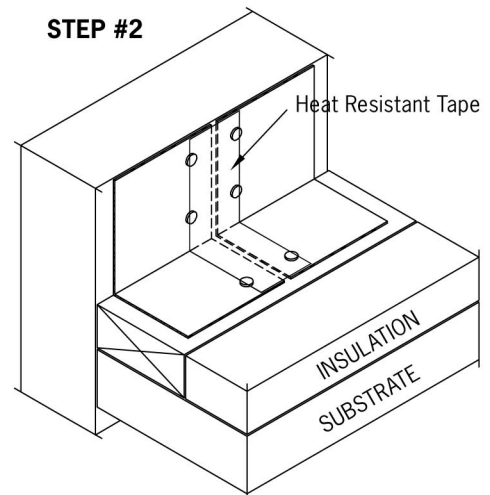
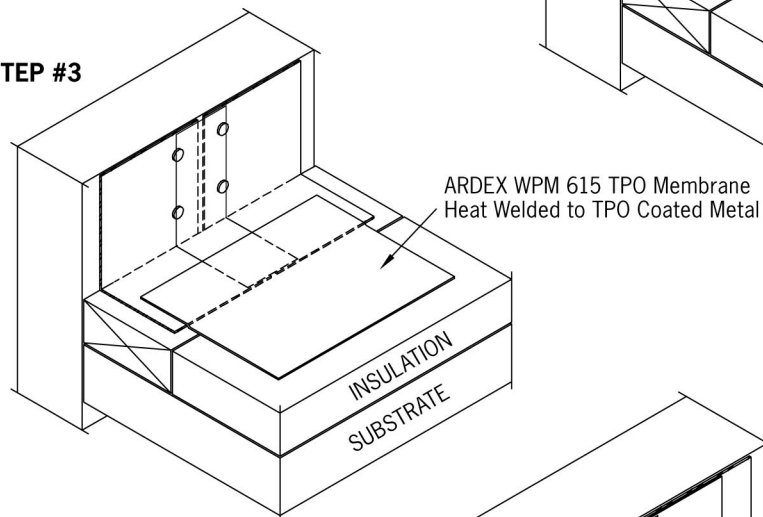
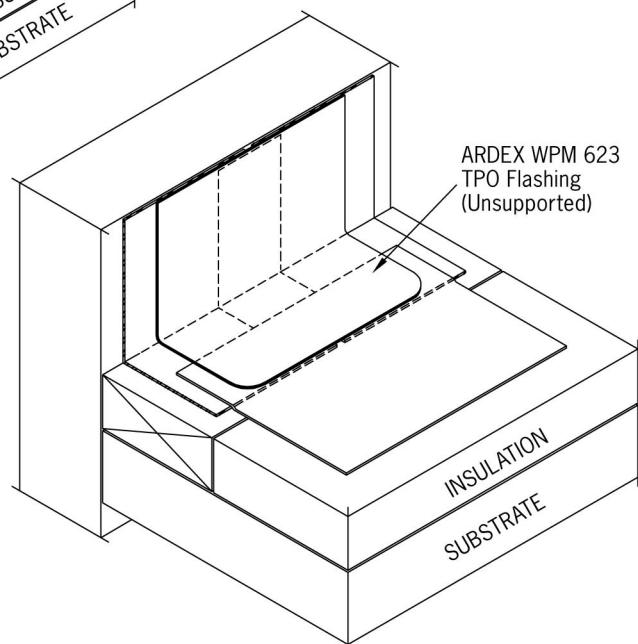
150 mm (Max.)

150 mm (Max.)

ARDEX WPM 615 TPO Membrane

Note: Base Flashings and Terminations not shown for clarity.
Refer to appropriate termination & Base Tie-In details.

	ARDEX TPO Base Tie-In with Securement at Outside Corner	No.: T - BT - 6	Systems All
		09/2009	

STEP #1**STEP #2****STEP #3****STEP #4**

ARDEX TPO
TPO Coated Metal Splice

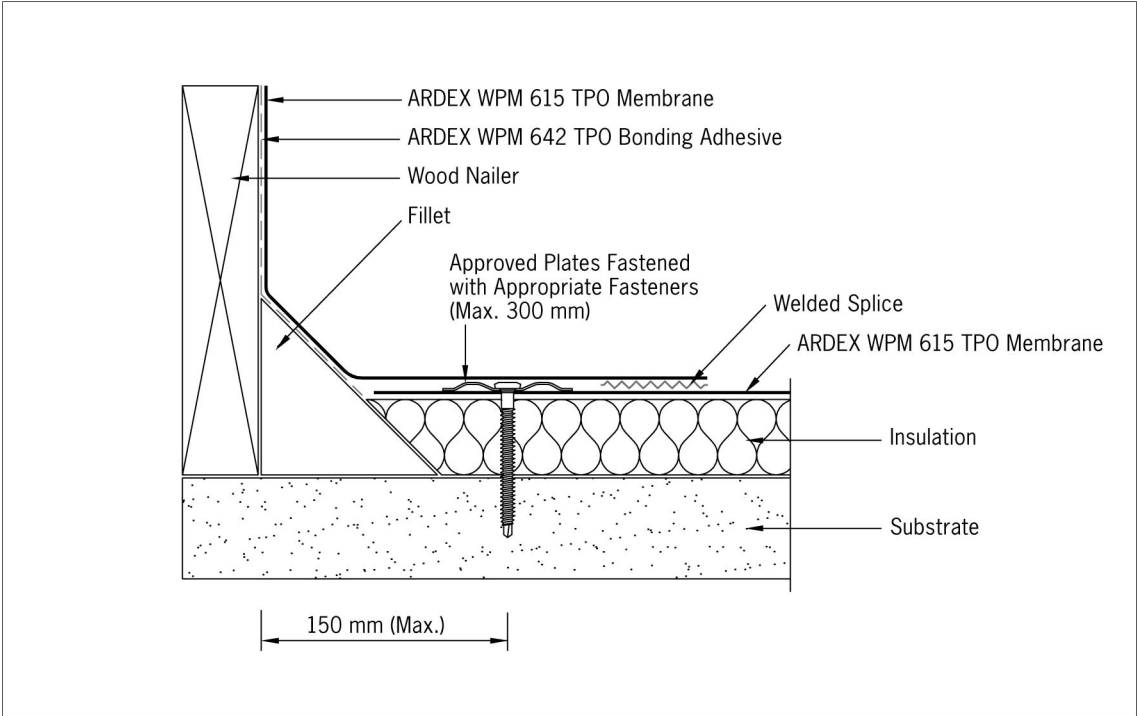
No.: T - BT - 7

09/2009

Systems
All

TPO Installation Details

Base Tie-Ins



	ARDEX TPO Base Tie-In at Upstand with existing Fillet	No.: T - BT - 8	Systems All
		09/2009	



TPO Installation Details

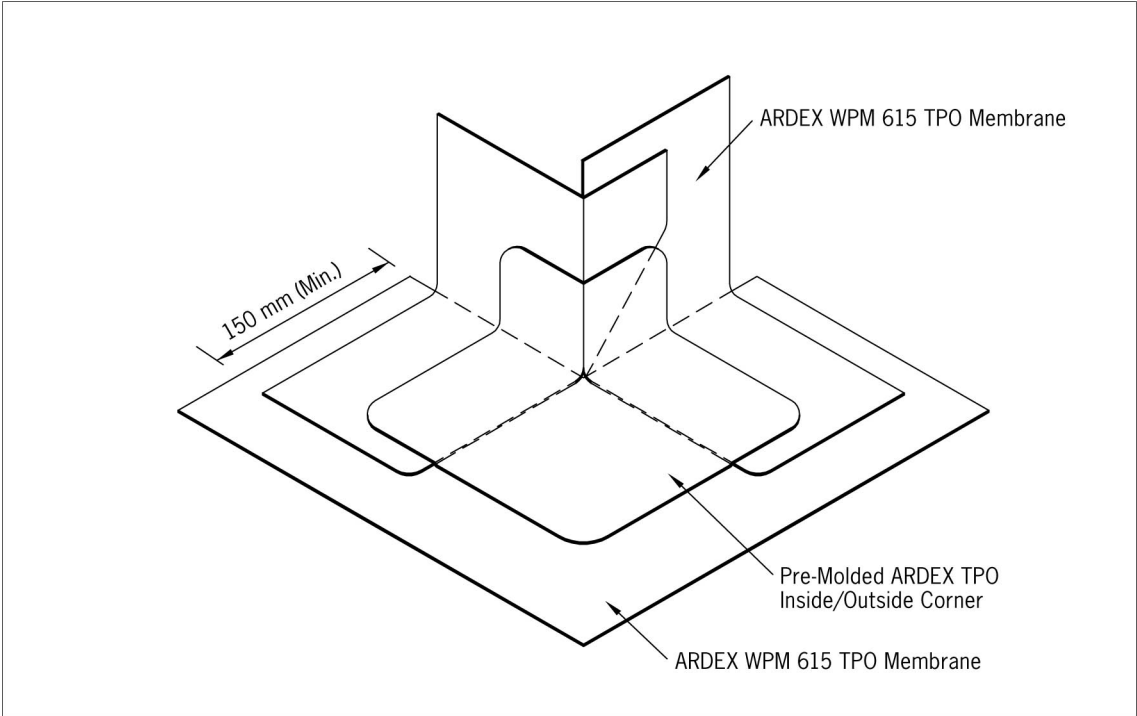
Corners


No	ARDEX TPO Detail	Systems
T-C-1	Outside Corner	All
T-C-2	Inside Corner	All
T-C-3	Outside Corner with TPO Coated Metal	All
T-C-4	Inside Corner with TPO Coated Metal	All
T-C-5	Outside Corner with TPO Coated Metal (with brake)	All
T-C-6	Inside Corner with Continuous Wall Flashing	All

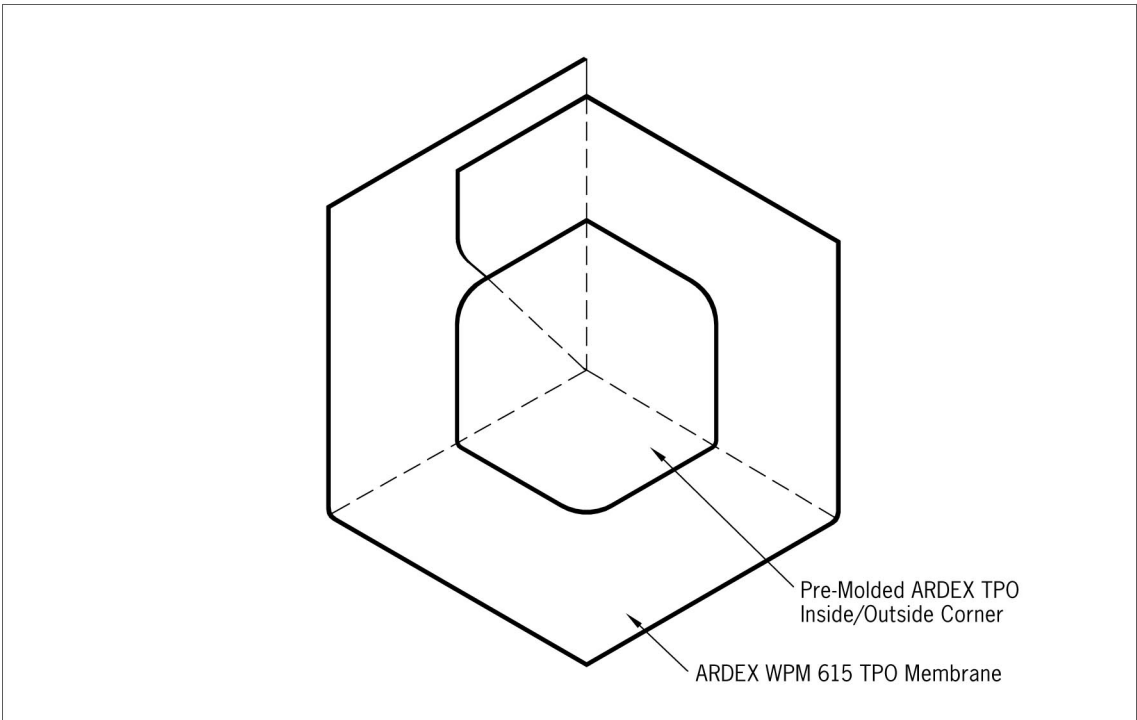
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TPO Installation Details

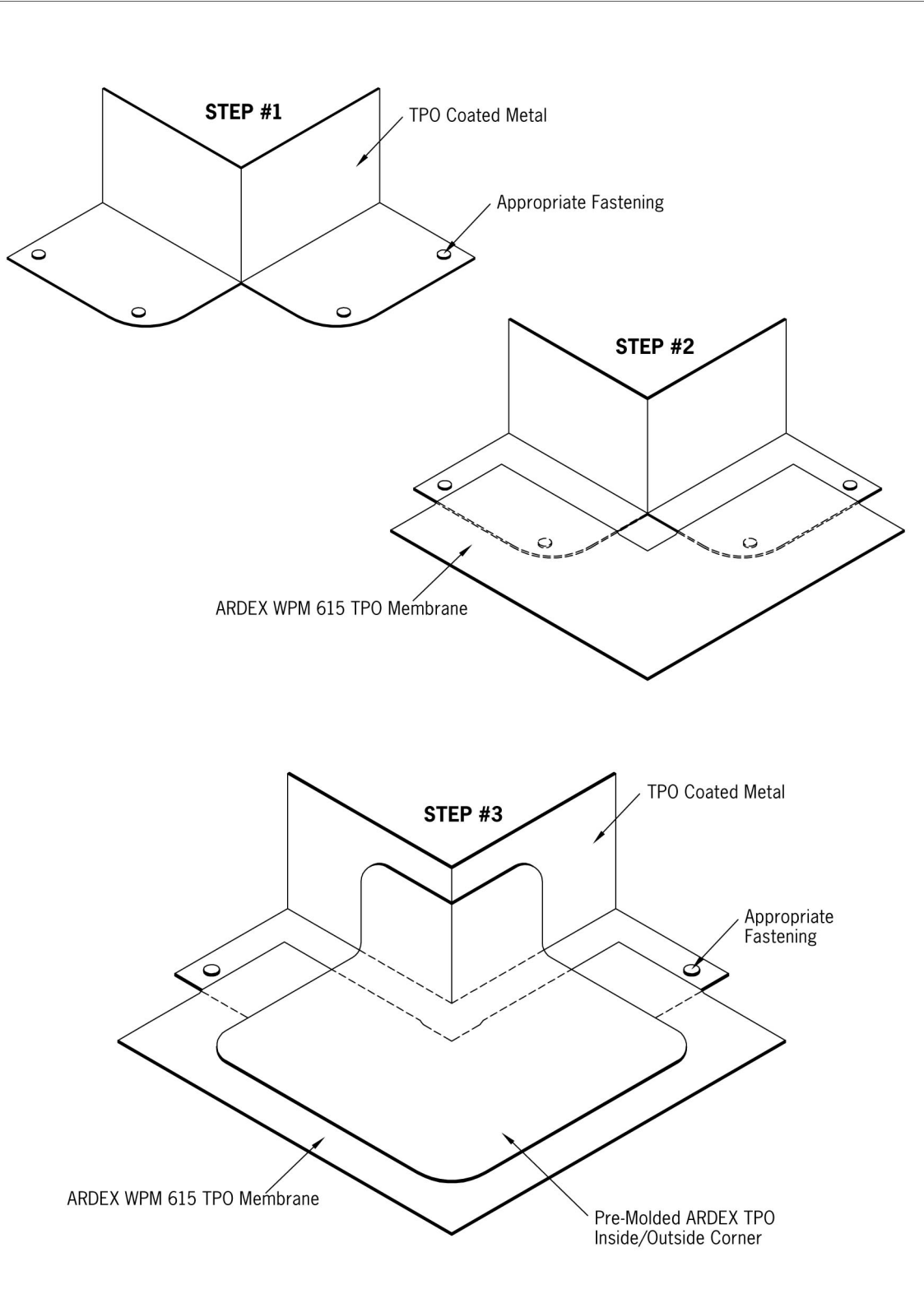
Corners



	ARDEX TPO Outside Corner	No.: T - C - 1	Systems All
		09/2009	



	ARDEX TPO Inside Corner	No.: T - C - 2	Systems All
		09/2009	



ARDEX TPO
Outside Corner with
TPO Coated Metal

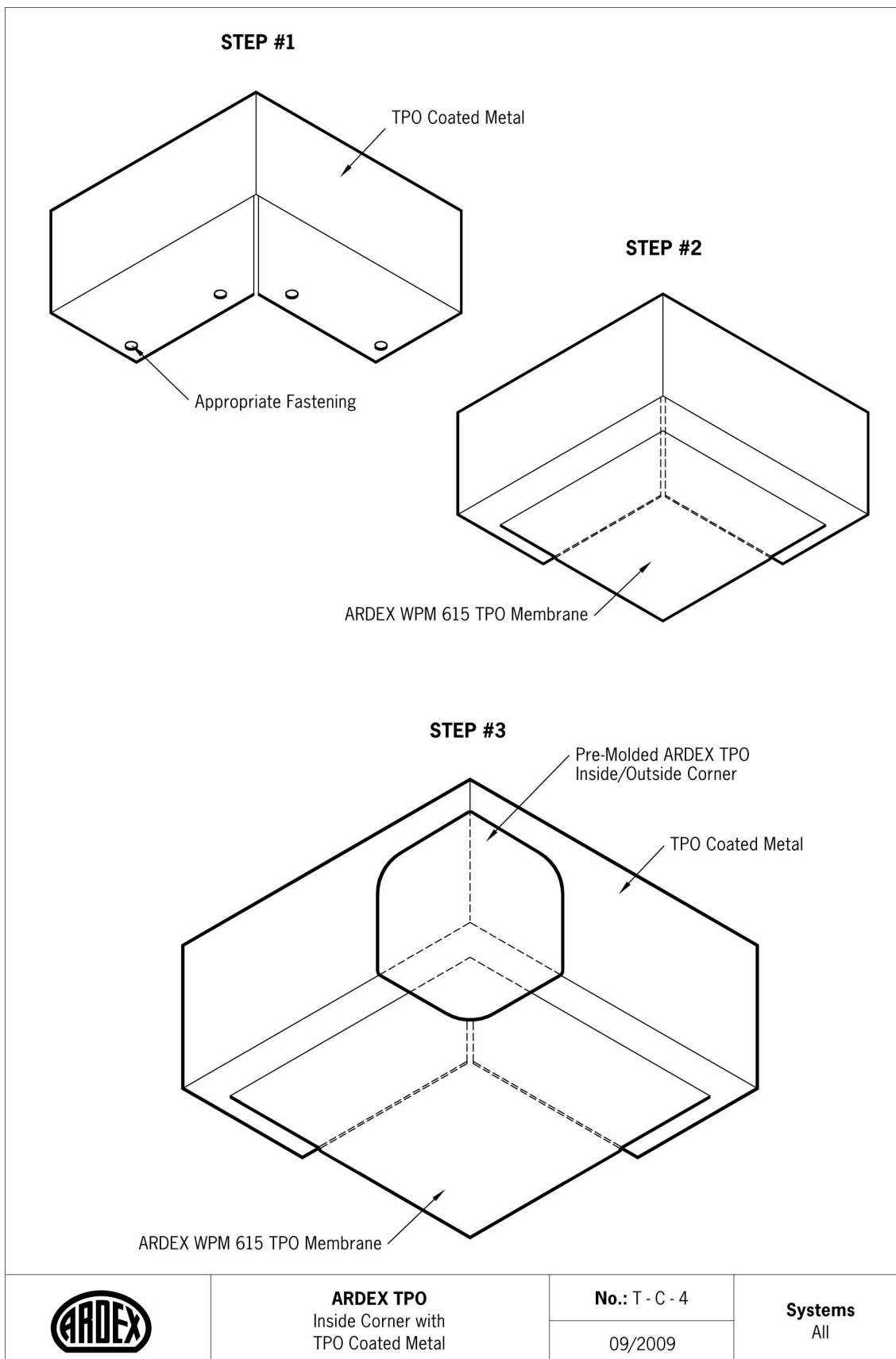
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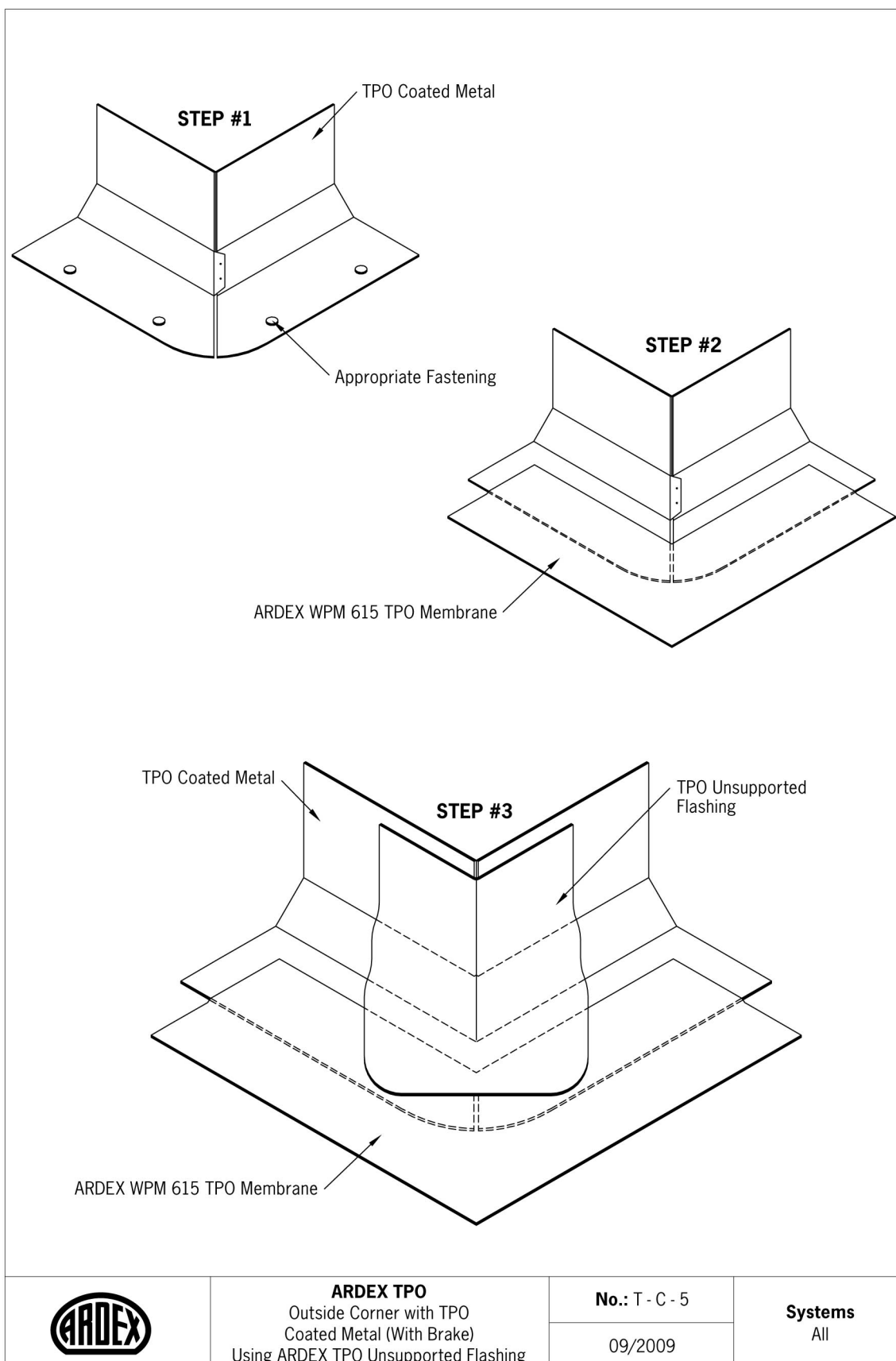
09/2009

Systems
All

TPO Installation Details

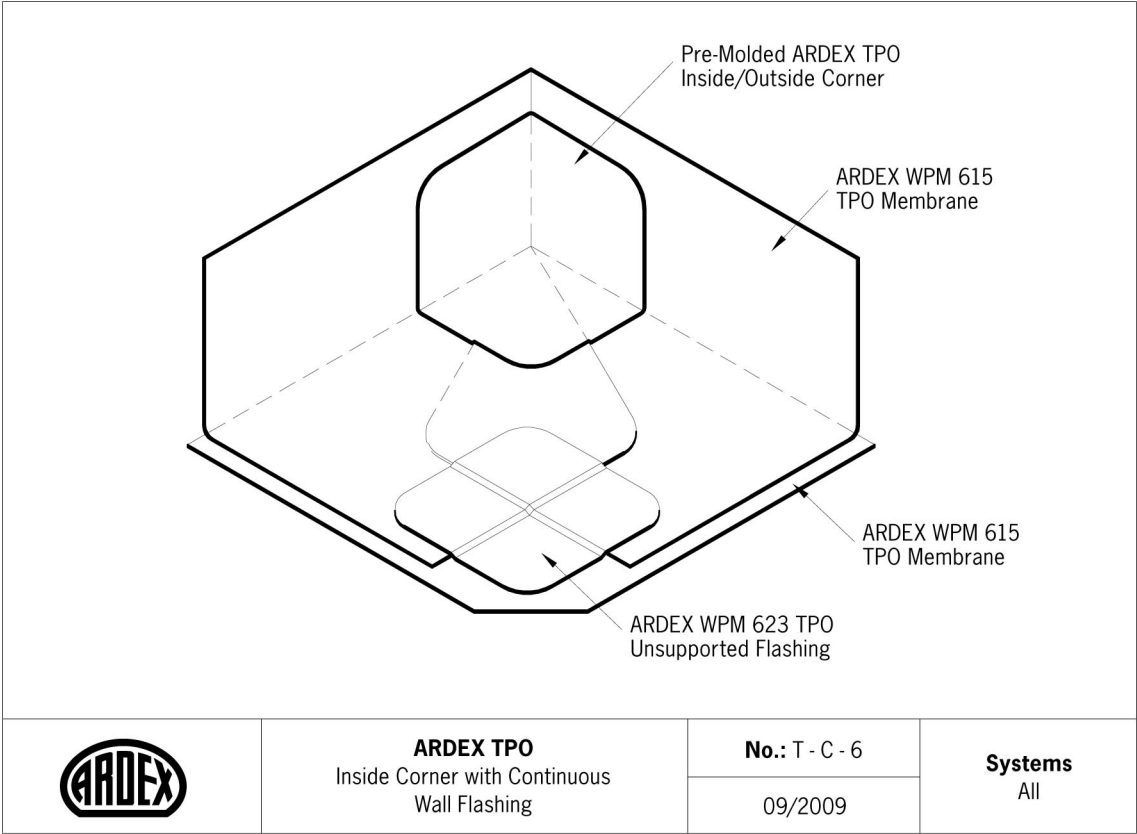
Corners





TPO Installation Details

Corners





TPO Installation Details

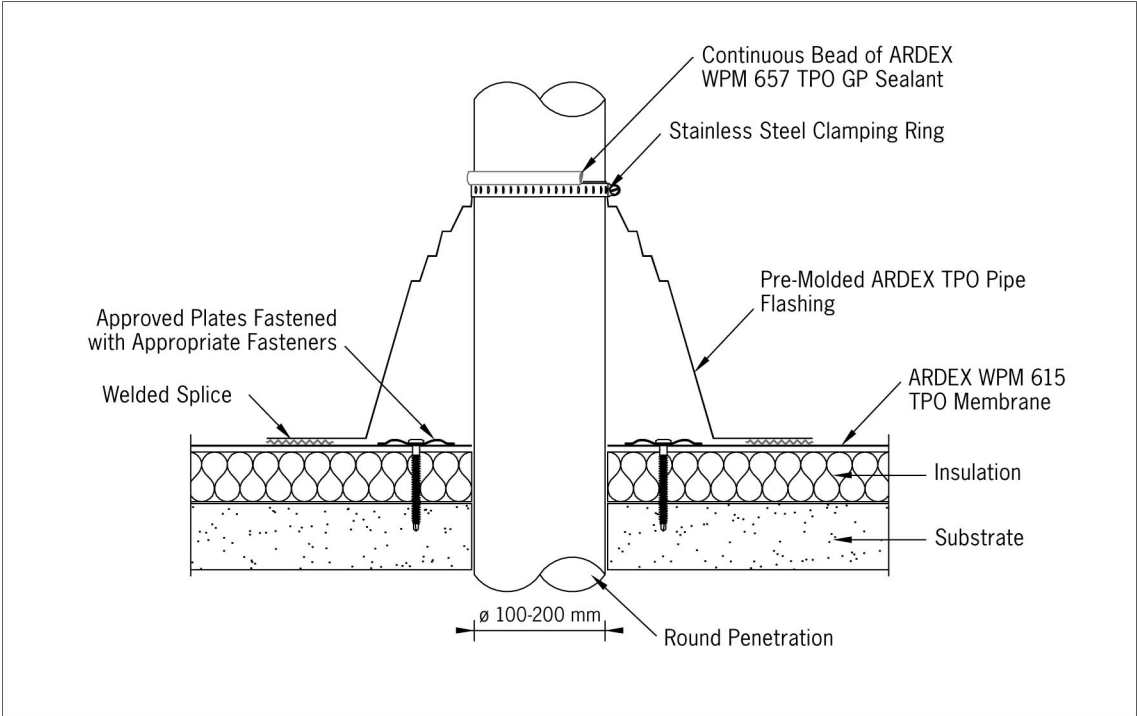
Penetrations

No	ARDEX TPO Detail	Systems
T-P-1	Penetration with ARDEX TPO Large Pipe Flashing	All
T-P-2	Penetration with ARDEX TPO Universal Pipe Flashing	All
T-P-3	Penetration with ARDEX TPO Flashing (unsupported)	All
T-P-4	Hot Pipe Penetration with ARDEX TPO Flashing	All
T-P-5	Penetration with TPO Penetration Pocket kit	All
T-P-6	Membrane Securement Layout (target patch)	All
T-P-7	Membrane Securement Layout (cover strips)	All

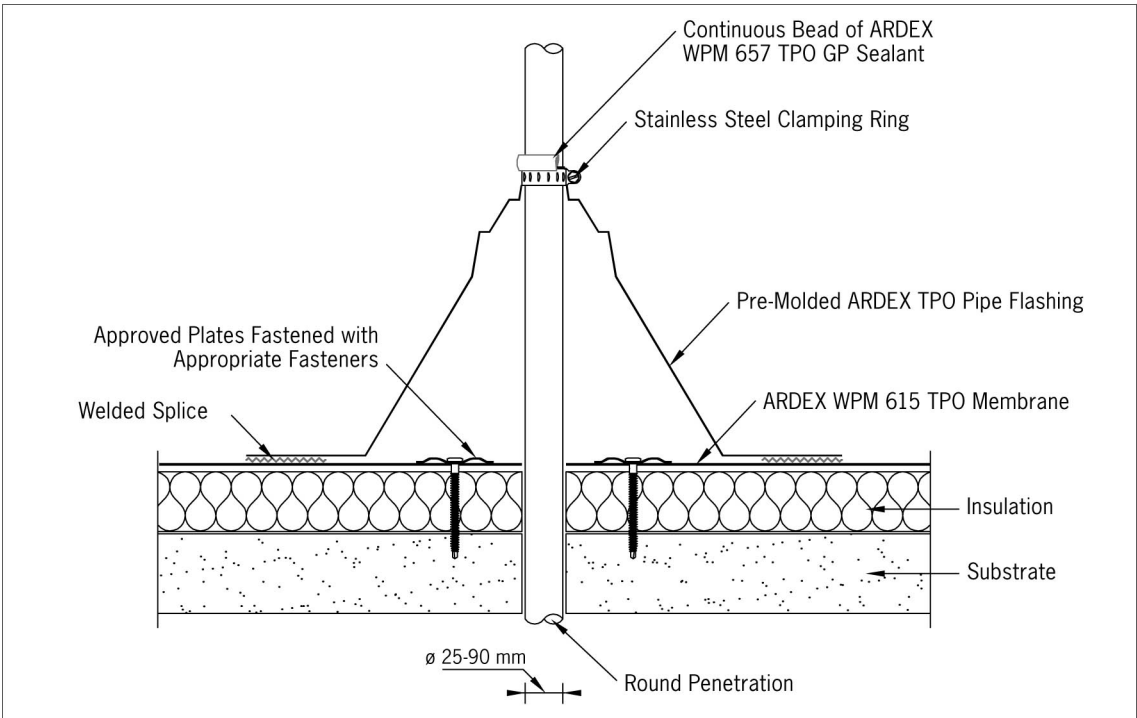
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TPO Installation Details

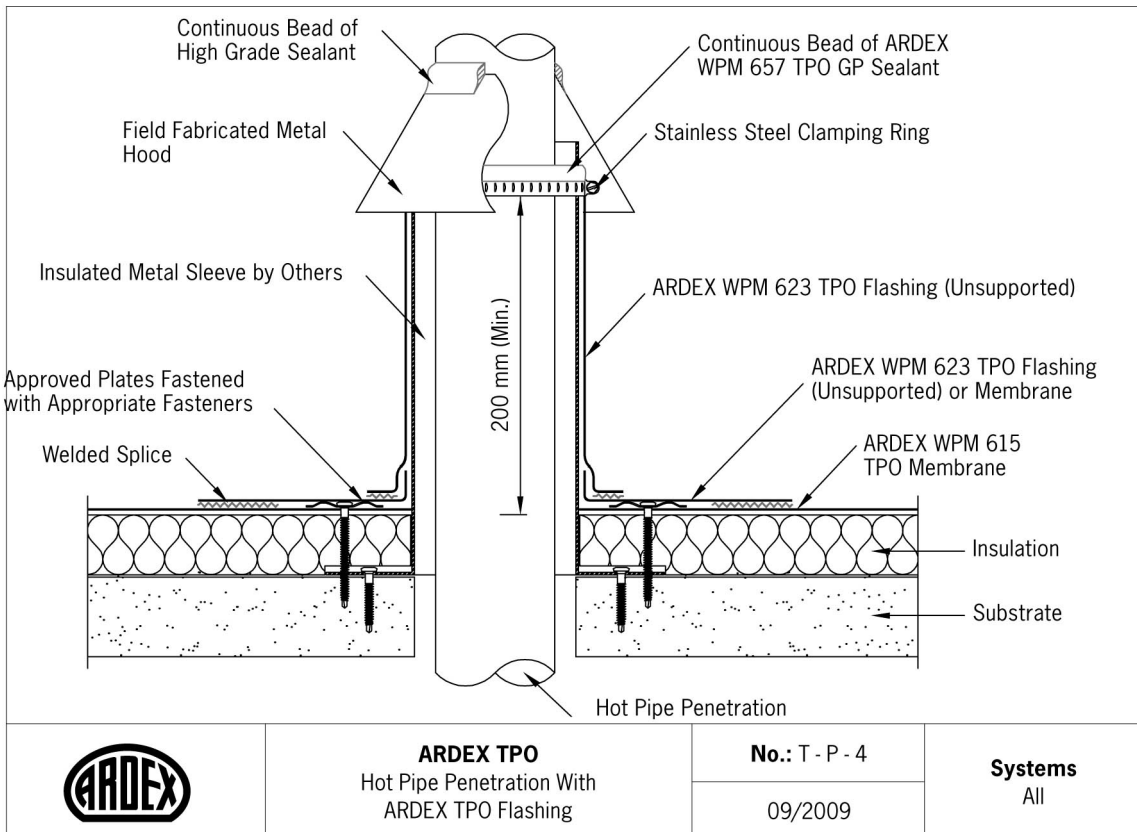
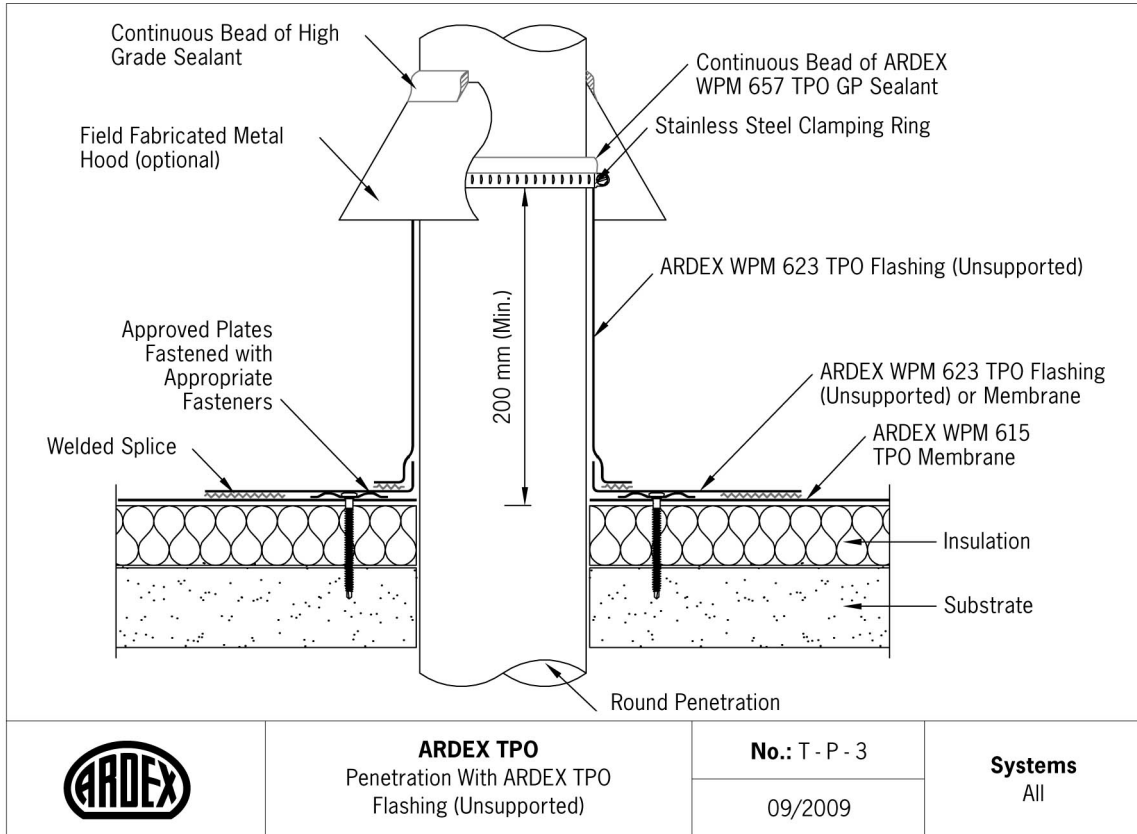
Penetrations



	ARDEX TPO Penetration With ARDEX TPO Large Pipe Flashing	No.: T - P - 1	Systems All
		09/2009	

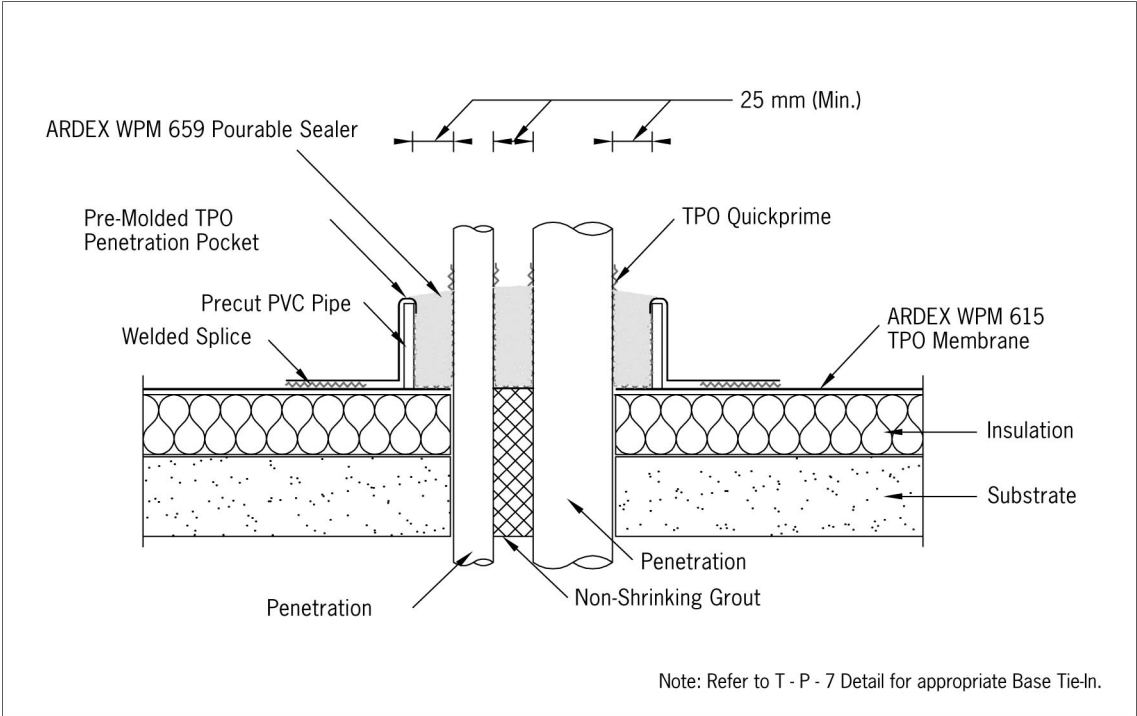


	ARDEX TPO Penetration With ARDEX TPO Universal Pipe Flashing	No.: T - P - 2	Systems All
		09/2009	

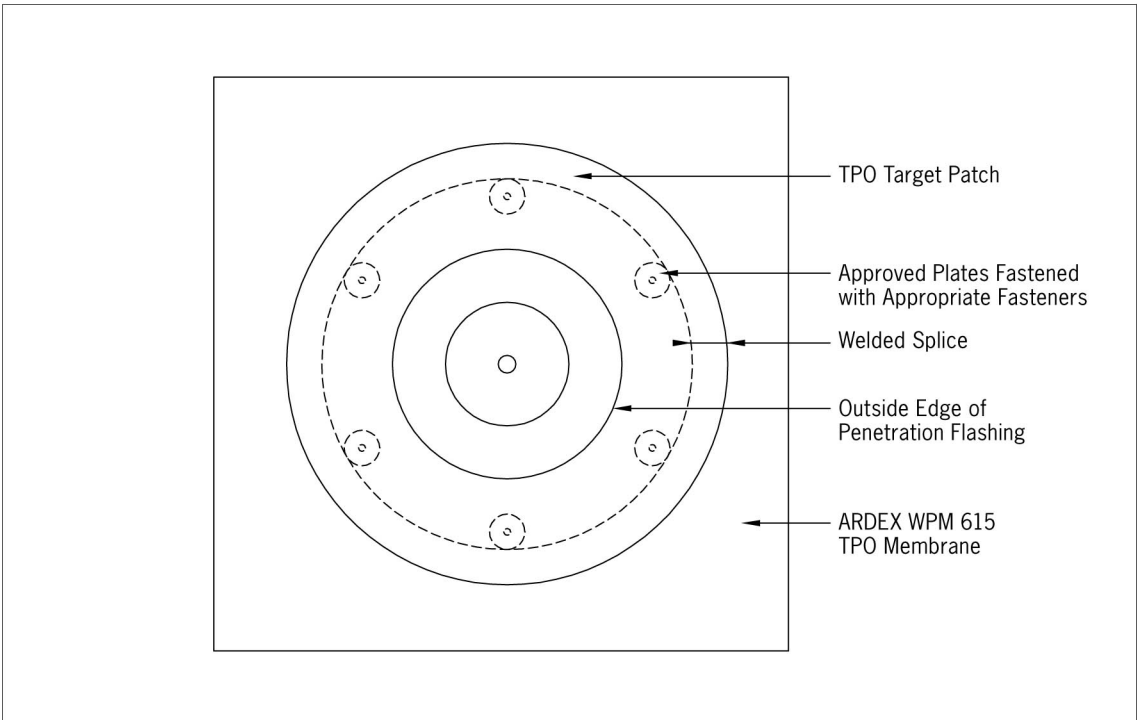


TPO Installation Details

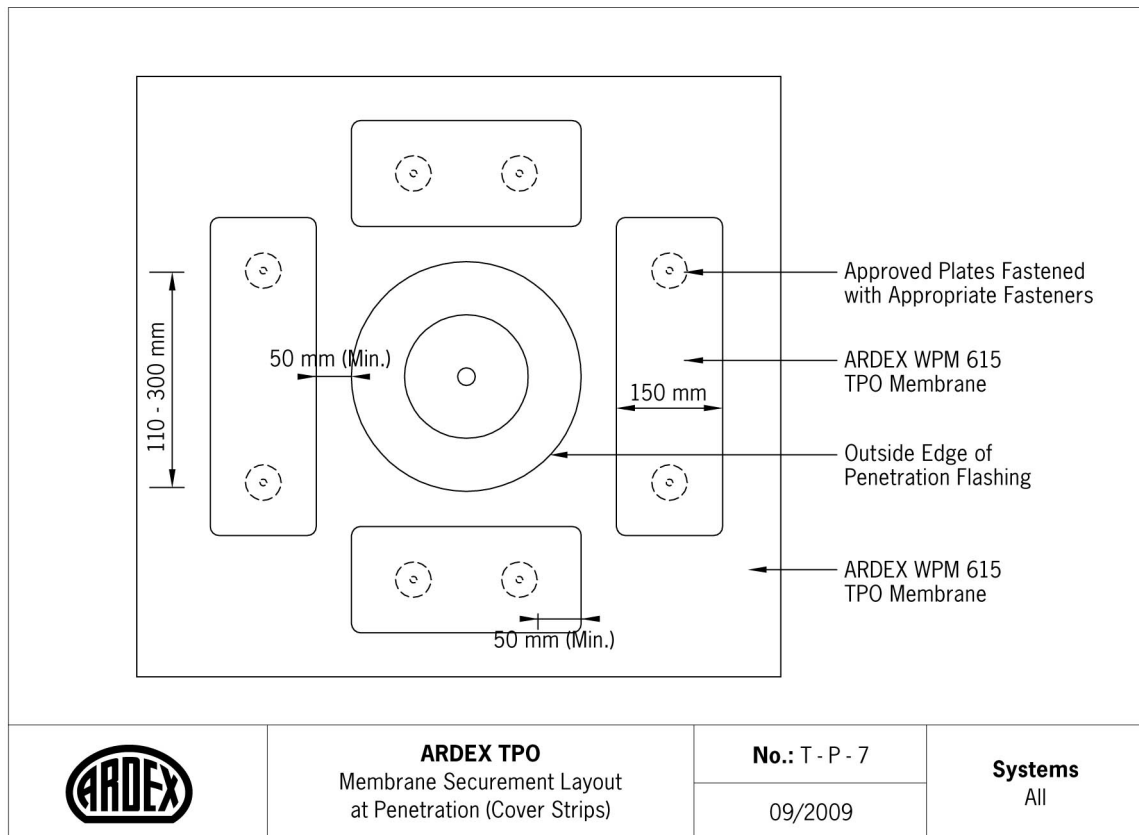
Penetrations



	ARDEX TPO Penetration With TPO Penetration Pocket Kit	No.: T - P - 5	Systems All
		09/2009	



	ARDEX TPO Membrane Securement Layout at Penetration (Target Patch)	No.: T - P - 6	Systems All
		09/2009	





TPO Installation Details

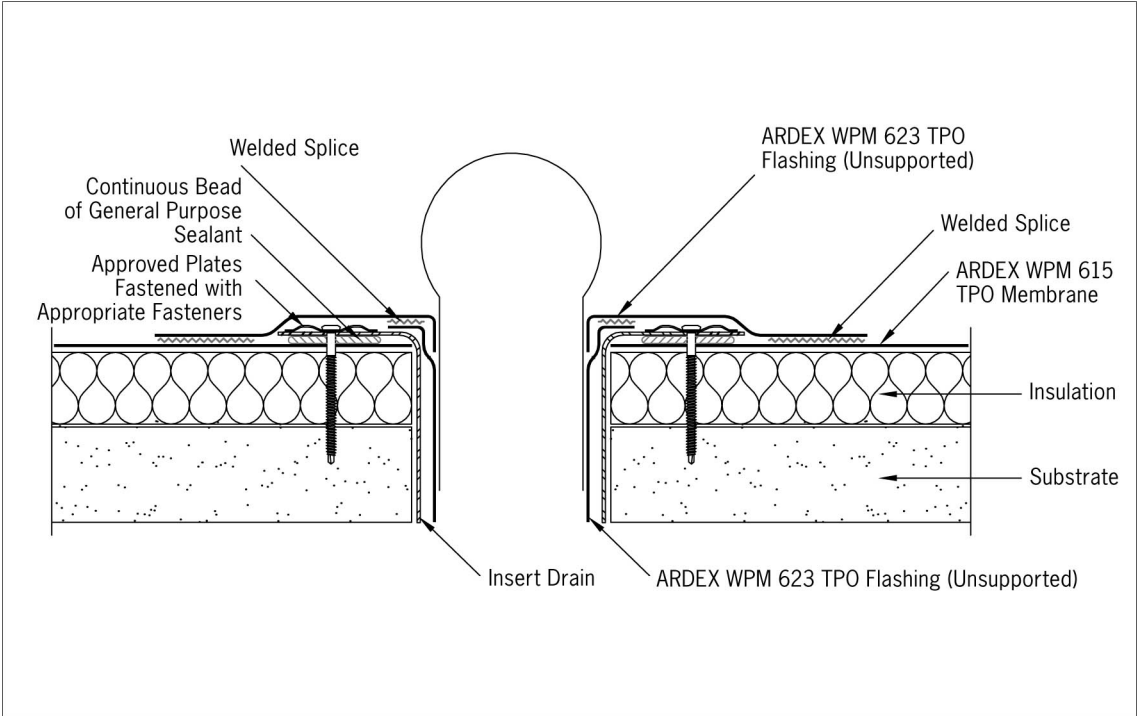
Drains


No	ARDEX TPO Detail	Systems
T-D-1	Field Fabricated Roof Drain	All
T-D-2	TPO Coated Drain	All
T-D-3	Drain with Clamping Ring	All
T-D-4	TPO Pre-molded Scuppper	All

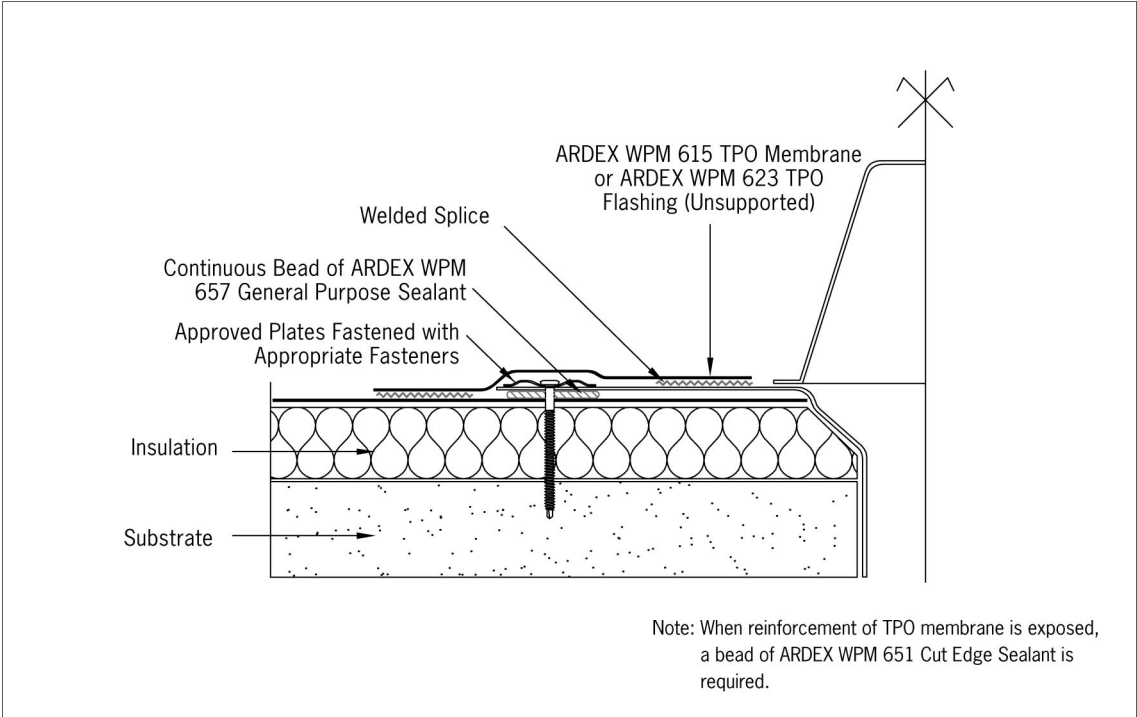
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TPO Installation Details


Drains

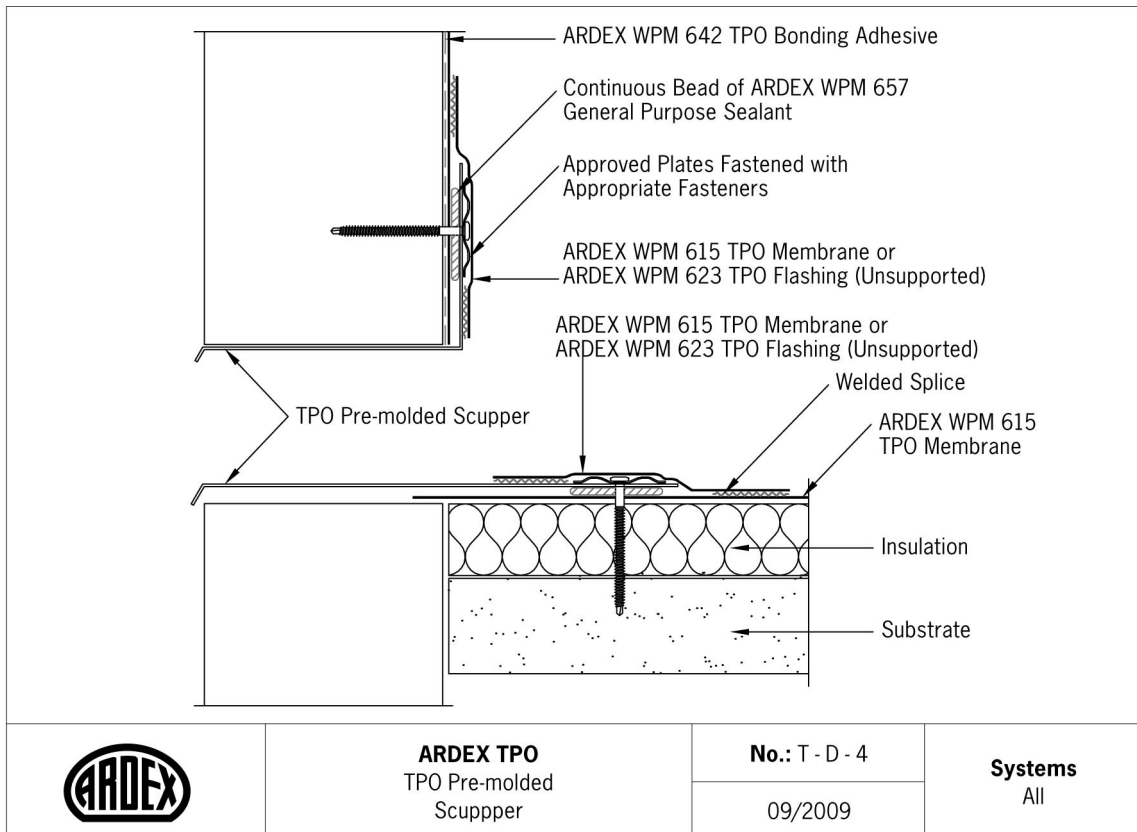
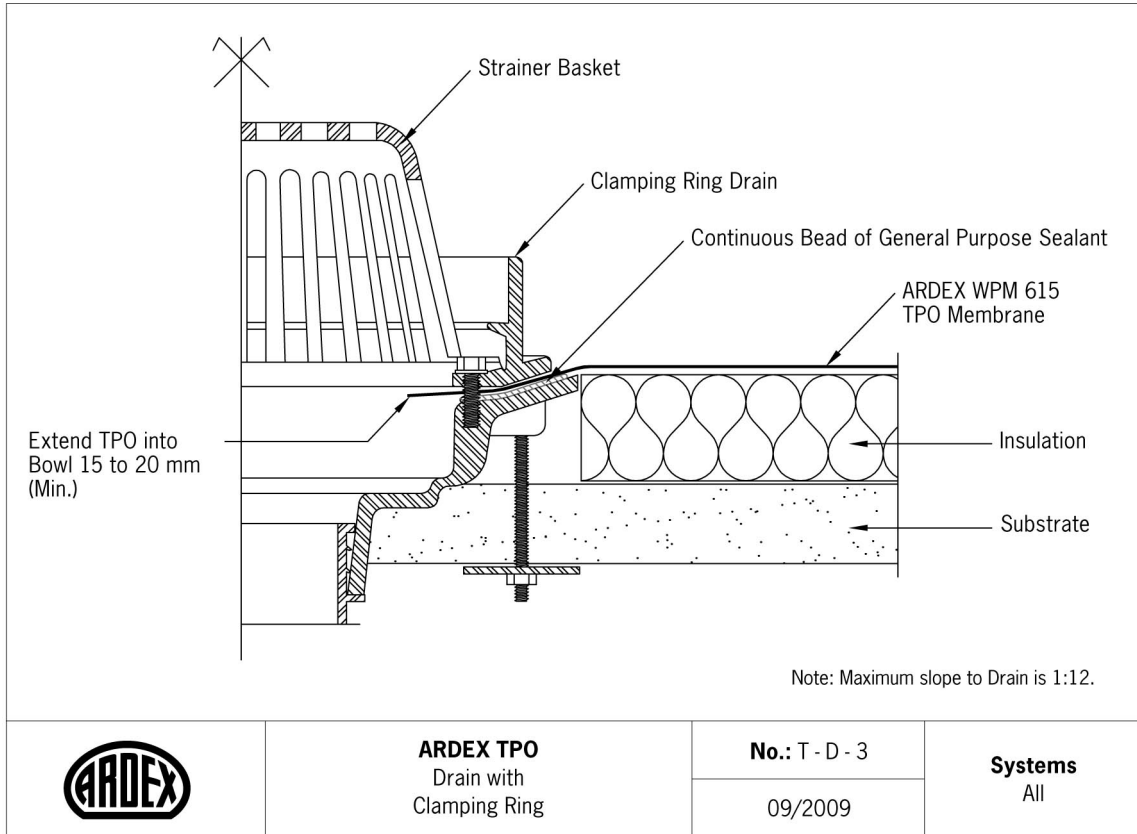


	ARDEX TPO Field Fabricated Roof Drain	No.: T - D - 1	Systems All
		09/2009	



Note: When reinforcement of TPO membrane is exposed, a bead of ARDEX WPM 651 Cut Edge Sealant is required.

	ARDEX TPO TPO Coated Drain	No.: T - D - 2	Systems All
		09/2009	





TPO Installation Details

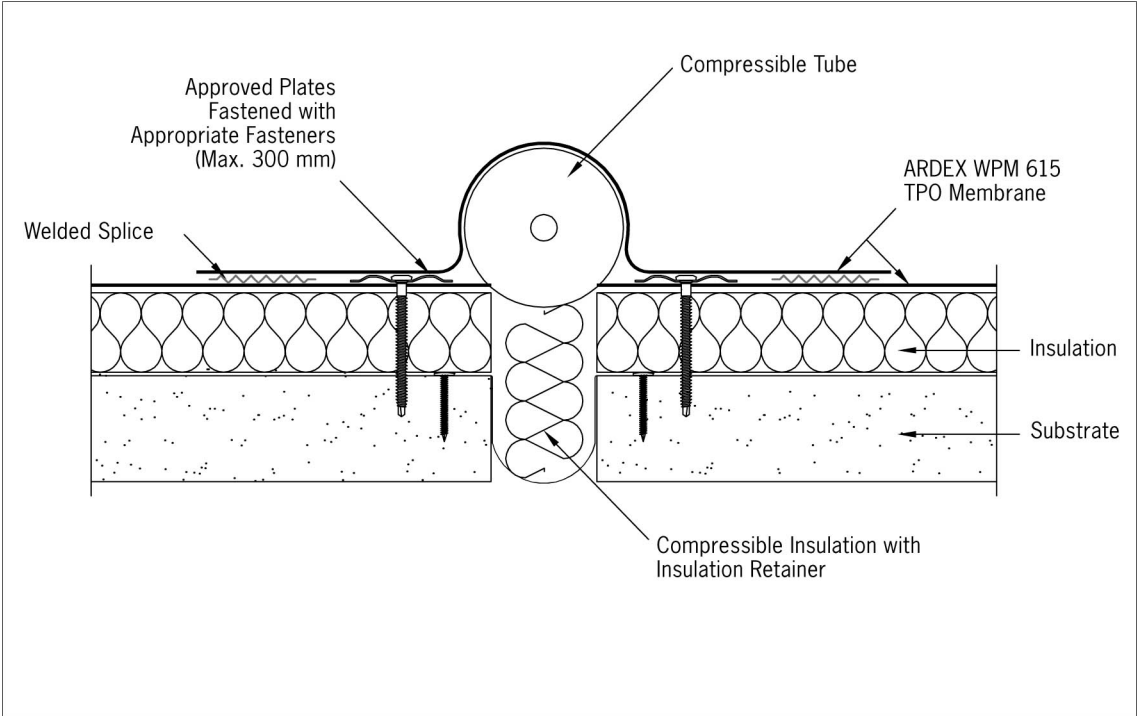
Expansion Joints

No	ARDEX TPO Detail	Systems
T-E-1	Flat Expansion Joint with Welded Splice	All
T-E-2	Raised Expansion Joint	All
T-E-3	Raised Expansion Joint with Metal Joint Cover	All
T-E-4	Wall Expansion Joint	All

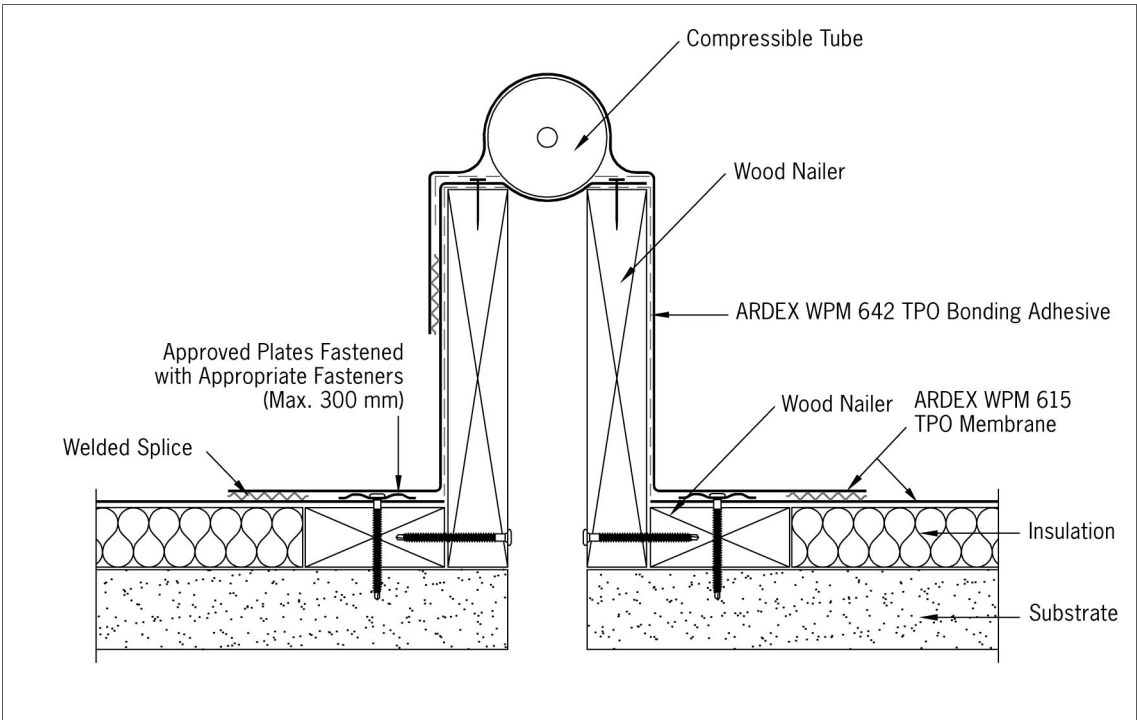
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TPO Installation Details

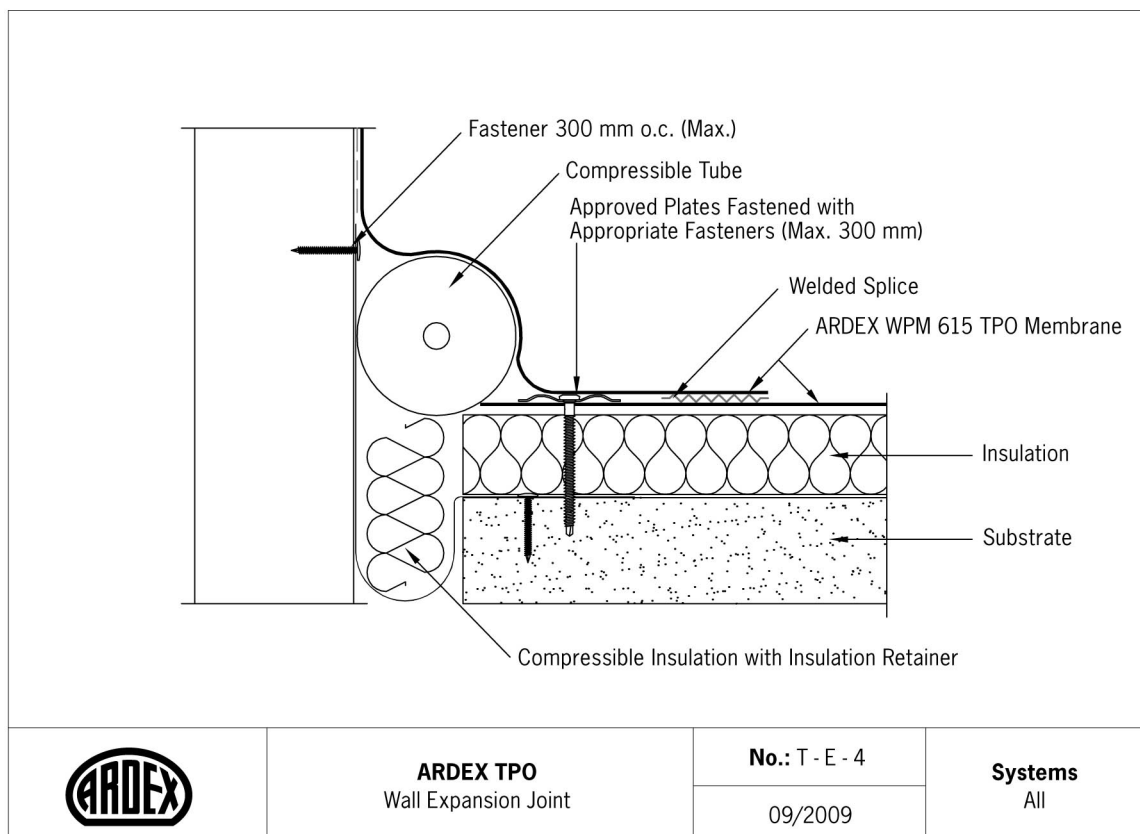
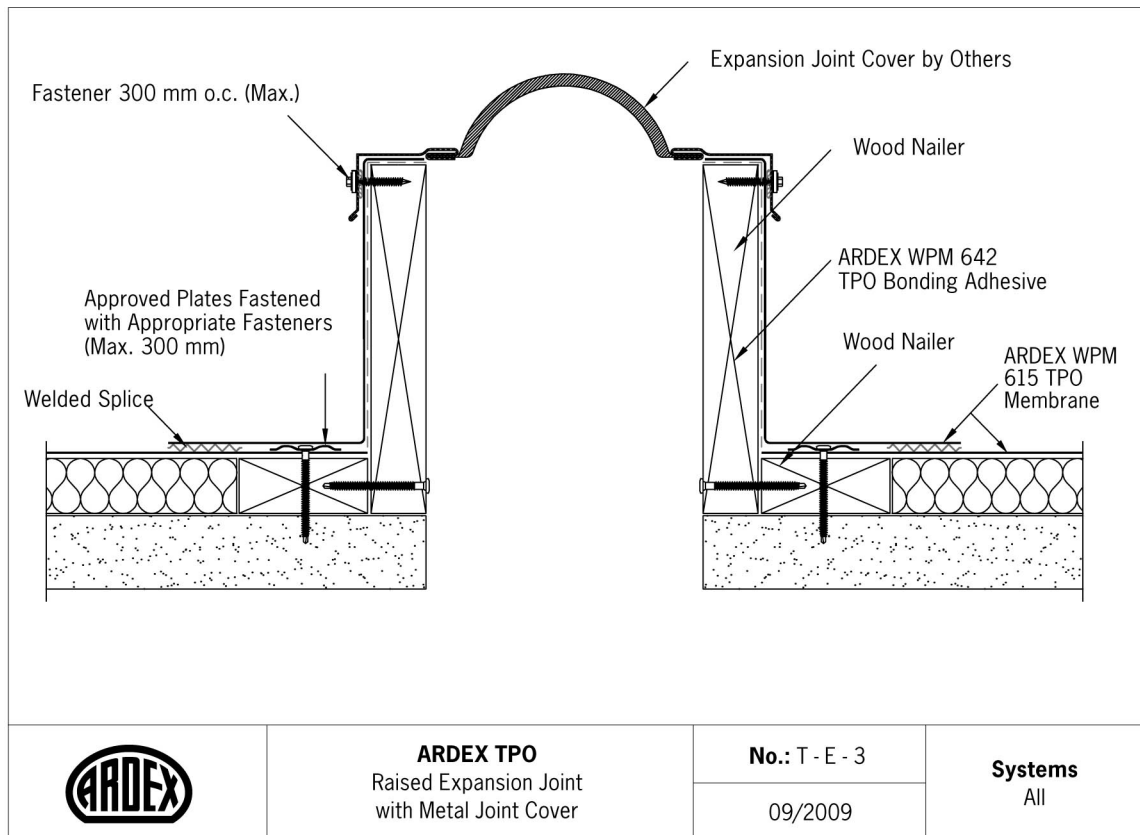
Expansion Joints



	ARDEX TPO Flat Expansion Joint with Welded Splice	No.: T - E - 1	Systems All
		09/2009	



	ARDEX TPO Raised Expansion Joint	No.: T - E - 2	Systems All
		09/2009	





TPO Installation Details

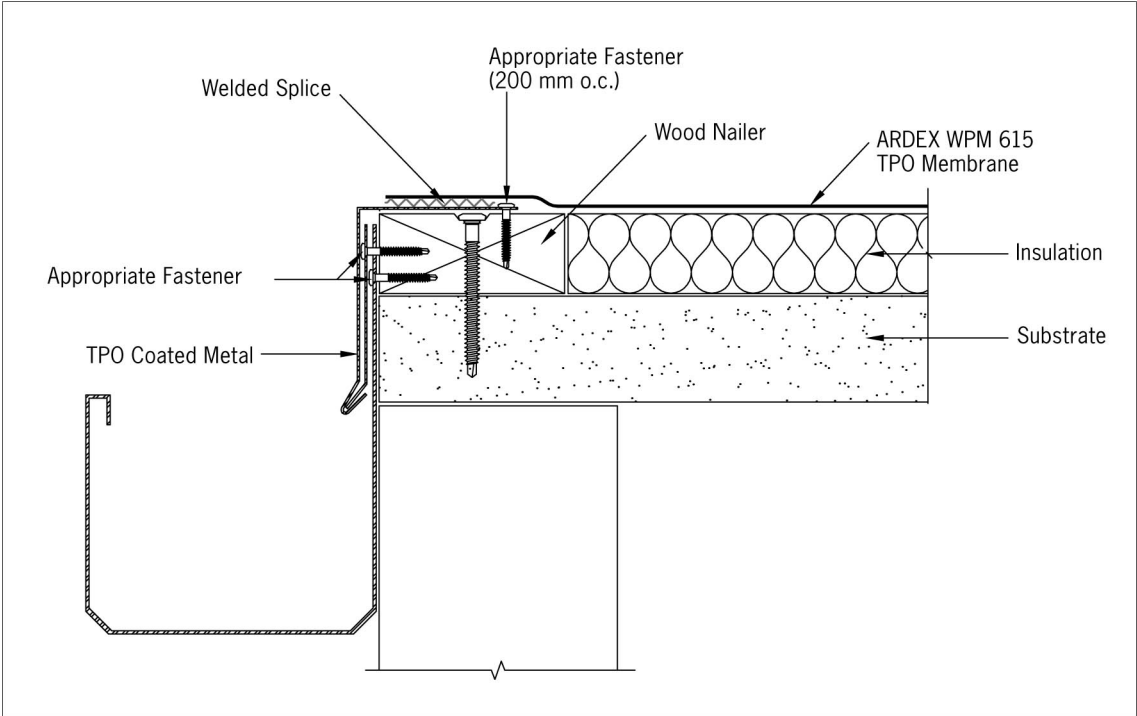
Roof Edges


No	ARDEX TPO Detail	Systems
T-RE-1	Roof Edge Gutter with TPO Coated Metal	All
T-RE-2	Roof Edge Gutter with TPO Coated Metal	All
T-RE-3	Roof Edge using ARDEX TPO QuickSeam Flashing	All
T-RE-4	Roof Edge with Edge Profile	All
T-RE-5	Roof Edge Splice with TPO Coated Metal	All
T-RE-6	Alternative Roof Edge with Edge Profile	All

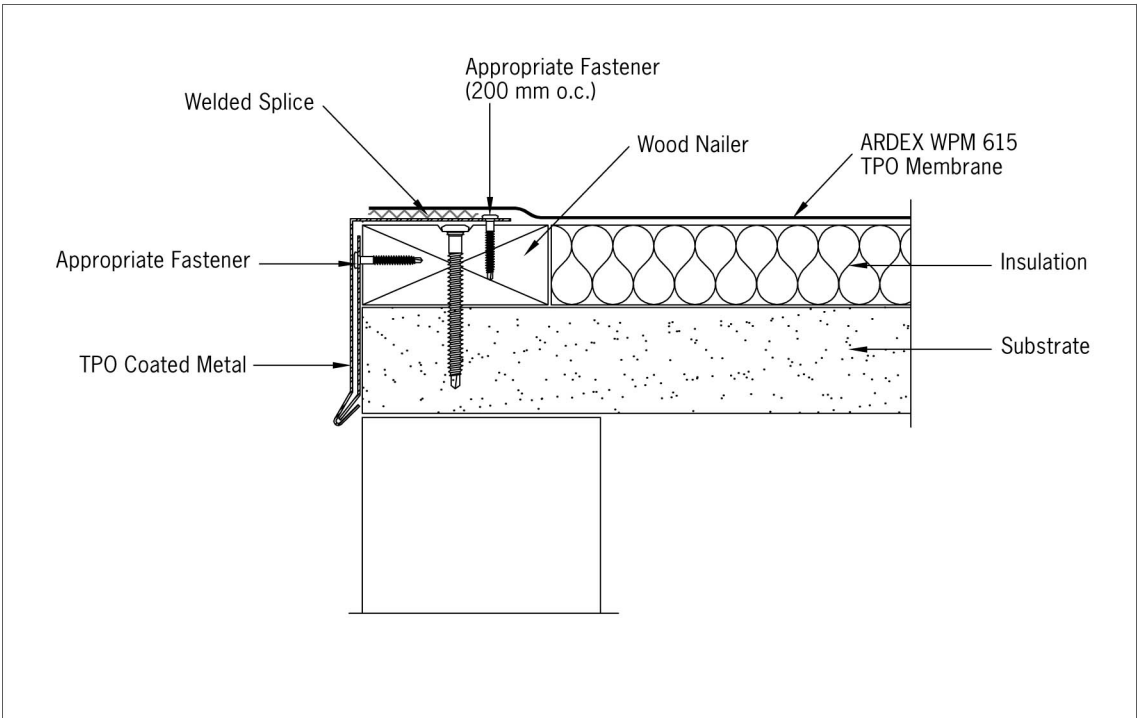
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TPO Installation Details

Roof Edges



	ARDEX TPO Roof Edge Gutter with TPO Coated Metal	No.: T - RE - 1	Systems All
		09/2009	



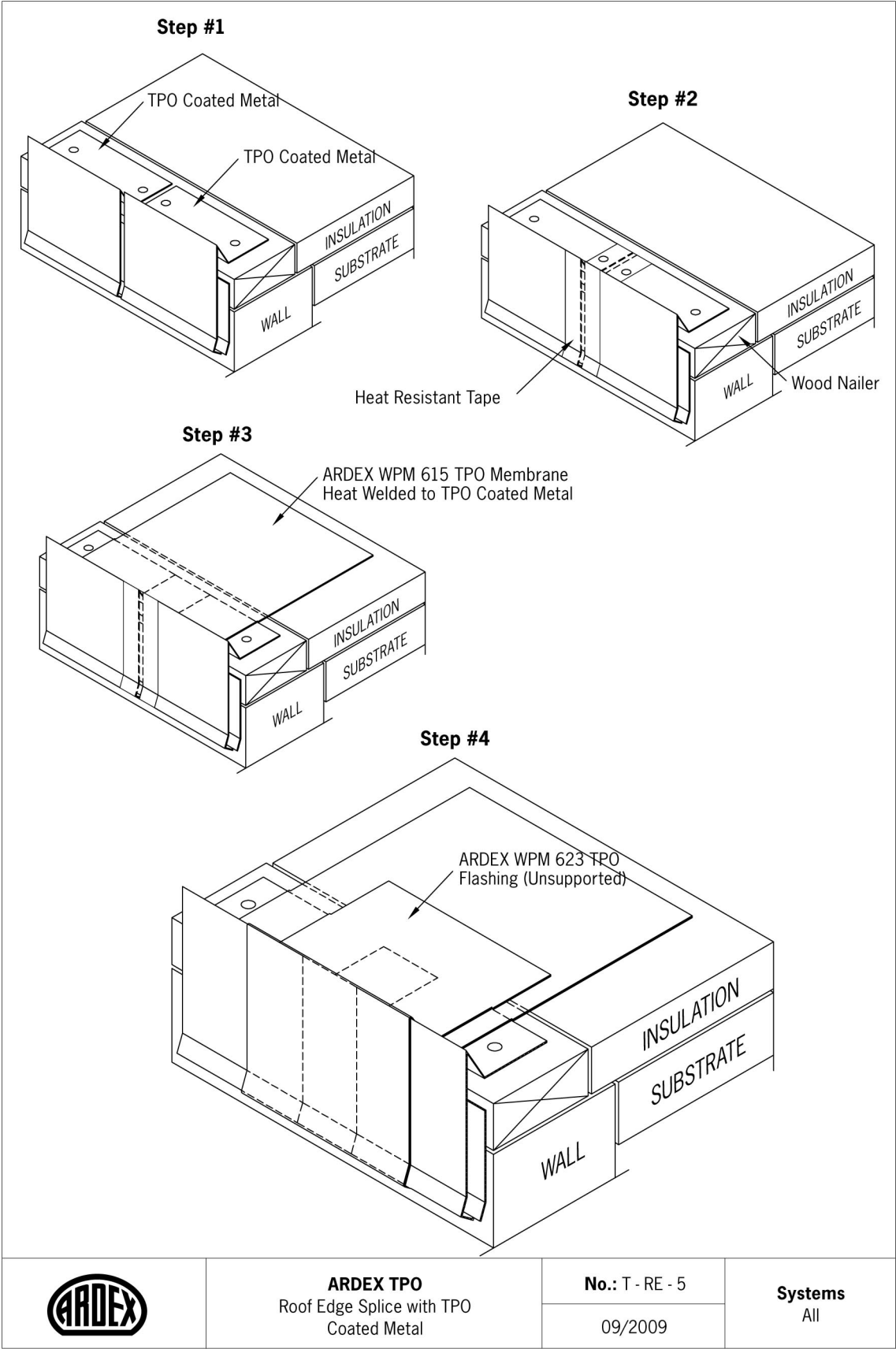
	ARDEX TPO Roof Edge with TPO Coated Metal	No.: T - RE - 2	Systems All
		09/2009	

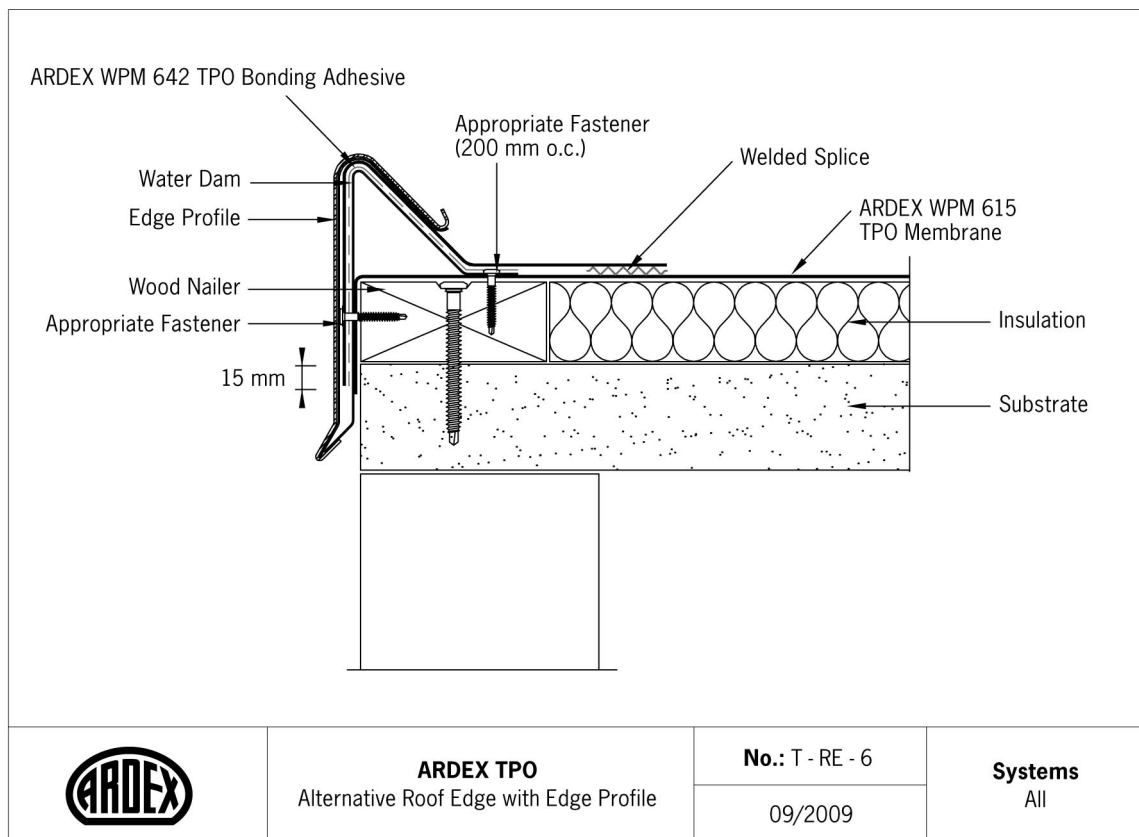
	ARDEX TPO Roof Edge using TPO QuickSeam Flashing	No.: T - RE - 3	Systems All
		09/2009	

	ARDEX TPO Roof Edge with Edge Profile	No.: T - RE - 4	Systems All
		09/2009	

TPO Installation Details

Roof Edges







TPO Installation Details

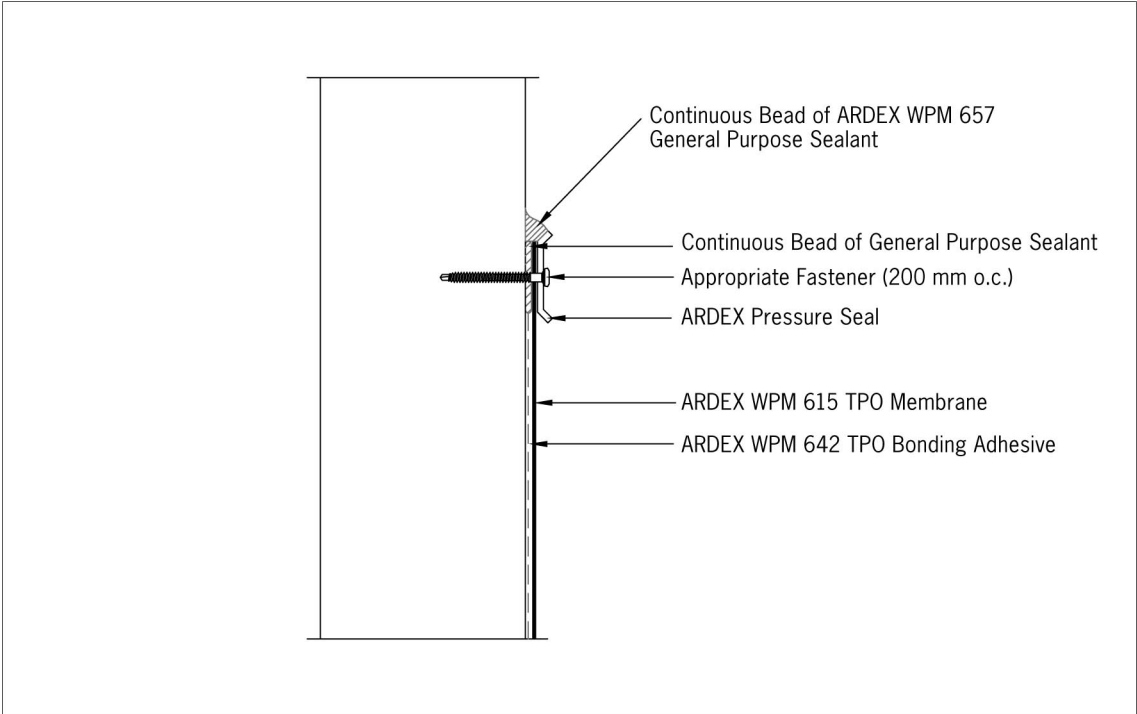
Terminations


No	ARDEX TPO Detail	Systems
T-T-1	Termination with Termination Bar	All
T-T-2	Termination with Termination Bar on Outside of Parapet Wall	All
T-T-3	Termination with Coping Stone	All
T-T-4	Termination with Metal Coping	All
T-T-5	Termination with Counterflashing	All
T-T-6	Termination with Termination Bar – Elevation Change	All
T-T-7	Termination with Termination Bar – Joint in Precast Concrete Panel	All
T-T-8	Termination with Termination Bar at Wall Expansion Joint	All
T-T-9	Termination with Monotrim Profile Flashing Termination	All
T-T-10	Termination with Intermediate Attachment at Wall Flashing	All

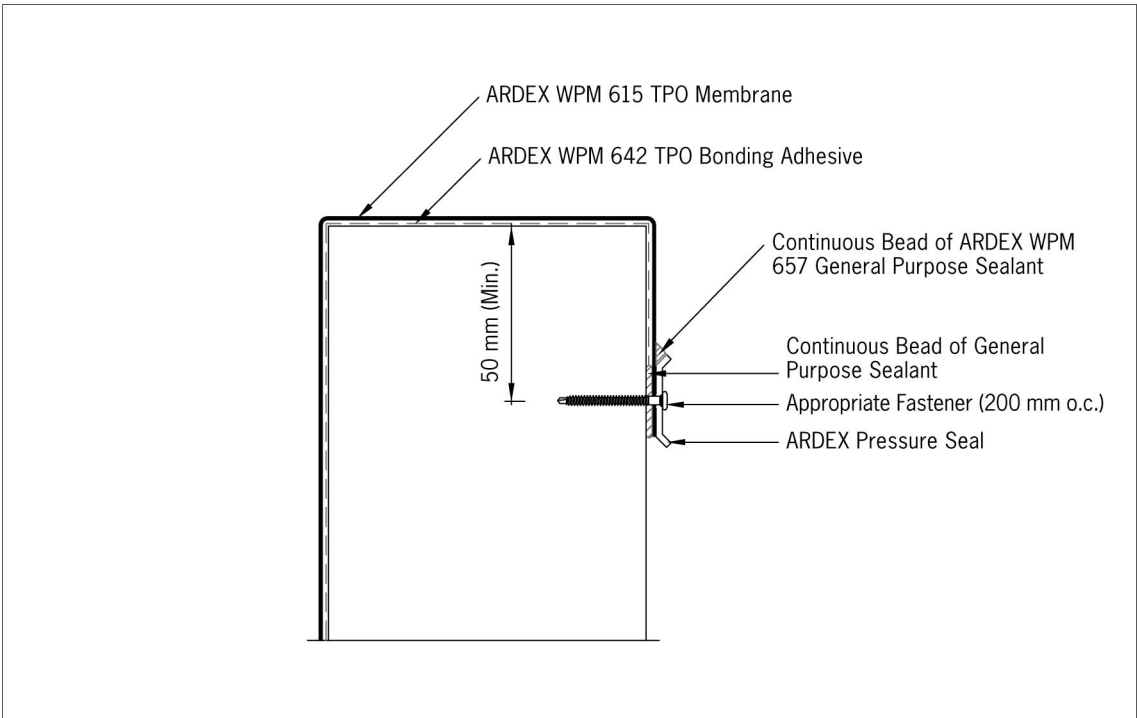
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TPO Installation Details

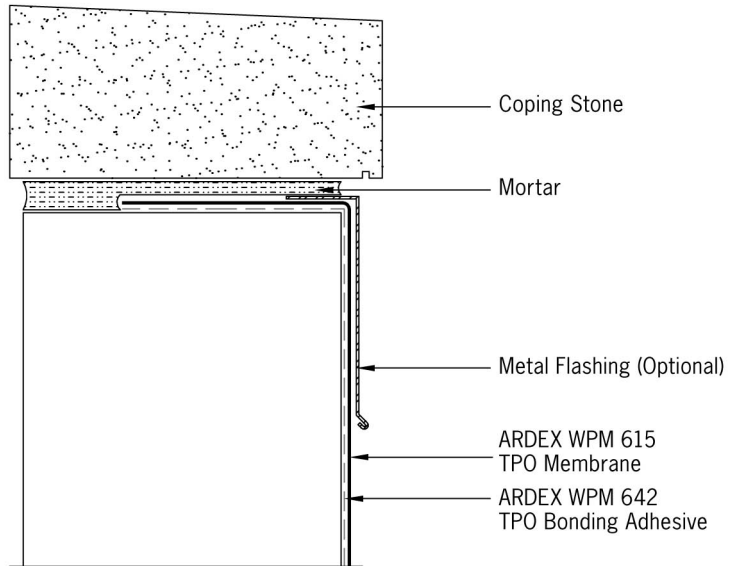
Terminations



	ARDEX TPO Termination with ARDEX Pressure Seal	No.: T - T - 1	Systems All
		09/2009	



	ARDEX TPO Termination with Termination Bar on Outside of Parapet Wall	No.: T - T - 2	Systems All
		09/2009	

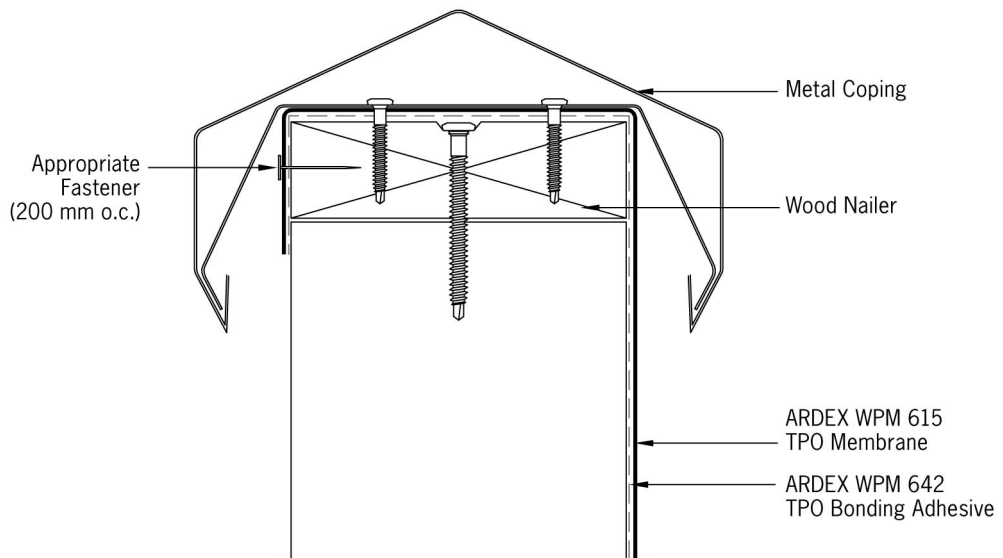


ARDEX TPO
Termination with Coping Stone

No.: T - T - 3

09/2009

Systems
All



ARDEX TPO
Termination with Metal Coping

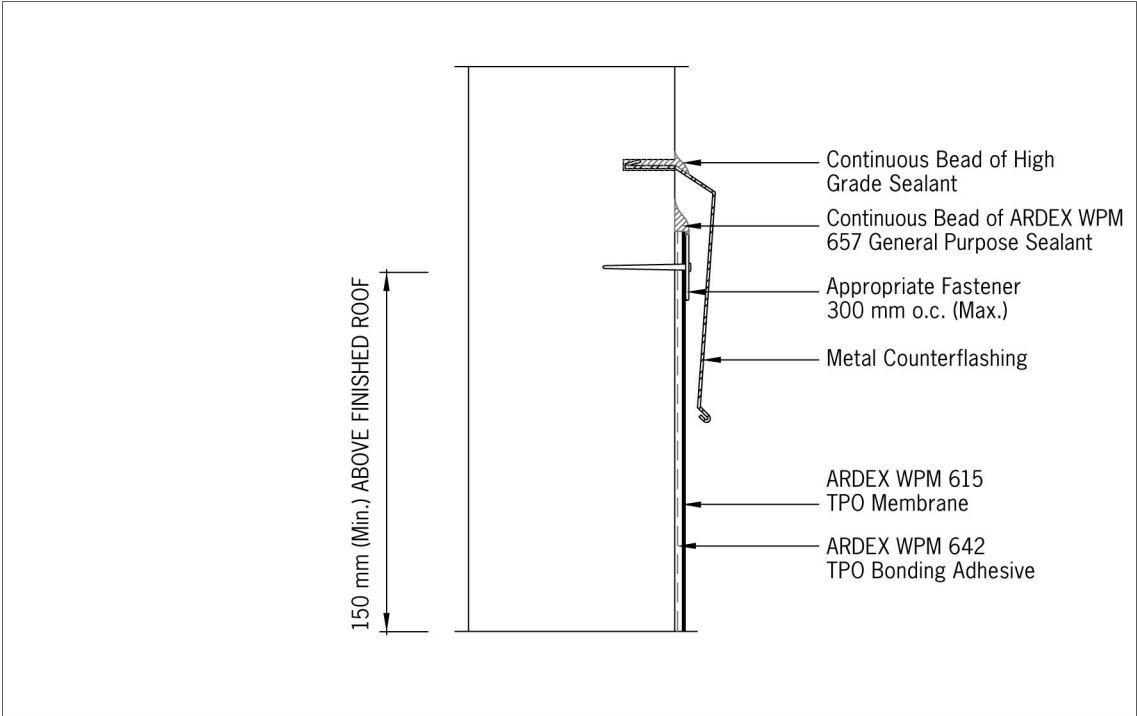
No.: T - T - 4

09/2009

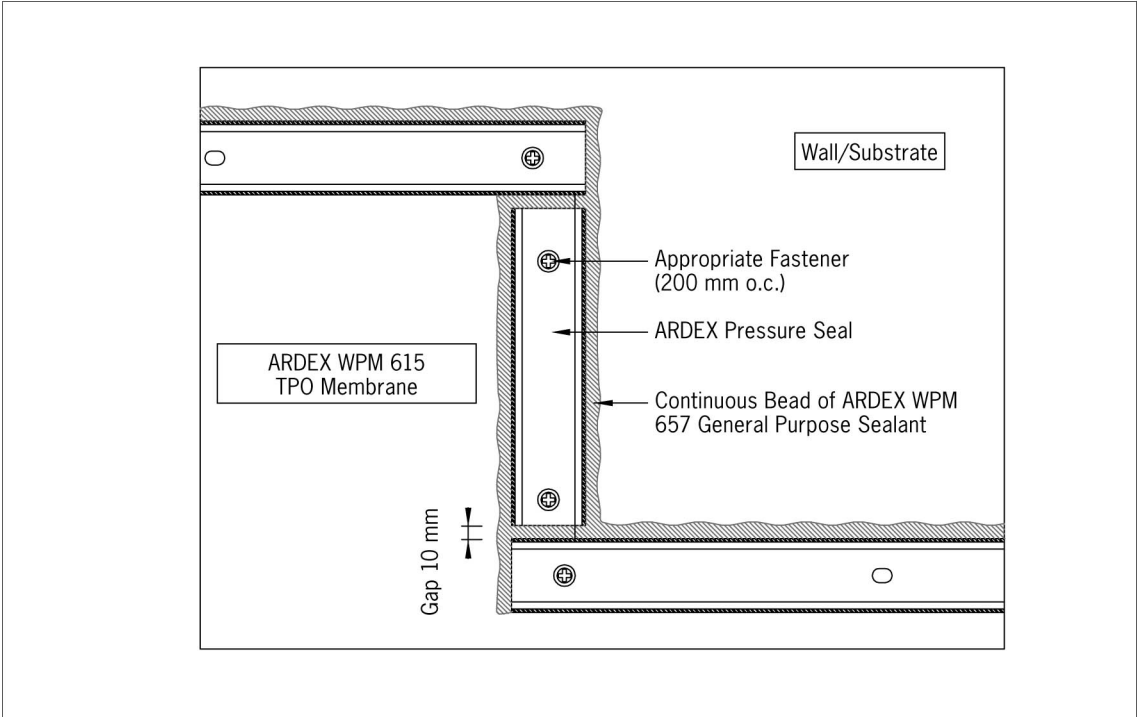
Systems
All

TPO Installation Details

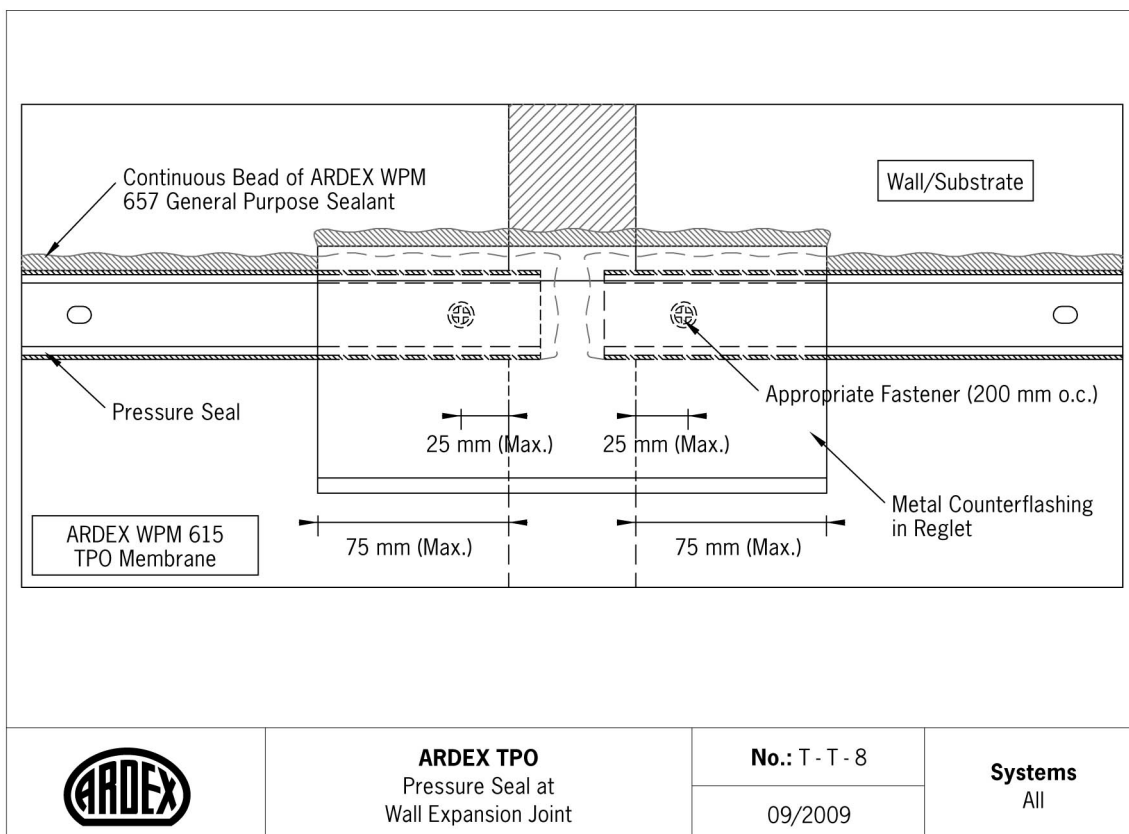
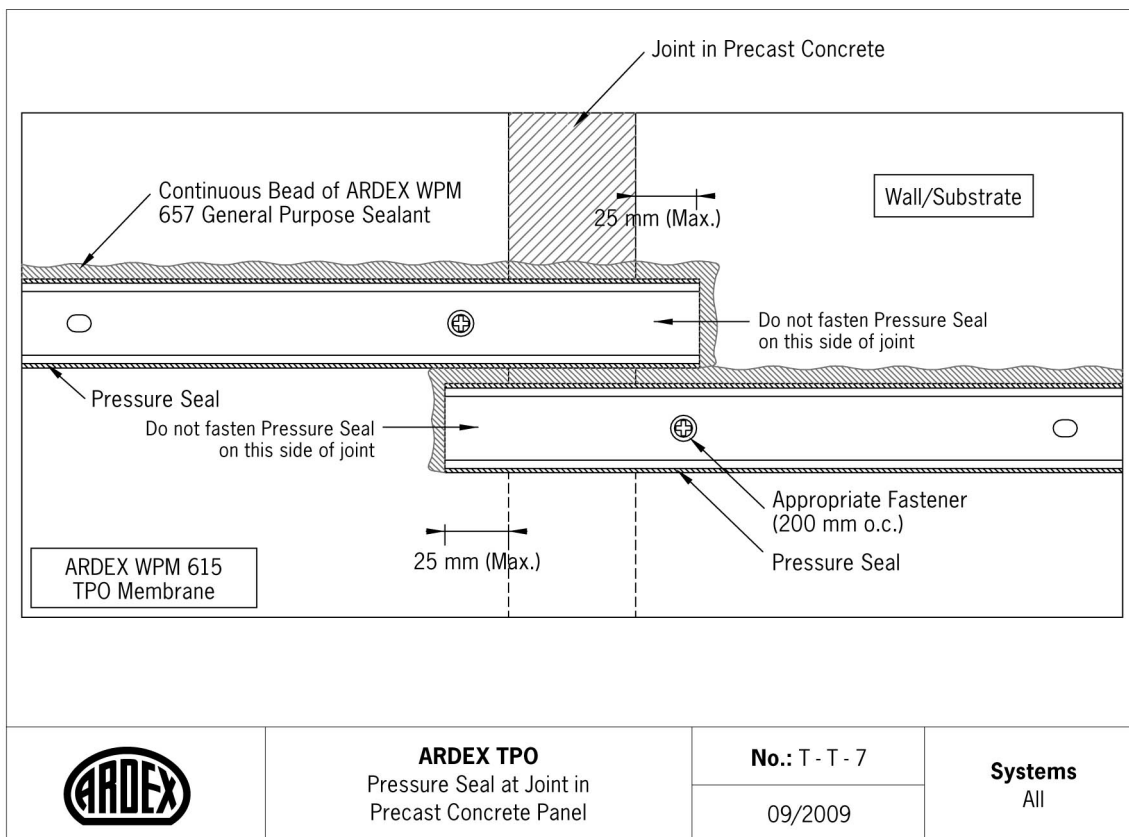
Terminations



	ARDEX TPO Termination with Counterflashing	No.: T - T - 5	Systems All
		09/2009	

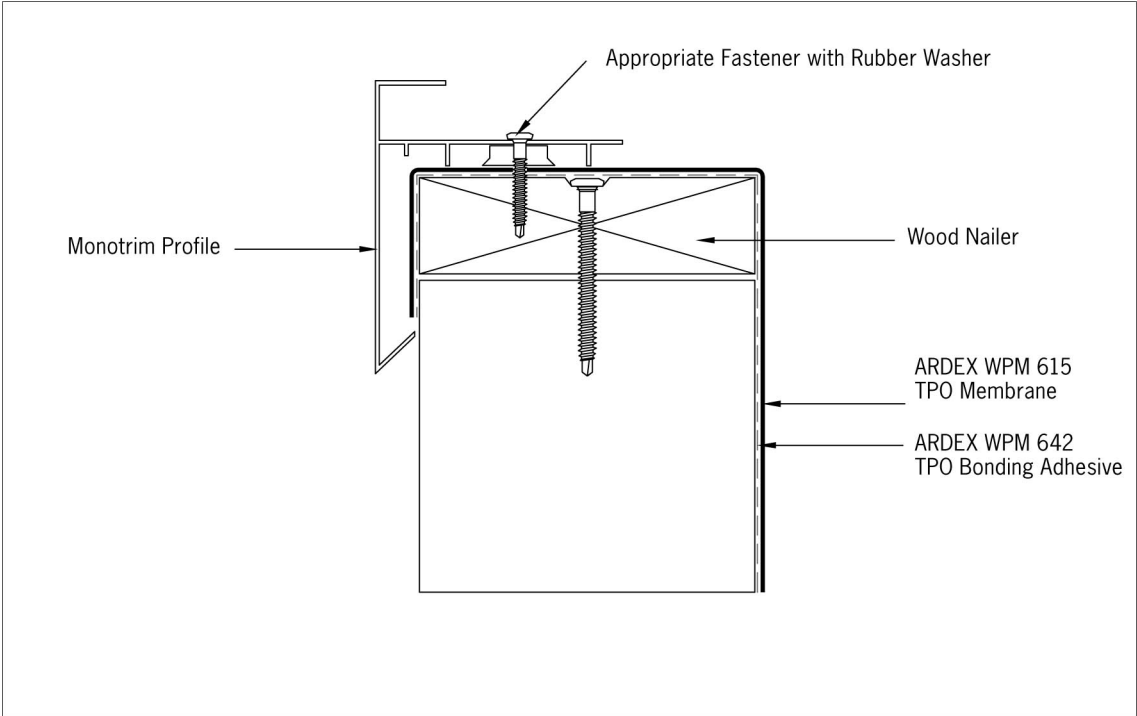


	ARDEX TPO Termination with Pressure Seal Elevation Change	No.: T - T - 6	Systems All
		09/2009	

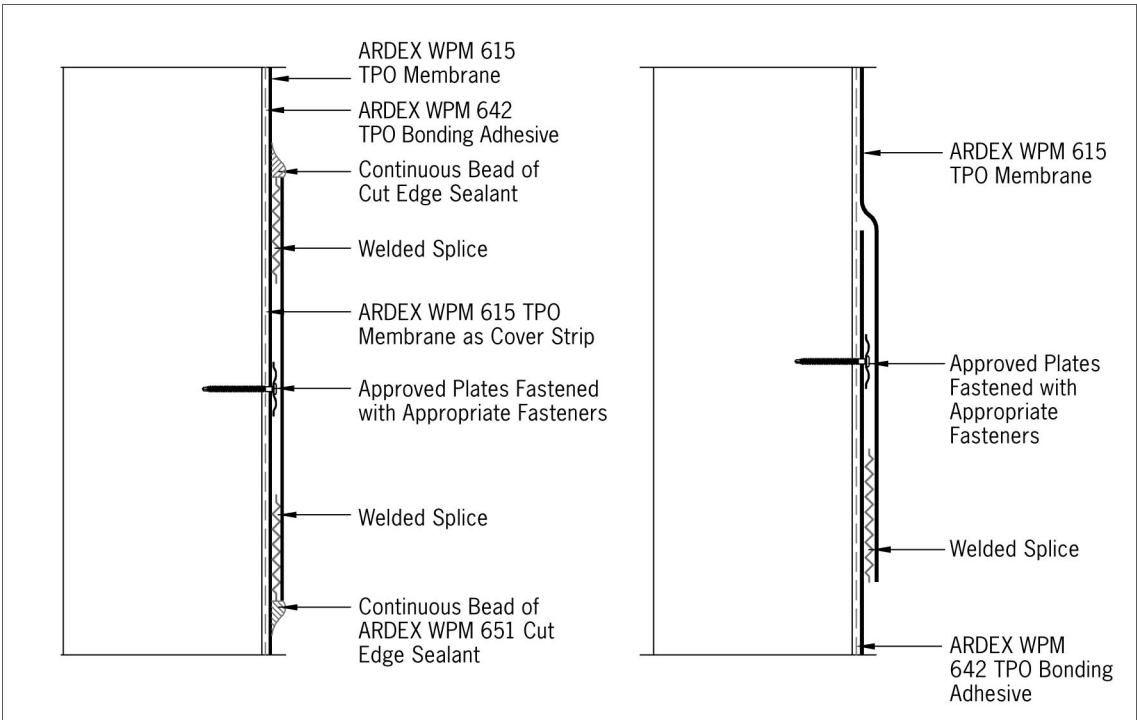


TPO Installation Details

Terminations



	ARDEX TPO Monotrim Profile Flashing Termination	No.: T - T - 9	Systems All
		09/2009	



	ARDEX TPO Intermediate Attachment at Wall Flashing	No.: T - T - 10	Systems All
		09/2009	



Bituminous Membranes

3-5	Shelterbit Membranes
6-13	Shelterbit BRANZ Appraisal
14-33	Shelterbit
15	WPM 444 Phoenix Star (Plain)
19	WPM 114 Vented Base Sheet
23	WPM 120 Fibrepol Membrane
27	WPM 180 Fibrepol Membrane
31	WPM 186 Garden Membrane
35	WPM 188 Garden Membrane
39	WPM 189 Mineral Membrane
43	WPM 191 Fibrepol SBS Membrane
47	WPM 195 Torch Applied SBS Membrane
55	WPM 196 Torch Applied SBS Membrane
63	WPM 1950 Polymeric Hydrophilic Rubber Joints
65	SEA WPM 1955 Polymeric Hydrophilic Rubber Joints
67-70	Shelter Primer
67	WPM 240 Shelter Primer
69	WPM 247 Shelter Primer
71-72	Shelterbit Shingle
73-74	WPM 150 Shelterstick
75-84	CAD Drawings



ARDEX Shelterbit Membranes

Torch Applied Membranes

BRANZ Appraised E2/AS1 Alternative Solution

This manual conforms to the Code of Practice for the Selection, Design and Installation of Torch-on Membrane Systems.

This Code of Practice has been developed and prepared by the 9 member companies of the Membrane Group, Roofing Association of New Zealand (RANZ) and utilises the collective experience of Torch-on Membrane Suppliers, Contractors and Specifiers in New Zealand.

ARDEX NZ Ltd is one of the member companies of the Membrane Group.

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ARDEX Shelterbit Membranes

Installation Specification

This recommendation has been prepared for the general installation of a Shelterbit Membrane System. Each project can have its own special conditions and idiosyncrasies that may require special conditions and/or processes of installation. Confirmation of the suitability for this recommendation in relation to any project should be sought from the ARDEX Representative prior to specifying.

The application of Shelterbit membranes should be carried out by an approved Applicator of ARDEX waterproofing membranes. Installation shall be strictly in accordance with the Manufacturer's recommendations. All materials used in conjunction with the Shelterbit Systems must be approved by ARDEX .

STORAGE AND HANDLING

Rolls of membrane delivered to the site are to be stored in a covered area or be covered with a protective sheet until required for installation. Rolls are to be stored vertically taking care to prevent damage to the ends. Rolls are not to be dropped or mishandled.

SURFACE PREPARATION

Concrete

Surfaces to which the Shelterbit systems are installed must be properly prepared prior to installation. All surfaces must be clean, dry, smooth, free of sharp edges, fines, loose or foreign materials, oil, grease and other materials which may damage the membrane.

Sand/cement fillets are recommended at all change in direction of substrate (from horizontal to vertical).

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 ARDEX WPM 150 (Peel & Stick Base Sheet) is applied. The plywood and the timber substructure shall have a maximum moisture content of 20% when Shelterbit 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, 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 ARDEX WPM 150 (Peel & Stick Base Sheet).

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

Commencement of laying shall be taken as acceptance of the substrate by the approved Applicator.

SUBSTRATE SPECIFICATION (Strandsarking)

Strandsarking sheets are 3.60m x 800mm x 16.3mm.

Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

PRIMING

Prior to the application of the Shelterbit all prepared surfaces shall be primed with Shelterbit Primer at a rate of 5-6m² per litre and allowed to dry.

Coverage of primer may vary depending on the density or porosity of the substrate. Primer may be applied by brush, roller or spray equipment. Coverage must be uniform.

Note that priming is not required for the installation of ARDEX WPM 116 (Fibre Backed Base Sheet) when used on Plywood.

MEMBRANE SYSTEM COMBINATION

Shelterbit can be used in various combinations, refer to Shelterbit System Recommendations in this section for your individual waterproofing requirement.

ARDEX Shelterbit Membranes

System Recommendations

TESTING

After installation, it is recommended, where possible, a water test be carried out for 24 hours.

PROTECTION

A protection layer should be used when backfilling or a topping is required, (Protection board or drainage cell for back filling or slip sheet for topping).

SAFETY

Shelterbit is not classified as dangerous goods.

However, during installation, exercise extreme caution when working with open flame.

Do not use open flame directly on highly combustible material. Follow all local fire codes.

Shelterbit Torch-on waterproofing membranes can be used in a wide variety of combinations to suit the requirements of a specific waterproofing application. The following table outlines most of the acceptable alternatives for a range of common situations encountered. Please consult with your ARDEX representative to select the most appropriate solution.

Spec. No. System

Systems for concrete substrates:

Single Layer Non Exposed	
01	One layer: WPM 180 3.5 sand/torchable film finished APP Shelterbit Torch-on membrane.
Two Layer Non Exposed	
02	First layer: WPM 120 2.5mm sand/torchable film finished APP Shelterbit Torch-on membrane. Second layer: WPM 120 2.5mm sand/torchable film finished APP Shelterbit Torch-on membrane.
Three Layer Non Exposed	
03	Vent sheet: WPM 114 Shelterbit vented base sheet (can be counted as waterproof layer) First layer: WPM 120 2.5mm sand/torchable film finished APP Shelterbit Torch-on membrane. (Optional) Second layer: WPM 120 2.5mm sand/torchable film finished APP Shelterbit Torch-on membrane.
Two Layer Exposed	
06	First layer: WPM 120 2.5mm sand/torchable film finished APP Shelterbit Torch-on membrane. Second layer: WPM 189 4.0mm APP/SBS DUO Mineral Shelterbit torch-on membrane
Three Layer Vented Exposed	
07	First layer: WPM 114 Shelterbit vented base sheet (can be counted as waterproof layer) Second layer: WPM 120 2.5mm sand/torchable film finished APP Shelterbit Torch-on membrane. (Optional) Third layer: WPM 189 4.0mm APP/SBS DUO Mineral Shelterbit torch-on membrane.

Systems for Plywood substrates:

Two Layer Non Exposed	
08	First layer: WPM150 2mm Peel & Stick Shelterstick SBS base sheet Second layer: WPM 189 4.0mm APP/SBS DUO Mineral Shelterbit torch-on membrane.
Two Layer Exposed	
09	First layer: WPM150 2mm Peel & Stick Shelterstick SBS base sheet Second layer: WPM 189 4.0mm APP/SBS DUO Mineral Shelterbit torch-on membrane.



BRANZ Appraised

Appraisal No. 463 [2011]

SHELTERBIT ROOFING MEMBRANES

Appraisal No. 463 [2011]

This Appraisal replaces BRANZ

Appraisal No. 463 [2005]

Amended 12 May 2017



BRANZ Appraisals

Technical Assessments of products for building and construction.



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BRANZ

BRANZ

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Private Bag 50 908
Porirua 5240,
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Tel: 04 237 1170
branz.co.nz



Product

- 1.1 Shelterbit Roofing Membranes are waterproofing membranes for nominally flat, pitched and curved roofs, gutters and parapets. They are installed as multi-layer system with a mineral chip finished product or as a single layer system onto a concrete substrate under heavy protection such as paving slabs or a topping screed.
- 1.2 The products are supplied as torch-on, reinforced, polymer-modified bitumen sheets in roll form.

Scope

- 2.1 Shelterbit Roofing Membranes have been appraised as roof waterproofing membranes on buildings within the following scope:
 - the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan areas; and,
 - with building structures designed and constructed to meet the requirements of the NZBC; and,
 - with roof supporting structures of timber framing with substrates of plywood or Strandsarking; and,
 - with substrates of suspended concrete slabs; and,
 - situated in NZS 3604 Wind Zones, up to, and including Extra High.
- 2.2 Shelterbit Roofing Membranes have also been appraised for use as roof waterproofing membranes on specifically designed buildings within the following scope:
 - with building structures designed and constructed to comply with the NZBC; and,
 - with roof supporting structures of timber framing with substrates of plywood or Strandsarking; and,
 - with substrates of suspended concrete slab; and,
 - subjected to maximum wind pressures [Refer Paragraph 8.1]; and,
 - with the weathertightness design of all junctions being the subject of specific design by the designer.

Note: The design of these junctions has not been appraised by BRANZ and is outside the scope of this Appraisal.
- 2.3 Roofs waterproofed with Shelterbit Roofing Membranes must be designed and constructed in accordance with the following limitations:
 - nominally flat, curved or pitched roofs constructed to drain water to gutters and drainage outlets complying with the NZBC; and,
 - constructed to suitable falls [Refer Paragraph 14.3 and 14.4]; and,
 - with no integral roof gardens.
- 2.4 The design and construction of the substrate and movement and control joints is specific to each building, and therefore is the responsibility of the building designer and building contractor and is outside the scope of this Appraisal.
- 2.5 The membranes must be installed by ARDEX New Zealand Ltd Trained Installers.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Shelterbit Roofing Membranes, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 [b], 15 years. Shelterbit Roofing Membranes meet this requirement. See Paragraph 10.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.1 and E2.3.2. Shelterbit Roofing Membranes meets these requirements. See Paragraphs 14.1 – 14.9.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Shelterbit Roofing Membranes meet this requirement and will not present a health hazard to people.

- 3.2 This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance. The membranes are an alternative to the membranes specified in NZBC Acceptable Solution E2/AS1, and an **Alternative Solution** subject to specific design for other buildings not covered within E2/AS1.

Technical Specification

- 4.1 Materials supplied by ARDEX New Zealand Ltd are as follows:

- **Shelterbit Membranes General** - These are general torch-on membranes used either as single layer protected systems or as base and intermediate layers in built-up systems. They are supplied in thicknesses of 2.5, 3.5 or 4.0 mm and have a sand finish top surface and a thermofusible film backing. The 4.0 mm thick membrane must be used for single layer protected systems.
- **Shelterbit Mineral WPM 444** - A 4.0 mm thick (excluding the slate finish) torch-on membrane with a slate finish top surface and a thermofusible thermoplastic film backing. It is designed to be used as the cap layer and is available in grey, green, white, black or red.
- **Shelterbit Duo Mineral Membrane WPM 189** - A 4.0 mm thick (excluding the slate finish) SBS/APP plastomeric type modified bitumen torch-on membrane with a mineral top surface and an embossed bottom surface protected by a heat sensitive polythene film. It is designed to be used as the cap layer and is available in various colours.
- **ARDEX WPM 150 Shelterstick** - A 2.0 mm thick self-adhesive bituminous membrane with a thermo fusion film backing. It is designed to be used as a base layer on heat sensitive substrates.
- **ARDEX WPM 114** - A 0.8 mm APP vented base sheet. It can be counted as a waterproof layer in a multi layer system.
- **Shelterbit Primer WPM 240** - A solvent-based, bitumen modified, black liquid primer available in 5 and 20 litre cans.
- **Shelter Primer WPM 247** - A water-based bitumen modified black liquid primer available in 5 and 20 litre containers..

Handling and Storage

- 5.1 Handling and storage of all materials whether on or off site is under the control of the ARDEX New Zealand 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 Shelterbit Roof Membranes. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

- 7.1 Shelterbit Roofing Membranes are for use on roofs, gutters and parapets where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas. The products can be used on new or existing buildings. ARDEX New Zealand Limited should be consulted as to the suitability of any existing substrates prior to using Shelterbit Roofing Membranes.
- 7.2 The effective control of internal moisture must be considered at the design stage due to the impermeability of the membranes. Refer to BRANZ publication "Good Practice Guide - Membrane Roofing".
- 7.3 The Shelterbit General Membrane is designed for use on roofs and gutters as the first layer of a double layer system and all areas requiring detailing such as upstands, protrusions, rainwater heads and outlets. The Shelterbit Mineral and Duo Mineral Membrane are used as the top layer of double layer systems.

Structure

- 8.1 Shelterbit Roofing Membranes fully bonded double layer systems are suitable for use in areas subject to maximum wind pressures of 6kPa Ultimate Limit State.

Substrates

Plywood

- 9.1 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. Timber framing 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 AS/NZS 1170. In all cases, framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and all sheet edges are fully supported.

Strandsarking

- 9.2 Strandsarking must be installed in accordance with the manufacturer's instructions and BRANZ Appraisal No. 946 [2016].

Concrete

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

Existing Construction

- 9.4 A thorough inspection of the substrate must be made to ensure it is in fit condition and does not contain any materials that will adversely affect the performance of the membrane.
- 9.5 Repairs must be undertaken, where applicable, to ensure the substrate is sound, the joints are sealed, and the flashings are sound. Plywood substrates must be checked for screw fixings, and if necessary refixed as for new plywood.

Durability

Serviceable Life

- 10.1 Shelterbit Roofing Membranes are expected to have a serviceable life of at least 15 years, provided they are designed, used, installed and maintained in accordance with this Appraisal and the Technical Literature.

Chemical Resistance

- 10.2 Industrial air pollutants and windborne salt deposits should not significantly affect the durability of the membranes. However, the long term properties of the material may be affected by contact with petroleum-based products such as oils, greases and solvents.

Maintenance

- 11.1 The membrane roof system, including any areas with a UV coating applied, must be regularly (at least annually) checked for damage, rubbish, debris or coating breakdown. Damage, such as small punctures and tears must be repaired and coatings reapplied as recommended by ARDEX New Zealand Ltd.
- 11.2 Special care must be taken when inspecting the membrane roof systems to ensure the continuing prevention of moisture ingress, and repairs must be undertaken where required.
- 11.3 Drainage outlets must be maintained to operate effectively.

Prevention of Fire Occurring

- 12.1 Separation or protection must be provided to Shelterbit Roofing Membranes from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 13.1 Roofs 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 aligns with details in NZBC Acceptable Solution E2/AS1.
- 13.2 When installed in accordance with this Appraisal and the Technical Literature, Shelterbit Roofing Membranes will prevent the penetration of water and will therefore meet code compliance with Clause E2.3.2. The membranes are impervious to water and will give a weathertight roof.
- 13.3 Roof falls must be built into the substrate and not created with mortar screeds applied over the membrane.
- 13.4 The minimum fall to roofs is 1 in 30 and gutters are 1 in 100. All falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the membrane.
- 13.5 Allowance for deflection and settlement of the substrate must be made in the design of the roof to ensure falls are maintained and no ponding of water can occur.
- 13.6 Shelterbit Roofing Membranes are 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.
- 13.7 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 roof does not drain to an external gutter or spouting.
- 13.8 Penetrations and upstands of the membranes must be raised above the level of any possible flooding caused by the blockage of roof drainage.
- 13.9 The design of details not covered by the Technical Literature is subject to specific weathertightness design and is outside the scope of this Appraisal.

Water Supplies

- 14.1 Shelterbit Roofing Membranes have not been assessed for roofs used for the collection of potable water.

Installation Information

Installation Skill Level Requirement

- 15.1 Installation of the membranes must be completed by ARDEX New Zealand Ltd Trained Installers.
- 15.2 Installation of substrates must be completed by tradespersons with an understanding of roof construction, in accordance with instructions given within the ARDEX New Zealand Ltd Technical Literature and this Appraisal.

Preparation of Substrates

- 16.1 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.
- 16.2 The relative humidity of concrete substrates must be 75% or less before membrane application. The concrete can be checked for dryness by using a hygrometer, as set out in BRANZ Bulletin No. 585.
- 16.3 The moisture content of the plywood and timber substructure must be a maximum of 20% and the plywood or Strandsarking sheets must be dry at time of membrane application. This will generally require plywood or Strandsarking sheets to be covered until just before the membrane is laid, to prevent rain wetting.
- 16.4 All substrates must be primed with Shelterbit Primer and left to dry [1 hour] before the membrane is installed.

Membrane Installation

- 17.1 The membranes must be installed in accordance with the Technical Literature.
- 17.2 All roof and wall junctions must have a 20 mm x 20 mm wooden fillet installed at the junction. Concrete substrate junctions must have a 20 mm x 20 mm cement mortar fillet installed. All external edges must be chamfered to a 5 mm radius to remove sharp edges.
- 17.3 The membrane must be unrolled without tension onto the prepared substrate and allowed to 'relax' for at least 30 minutes prior to installation.
- 17.4 The membrane is installed from the lowest point and each layer is installed across the roof fall allowing a 100 mm side overlap and a 200 mm end overlap. The cap sheet layer must be offset against the base sheet layer.

Inspections

- 18.1 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

- 19.1 Safe use and handling procedures for Shelterbit Roofing Membranes are provided in the Technical Literature. The products must be used in conjunction with the relevant Material Safety Data Sheets for each membrane.

Basis of Appraisal

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

Tests

- 20.1 Testing of Phoenix Star and Phoenix Star Mineral [Shelterbit Membranes] have been undertaken by ICITE, which formed the basis of the technical investigations and evaluation undertaken by the British Board of Agrément [BBA] for issue of the current BBA Certificate covering these products. This testing covered: tensile strength, elongation at break, tear strength, dimensional stability, low temperature flexibility, heat resistance, unrolling at low temperatures, sliding resistance, watertightness, static indentation, dynamic indentation, fatigue cycling, peel resistance, softening point, penetration, air pressure of joints, tensile strength of joints and peel strength of joints. Some testing covered heat aged, UV aged and water soaked samples as well as controls.
- 20.2 The Shelterbit Duo has been tested for tensile, elongation, tear resistance, adhesion of granules, dimensional stability, flow resistance and pliability at low temperature and is a CE marked product. The above test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

- 21.1 A durability opinion has been provided by BRANZ technical experts.
- 21.2 Installation of the membranes has been assessed by BRANZ for practicability of installation and found to be satisfactory.
- 21.3 The Technical Literature has been examined by BRANZ and found to be satisfactory.

Quality

- 22.1 The manufacture of the membranes and primer has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory. An examination of the manufacturing practice and quality control procedures employed in the manufacture of the membranes is subject to the ongoing validity of the current BBA Certificate.
- 22.2 The quality of the supply of products to the New Zealand market is the responsibility of ARDEX New Zealand Ltd.
- 22.3 Quality on site is the responsibility of the ARDEX New Zealand Ltd Trained Installers.
- 22.4 Designers are responsible for the building design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of ARDEX New Zealand Ltd and this Appraisal.
- 22.5 Building owners are responsible for the maintenance of the membrane systems in accordance with the instructions of ARDEX New Zealand Ltd and this Appraisal.

Sources of Information

- AS/NZS 2269: 2012 Plywood – structural.
- AS/NZS 1170: 2002 Structural design actions.
- BBA Certificate No. 99/3586/C Phoenix Star and Phoenix Star Mineral Roof Waterproofing Membranes.
- BRANZ Appraisal No. 946 [2016] Strandsarking for Low Slope Membrane Roofs.
- BRANZ Good Practice Guide, Membrane Roofing, October 2015.
- NZS 3101: 2006 Concrete structures standard.
- NZS 3604: 2011 Timber framed buildings.
- Acceptable Solutions and Verification Methods for New Zealand Building Code, External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 [Amendment 7, 01 January 2017].
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 31 January 2012.

This Appraisal has been amended to update clause changes as required by the introduction of NZS 3604: 2011 and NZBC Acceptable Solution E2/AS1 Third Edition, Amendment 5.

Amendment No. 2, dated 19 June 2013.

This Appraisal has been amended to update clause changes as required by the introduction of NZBC Fire Clauses C1 – C6 Protection from Fire and A3 Building Importance Levels.

Amendment No. 3, dated 08 August 2016.

This Appraisal has been amended to match Appraisal Holder marketing protocol.

Amendment No. 4, dated 12 May 2017.

This Appraisal has been amended to update the Technical Specification and add Strandsarking as a suitable substrate.



In the opinion of BRANZ, **Shelterbit Roofing membranes** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **ARDEX New Zealand Limited**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - 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. **ARDEX New Zealand Limited:**
 - 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.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty 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 **ARDEX New Zealand Limited**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **ARDEX New Zealand Limited** or any third party.

For BRANZ



Pieter Burghout
Chief Executive
Date of Issue:
08 August 2011

ARDEX Shelterbit Membranes

Product	Thickness (mm)	Multi layer use	Single layer Use	Concrete (c) or Plywood (P)	Need U-V Protection	Torch-On	In Branz appraisal/ Code of Compliance	Water-proof	Use on Heat-sensitive product	Use with Water Based Primer	Use with Solvent Based Primer
WPM 114 Vented base sheet	4	Y	N	CP	Y	Y	Y	Y	N		
WPM 120 Fibrepol membrane	2.5	Y		C	Y	Y	Y	Y	N		
WPM 150 Shelterstick	2	Y		CP	Y	N	Y	Y	Y		
WPM 180 Fibrepol membrane	3.5	Y	Y	C	Y	Y	Y	Y	N		
WPM 186 Garden Membrane	3.5	Y	Y	CP	Y	Y	N	Y	N		
WPM 189 Shelterbit Duo	4	Y	Y	CP	N	Y	Y	Y	N		
WPM 191 Fibrepol SBS membrane	3.5	Y	Y		Y	Y	Y	Y	N		
WPM 444 Phoenix Star	4.1	CP	C	CP	Y	Y	Y	Y	N		



ARDEX WPM 444

Shelterbit Phoenix Star (Plain)

4.1mm Reinforced APP Bitumen Membrane

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

ARDEX WPM 444

Shelterbit Phoenix Star (Plain)

4.1mm Reinforced APP Bitumen Membrane



PRODUCT DESCRIPTION

ARDEX WPM 444 (Shelterbit Phoenix Star) is an APP (Atactic Polypropylene) plastomeric type modified bitumen membrane, consisting of a specially formulated bituminous compound of distilled asphalt modified with selected high grade visco-elastic polymers and reinforced with a combined reinforcement (polyester and fibreglass).

ARDEX WPM 444 (Shelterbit Phoenix Star) is certified in Great Britain with BBA No 99/3586/C and in Italy with Technical Agreement I.T.C. 591/03.

ARDEX WPM 444 (Shelterbit Phoenix Star) is coated with either a sanded or talc top surface finish, while the bottom surface is embossed and protected by a heat sensitive polythene film. This type of finish for the lower surface has been chosen for two specific purposes.

1. To act as a temperature gauge during application. When the film melts it shows that the compound is at the correct temperature.
2. The embossing is to allow the gases to rapidly escape when heated to its correct installation temperature avoiding possible problems of bubbling and blistering.

FEATURES/BENEFITS

APP modified compound

- Excellent cold flexibility to -15°C
- Excellent elongation
- Heat welded laps provides homogenous joint
- Prefabricated membrane
- Good elastic memory

Combined reinforcement carrier

- High mechanical characteristics
- High puncture resistance
- Good elongation
- Will not decay

USES

ARDEX WPM 444 (Shelterbit Phoenix Star) is designed for use as a multi-layer system on concrete or plywood substrates, or as a single layer system on concrete

substrates with a protective topping such as paving slabs or concrete.

Non-accessible flat roofing

Accessible flat roofing

Foundations and underground premises

Vault covering

Shed covering

Renovation and refurbishment

Inverted roof systems

Bridges, viaducts and road structures

Car parks

Tunnels

INSTALLATION

The application of ARDEX WPM 444 (Shelterbit Phoenix Star) should be carried out by an approved Applicator.

Installation shall be strictly in accordance with the manufacturer's recommendations.

Acceptable substrates to which ARDEX WPM 444 (Shelterbit Phoenix Star) is to be installed must be properly prepared prior to membrane installation.

All surfaces must be dry, clean, smooth, free of sharp edges, loose or foreign materials, oil, grease and other materials which may damage the membrane.

Prior to the application of ARDEX WPM 444 (Shelterbit Phoenix Star) base substrate surfaces should be primed with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 444 (Shelterbit Phoenix Star) is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 444 (Shelterbit Phoenix Star) may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

ARDEX WPM 444 (Shelterbit Phoenix Star) is used as a single layer membrane system which is normally installed prior to the installation of toppings, road base or hot melt asphalt or bitumen.

Application of toppings may be applied on completion. Road base may be installed directly to the membrane without an extra protection layer.

The asphalt should be applied as soon as possible after the ARDEX WPM 444 (Shelterbit Phoenix Star) membrane has been installed. ARDEX recommend applying a minimum 50mm compacted overlay for carpark areas. The topping should be applied in two layers at a temperature of between 120-150°C.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX .

TECHNICAL DATA

MEMBRANE

Characteristics	Standard	Units	Nom.
Length	UNI EN 1848-1	m	10±1%
Width	UNI EN 1848-1	m	1±1%
Thickness	UNI EN 1849-1	mm	4.1
Aeric Mass	UNI EN 1849-1	kg/m ²	4.0
Heat Stability	UNI EN 1110	°C	130
Heat Stability After 6 months at 70°C	UNI EN 1110	°C	130
Cold Flexibility	UNI EN 1109	°C	-15
Cold Stability After 6 months at 70°C	UNI EN 1109	°C	0
Dimensional Stability			
Longitudinal	UNI EN 1107-1 A	%	≤ -0.3
Transversal			≤ +0.3
Impermeability	UNI EN 1928	kPa	≥ 60
Tensile Strength			
Longitudinal			
Ultimate Tensile Strength	UNI EN 12311-1	N/50mm	900
Transversal			
Ultimate Tensile Strength			700
Elongation at Break			
Longitudinal	UNI EN 12311-1	%	45
Transversal			45
Tear Resistance			
Longitudinal			150
Transversal	UNI EN 12310-1	N	150
Resistance to Static Load	UNI EN 12730	kg	25
Mineral Adhesion	UNI EN 12039	%	-

Values are referred to a membrane of:
Thickness 4.1mm Weight 4.0kg/m²

All tests have been carried out according to UEATC directive

COMPOUND

Characteristics	Standard	Units	Nom.	Tolerances
Ring and Ball	ASTM D 36	°C	150	Valore min
Penetration at 60°C	ASTM D 5	dmm	120	Valore min
Cold Flexibility	UNI EN 1109	°C	-15	Valore min
Cold Stability After 6 months at 70°C	UNI EN 1109	°C	0	Valore min

SAFETY PRECAUTIONS

ARDEX WPM 444 (Shelterbit Phoenix Star) is not classified as dangerous goods.

However during installation exercise caution when working with open flame. Examine all surfaces to which the flame has been applied for smouldering or burning conditions.

Do not use open flame on or near highly combustible materials. Follow all local fire codes.

STORAGE

All rolls of ARDEX WPM 444 (Shelterbit Phoenix Star) should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 10m

Roll weight: Approximately 40kg

Rolls per pallet: 23



ARDEX WPM 114

Shelterbit 4mm APP Vented Base Sheet

Vented Base Sheet for Shelterbit Membrane Systems

CE Certification GB06/69203

BRANZ Appraised (No. 463)

Codemark Certification (No. AQ-030516-CMNZ)

Venting base sheet for vapour control

Excellent Elongation and Flexibility

Thickness 4mm



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ARDEX WPM 114

Shelterbit 4mm APP Vented Base Sheet

PRODUCT DESCRIPTION

ARDEX WPM 114 is an APP (Atactic Polypropylene) plastomeric type modified bitumen membrane vented base sheet, consisting of a specially formulated bituminous compound of distilled asphalt modified with selected high-grade viscoelastic polymers.

ARDEX WPM 114 is suitable for application in all climatic zones, with excellent cold flexibility (-10° C) enabling an easy application and this also means the membrane is ideally suited for application in areas with harsh climates.

The exceptional elongation properties of APP, combined with the strength and dimensional stability of the reinforcing, provides an excellent waterproofing membrane in roofing applications. ARDEX WPM 114 is coated with a sanded polymeric film PE/PP, while the bottom surface has thermo-adhesive strips that activate with heat.

FEATURES/BENEFITS

- BRANZ Appraised
- European CE certification - GB06/69203
- CodeMark AQ-030516-CMNZ
- High flexibility during application at sub-zero temperature with no physical strains
- High malleability
- Accommodates structural movements
- Resistant to chemical attacks
- Withstand thermal shocks
- Proven performance in colder regions
- Good elongation and flexibility

USES

ARDEX WPM 114 is used as part of a multi-layer system in roofing applications for waterproofing. It has been designed to be used in situations where there may be potential moisture issues in the substrate and can only be used as the base sheet of a multi-layer roofing system.

ARDEX WPM114 membrane must be protected from UV.

- Is a specially designed vented base sheet for use in a multi-layer waterproofing system.
- Virtually eliminates bubbles and blisters forming underneath the waterproofing layer.
- Allows vapour permeating through the deck to diffuse underneath the waterproofing where, ideally, ARDEX Low Rise vents should be installed to allow the vapour to escape to the atmosphere.
- Eliminates the creation of stresses in the waterproofing layers thus greatly reducing failures in the waterproofing caused by deck movements.

- Is the ideal solution for controlled, partially attached first layer in a multi-layer system.

SURFACE PREPARATION

Substrates need to be clean, smooth, dry and free of sharp edges, loose or foreign materials, oil, grease and other materials that may damage the membrane. All surface voids greater than 5mm wide should properly be filled with an acceptable fill material.

Confirm concrete structures are specifically engineered to meet the requirements of the NZBC B1/VM1, 3.0 Concrete.

Ensure concrete substrate has been allowed to cure for at least 28 days before commencing application. The relative humidity of concrete substrates must be 75% or less before membrane application as per the NZBC.

INSTALLATION

The application of ARDEX WPM 114 should be carried out by an approved ARDEX Applicator.

Installation shall be undertaken in accordance with all relevant technical information related to the selected installation method, including information contained within the ARDEX specification.

Prior to the application of ARDEX WPM 114, the surface may require priming with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 114 is normally bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by a torch.

ARDEX WPM 114 may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for the suitable specification from ARDEX.

SAFETY PRECAUTIONS

ARDEX WPM 114 is not classified as dangerous goods.

During installation, exercise caution when working with an open flame. Examine all surfaces to which the flame has been applied for smouldering or burning conditions. Do not use an open flame on or near highly combustible materials. Follow all local fire codes.

STORAGE

All rolls of ARDEX WPM 114 should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

ARDEX WPM 114

Shelterbit 4mm APP Vented Base Sheet

PACKAGING

Roll size: 1m x 10 m

Roll weight: Approximately 40kg

Rolls per pallet: 23

TECHNICAL CHARACTERISTICS

CHARACTERISTIC	TEST METHOD	UNITS	NOMINAL VALUES	TOLERANCES
Visible defects	EN 1850-1	visible	Without defects	
Length	EN 1848-1	m	10,00 -1%	MLV
Width	EN 1848-1	m	1,000 -1%	MLV
Straightness	EN 1848-1	mm	20 mm x 10 m	MLV
Thickness	EN 1849-1	mm	4	± 0,2
Watertightness (A)	EN 1928	kPa	60	MLV
External fire performance	EN 13501-5	B roof	F Roof	
Reaction to fire	EN 13501-1	Class	F	Pass
Shear resistance longitudinal / transversal	EN 12317-1	N/50 mm	450 / 350	± 20%
Water vapour transmission proprieties Method A	EN 1931	μ / Sd (m)	120.000 / 480	-20.000
Tensile Strength Longitudinal / Transversal	EN 12311-1	N/50 mm	500 / 400	± 20%
Elongation at break Longitudinal / Transversal	EN 12311-1	%	35 / 35	- 15 absolut
Resistance to tearing (nail shank)	EN 12310-1	N	150 / 150	- 30%
Dimensional stability Longitudinal / Transversal	EN 1107-1 met. A	%	± 0,3 %	MLV
Flexibility al low temperature	EN 1109	°C	-10	MLV
Flow resistance at elevated temperature	EN 1110	°C	100	MLV
Water vapour transmission proprieties after exposure to artificial ageing	EN 1296 / EN 1931	μ / Sd (m)	120.000 / 480	± 50% of the initial value
Water vapour transmission proprieties against chemicals	EN 1847 / EN 1931	μ / Sd (m)	120.000 / 480	± 50% of the initial value

ARDEX WPM 114

Shelterbit 4mm APP Vented Base Sheet

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ARDEX WPM 120

Shelterbit Fibrepol 120 Membrane

2.5mm Combined Reinforced APP Bitumen Membrane

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ARDEX WPM 120

Shelterbit Fibrepol 120 Membrane

2.5mm Combined Reinforced APP Bitumen Membrane



PRODUCT DESCRIPTION

ARDEX WPM 120 (Shelterbit Fibrepol 120) is an APP (Atactic Polypropylene plastomeric) type modified bitumen membrane, consisting of a specially formulated bituminous compound of distilled asphalt modified with selected high grade visco-elastic polymers and reinforced with a combined reinforcement carrier.

ARDEX WPM 120 (Shelterbit Fibrepol 120) is coated with either a sanded or talc top surface finish, while the bottom surface is embossed and protected by a heat sensitive polythene film. This type of finish for the lower surface has been chosen for two specific purposes.

1. To act as a temperature gauge during application. When the film melts it shows that the compound is at the correct temperature.
2. The embossing is to allow the gases to rapidly escape when heated to its correct installation temperature avoiding possible problems of bubbling and blistering.

FEATURES/BENEFITS

APP modified compound

- Excellent cold flexibility to -5°C
- Excellent elongation
- Heat welded laps provide homogenous joint
- Prefabricated membrane
- Good elastic memory

Combined reinforcement carrier

- High mechanical characteristics
- High puncture resistance
- Will not decay

USES

ARDEX WPM 120 (Shelterbit Fibrepol 120) is used as a base and or mid layer in multi-layer membrane systems in horizontal or vertical applications for waterproofing balconies, terraces and roofs. ARDEX WPM 120 (Shelterbit Fibrepol 120) membrane is a sandwich membrane and must be protected from UV.

INSTALLATION

The application of ARDEX WPM 120 (Shelterbit Fibrepol 120) should be carried out by an approved Applicator.

Installation shall be strictly in accordance with the manufacturer's recommendations.

Acceptable substrates to which ARDEX WPM 120 (Shelterbit Fibrepol 120) is installed must be properly prepared prior to membranes installation.

All surfaces must be dry, clean, smooth, free of sharp edges, loose or foreign materials, oil, grease and other materials which may damage the membrane.

Prior to the application of ARDEX WPM 120 (Shelterbit Fibrepol 120) the base substrate surfaces should be primed with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 120 (Shelterbit Fibrepol 120) is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm.

Overlaps shall be sealed by torch.

ARDEX WPM 120 (Shelterbit Fibrepol 120) may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX .

SAFETY PRECAUTIONS

ARDEX Shelterbit is not classified as dangerous goods.

However during installation exercise caution when working with open flame. Examine all surfaces to which the flame has been applied for smouldering or burning conditions.

Do not use open flame on or near highly combustible materials. Follow all local fire codes.

STORAGE

All rolls of ARDEX WPM 120 (Shelterbit Fibrepol 120) should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 15m

Roll weight: 45kg

Rolls per pallet: 23

TECHNICAL DATA

The Technical Data shown here below are the average results of the Tests, Measurements and Trials, carried out on ARDEX WPM 120 (Shelterbit Fibrepol 120) Waterproofing Membrane.

Characteristics	Standard	Units	Nom.
Length	UNI EN 1848-1	m	15
Width	UNI EN 1848-1	m	1.0
Thickness	UNI EN 1849-1	mm	2.5
Aeric Mass	UNI EN 1849-1	kg/m ²	2.9
Heat Stability	UNI EN 1110	°C	110
Cold Flexibility	UNI EN 1109	°C	-5
Tensile strength	UNI EN 12311-1		
Ultimate Longitudinal	N/5	cm	530
Ultimate Transverse	N/5	cm	400
Elongation at Break	UNI EN 12311-1		
Longitudinal		%	35
Transverse		%	40
Tear resistance	UNI EN 12310-1		
Longitudinal		N	120
Transverse		N	120
Reinforcement	Combined	g.s.m.	120
Surface finishes	Lower ¹	torch film	
	Top ²	sand	

Note 1) Lower surface; the surface which is applied to the structure being waterproofed.

Note 2) Top surface; exposed to underside of covering membrane.

All tests have been carried out to UEATC, to tolerances as per European Directive.



ARDEX WPM 180

Shelterbit Fibrepol 180 Membrane

3.5mm Combined Reinforced APP Bitumen Membrane

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ARDEX WPM 180

Shelterbit Fibrepol 180 Membrane

3.5mm Combined Reinforced APP Bitumen Membrane



PRODUCT DESCRIPTION

ARDEX WPM 180 (Shelterbit Fibrepol 180) is an APP (Atactic Polypropylene) plastomeric type modified bitumen membrane, consisting of a specially formulated bituminous compound of distilled asphalt modified with selected high grade visco-elastic polymers and reinforced with a combined reinforcement (polyester and fibreglass).

ARDEX WPM 180 (Shelterbit Fibrepol 180) is coated with either a sanded or talc top surface finish, while the bottom surface is embossed and protected by a heat sensitive polythene film. This type of finish for the lower surface has been chosen for two specific purposes.

1. To act as a temperature gauge during application. When the film melts it shows that the compound is at the correct temperature.
2. The embossing is to allow the gases to rapidly escape when heated to its correct installation temperature avoiding possible problems of bubbling and blistering.

FEATURES/BENEFITS

APP modified compound

- Excellent cold flexibility to -5°C
- Excellent elongation
- Heat welded laps provide homogenous joint
- Prefabricated membrane
- Good elastic memory

Combined reinforcement carrier

- High mechanical characteristics
- High puncture resistance
- Good elongation
- Will not decay

USES

ARDEX WPM 180 (Shelterbit Fibrepol 180) is used as a multi-layer membrane in horizontal or vertical applications for waterproofing balconies, terraces and roofs. ARDEX WPM 180 (Shelterbit Fibrepol 180) membrane is a sandwich membrane and must be protected from UV.

INSTALLATION

The application of ARDEX WPM 180 (Shelterbit Fibrepol 180) should be carried out by an approved Applicator.

Installation shall be strictly in accordance with the manufacturer's recommendations.

Acceptable substrates to which ARDEX WPM 180 (Shelterbit Fibrepol 180) is to be installed must be properly prepared prior to membrane installation.

All surfaces must be dry, clean, smooth, free of sharp edges, loose or foreign materials, oil, grease and other materials which may damage the membrane.

Prior to the application of ARDEX WPM 180 (Shelterbit Fibrepol 180) base substrate surfaces should be primed with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 180 (Shelterbit Fibrepol 180) is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 180 (Shelterbit Fibrepol 180) may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX .

SAFETY PRECAUTIONS

ARDEX WPM 180 (Shelterbit Fibrepol 180) is not classified as dangerous goods.

However during installation exercise caution when working with open flame. Examine all surfaces to which the flame has been applied for smouldering or burning conditions.

Do not use open flame on or near highly combustible materials. Follow all local fire codes.

STORAGE

All rolls of ARDEX WPM 180 (Shelterbit Fibrepol 180) should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 10m

Roll weight: Approximately 42kg

Rolls per pallet: 23

TECHNICAL DATA

The Technical Data shown here below are the average results of the Tests, Measurements and Trials, carried out on ARDEX WPM 180 (Shelterbit Fibrepol 180) Waterproofing Membrane.

Characteristics	Standard	Units	Nom.
Length	UNI EN 1848-1	m	10
Width	UNI EN 1848-1	m	1.0
Thickness	UNI EN 1849-1	mm	3.5
Aeric Mass	UNI EN 1849-1	kg/m ²	4.2
Heat Stability	UNI EN 1110	°C	110
Cold Flexibility	UNI EN 1109	°C	-5
Tensile strength	UNI EN 12311-1		
Ultimate Longitudinal	N/5	cm	720
Ultimate Transverse	N/5	cm	420
Elongation at Break	UNI EN 12311-1		
Longitudinal		%	40
Transverse		%	45
Tear resistance	UNI EN 12310-1		
Longitudinal		N	130
Transverse		N	130
Reinforcement	Combined	g.s.m.	180
Surface finishes	Lower ¹	torch film	
	Top ²	sand	

Note 1) Lower surface; the surface which is applied to the structure being waterproofed.

Note 2) Top surface; exposed to underside of covering membrane.

All tests have been carried out to UEATC, to tolerances as per European Directive.



ARDEX WPM 186

Shelterbit Garden Membrane

3.5mm Garden APP Bitumen Membrane

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ARDEX WPM 186

Shelterbit Garden Membrane

3.5mm Garden APP Bitumen Membrane

PRODUCT DESCRIPTION

ARDEX WPM 186 (Shelterbit Garden) is an APP (Atactic Polypropylene) plastomeric torch applied modified waterproofing membrane, consisting of a specially formulated bituminous compound of distilled asphalt modified with selected high grade visco-elastic polymers and reinforced with a high quality combined reinforcement (fibreglass and polyester) and treated with preventive chemical to stop roots from plants damaging the membrane.

ARDEX WPM 186 (Shelterbit Garden) is coated with either a sanded or talc top surface finish, while the bottom surface is embossed and protected by a heat sensitive polythene film. This type of finish for the lower surface has been chosen for two specific purposes.

1. To act as a temperature gauge during application. When the film melts it shows that the compound is at the correct temperature.
2. The embossing is to allow the gases to rapidly escape when heated to its correct installation temperature avoiding possible problems of bubbling and blistering.

FEATURES/BENEFITS

- Positive vapour barrier
- Excellent resistance to pollutants and aging
- Maintains shape stability at high temperatures
- High resistance to perforation
- Is rot-proof
- Resists roots both on membrane and laps
- Good elongation and flexibility
- Heat welded laps provide an homogenous joint

USES

ARDEX WPM 186 (Shelterbit Garden) has been especially formulated for the waterproofing of:

- Planter boxes
- Garden beds
- Roof gardens
- Flower beds
- Green covered civil works etc

ARDEX WPM 186 (Shelterbit Garden) may be installed in a one or multi-layer system incorporating normal Shelterbit. Shelterbit Garden always being the top layer.

INSTALLATION

The application of ARDEX WPM 186 (Shelterbit Garden) should be carried out by an approved Applicator.

Installation shall be strictly in accordance with the manufacturer's recommendations.

Acceptable substrates to which ARDEX WPM 186 (Shelterbit Garden) is to be installed must be properly prepared prior to membrane installation.

All surfaces must be dry, clean, smooth, free of sharp edges, loose or foreign materials, oil, grease and other materials which may damage the membrane.

Prior to the application of ARDEX WPM 186 (Shelterbit Garden) the surface should be primed with ARDEX WPM 240 (Shelter Primer).

Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 186 (Shelterbit Garden) is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 186 (Shelterbit Garden) may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX .

SAFETY PRECAUTIONS

ARDEX WPM 186 (Shelterbit Garden) is not classified as dangerous goods.

However during installation, exercise caution when working with open flame. Examine all surfaces to which the flame has been applied for smouldering or burning conditions.

Do not use open flame on or near highly combustible materials. Follow all local fire codes.

STORAGE

All rolls of ARDEX WPM 186 (Shelterbit Garden) should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size 1m x 10m

Roll weight: Approximately 42kg

Rolls per pallet: 23

TECHNICAL DATA

The Technical Data shown here below are the average results of the Tests, Measurements and Trials, carried out on ARDEX WPM 186 (Shelterbit Garden) Waterproofing Membrane.

Characteristics	Standard	Units	Nom.
Length	UNI EN 1848-1	m	10
Width	UNI EN 1848-1	m	1.0
Thickness	UNI EN 1849-1	mm	3.5
Aeric Mass	UNI EN 1849-1	kg/m ²	4.2
Heat Stability	UNI EN 1110	°C	110
Cold Flexibility	UNI EN 1109	°C	-5
Tensile strength	UNI EN 12311-1		
Ultimate Longitudinal	N/5	cm	720
Ultimate Transverse	N/5	cm	420
Elongation at Break	UNI EN 12311-1		
Longitudinal		%	40
Transverse		%	45
Tear resistance	UNI EN 12310-1		
Longitudinal		N	130
Transverse		N	140
Reinforcement	Combined	g.s.m.	180
Surface finishes	Lower ¹	torch film	
	Top ²	sand	

Note 1) Lower surface; the surface which is applied to the structure being waterproofed.

Note 2) Top surface; exposed to underside of covering membrane.

All tests have been carried out to UEATC, to tolerances as per European Directive.



ARDEX WPM 188

(Shelterbit Garden Tanking Membrane)

3.0mm SBS bitumen membrane

Positive vapour barrier

Excellent resistance to pollutants and aging

Good elongation and flexibility

For waterproofing planter boxes, garden beds, roof gardens and flower beds

Contains root inhibitor – stops roots from plants damaging the membrane

High flexibility during application at sub zero temperatures with no physical strain

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ARDEX WPM 188

(Shelterbit Garden Tanking Membrane)

3.0mm SBS Bitumen Membrane

PRODUCT DESCRIPTION

ARDEX WPM 188 is an S.B.S. (Styrene Butadiene Styrene) torch applied modified bitumen waterproofing membrane, consisting of a specially formulated bituminous compound of distilled asphalt modified with selected high grade visco-elastic polymers and reinforced with a high quality combined reinforcement (fibreglass and polyester) and treated with preventive chemicals to stop roots from plants damaging the membrane.

The exceptional elongation properties of SBS combined with the strength and dimensional stability of the reinforcing, provides an excellent waterproofing membrane for new and existing constructions.

ARDEX WPM 188 is coated with either a sanded or talc top surface finish, while the bottom surface is embossed and protected by a heat sensitive polythene film. This type of finish for the lower surface has been chosen for two specific purposes.

1. To act as a temperature gauge during application. When the film melts it shows that the compound is at the correct temperature.
2. The embossing is to allow the gases to rapidly escape when heated to its correct installation temperature avoiding possible problems of bubbling and blistering.

FEATURES AND BENEFITS

- Positive vapour barrier.
- Excellent resistance to pollutants and aging.
- High flexibility during application at sub zero temperature with no physical strain.
- Maintains shape stability at high temperatures.
- High resistance to perforation.
- Resists root growth ingress into both the membrane and the laps.
- Good elongation and flexibility.
- Heat welded laps provide an homogenous joint.

USES

ARDEX WPM 188 has been especially formulated for the waterproofing of:

- Planter boxes.
- Garden beds.
- Roof gardens.
- Flower beds.
- Green covered civil works etc.

ARDEX WPM 188 is used as a single layer or multi layer tanking membrane in horizontal or vertical applications, also for waterproofing balconies, terraces and flat roofs.

INSTALLATION

The application of ARDEX WPM 188 should be carried out by an accredited applicator.

Installation shall be strictly in accordance with the manufacturer's recommendations.

All surfaces to which the ARDEX Shelterbit systems are installed must be properly prepared prior to installation. All surfaces must be clean, dry, smooth, and free of sharp edges, fines, loose or foreign materials, oil, grease and other materials which may damage the membrane. New concrete must be cured a minimum of 28 days prior to the installation.

ARDEX WPM 188

Apply to all surfaces one coat of ARDEX WPM 240 Bituminous Primer at a coverage rate of 5 square metres per litre and allow to dry thoroughly.

A layer of ARDEX WPM 188 shall be installed over all positive side surfaces by LPG torch application techniques by an ARDEX accredited applicator. The ARDEX WPM 188 must be fully bonded to the prepared substrate with side laps of 7.5cm and end laps of 10cm. The membrane must be detailed in accordance with ARDEX recommendations. Overlaps shall be sealed by torch.

The ARDEX WPM 188 membrane shall extend to at least 100mm above the backfill level. The top edge of the membrane shall be finished using an ARDEX Pressure Seal to prevent ingress of water behind the membrane.

After all membranes have been installed they shall be protected from mechanical damage by placing ARDEX Protection Board against the membrane before backfilling. The board shall be fixed using PVC Duct Tape – do not use mechanical fixing that will puncture or penetrate the membrane.

SAFETY PRECAUTIONS

ARDEX WPM 188 is hazardous; non-dangerous goods.

However during installation, exercise caution when working with open flame. Examine all surfaces to which the flame has been applied for smouldering or burning conditions.

Do not use open flame on or near highly combustible materials. Follow all local fire codes.

STORAGE

All rolls of ARDEX WPM 188 should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

ARDEX WPM 188

(Shelterbit Garden Tanking Membrane)

3.0mm SBS Bitumen Membrane

PACKAGING

Roll size: 1m x 10m

Roll weight: Approximately 35kg

Rolls per pallet: 28

TECHNICAL DATA

The Technical Data shown below are the average results of the Tests, Measurements and Trials, carried out on ARDEX WPM 188 Waterproofing Membrane.

Characteristics	Standard	Units	Nom.
Length	EN 1848-1	m	10
Width	EN 1848-1	m	1.0
Thickness	EN 1849-1	mm	3.0
Aeric mass	EN 1849-1	kg/m ²	3.5
Heat stability	EN 1110	°C	90
Cold flexibility	EN 1109	°C	-20
Tensile strength	EN 12311-1		
Ultimate longitudinal		N/5cm	720
Ultimate transverse		N/5cm	420
Elongation at break	EN 12311-1		
Longitudinal		%	40
Transverse		%	45
Tear resistance	EN 12310-1		
Longitudinal		N	130
Transverse		N	140
Reinforcement	Combined	g.s.m.	180
Surface finishes	Lower ¹	torch film	
	Top ²	torch film	

Note 1) Lower surface; the surface which is applied to the structure being waterproofed.

Note 2) Top surface; exposed to underside of covering membrane.

DISCLAIMER

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Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations.

The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

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ARDEX WPM 189

Shelterbit Duo Mineral Membrane

4.5kg/m² Mineral Coated SBS/APP Bitumen Membrane

Excellent resistance to atmospheric agents

Resistant to chemical attacks

High puncture resistance

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ARDEX WPM 189

Shelterbit Duo Mineral Membrane

4.5kg/m² Mineral Coated SBS/APP Bitumen Membrane

PRODUCT DESCRIPTION

ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) is a combined APP (Atactic Polypropylene) and SBS (Styrene-Butadiene-Styrene) plastomeric type modified bitumen membrane, consisting of a specially formulated bituminous compound of distilled asphalt modified with selected high grade visco-elastic polymers and reinforced with a combined reinforcement (polyester and fibreglass).

ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) bottom layer comprises of an SBS compound which gives high elasticity and excellent flexibility at low temperatures. The top layer is then formed from APP modified bitumen which provides good cold flexibility and high resistance to heat and UV rays.

ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) is coated with a mineral top surface finish, while the bottom surface is embossed and protected by a heat sensitive polythene film.

This type of finish for the lower surface has been chosen for two specific purposes. 1. To act as a temperature gauge during application. When the film melts it shows that the compound is at the correct temperature. 2. The embossing is to allow the gases to rapidly escape when heated to its correct installation temperature avoiding possible problems of bubbling and blistering

FEATURES/BENEFITS

APP modified compound

- Excellent elongation
- Heat welded laps provide homogenous joint
- Prefabricated membrane
- Good elastic memory

SBS modified compound

- Excellent cold flexibility and elasticity
- Excellent resistance to cracking
- Improved dimensional stability

Combined reinforcement carrier

- High mechanical characteristics
- High puncture resistance
- Good elongation
- Will not decay

USES

ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) is used as a multi-layer membrane in horizontal or vertical applications for waterproofing balconies, terraces and roofs. ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) is the final layer in the system

INSTALLATION

The application of ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) should be carried out by an approved Applicator

Installation shall be strictly in accordance with the manufacturer's recommendations.

Acceptable substrates to which ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) is to be installed must be properly prepared prior to membrane installation.

All surfaces must be dry, clean, smooth, free of sharp edges, loose or foreign materials, oil, grease and other materials which may damage the membrane.

Prior to the application of ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) base substrate surfaces should be primed with ARDEX WPM 247 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX .

SAFETY PRECAUTIONS

ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) is not classified as dangerous goods. However during installation exercise caution when working with open flame. Examine all surfaces to which the flame has been applied for smouldering or burning conditions.

Do not use open flame on or near highly combustible materials. Follow all local fire codes.

STORAGE

All rolls of ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) should be stored in a covered area protected against sunlight and UV radiation.

Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 10m

Roll weight: Approximately 45kg

Rolls per pallet: 23

Thickness: 4mm

TECHNICAL DATA

The Technical Data shown below are the average results of the Tests, Measurements and Trials, carried out on ARDEX WPM 189 (Shelterbit Duo Mineral Membrane).

Characteristics	Standard	Nom/Units
Length	UNI EN 1848-1	10m
Width	UNI EN 1848-1	1.0m
Aeric Mass	UNI EN 1849-1	4.5kg/m ²
Heat Stability	UNI EN 1110	100°C
Cold Flexibility	UNI EN 1109	-10°C
Tensile strength	UNI EN 12311-1	
Ultimate		600m
Longitudinal		N/5cm
Ultimate		500m
Transverse		N/5cm
Elongation at Break	UNI EN 12311-1	
Longitudinal		35%
Transverse		35%
Tear resistance	UNI EN 12310-1	
Longitudinal		N 150
Transverse		N 150
Surface finishes	Lower ¹	Torch Film
	Top ²	Mineral Coated

Note 1) Lower surface; the surface which is applied to the structure being waterproofed. Note 2) Top surface; exposed to weather. All tests have been carried out to UEATC Directive.

INSTALLATION RECOMMENDATIONS

The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.



ARDEX WPM 191

Shelterbit Fibrepol SBS

3.5mm SBS Bitumen Cold Climate Membrane

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

ARDEX WPM 191

Shelterbit Fibrepol SBS

3.5mm SBS Bitumen Cold Climate Membrane

PRODUCT DESCRIPTION

ARDEX WPM 191 (Shelterbit Fibrepol SBS) is a high performance Styrene-Butadiene-Styrene (SBS) rubber modified bitumen membrane, reinforced with a combined reinforcement (polyester and fibreglass).

The exceptional elongation properties of SBS combined with the strength and dimensional stability of the reinforcing, provides an excellent waterproofing membrane for new and existing constructions.

ARDEX WPM 191 (Shelterbit Fibrepol SBS) is coated with either a sanded or talc top surface finish, while the bottom surface is embossed and protected by a heat sensitive polythene film. This type of finish for the lower surface has been chosen for two specific purposes.

1. To act as a temperature gauge during application. When the film melts it shows that the compound is at the correct temperature.
2. The embossing is to allow the gases to rapidly escape when heated to its correct installation temperature avoiding possible problems of bubbling and blistering.

FEATURES/BENEFITS

- Positive vapour barrier
- Excellent resistance to atmosphere agents
- High flexibility during application at sub-zero temperature with no physical strains
- High malleability
- Accommodates structural movements
- Resistant to chemical attacks
- Withstand thermal shocks
- Proven performance in colder regions
- Good elongation and flexibility

USES

ARDEX WPM 191 (Shelterbit Fibrepol SBS) is used as a single layer or multi-layer membrane in horizontal or vertical applications for waterproofing balconies, terraces and flat roofs. ARDEX WPM 191 (Shelterbit Fibrepol SBS) membrane is a sandwich membrane and must be protected from UV.

ARDEX WPM 191 (Shelterbit Fibrepol SBS) is available in mineral finish for exposed roof areas).

INSTALLATION

The application of ARDEX WPM 191 (Shelterbit Fibrepol SBS) should be carried out by an approved Applicator.

Installation shall be strictly in accordance with the manufacturers recommendations.

Acceptable substrates to which ARDEX WPM 191 (Shelterbit Fibrepol SBS) is to be installed must be properly prepared prior to membrane installation.

All surfaces must be dry, clean, smooth, free of sharp edges, loose or foreign materials, oil, grease and other materials which may damage the membrane.

Prior to the application of ARDEX WPM 191 (Shelterbit Fibrepol SBS) the surface may require priming with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 191 (Shelterbit Fibrepol SBS) is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 191 (Shelterbit Fibrepol SBS) may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX .

SAFETY PRECAUTIONS

ARDEX WPM 191 (Shelterbit Fibrepol SBS) is not classified as dangerous goods.

However during installation exercise caution when working with open flame. Examine all surfaces to which the flame has been applied for smouldering or burning conditions.

Do not use open flame on or near highly combustible materials. Follow all local fire codes.

STORAGE

All rolls of ARDEX WPM 191 (Shelterbit Fibrepol SBS) should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 10m

Roll weight: Approximately 43kg

Rolls per pallet: 23

TECHNICAL DATA

The Technical Data shown here below are the average results of the Tests, Measurements and Trials, carried out on ARDEX WPM 191 (Shelterbit Fibrepol SBS) Waterproofing Membrane.

Characteristics	Standard	Units	Nom.
Length	UNI EN 1848-1	m	10
Width	UNI EN 1848-1	m	1.0
Thickness	UNI EN 1849-1	mm	3.5
Aeric Mass	UNI EN 1849-1	kg/m ²	4.3
Heat Stability	UNI EN 1110	°C	90
Cold Flexibility	UNI EN 1109	°C	-20
Tensile strength	UNI EN 12311-1		
Ultimate Longitudinal	N/5	cm	720
Ultimate Transverse	N/5	cm	420
Elongation at Break	UNI EN 12311-1		
Longitudinal		%	45
Transverse		%	45
Tear resistance	UNI EN 12310-1		
Longitudinal		N	160
Transverse		N	170
Reinforcement	Combined	g.s.m.	180
Surface finishes	Lower ¹	torch film	
	Top ²	torch film	

Note 1) Lower surface; the surface which is applied to the structure being waterproofed.

Note 2) Top surface; exposed to underside of covering membrane.

All tests have been carried out to UEATC, to tolerances as per European Directive.



ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

Modified Bitumen Tanking Membrane

CE Certification

CodeMark Certification (No. AQ-021216-CMNZ)

Positive Vapour Barrier

High Resistance to Thermal Ageing

High Resistance to Cracking

Excellent Elongation and Flexibility

4mm Gauge

Sand Finish



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ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

PRODUCT DESCRIPTION

ARDEX WPM 195 is a high performance Styrene-Butadiene-Styrene (SBS) bituminous compound modified with adhesive elastoplastomeric polymers its excellent quality is highlighted by two indicators: cold flexibility and high adhesiveness. ARDEX WPM 195 is suitable for application in all climatic zones, with excellent cold flexibility (-20° C) enables an easy application and allows the membrane to be ideally suited to be applied in areas with harsh climates.

The exceptional elongation properties of SBS combined with the strength and dimensional stability of the reinforcing provides an excellent waterproofing membrane in below ground applications. ARDEX WPM 195 is coated with a sanded polymeric film PE/PP, while the bottom surface is embossed and protected by a heat sensitive polythene film.

ARDEX WPM 195 also has the European CE certification for use as a tanking membrane.

FEATURES/BENEFITS

- Complies with BS EN 13969:2004
- European CE certification - GB06/69203
- CodeMark Certification (No. AQ-021216-CMNZ)
- Excellent resistance to atmosphere agents
- Excellent resistance to Geothermal Gas including Hydrogen Sulphide
- High flexibility during application at sub-zero temperature with no physical strains
- High malleability
- Accommodates structural movements
- Resistant to chemical attacks
- Withstand thermal shocks
- Proven performance in colder regions
- Good elongation and flexibility

USES

ARDEX WPM 195 is used as a single layer or multi-layer membrane in horizontal or vertical applications for waterproofing for below ground tanking. It is primarily applied to the outside of a sub-structure of a building, such as a foundation or basement to prevent water ingress.

Other forms of tanking where ARDEX 195 can be used include under floor slabs, behind masonry walls, the lining of substrates of in situ or precast concrete; retaining walls, lift shafts, tunnels, living roofs and planter boxes.

ARDEX WPM195 membrane must be protected from UV.

SURFACE PREPARATION

Substrates need to be clean, smooth, dry and free of sharp edges, loose or foreign materials, oil, grease and other materials that may damage the membrane. All surface voids greater than 5mm wide shall be properly filled with an acceptable fill material.

Confirm concrete structures are specifically engineered to meet the requirements of the NZBC B1/VM1, 3.0 Concrete.

Ensure concrete substrate has been allowed to cure for at least 28 days before commencing application. The relative humidity of concrete substrates must be 75% or less before membrane application to NZBC E2/AS1, 10.0 Construction moisture. Take a measurement using a hygrometer to verify concrete has sufficiently dried when necessary. This process is essential.

The above criteria do not apply if ARDEX WPM 195 is loose-laid on lean site concrete.

ARDEX do not recommend the use of curing compounds; however, when used ensure all traces of compound are gone or removed. Concrete to be finished to NZS 3114, U3 with a light trowel texture. The concrete to have all ridges and protrusions stoned flush.

INSTALLATION

The application of ARDEX WPM 195 should be carried out by an approved ARDEX Applicator.

Installation shall be undertaken in accordance with all relevant technical information related to the selected installation method, including information contained within the ARDEX specification.

Prior to the application of ARDEX WPM 195 the surface may require priming with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 195 is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 195 may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX.

STORAGE

All rolls of ARDEX WPM195 should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 8m

Roll weight: Approximately 40kg

Rolls per pallet: 25

ARDEX HYDRO STOP

Please refer to Ardex 1950 and Ardex 1955 for data sheets on standard and sea water activated Hydrophilic Rubber Water Stops.

ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

TECHNICAL CHARACTERISTICS

CHARACTERISTIC	TEST METHOD	UNITS	NOMINAL VALUES	TOLERANCES
Visible defects	EN 1850-1	visible	Without defects	
Length	EN 1848-1	m	8 -1%	MLV
Width	EN 1848-1	m	1 -1%	MLV
Straightness	EN 1848-1	mm	20 mm x 8 m	MLV
Thickness	EN 1849-1	mm	4	±
Watertightness (A)	EN 1928	kPa	60	MLV
Shear resistance longitudinal / transversal	EN 12317-1	N/50 mm	650 / 450	± 20%
Water vapour transmission proprieties Method A	EN 1931	μ / Sd (m)	120.000 / 480	-20.000
Tensile Strength Longitudinal / Transversal	EN 12311-1	N/50 mm	750 / 550	± 20%
Elongation at break Longitudinal / Transversal	EN 12311-1	%	45 / 45	- 15 absolut
Resistance to impact	EN 12691	mm	900	MLV
Resistance to static loading Method A	EN 12730	Kg	15	MLV
Resistance to tearing (nail shank)	EN 12310-1	N	180 / 180	- 30%
Dimensional stability Longitudinal / Transversal	EN 1107-1 met. A	%	± 0,3 %	MLV
Flexibility at low temperature	EN 1109	°C	-20	MLV
Flow resistance at elevated temperature	EN 1110	°C	90	MLV
Durability of water-tightness against artificial ageing	EN 1296 / EN 1928	kPa	60	MLV
Durability of water-tightness against chemicals	EN 1847 / EN 1928	Kpa	60	MLV
Change in mass on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	0.29	MDV
Change in Tensile Strength on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	-9.6	MDV
Change in Elongation on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	7.2	MDV

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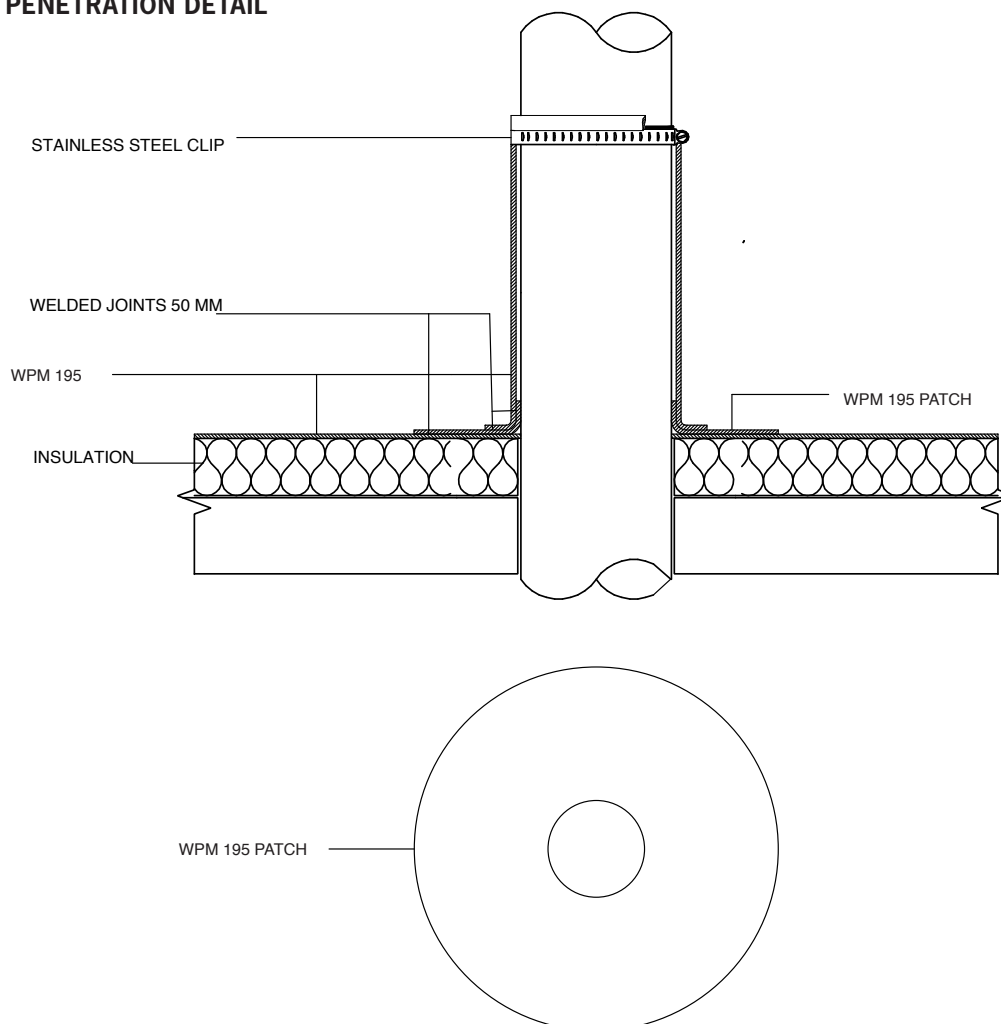
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ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

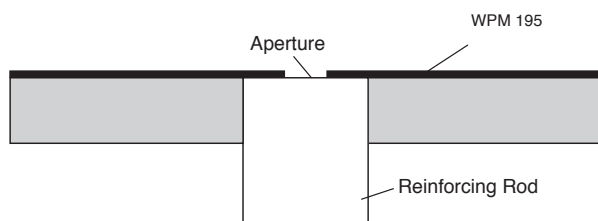
PIPE PENETRATION DETAIL



FLASHING - REINFORCING RODS

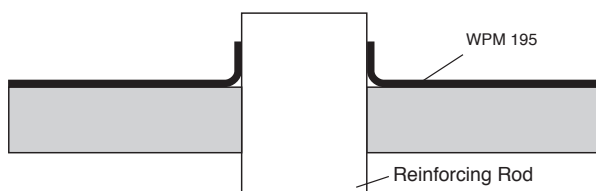
STEP 1

Cut smaller diameter hole than Reinforcing Rod.



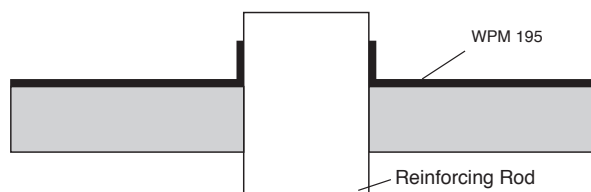
STEP 2

Rod is raised through smaller diameter hole in WPM 195, forcing edge upwards to create



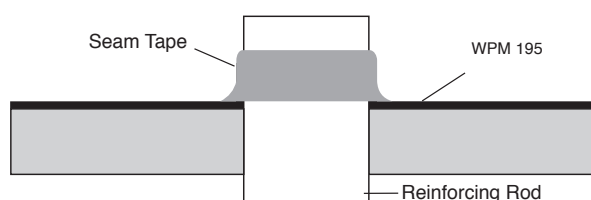
STEP 3

Roll Patch down to eliminate void.

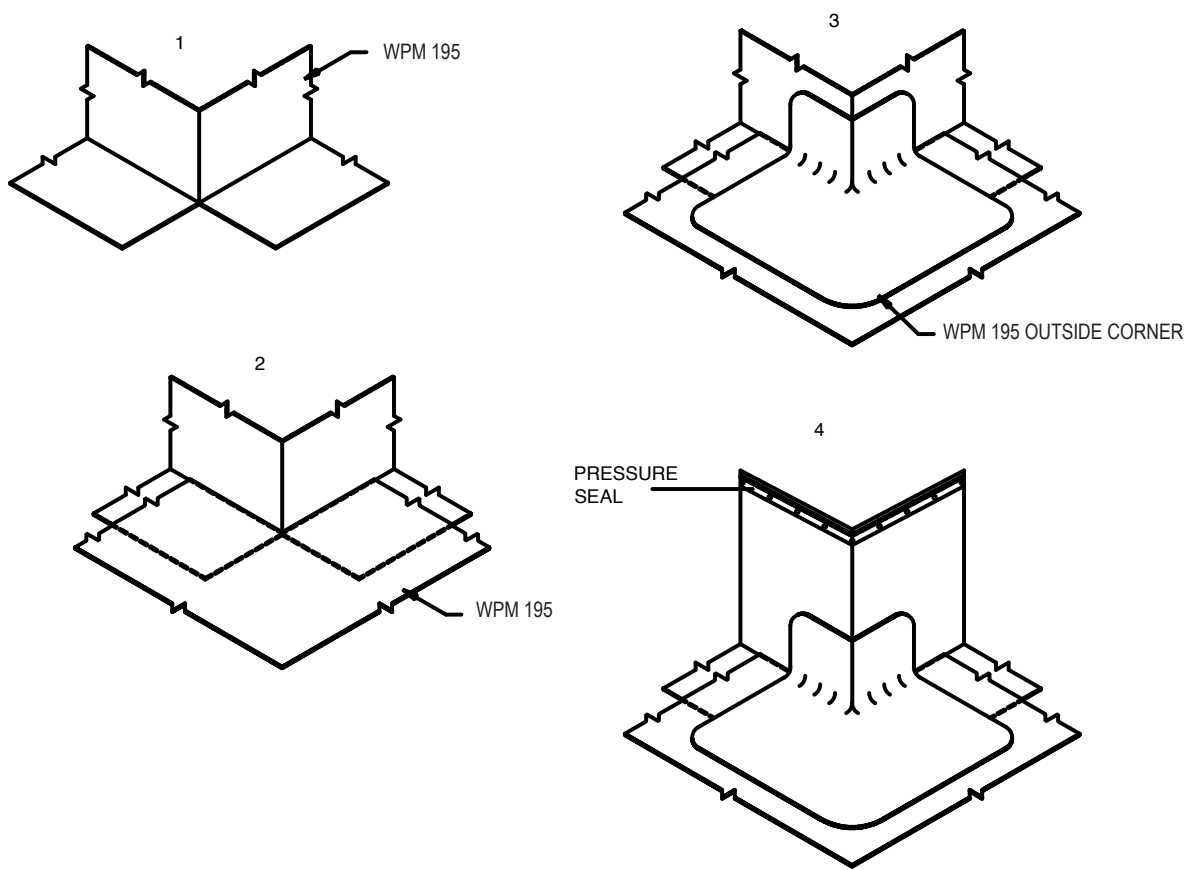


STEP 4

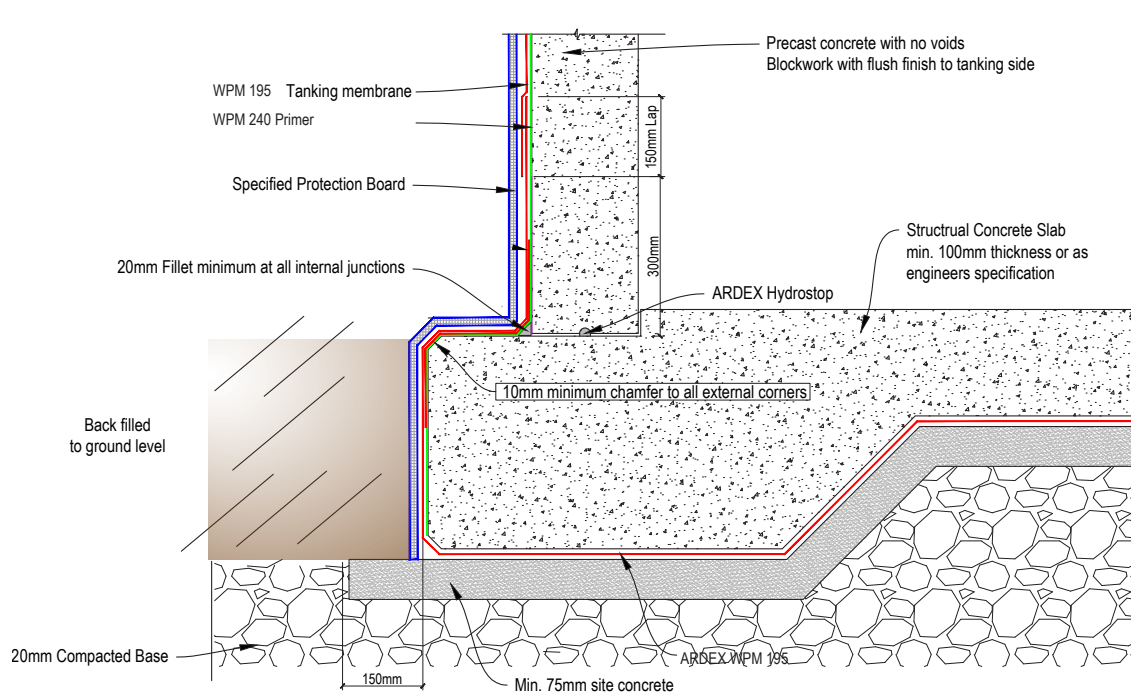
Form upstand with WPM 195 to rod.



CORNER DETAILING / SQUARE PENETRATIONS



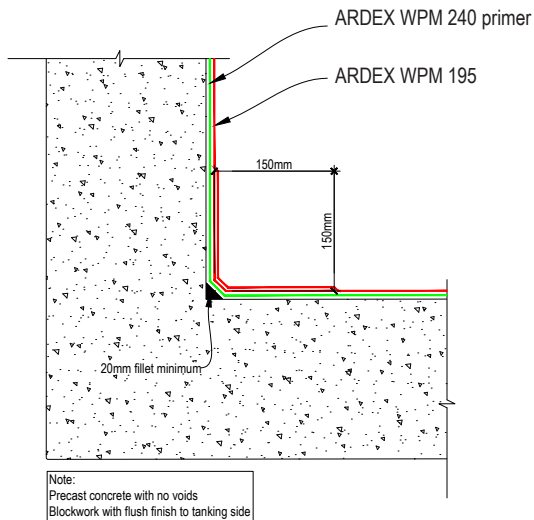
FOOTING JUNCTION



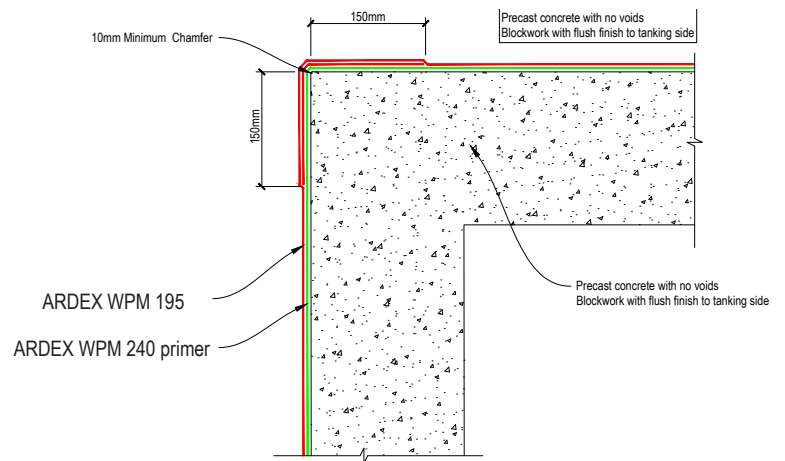
ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

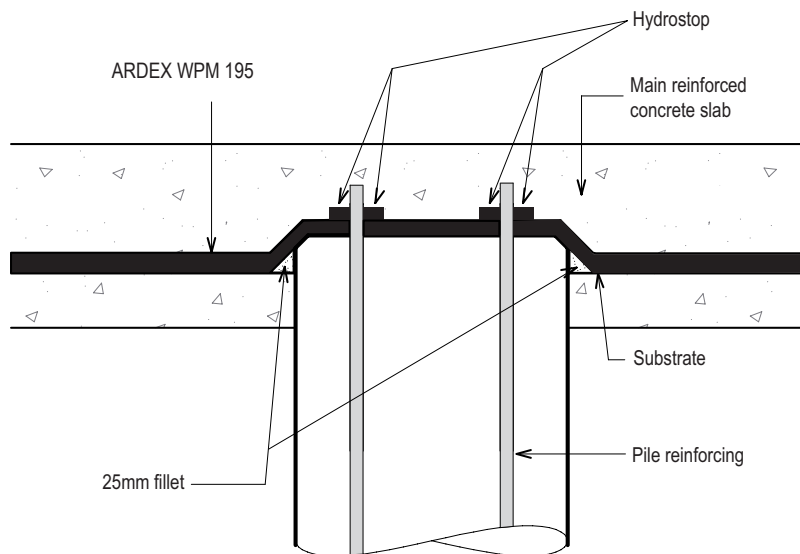
INTERNAL CORNER



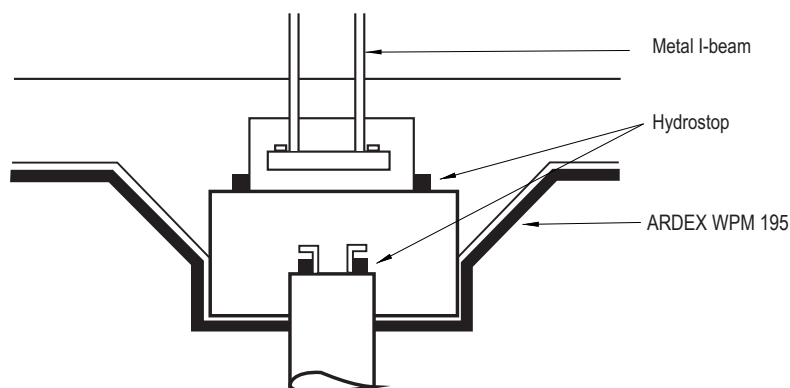
EXTERNAL CORNER



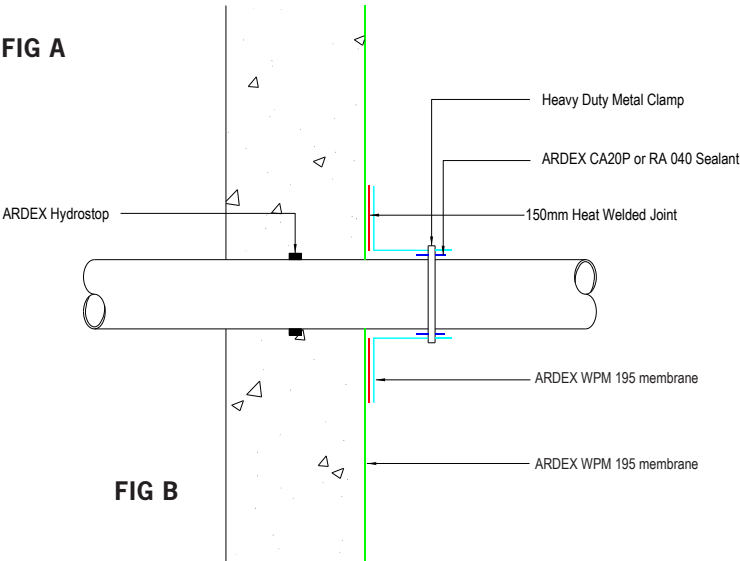
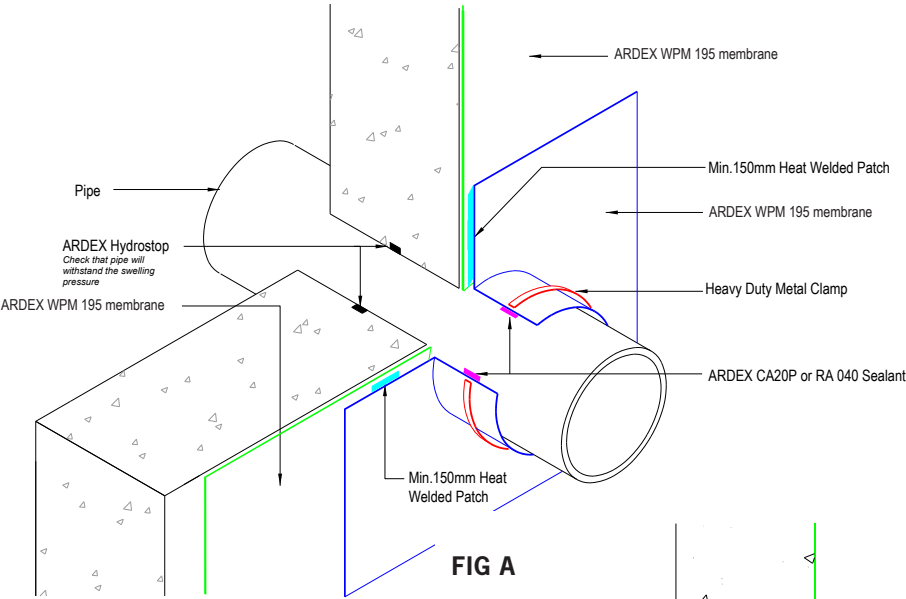
PILE CAP



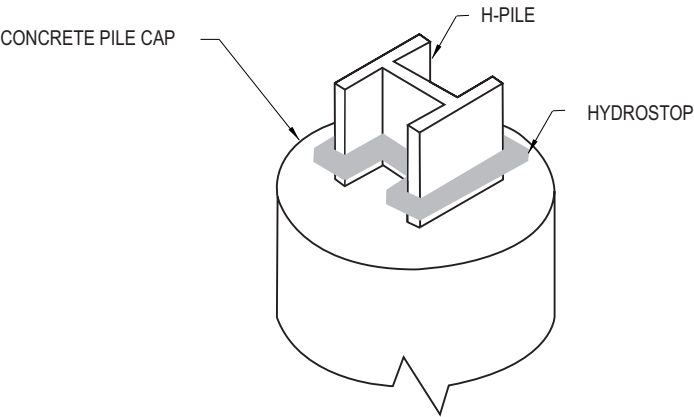
PILE CAP



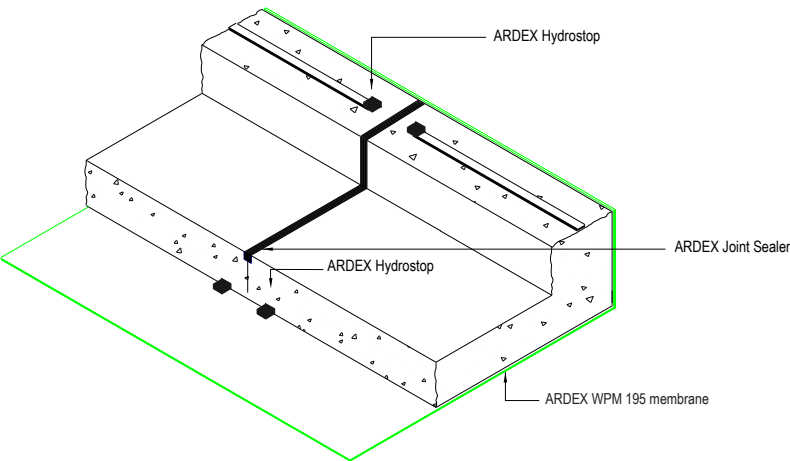
STANDARD PIPE DETAIL



PILE CAP-HYDROSTOP



WATERSTOP & PVC JOINT CONNECTION



ARDEX WPM 195

SBS Torch-Applied Tanking Membrane

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ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

Modified Bitumen Tanking Membrane

CE Certification

CodeMark Certification (No. AQ-021216-CMNZ)

Positive Vapour Barrier

High Resistance to Thermal Ageing

High Resistance to Cracking

Excellent Elongation and Flexibility

4mm Gauge

Mineral Chip Finish



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ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

PRODUCT DESCRIPTION

ARDEX WPM 196 is a high performance Styrene-Butadiene-Styrene (SBS) bituminous compound modified with adhesive elastoplastic polymers its excellent quality is highlighted by two indicators: cold flexibility and high adhesiveness. ARDEX WPM 196 is suitable for application in all climatic zones, with excellent cold flexibility (-20° C) enables an easy application and allows the membrane to be ideally suited to be applied in areas with harsh climates.

The exceptional elongation properties of SBS combined with the strength and dimensional stability of the reinforcing provides an excellent waterproofing membrane in below ground applications. ARDEX WPM 196 is coated with a mineral chip - sand, polymeric film PE/PP, while the bottom surface is embossed and protected by a heat sensitive polythene film.

ARDEX WPM 196 also has the European CE certification for use as a tanking membrane.

FEATURES/BENEFITS

- Complies with BS EN 13969:2004
- European CE certification - GB06/69203
- CodeMark Certification (No. AQ-021216-CMNZ)
- Excellent resistance to atmosphere agents
- Excellent resistance to Geothermal Gas including Hydrogen Sulphide
- High flexibility during application at sub-zero temperature with no physical strains
- High malleability
- Accommodates structural movements
- Resistant to chemical attacks
- Withstand thermal shocks
- Proven performance in colder regions
- Good elongation and flexibility

USES

ARDEX WPM 196 is used as a single layer or multi-layer membrane in horizontal or vertical applications for waterproofing for below ground tanking. It is primarily applied to the outside of a sub-structure of a building, such as a foundation or basement to prevent water ingress.

Other forms of tanking where ARDEX WPM 196 can be used include under floor slabs, behind masonry walls, the lining of substrates of in situ or precast concrete; retaining walls, lift shafts, tunnels, living roofs and planter boxes.

SURFACE PREPARATION

Substrates need to be clean, smooth, dry and free of sharp edges, loose or foreign materials, oil, grease and other materials that may damage the membrane. All surface voids greater than 5mm wide shall be properly filled with an acceptable fill material.

Confirm concrete structures are specifically engineered to meet the requirements of the NZBC B1/VM1, 3.0 Concrete.

Ensure concrete substrate has been allowed to cure for at least 28 days before commencing application. The relative humidity of concrete substrates must be 75% or less before membrane application to NZBC E2/AS1, 10.0 Construction moisture. Take a measurement using a hygrometer to verify concrete has sufficiently dried when necessary. This process is essential.

The above criteria do not apply if ARDEX WPM 196 is loose-laid on lean site concrete.

ARDEX do not recommend the use of curing compounds; however, when used ensure all traces of compound are gone or removed. Concrete to be finished to NZS 3114, U3 with a light trowel texture. The concrete to have all ridges and protrusions stoned flush.

INSTALLATION

The application of ARDEX WPM 196 should be carried out by an approved ARDEX Applicator.

Installation shall be undertaken in accordance with all relevant technical information related to the selected installation method, including information contained within the ARDEX specification.

Prior to the application of ARDEX WPM 196 the surface may require priming with ARDEX WPM 240 (Shelter Primer). Coverage of primer will depend on the porosity of the substrate.

ARDEX WPM 196 is normally fully bonded to the prepared substrate with side laps of 100mm and end laps of 150mm. Overlaps shall be sealed by torch.

ARDEX WPM 196 may be used in various combinations to produce a variety of specifications tailored to suit the individual waterproofing need.

The exact specification will depend on functional and economic requirements. Advice should be sought for suitable specification from ARDEX.

STORAGE

All rolls of ARDEX WPM 196 should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

Roll size: 1m x 8m

Roll weight: Approximately 40kg

Rolls per pallet: 25

ARDEX HYDRO STOP

Please refer to Ardex 1950 and Ardex 1955 for data sheets on standard and sea water activated Hydrophilic Rubber Water Stops.

ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

TECHNICAL CHARACTERISTICS

CHARACTERISTIC	TEST METHOD	UNITS	NOMINAL VALUES	TOLERANCES
Visible defects	EN 1850-1	visible	Without defects	
Length	EN 1848-1	m	8 -1%	MLV
Width	EN 1848-1	m	1 -1%	MLV
Straightness	EN 1848-1	mm	20 mm x 8 m	MLV
Thickness	EN 1849-1	mm	4	±
Watertightness (A)	EN 1928	kPa	60	MLV
Shear resistance longitudinal / transversal	EN 12317-1	N/50 mm	650 / 450	± 20%
Water vapour transmission proprieties Method A	EN 1931	μ / Sd (m)	120.000 / 480	-20.000
Tensile Strength Longitudinal / Transversal	EN 12311-1	N/50 mm	750 / 550	± 20%
Elongation at break Longitudinal / Transversal	EN 12311-1	%	45 / 45	- 15 absolut
Resistance to impact	EN 12691	mm	900	MLV
Resistance to static loading Method A	EN 12730	Kg	15	MLV
Resistance to tearing (nail shank)	EN 12310-1	N	180 / 180	- 30%
Dimensional stability Longitudinal / Transversal	EN 1107-1 met. A	%	± 0,3 %	MLV
Flexibility at low temperature	EN 1109	°C	-20	MLV
Flow resistance at elevated temperature	EN 1110	°C	90	MLV
Durability of water-tightness against artificial ageing	EN 1296 / EN 1928	kPa	60	MLV
Durability of water-tightness against chemicals	EN 1847 / EN 1928	Kpa	60	MLV
Change in mass on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	0.29	MDV
Change in Tensile Strength on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	-9.6	MDV
Change in Elongation on exposure to Hydrogen Sulphide	EN 1847 - Cert No 10998	%	7.2	MDV

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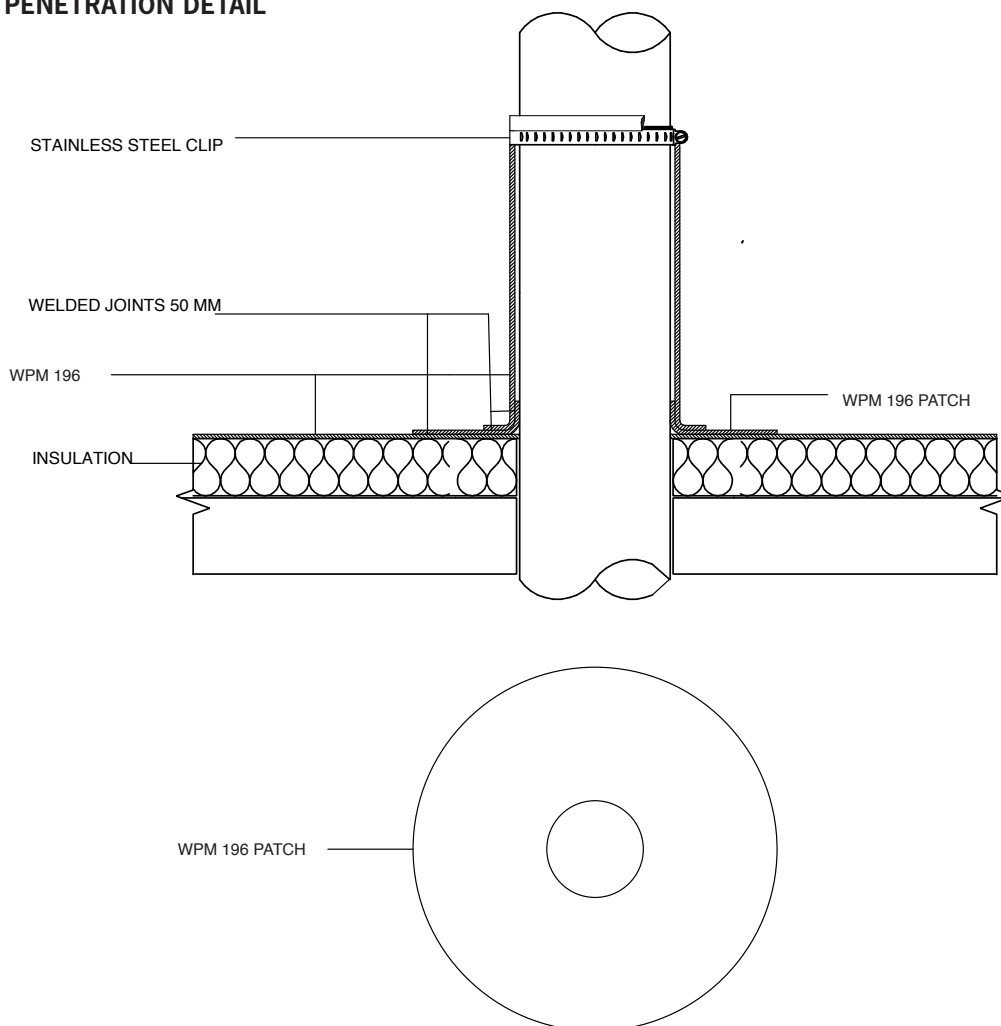
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ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

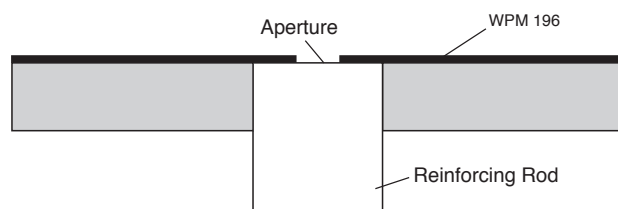
PIPE PENETRATION DETAIL



FLASHING - REINFORCING RODS

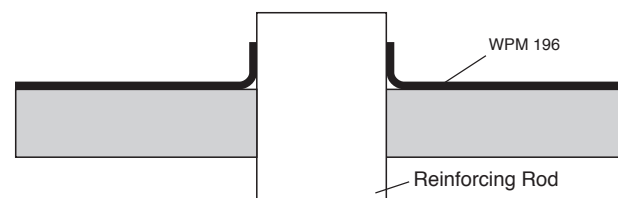
STEP 1

Cut smaller diameter hole than Reinforcing Rod.



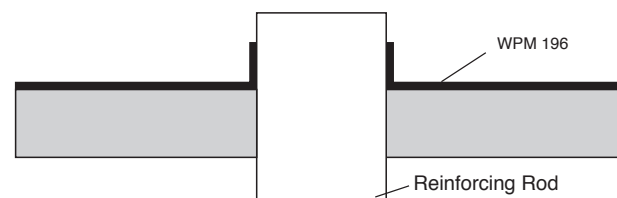
STEP 2

Rod is raised through smaller diameter hole in WPM 196, forcing edge upwards to create



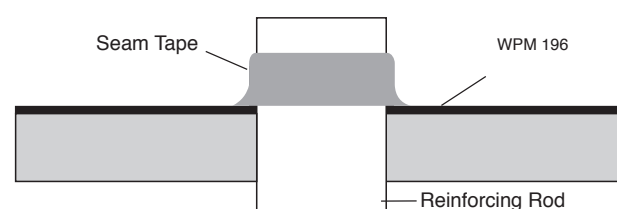
STEP 3

Roll Patch down to eliminate void.

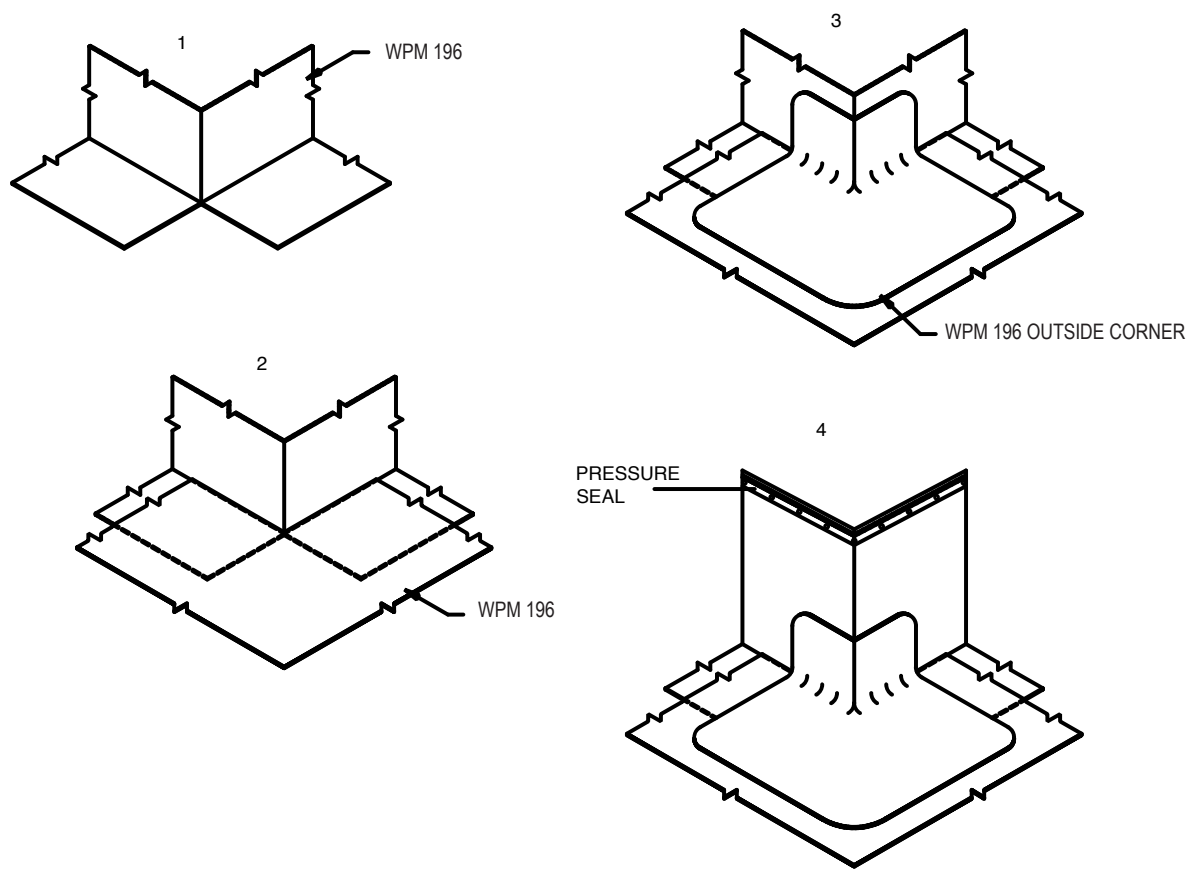


STEP 4

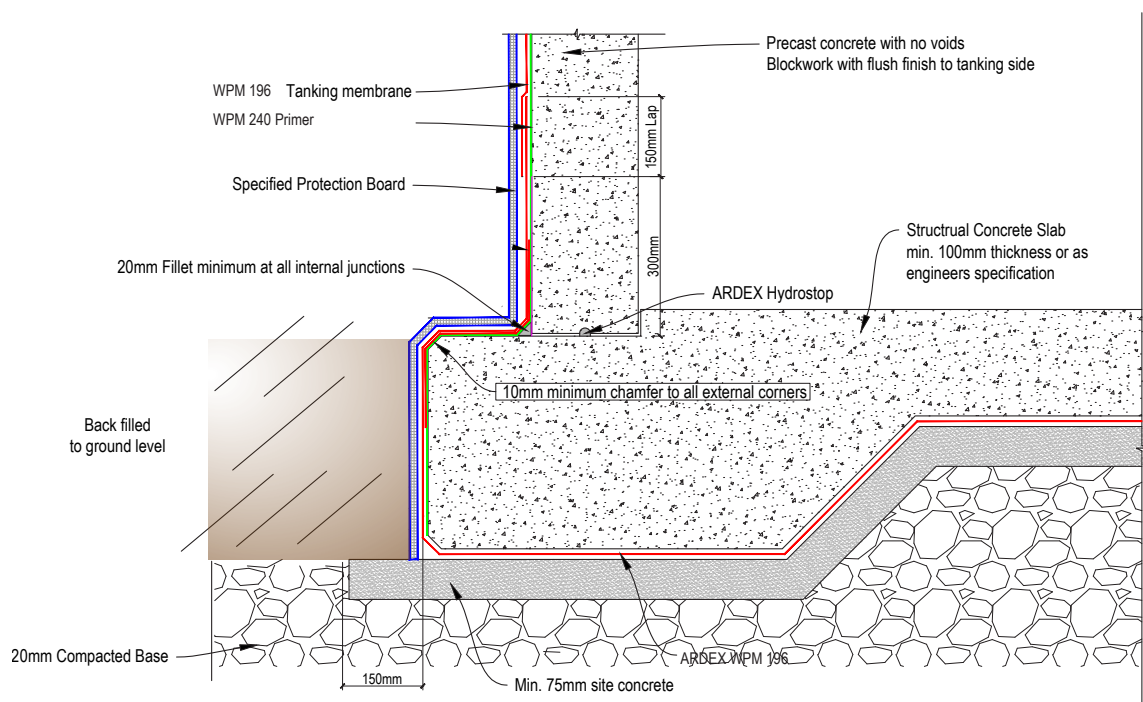
Form upstand with WPM 196 to rod.



CORNER DETAILING / SQUARE PENETRATIONS



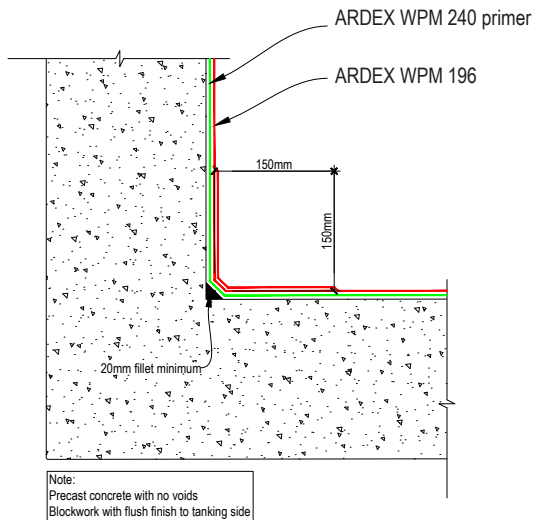
FOOTING JUNCTION



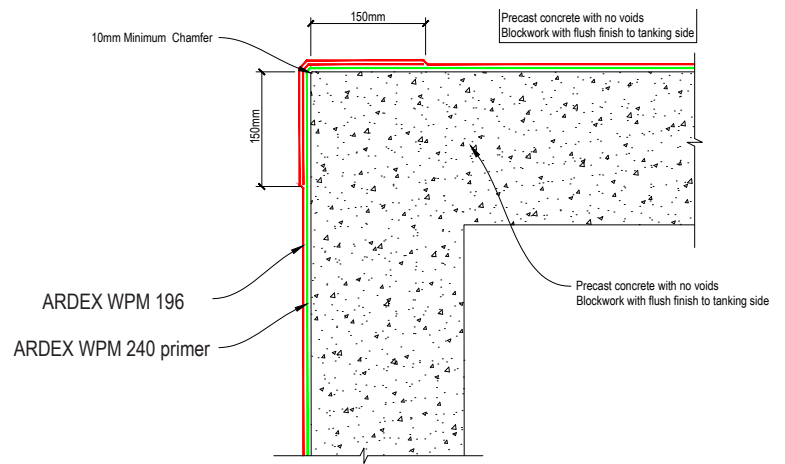
ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

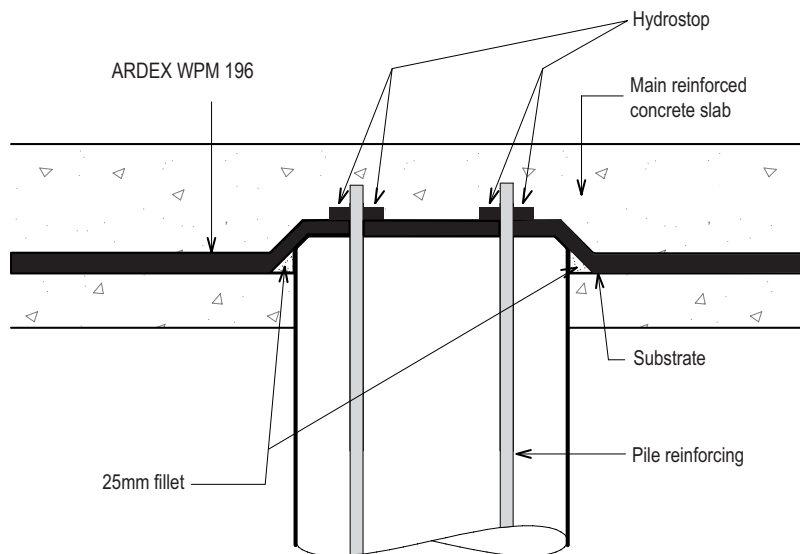
INTERNAL CORNER



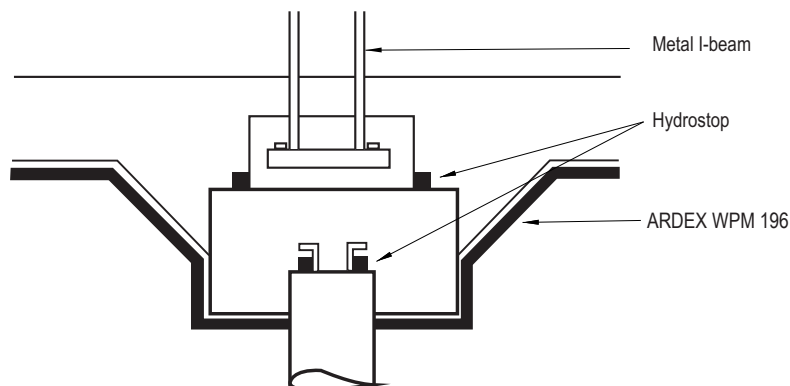
EXTERNAL CORNER



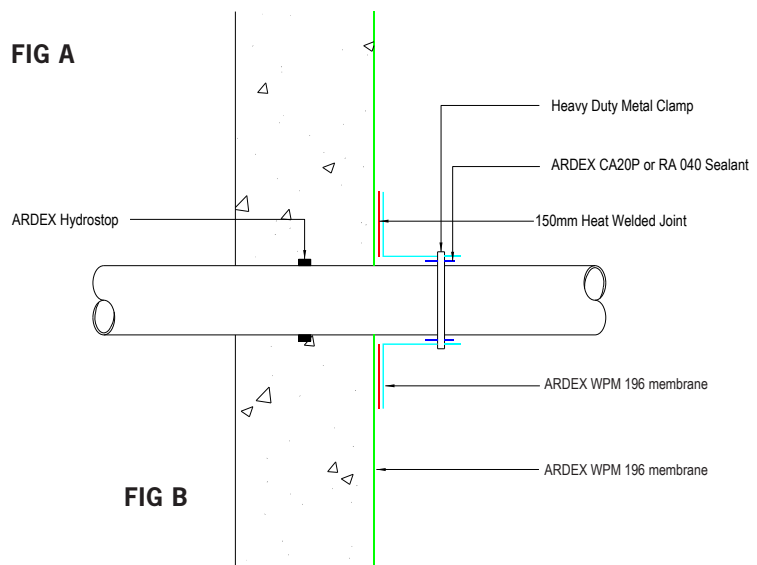
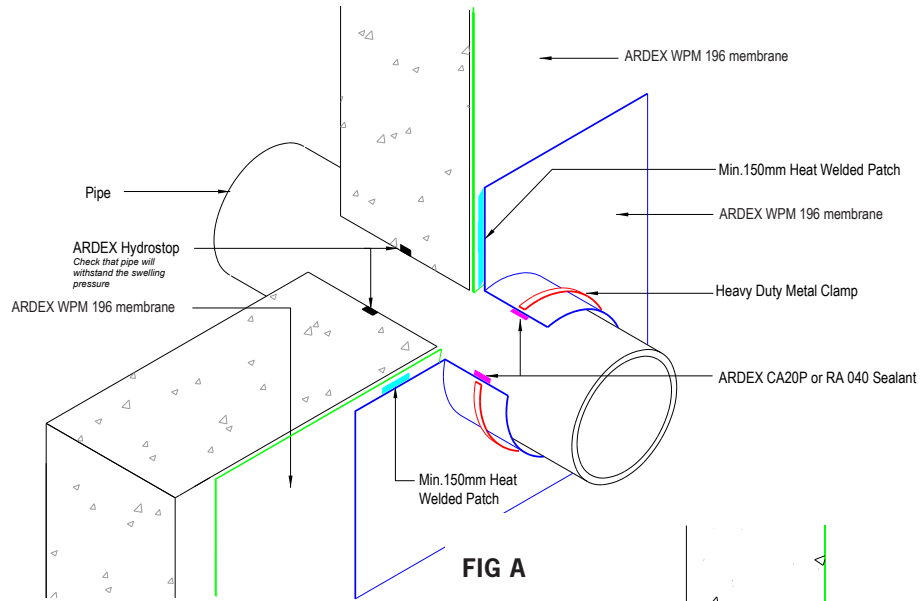
PILE CAP



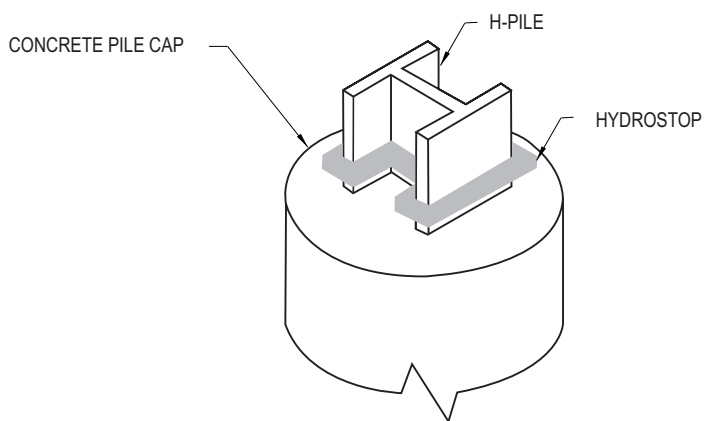
PILE CAP



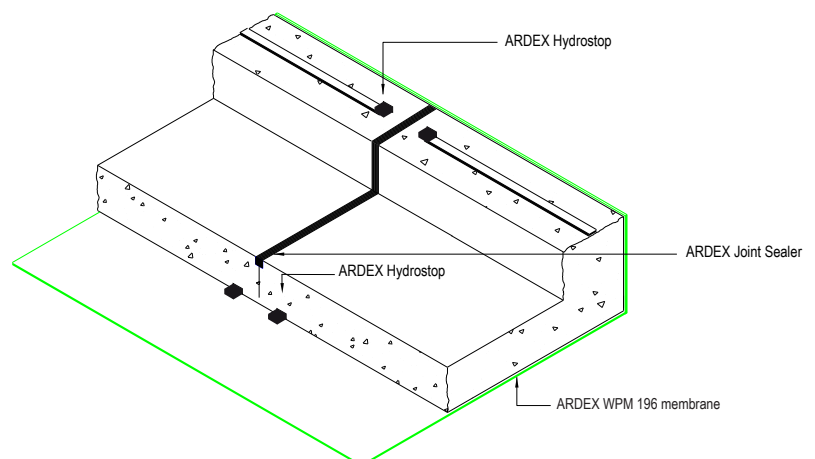
STANDARD PIPE DETAIL



PILE CAP-HYDROSTOP



WATERSTOP & PVC JOINT CONNECTION



ARDEX WPM 196

SBS Torch-Applied Tanking Membrane

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ARDEX HYDROSTOP SW WPM 1950

Polymeric Hydrophilic Rubber Joints

Non-greasy, non-sticky, odourless and non -toxic

Excellent for application to rough concrete surfaces

No premature expansion; allows concrete to gain strength before expansion

Easy to install by bonding, nailing or casting into joint faces with the aid of ARDEX CA20P.

Solves detailing problems in construction.

Excellent performance - Swelling properties unaffected by long term cyclic wetting and drying; limited loss of integrity of waterstop

Sustains effective seal in wet conditions

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ARDEX HYDROSTOP SW WPM 1950

Polymeric Hydrophilic Rubber Joints

DESCRIPTION

Thanks to its particular chemical composition, ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint remains unaltered over time even at maximum expansion, is dimensionally stable even after numerous hydration and de-hydration cycles while maintaining its ability to increase its volume.

In its maximum expansion, in all its sections, ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint is mechanically strong and elastic. The swelling process is controlled and designed to be compatible with fresh concrete.

The expansion is due to the increase in volume of the ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint components, such as butyl rubber, polyethylene aggregated by high cohesion polymeric binders.

APPLICATION INSTRUCTIONS

ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint must be applied to the support with nails or cement adhesives to remain attached to the support in the early stages of concrete casting. For maximum performance ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint should be placed between the reinforcing bars or in a support with raised edge of at least 8/10 cm. The joints are realized by matching sideways the rubber strip for at least 5 cm, while avoiding overlapping. The application surface should be clean, compact, properly vibrated and free of any irregularities.

BENEFITS

ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint is non-greasy, non-sticky, odorless and non-toxic. Thanks to its ductility it can be used in all conditions and, apart from the nails or adhesive, needs no additional support also in the vertical laying.

PACKAGING

Normally the ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint is protected in impermeable packs in cardboard boxes with 6 rolls 8mt long in a box, giving a total of 48 lineal meters. Profiles and sizes are those normally used in the construction site; profiles with particular sections are available on request:

SW WPM 1950 20mm x 10mm x 8mt roll. 6 rolls per carton equals 48 lineal metres per box

LIMITATIONS

In case of contact with high salt content water, ARDEX Hydrostop SW WPM 1950 hydrophilic rubber joint, preliminary expansion tests must be carried out. For further information please contact our technical service.

SAFETY PRECAUTIONS

There is no health hazards associated with ARDEX Hydrostop SW WPM 1950 in normal use.

Technical Data

Specific weight	ISO 1183	1,26 kg/dm ³
Operating temperature	ISO 458/2	about +4 °C
Max. expansion		% 350
Hardness	ISO 868	60 shore A
Load at break	ISO 527	25 N/mm ²
Elongation at break	ISO 527	300 %
Durability		unlimited
Sections	various	

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ARDEX HYDROSTOP SEA WPM 1955

Polymeric Hydrophilic Rubber Joints

Specifically designed for marine environments

Non-greasy, non-sticky, odourless and non-toxic

Excellent for application to rough concrete surfaces

No premature expansion; allows concrete to gain strength before expansion

Easy to install by bonding, nailing or casting into joint faces with the aid of ARDEX CA20P.

Solves detailing problems in construction.

Excellent performance - Swelling properties unaffected by long term cyclic wetting and drying; limited loss of integrity of waterstop

Sustains effective seal in wet conditions

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ARDEX HYDROSTOP SEA WPM 1955

Polymeric Hydrophilic Rubber Joints

DESCRIPTION

Thanks to its particular chemical composition, ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint remains unaltered over time even at maximum expansion, is dimensionally stable even after numerous hydration and dehydration cycles while maintaining its ability to increase its volume.

USED IN APPLICATIONS IN BRACKISH AND MARINE WATER

In its maximum expansion, in all its sections, ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint is mechanically strong and elastic. The swelling process is controlled and designed to be compatible with fresh concrete. First expansion occurs after 6/12 hours, while second expansion occurs after 24/36 hours.

COMPOSITION

The expansion is due to the increase of volume in the ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint components, such as butyl rubber, polyethylene aggregated by high cohesion polymeric binders.

APPLICATION INSTRUCTIONS

ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint, whose standard section size is 10x20mm, but can also be supplied in different sizes, must be applied to the support with nails or cement adhesives to remain attached to the support in the early stages of concrete casting. For maximum performance ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint should be placed between the reinforcing bars or in a support with raised edge of at least 8/10 cm. The joints are realized by matching sideways the rubber strip for at least 5 cm, while avoiding overlapping. The application surface should be clean, compact, properly vibrated and free of any irregularities.

BENEFITS

ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint is non-greasy, non-sticky, odorless and non-toxic. Thanks to its ductility it can be used in all conditions and, apart from the nails or adhesive, needs no additional support also in the vertical laying.

PACKAGING

Normally the ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint is protected in impermeable packs in cardboard boxes with 6 rolls 8mt long in a box, giving a total of 48 lineal meters. Profiles and sizes are those normally used in the construction site; profiles with particular sections are available on request:

SEA WPM 1955 20mm x 10mm x 8mt roll. 6 rolls per carton equals 48 lineal metres per box.

Guarantees

ARDEX Hydrostop SEA WPM 1955 hydrophilic rubber joint in its various sections is manufactured with the best materials available on the market to obtain a top quality product.

All information reported on this data sheet correspond to our present level of technical and scientific knowledge studied in laboratory and tested on the site.

There can be changes attributable to environmental or application differences, or to the particular state of the material where to install the joint.

Therefore, information given in this sheet is not a guarantee on results, just warranty on the product quality.

SAFETY PRECAUTIONS

There is no health hazards associated with ARDEX Hydrostop SEA WPM 1955 in normal use.

Technical Data

Specific weight	ISO 1183	1,27 kg/dm ³
Operating temperature	ISO 458/2	about +3 °C
Max. expansion		% 350
Hardness	ISO 868	45 shore A
Load at break	ISO 527	30 N/mm ²
Elongation at break	ISO 527	500 %
Expansion		200 %
Sections	various	

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ARDEX WPM 240

Shelter Primer

Solvent Based Primer

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ARDEX WPM 240

Shelter Primer Solvent Based Primer

PRODUCT DESCRIPTION

Ardex WPM 240 (Shelter Primer) is a solvent based bitumen modified primer to be used to seal and prepare the substrate prior to the installation of the Shelterbit torch-on and Shelterseal self adhesive membranes.

APPLICATION

Ensure that the surface to be primed is dry and free from dust, oil, paint, curing compounds and any other contaminating materials. Stir contents well before use. Apply by brush, roller or airless spray. Ardex WPM 240 (Shelter Primer) must be dry before applying membrane.

COVERAGE

1 litre of Ardex WPM 240 (Shelter Primer) will cover approximately 5m².

DRYING TIME

Allow 1-2 hours @ 23°C.

LIMITATIONS

Ardex WPM 240 (Shelter Primer) should be used with appropriate mask and breathing apparatus in areas with poor ventilation/air flow.

PACKAGING

5L and 20L

STORAGE

12 months in the original unopened packaging stored @ 23°C.

IDENTIFICATION

Black liquid comprising bitumen dissolved in mineral spirits.

CLEAN UP

Wash equipment with Ardex WA98S.

SAFETY DATA

First Aid:

Swallowed: Give water to clean mouth. Do not induce vomiting.

Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water.

Eyes: Hold open and flood with water for at least 15 minutes.

Inhalation: Remove to fresh air. If breathing is difficult administer oxygen.

If irritation continues seek medical attention promptly.



ARDEX WPM 247

Shelter Primer

Water based Primer

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ARDEX WPM 247

Water Based Shelter Primer

PRODUCT DESCRIPTION

ARDEX WPM 247 (Shelter Primer) is a water based bitumen modified primer to be used to seal and prepare the substrate prior to the installation of the Shelterbit torch-on and Shelterseal self adhesive membranes.

APPLICATION

Ensure that the surface to be primed is dry and free from dust, oil, paint, curing compounds and any other contaminating materials. Stir contents well before use. Apply by brush or roller. ARDEX WPM 247 (Shelter Primer) must be dry before applying membrane.

COVERAGE

1 litre of ARDEX WPM 247 (Shelter Primer) will cover approximately 6m².

DRYING TIME

Allow 1-2 hours @ 23°C.

LIMITATIONS

ARDEX WPM 247 (Shelter Primer) should be used with appropriate mask and breathing apparatus in areas with poor ventilation/air flow.

PACKAGING

5L and 20L containers

STORAGE

12 months in the original unopened packaging stored at @ 23°C.

IDENTIFICATION

Black liquid comprising bitumen suspended in water.

SAFETY DATA

First Aid:

Swallowed: Give water to clean mouth. **Do NOT** induce vomiting. Contact Doctor or Poisons information Centre.

Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water. **Do NOT** use solvents to remove bitumen material from skin. Bitumen may be removed using vegetable or medicinal paraffin oil.

Eyes: Holding eye(s) open, immediately irrigate (s) with water for at least 15 minutes. Seek medical advice.

Inhalation: Not known to be a problem. Remove patient to a well ventilated area. Recovery should be rapid after removal from exposure.

Hair: Solidified bitumen in eyelashes, hair etc. can be removed by gently wiping with lint soaked in medicinal paraffin oil.



ARDEX Shelterbit Shingles

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ARDEX Shelterbit Shingles

LAYING ARDEX SHELTERBIT SHINGLES

ARDEX Shelterbit Shingles are made from a 4mm combined APP (AtacticPolypropylene) and SBS (Styrene-Butadine-Styrene) plastomeric type modified bitumen membrane, referred to elsewhere in this manual as ARDEX WPM 189 (Shelterbit Duo Mineral Membrane)

External Moisture

To comply with New Zealand Building Code Acceptable Solution E2/AS1 bitumen shingles should be laid at a minimum pitch of 17.5°.

Underflashings

Fix Shelterbit 380mm underflashings to valleys etc. and also as a starter course along the bottom of the roof allowing an overlay into the gutter. All surfaces to which the underflashings are to be fixed should be primed with ARDEX WPM 240 (Shelter Primer).

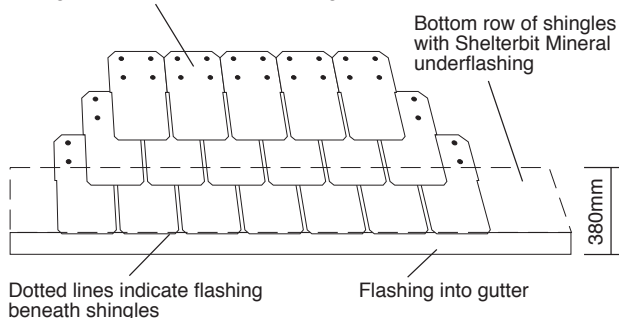
Laying

1. Mark a chalk line horizontally along the roof one shingle height up. This marks the top of the first row of shingles.
2. The contoured edge of each shingle provides the correct spacing. The top edge when butted also prevents water blowing back up the shingle. The top of each shingle is then fixed with four galvanised clouts. To locate the next row mark a horizontal chalk line up one shingle height minus the overlap onto the lower shingle.
3. The lower half of each shingle must be heated by lifting the shingle back and heating the under surface by the same method used to apply other Torch-on membranes. Care must be taken not to discolour the mineral surface of the shingle below. A piece of plywood can be used to provide a mask and a working platform. The top row of shingles may be cut to suit the apex and a Shelterbit Mineral overflashing used to finish the ridge. Any loose mineral should be brushed off the roof with a soft broom.
4. The heated shingle is then carefully rolled down, paying attention to the lapped edges.

Roof area coverage per 50 shingles is approximately 3.57m².

ARDEX WPM 189 (Shelterbit Duo Mineral Membrane) is appraised in BRANZ Certificate No 463 (2011) as an Alternative Solution to E2/AS1.

Four galvanised clouts on each shingle



Standard Shingles

Approximately 580x290mm, 50% overlap of the shingle below.



ARDEX WPM 150

Shelterstick Self-adhesive Membrane

2mm SBS Fibreglass Reinforced Bituminous Membrane

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ARDEX WPM 150

Shelterstick Self-adhesive Membrane

2mm SBS Fibreglass Reinforced Bituminous Membrane

PRODUCT DESCRIPTION

ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) is a self-adhesive bituminous membrane.

SPECIAL FEATURES

Innovation is the feature that distinguishes ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) from traditional torch-on or fastened systems.

- Absolute waterproofing resists high hydrostatic pressure.
- Because ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) is cold applied and installed without the use of naked flames, they offer a higher safety level on the job.
- Highly resistant to acids, alkalis or other pollutants.
- ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) membrane self seals on contact if being installed using nails or other fasteners, or if cut accidentally.

USES

Ideal for general waterproofing, foundations, tunnels, etc. and especially when, due to the type of operation or materials, the use of torch/fire must be avoided (e.g. on isolation panels, wood paint etc.) For these applications, ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) can also become self-adhesive on the upper surface, simply by heating the protection film until soft, enabling the membrane to be used as an underlay for the application of traditional torch-on membranes.

INSTALLATION

ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) is cold applied without the use of torch or special tools. Provides a fast and long-lasting waterproofing on materials such as: metal, wood, zinc, aluminium, cement or clay tiles, concrete, stone, asbestos cement and a wide variety of plastic products: polyethylene, polypropylene, fibreglass, polycarbonate and some PVC types. The membranes can be installed directly on inflammable materials, on insulation panels that are not fire resistant and in environments where the use of naked flames is dangerous.

VERSATILE

ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) resists elongation and mechanical stresses like no other system or waterproofing material can. ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) is a self-adhesive bituminous membrane with fibreglass reinforcement for waterproofing, sound and vapour barriers, underlays, etc.

Its versatility is assured because of the softness, lightness, and flexibility. In situations where traditional torch-on or fastened systems cannot be used ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) provides the best results without compromising the quality of the work done. ARDEX WPM 150 (Shelterstick Self-adhesive Membrane) is also ideal for urgent repairs, assuring long lasting results.

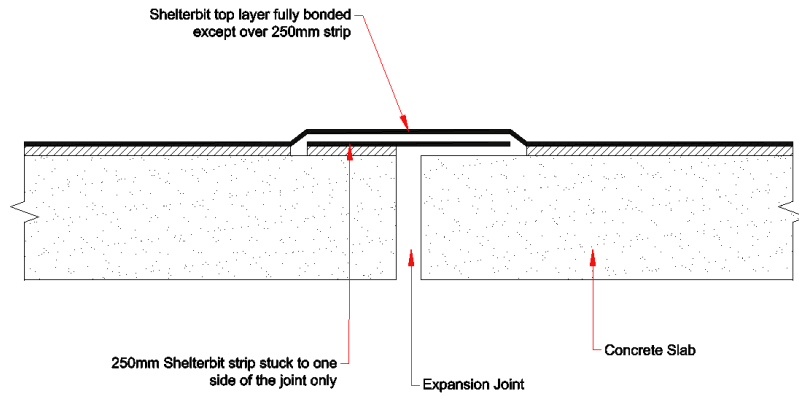
PACKAGING

Roll size: 1m wide x 15m x 2mm.



CAD Drawings Version 1.1

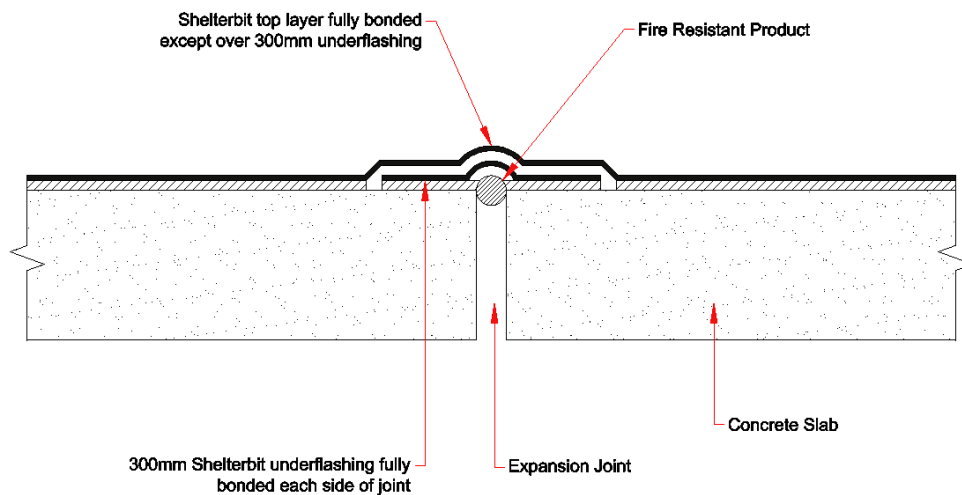
Bituminous BIT-01 > BIT-17



ARDEX BITUMINOUS
Construction Joint

No.: BIT-01

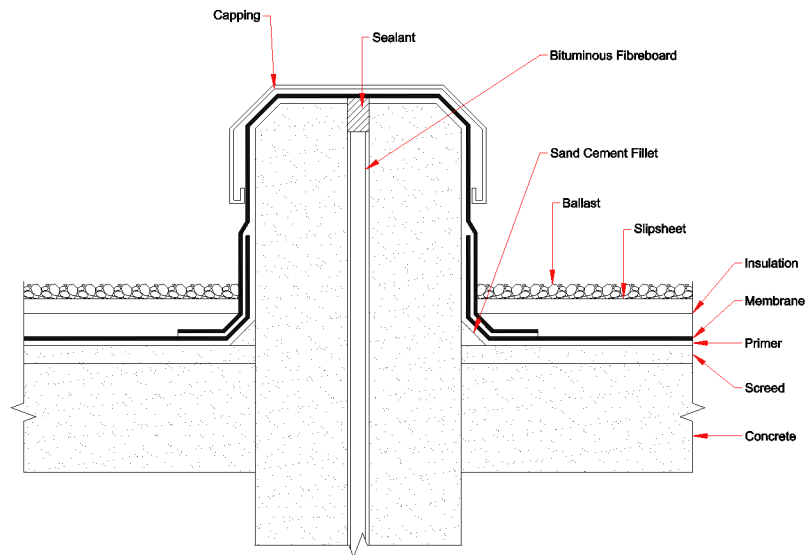
Systems
All



ARDEX BITUMINOUS
Expansion Joint

No.: BIT-02

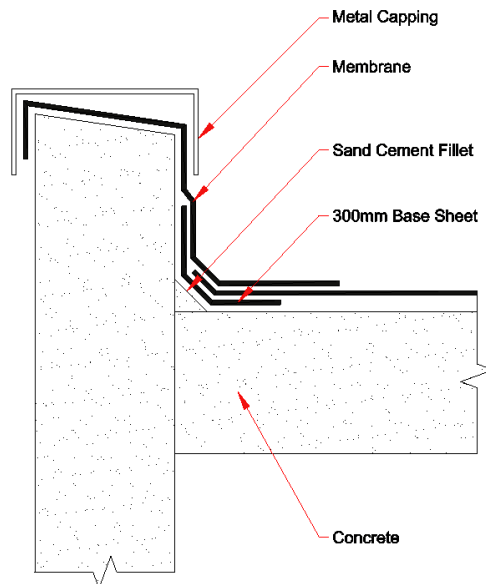
Systems
All



ARDEX BITUMINOUS
Alternative Expansion Joint

No.: BIT-03

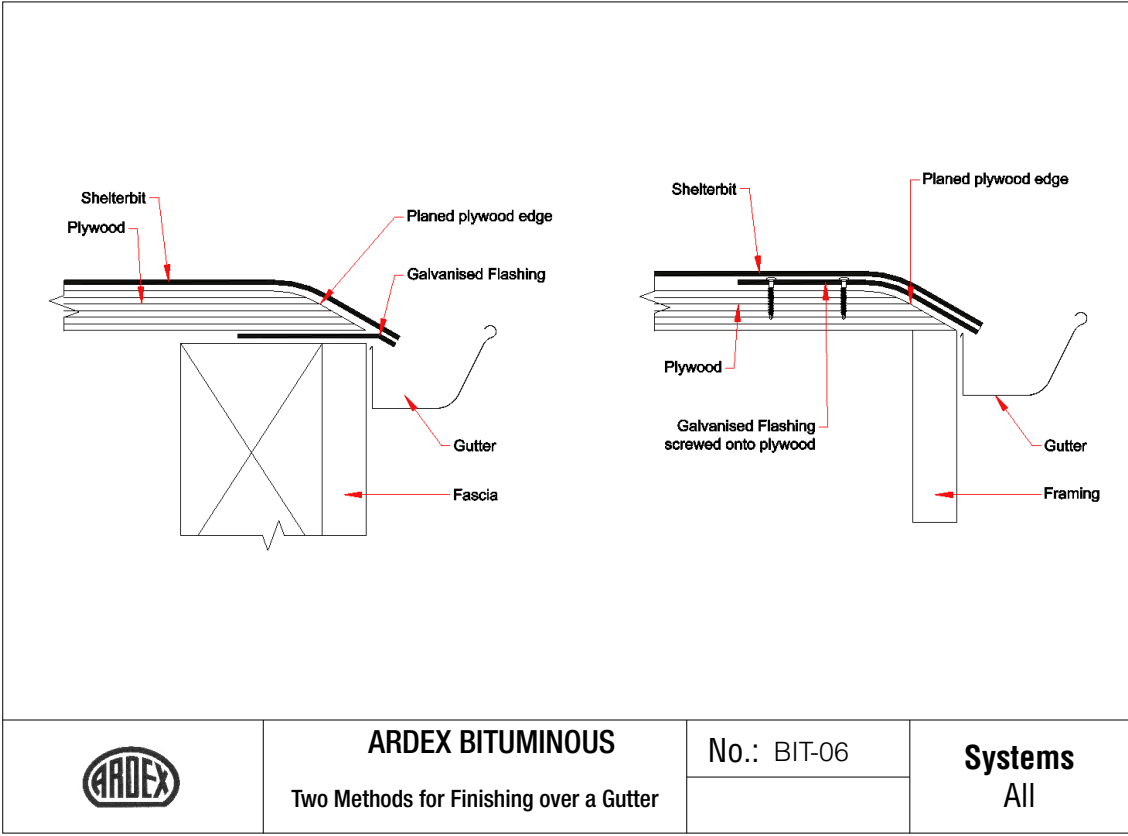
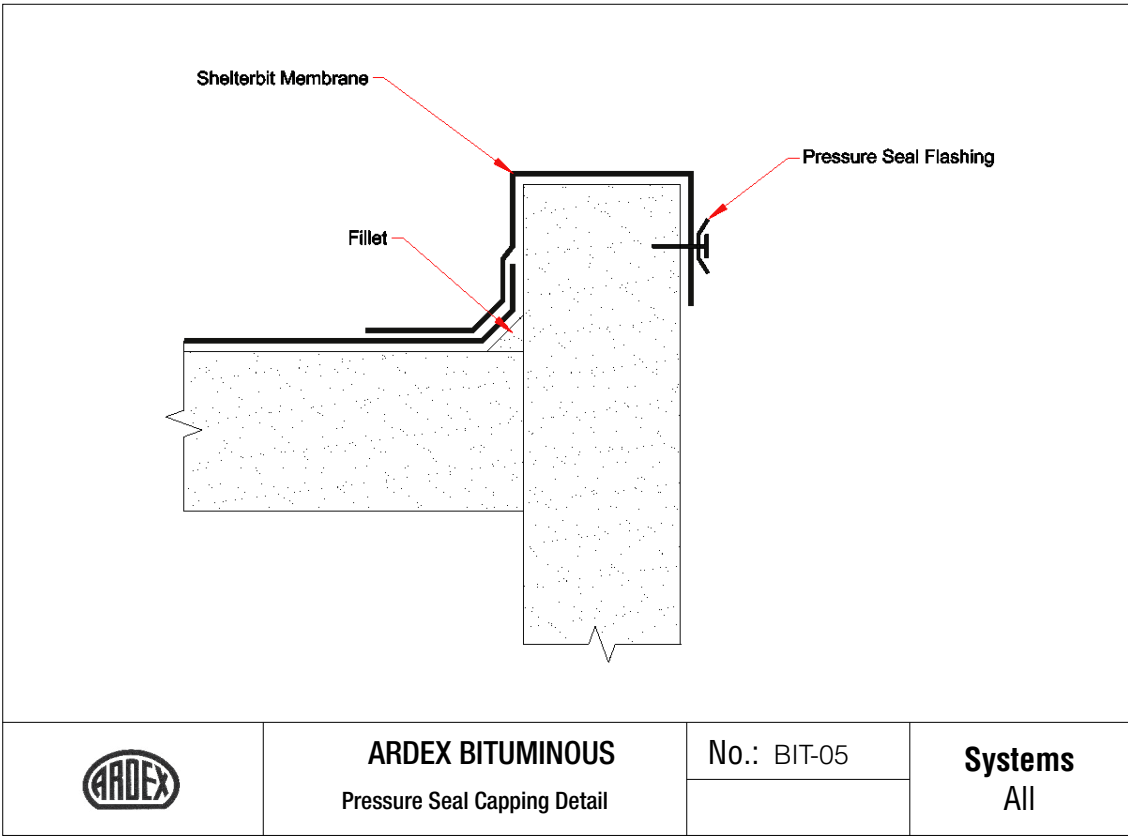
Systems
All

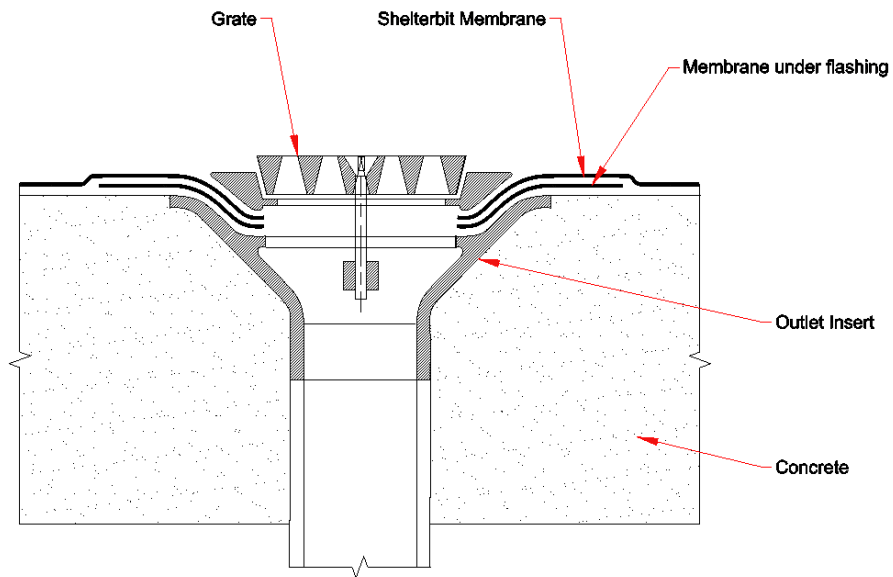


ARDEX BITUMINOUS
Capping Detail

No.: BIT-04

Systems
All

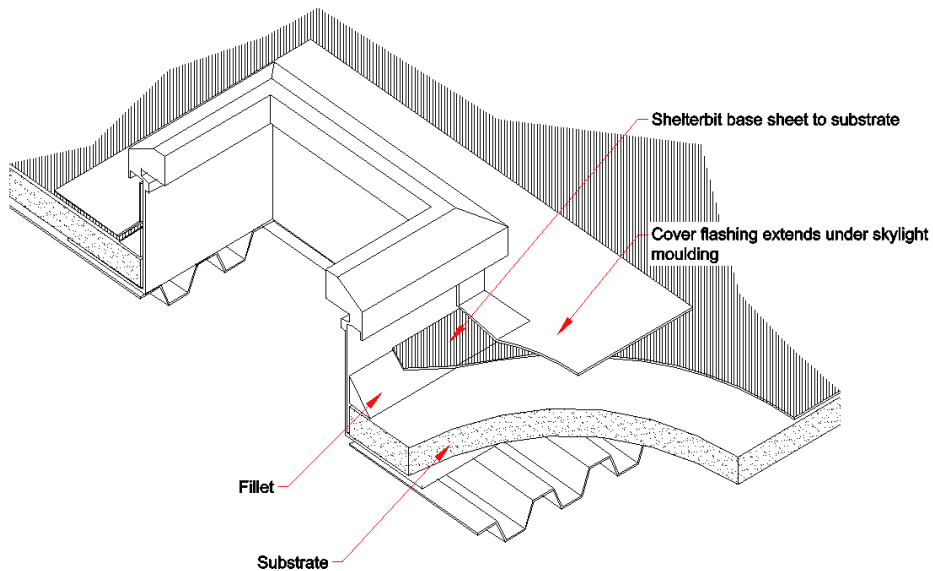




ARDEX BITUMINOUS
Typical Outlet Detail

No.: BIT-07

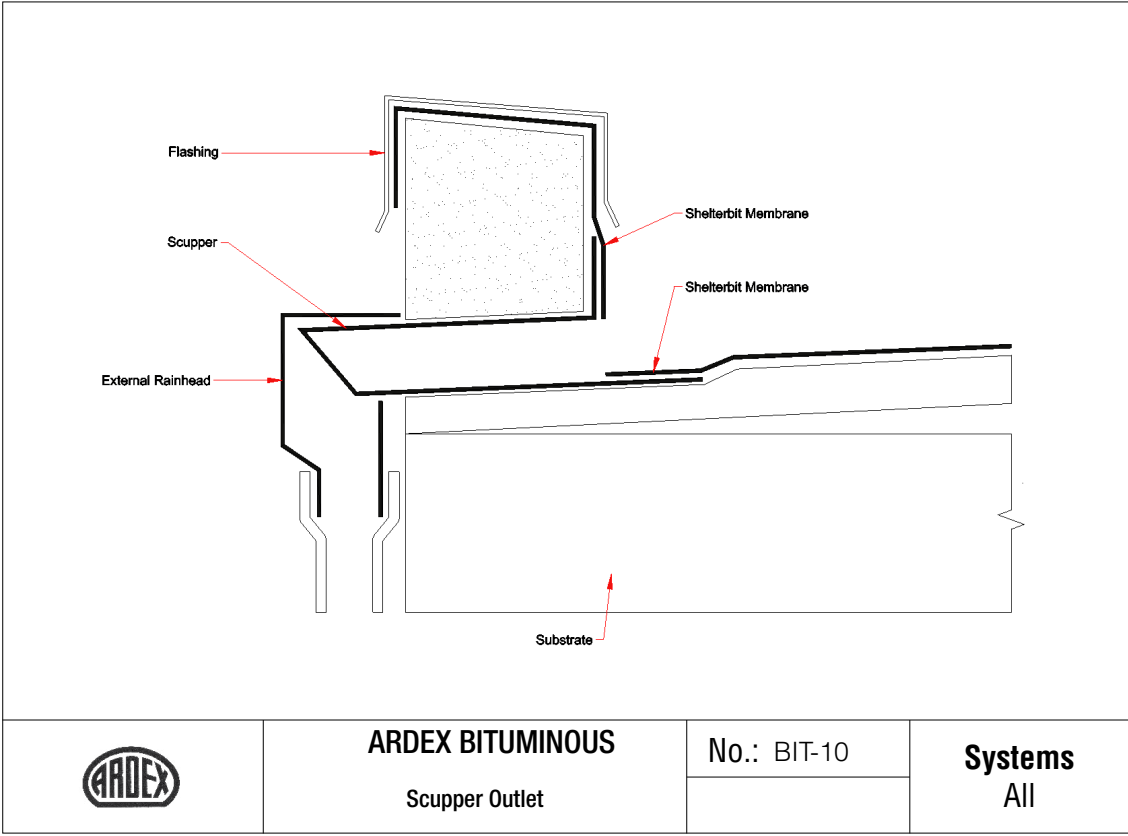
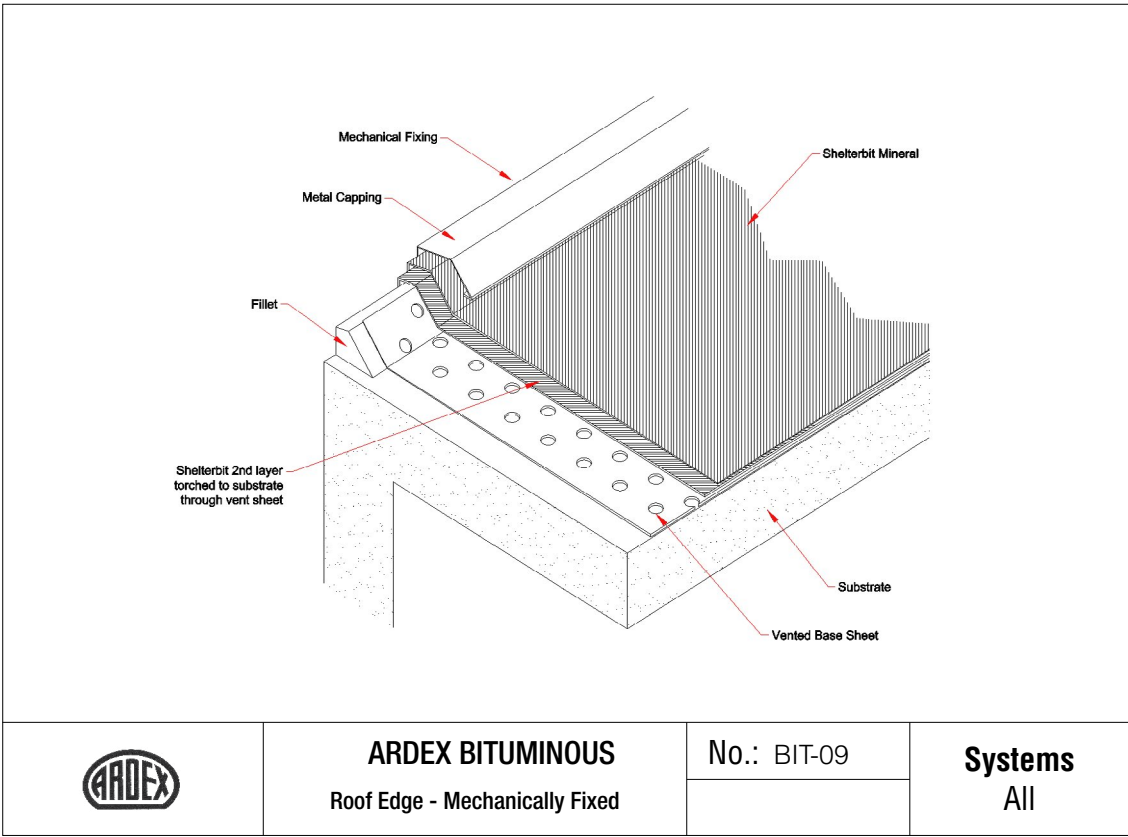
Systems
All

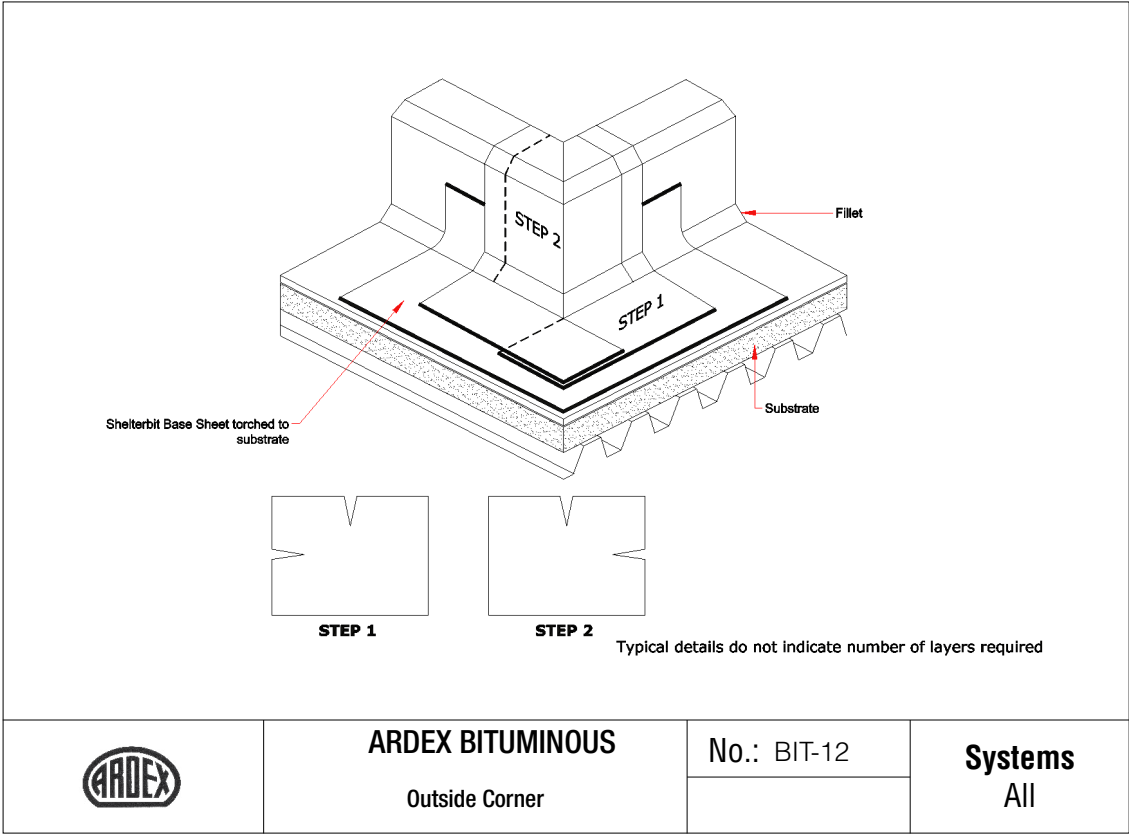
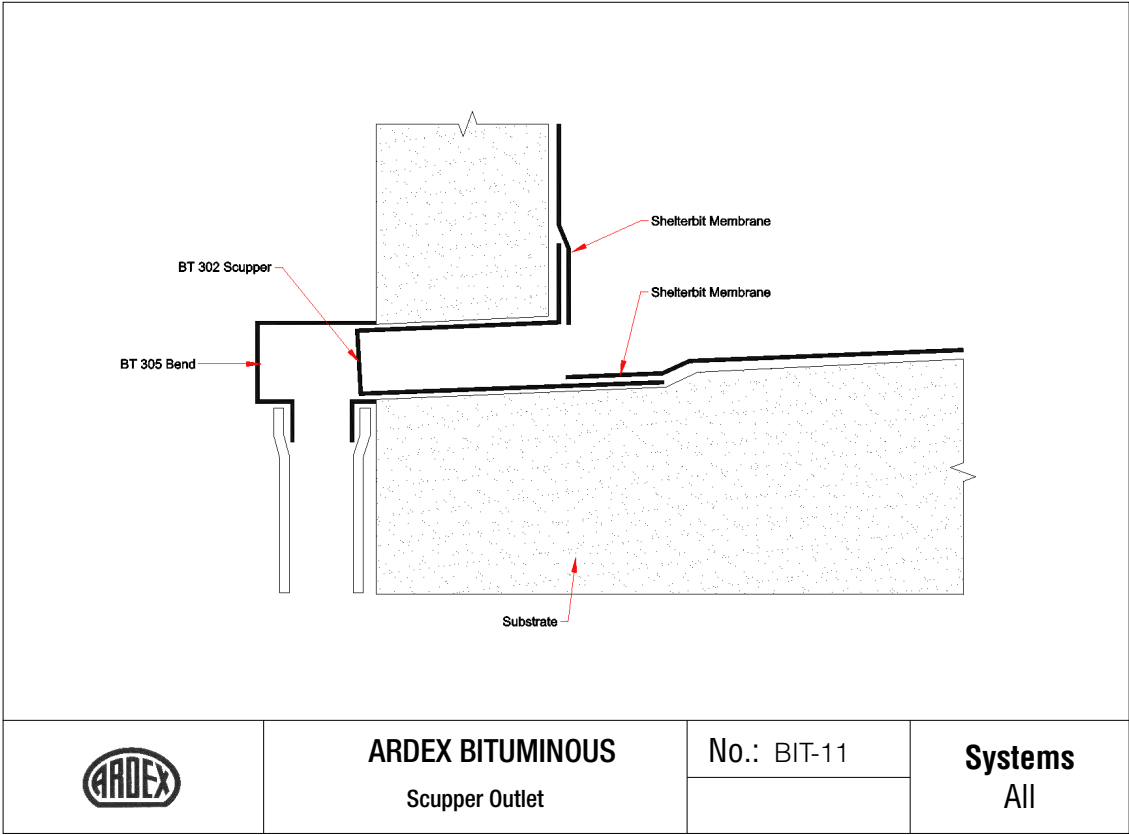


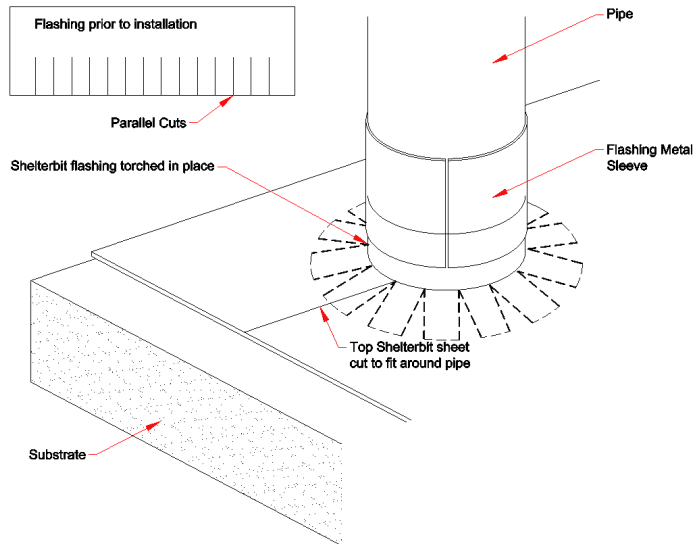
ARDEX BITUMINOUS
Skylight Flashing

No.: BIT-08

Systems
All







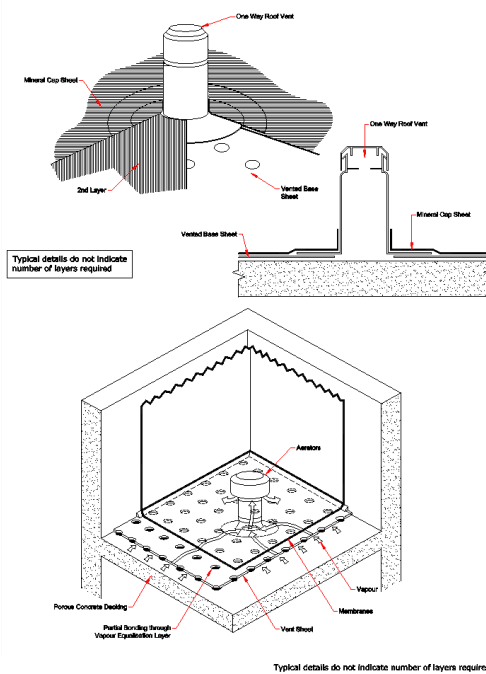
Typical details do not indicate number of layers required



ARDEX BITUMINOUS Pipe Flashing

No.: BIT-13

Systems
All



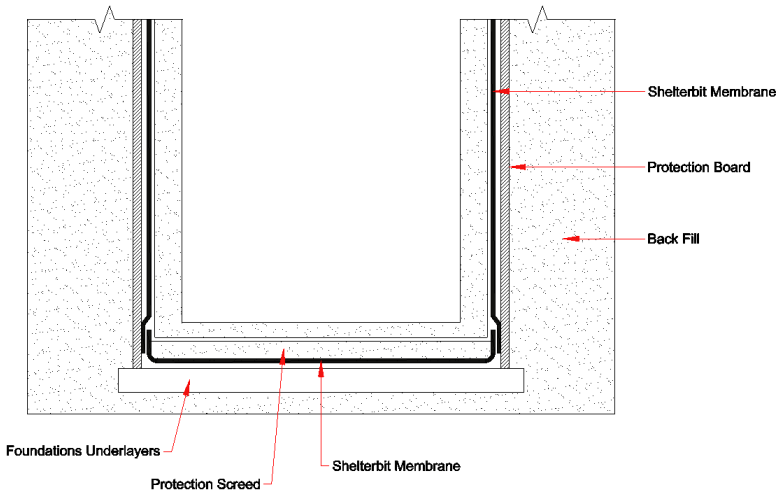

Typical details do not indicate number of layers required

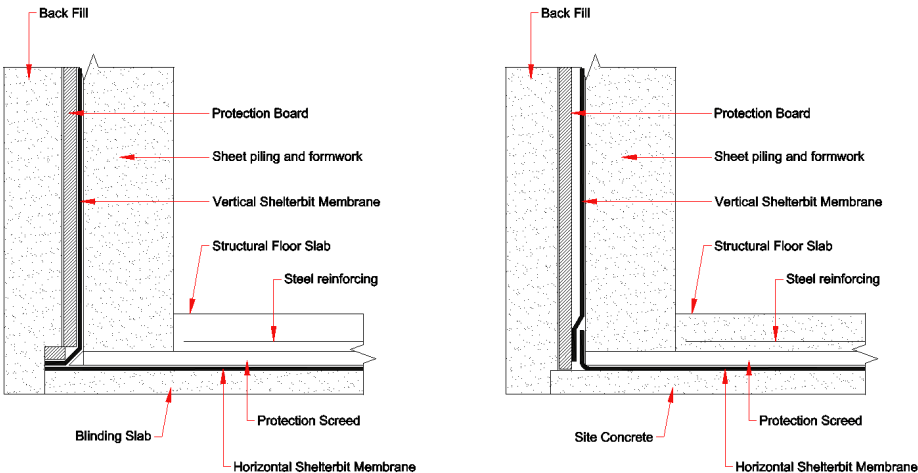



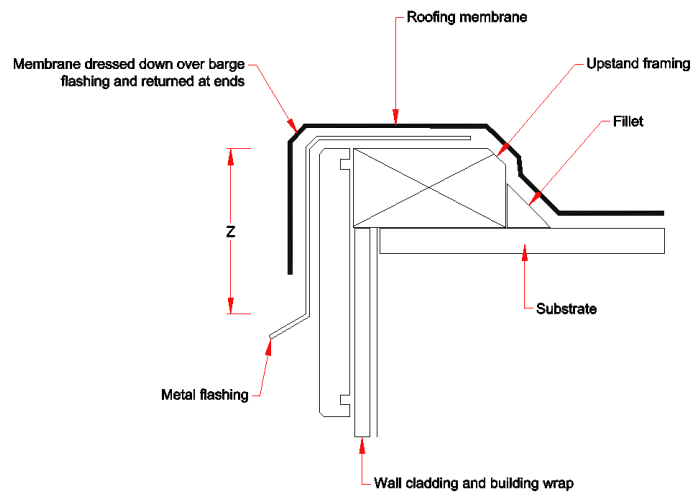
ARDEX BITUMINOUS One-Way Vent Installation

No.: BIT-14

Systems
All

 <p>Foundations Underlayers</p> <p>Protection Screed</p> <p>Shelterbit Membrane</p> <p>Shelterbit Membrane</p> <p>Protection Board</p> <p>Back Fill</p> <p>Typical details do not indicate number of layers required</p>			
	ARDEX BITUMINOUS Tanking of Lift Pit below Water Table	No.: BIT-15	Systems All

<p>ALTERNATIVE OPTION</p>  <p>Back Fill</p> <p>Protection Board</p> <p>Sheet piling and formwork</p> <p>Vertical Shelterbit Membrane</p> <p>Structural Floor Slab</p> <p>Steel reinforcing</p> <p>Blinding Slab</p> <p>Protection Screed</p> <p>Horizontal Shelterbit Membrane</p> <p>Typical details do not indicate number of layers required</p>			
	ARDEX BITUMINOUS Below Ground Detail	No.: BIT-16	Systems All



NOTE: Z = variable according to wind zone



ARDEX BITUMINOUS
Eave and Verges in Shelterbit

No.: BIT-17

Systems
All



Self Adhesive

3-18	Shelterseal Membranes
4-7	Shelterseal BRANZ Appraisal
9	Waterproofing Basements (BUILD)
10	Shelterseal Range
11-18	Shelterseal
11	WPM 3000X
15	WPM 5000HD
19-20	Shelter Primer



ARDEX Shelterseal Membranes

Self Adhesive Membranes

BRANZ Appraised as an Acceptable Solution in E2/AS1
and Performance Durability B2.3.1 (a) 50 years

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.



BRANZ Appraised

Appraisal No.462 [2010]

BRANZ Appraisals

Technical Assessments of products
for building and construction

**BRANZ
APPRAISAL
No. 462 (2010)**

This Appraisal replaces Appraisal
No. 462 (2004) issued
30 November 2004.

**SHELTERSEAL 3000X
AND SHELTERSEAL
HD DAMP-PROOF
MEMBRANES**

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Product

1.1 Shelterseal 3000X and Shelterseal HD are self adhesive damp-proof membranes (DPM) for basement retaining walls and floors. They are applied under floor slabs and foundations and to the exterior face of basement retaining walls to prevent water vapour penetrating to the interior face in spaces where moisture may cause damage.

1.2 The products are supplied as self-adhering, cold-applied, polymer-rubber modified bitumen sheets in roll form and are applied as single or double layer systems.



Typical waterproofing using Shelterseal 3000X

Scope

2.1 Shelterseal 3000X and Shelterseal HD have been appraised for use as damp-proof membranes under basement floors and on basement walls within the following scope:

- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraphs 10.3 and 12.

2.2 Shelterseal 3000X and Shelterseal HD have also been appraised for use as damp-proof membranes under basement floors and on basement walls subject to a specific design, where:

- the substrates comply with NZS 3101 for in-situ or precast concrete or with NZS 4230 for concrete masonry.

2.3 The reinforced concrete or masonry substrates must be dry, clean, sound and continuous. The membranes must be adequately protected against damage during backfilling and in service.

2.4 Basement walls must have subsoil drainage and free draining granular backfill placed behind them.

2.5 The products must be installed by Ardex New Zealand Limited approved applicators.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Shelterseal 3000X and Shelterseal HD if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 (a) not less than 50 years. Shelterseal 3000X and Shelterseal HD meet this requirement. See Paragraph 11.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.3. Shelterseal 3000X and Shelterseal HD meet this requirement. See Paragraphs 13.1 – 13.3.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Shelterseal 3000X and Shelterseal HD meet this requirement and will not present a health hazard to people.

3.2 This is an Appraisal of an **Acceptable Solution** in terms of New Zealand Building Code compliance. The membranes comply with NZBC Acceptable Solution E2/AS1, Paragraph 10.3.3, 10.3.4, 12.2.1 (a), (b) and (c) and 12.2.2 (b). The products are also Appraised as an **Alternative Solution** as outlined in Paragraph 2.2.

Technical Specification

4.1 Materials supplied by Ardex New Zealand Limited are as follows:

Shelterseal 3000X and Shelterseal HD

- The membranes are manufactured from a bituminous asphalt compound modified with SBS (styrene-butadiene-styrene) rubber and high tack resins. The self-adhesive inner face is protected by a release paper with the outer surface protected by either a layer of cross-laminated high-density polyethylene film (Shelterseal 3000X) or a layer of polypropylene mesh (Shelterseal HD). Shelterseal HD is designed for use where a more robust system is required.
- The membranes are 1.5 mm thick, and supplied in rolls 1 metre wide by 20 metres long. The roll weight is approximately 30 kg.

Shelter Primer

- A solvent based, bitumen-modified primer. It is supplied in 5 or 20 litre containers and is coloured black.

WPM 247 Primer

- A water based, bitumen emulsion primer. It is supplied in 5 or 20 litre containers and is coloured black.

WA 98 Contact Adhesive/Primer

- A contact adhesive that can be used as a primer in difficult drying conditions. It can be spray applied. It is supplied in 4 or 20 litre containers and is coloured red or clear.

Handling and Storage

5.1 Handling and storage of all materials whether on or off site is under the control of the installer. Dry storage must be provided for all products and the membranes must be protected from sunlight and UV radiation. Rolls of membrane must be stored on end.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Shelterseal 3000X and Shelterseal HD. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

Substrate Design

7.1 Substrate design must be in accordance with the NZBC to a relevant standard, such as NZS 3101 for concrete, and NZS 4229 or NZS 4230 for concrete masonry.

7.2 The substrate must have a surface finish that is smooth, clean and free from defects or irregularities which may damage the membrane or allow water to trap behind the membrane.

Control Joints

8.1 Where control or construction joints are formed in the substrate, Ardex New Zealand Limited must be consulted for use of the membranes over these joints.

Concrete Slab-on-ground

9.1 The membranes must be laid on a minimum of 75 mm thickness of site concrete. The structural concrete slab placed over the membranes must be a minimum of 100 mm thick.

Backfilling and Drainage

10.1 The membranes must be protected against damage by the placement of a protection material between the membranes and the granular fill.

10.2 Backfilling, drainage and the backfill capping must be in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 12 when used within the scope of E2/AS1. For specific design, the minimum requirement for backfilling is that a granular, free-draining material is used with the top of the backfill capped with an impervious clay fill that may be covered with topsoil if required. The impervious capping and topsoil must slope with a minimum of 1:30 fall away from the wall.

10.3 A minimum 100 mm diameter subsoil perforated drainage pipe must be installed at the bottom of the wall. The pipe must be covered with a geotextile filter fabric, be laid at a minimum 1:200 fall and discharge to a drainage outlet. Provision for cleaning the pipe must also be provided.

Durability

Serviceable Life

11.1 Shelterseal 3000X and Shelterseal HD are suitable DPM materials (Modified bitumen sheet) as set out in NZBC Acceptable Solution E2/AS1, Paragraphs 10.3.3, 10.3.4 and 12.2.2 (b), therefore they are expected to have a serviceable life of at least 50 years provided they are installed and maintained in accordance with this Appraisal and are continually protected from sunlight and ultra-violet (UV) radiation.

Maintenance

12.1 Annual inspections must be made of the membranes top edge seal and protection, the backfill capping, and the drainage pipe to ensure all are functioning as originally designed.

12.2 If required, the drainage pipe must be cleared to remove any sediment or silt build-up. The slope of the backfill capping must be maintained at all times.

External Moisture

13.1 Shelterseal 3000X and Shelterseal HD, when installed in accordance with this Appraisal and the Technical Literature, will prevent water vapour from penetrating to the interior face of basement retaining walls and floors in spaces where moisture may cause damage. The membranes have a vapour flow resistance of not less than 90 MN s/g as required by NZBC Acceptable Solution E2/AS1, Paragraphs 10.3.3 (a) and 12.2.1 (a).

13.2 The membranes self-adhere, and can be used to form sealed joints and to seal penetrations as required by NZBC Acceptable Solution E2/AS1, Paragraphs 10.3.3 (g) and 12.2.1 (b). The top edge of the membranes must be sealed to the wall as set out in the Technical Literature, and protected.

13.3 Building designers must ensure junctions with other membranes, such as at the floor/wall junction, form a waterproof joint. These junctions have not been assessed and are outside the scope of this Appraisal.

Installation Information

Installation Skill Level Requirement

14.1 Installation of the membranes must be completed by Ardex New Zealand Limited approved applicators.

System Installation

Substrate Preparation

15.1 All surfaces must be checked to ensure they are dry, clean, smooth and free from sharp edges, loose or foreign materials, oil, grease or other deleterious material that may affect adhesion or may damage the membranes.

Priming

15.2 All substrates must be primed before application of the membranes. The supplier of the membranes, Ardex New Zealand Limited, should be contacted to confirm the most suitable primer. Application instructions for the primers are contained in the technical data sheets.

Membrane Installation - Walls

15.3 Starting at the lowest point, the membranes must be installed in accordance with the Technical Literature. Sheet edges must be overlapped a minimum of 60 mm as marked on the sheets. End laps must be a minimum of 100 mm, with upper sheets lapped over lower sheets. Internal and external corners of single layer systems must be reinforced with an extra layer of membrane 300 mm wide. Where two layer systems are specified, lap joints must be staggered. Protection material must be installed before backfilling. Backfilling must commence immediately after the membranes are installed to ensure the membranes is not left exposed to sunlight or UV radiation.

Membrane Installation - Floors

15.4 Membranes must be installed in accordance with the Technical Literature. Sheet edges must be overlapped a minimum of 60 mm as marked on the sheets and end laps must be a minimum of 100 mm. The membranes must be inspected for damage and any damage must be repaired in accordance with the Technical Literature. The membranes must not be exposed to UV radiation for any longer than two months before the structural concrete slab is placed.

Inspections

15.5 The Technical Literature and the installation company's Quality Control sheets must be referred to during the inspection of the membrane installation by building consent authorities and territorial authorities.

Health and Safety

16.1 Safe use and handling procedures for the membranes are provided in the Technical Literature.

Basis of Appraisal

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

Tests

17.1 The following testing of Shelterseal 3000X has been undertaken by the following organisations:

- Istituto Giordano S.p.A., Italy – Resistance to chemical agents, tensile properties, determination of dielectric strength, resistance to tearing, resistance to static perforation, resistance to dynamic perforation and resistance to hydrostatic pressure.
- Singapore Institute of Standards and Research – Thickness, dimensional stability, tensile properties, tensile strength at joints, puncture resistance, water absorption, pliability, water vapour transmission, hydrostatic head and resistance to leakage at joints.
- Isoltema, S.p.A., Italy – Adhesion to cement (concrete).

Test methods and results have been reviewed by BRANZ and found to be satisfactory.

17.2 The following testing of Shelterseal HD has been undertaken by the following organisations:

- Istituto Giordano S.p.A., Italy - Puncture resistance, tensile properties and elongation.
- Autostrade S.p.A., Italy – Tensile strength, elongation, resistance to dynamic perforation and cold flexibility.
- Isoltema, S.p.A., Italy – Adhesion to cement (concrete).

Test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

18.1 A durability opinion has been given by BRANZ technical experts.

18.2 Practicability of installation has been assessed by BRANZ and found to be satisfactory.

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

Quality

19.1 The manufacture of the membranes and primers have not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

19.2 The quality management system of the membrane manufacturer has been assessed and found to be satisfactory.

19.3 The quality of materials supplied to the market is the responsibility of Ardex New Zealand Limited.

19.4 Quality of installation on site is the responsibility of the Ardex New Zealand Limited approved applicator.

19.5 Designers are responsible for the building design, and building contractors are responsible for the quality of construction of substrate systems in accordance with the instructions of Ardex New Zealand Limited.

19.6 Building owners are responsible for the maintenance of the membrane systems in accordance with the instructions of Ardex New Zealand Limited.

Sources of Information

- NZS 3101: 2006 Concrete structures standard.
- NZS 4229: 1999 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230: 2004 Design of reinforced concrete masonry structures.
- 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, Department of Building and Housing, Third Edition May 2007.
- The Building Regulations 1992, up to, and including August 2008 Amendment.



BRANZ

In the opinion of BRANZ, Shelterseal 3000X and Shelterseal HD are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to Ardex New Zealand Limited, and is valid until further notice, subject to the Conditions of Appraisal.

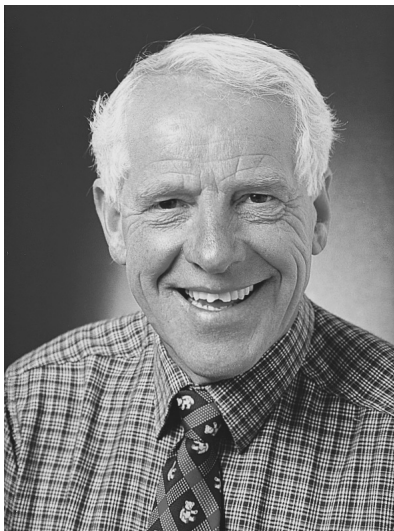
Conditions of Appraisal

1. This Appraisal:
 - 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. [Ardex New Zealand Limited](#):
 - 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.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty 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 [Ardex New Zealand Limited](#).
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to [Ardex New Zealand Limited](#) or any third party.

For BRANZ

P Burghout
Chief Executive

Date of issue: 29 April 2010



Waterproofing basements

During April and early May, BRANZ ran a seminar series throughout New Zealand on domestic concrete floor and basement construction. Some of the subjects that kept cropping up during question time all around the country related to concrete basement waterproofing.

A failure of basement waterproofing is likely to prove very expensive to put right and the cost of consequential damage may be high. Don't take risks – get it right first time!

Figure 1 illustrates the essentials for successful basement waterproofing. They are:

1. Ensure that the ground surface falls away from the building (minimum fall 1:30).
2. Maintain the proper clearance between floor and ground level as required by the NZ Building Code Acceptable Solution E2.
3. Install a continuous damp-proof membrane (DPM).
4. Provide protection to the DPM against damage by the backfill.
5. Use full depth of clean drainage metal.
6. Use a slotted drainpipe (to carry the water away) which is laid with a fall and is capable of being cleaned.

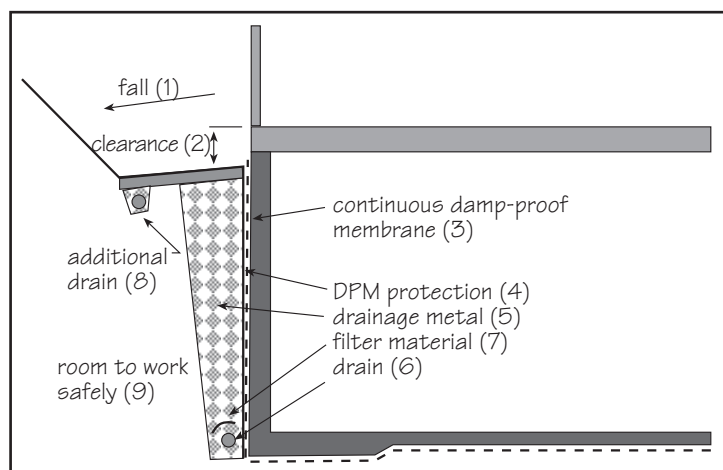


Figure 1. Basement waterproofing.

7. Install filter material above drain to prevent fine material from clogging it.
8. Install extra drain for surface drainage on very wet sites.
9. Allow sufficient space to work in safety during construction.

More detailed information is contained in the BRANZ Good Concrete Floors and Basements Practice book.

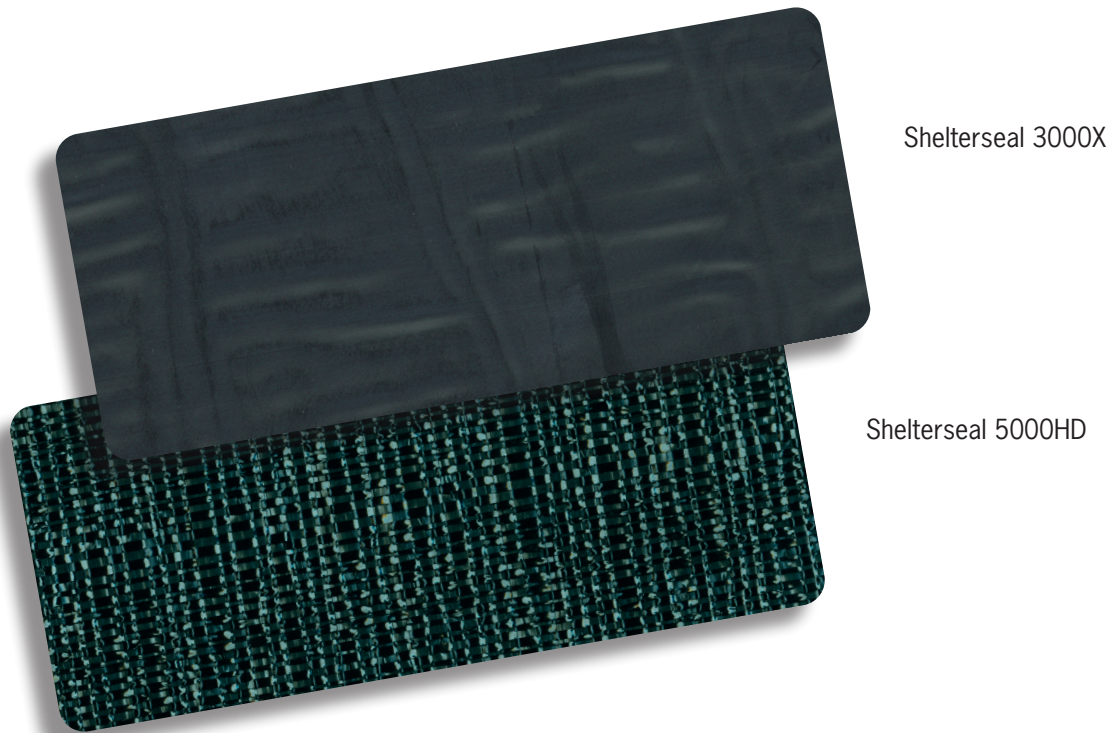
Does the seam seem seemly ?

An old chestnut is how to join a polythene sheet membrane to other types of damp-proof membrane in a concrete basement. The short answer is DON'T. The reasons are:

- Polythene is too easily damaged during the construction process to be used in a situation where it is expected to keep out water which may be under pressure.
- Unless you can obtain a written assurance from the manufacturer of the other DPM that the polythene can be successfully joined to their product, don't risk failure of the joint.
- Use one type of membrane through the whole basement including the slab and the walls.
- A polythene sheet membrane is usually chosen for its 'economy' but there is no 'cheap' solution to waterproofing a basement.
- Always use a membrane of which the manufacturer is willing to state in writing that it is suitable for your specific situation and install it in complete accordance with the manufacturer's instructions.

*Alan Bulleyment is a BRANZ Technical Writer.

ARDEX Shelterseal Range



Shelterseal is BRANZ Appraised and complies with NZBC Acceptable Solution E2/AS1.

ARDEX Shelterseal comes in two types, Shelterseal 3000X and Shelterseal 5000HD.

Both types are "peel 'n' stick" self adhesive bituminous/asphalt membranes protected by either a cross laminated high density polyethylene film (3000X) or with a layer of polypropylene mesh (5000HD).



ARDEX WPM 3000X

Shelterseal 3000X

Self Adhesive SBS Membrane

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ARDEX WPM 3000X

Shelterseal 3000X

Self Adhesive SBS Membrane



PRODUCT DESCRIPTION

ARDEX WPM 3000X (Shelterseal 3000X) is a “peel and stick” bituminous/asphalt damp proof membrane protected by a cross laminated high-density polyethylene film.

ARDEX WPM 3000X (Shelterseal 3000X) is made from two structural components

Bitumen/asphalt compound modified with SBS and high tack resins

This special compound has been formulated to make the product easy to install. The membrane can be adjusted should it initially be placed in the wrong position, as the adhesive on the sheet achieves final adhesion only after a few minutes.

Protective film

This is hot-laminated to the bituminous/asphalt compound and gives the membrane its mechanical and physical characteristics, such as heat stability, shape, chemical resistance, etc.

FEATURES/BENEFITS

Cold Application: installed without the use of open flames. Ideal for installation in restricted spaces.

Chemical resistance: the protective polymer film is highly resistant to acids, alkalis and other pollutants.

Flexibility and adaptability: this membrane will adapt easily to irregularly shaped surfaces, and will stretch up to 9% without breaking or cracking.

Self sealing: the membrane self seals on contact maintaining its watertightness.

Constant thickness: the membrane is manufactured using high-tech machinery which constantly monitors its thickness, and ensures that the films and synthetic materials are manufactured to the highest specifications and quality control requirements.

ACCEPTABLE SUBSTRATES

- Concretes, renders and screeds
- Fibre cement sheets
- Structural or marine plywood
- Polystyrene blocks

For use over other substrates including existing membranes contact ARDEX.

TYPICAL APPLICATIONS

- Planter boxes
- Foundations
- Below-ground applications
- Retaining walls

BASIC APPLICATION INSTRUCTIONS

Surface Preparation

Surfaces to which the ARDEX WPM 3000X (Shelterseal 3000X) systems are installed must be properly prepared prior to installation. All surfaces must be clean, dry, smooth, free of sharp edges, loose or foreign materials, oil, grease, and other materials that may damage the membrane. If concrete has moisture on surface use gas torch to dry and warm before priming.

Priming

Prior to the application of the membrane all prepared surfaces (except polystyrene blocks) should be primed with ARDEX WPM 240 or WPM 247 (Shelter Primer) at a rate of 5-6m² per litre and allowed to dry.

Membrane Installation

Starting at the lowest point, the membrane must be installed in accordance with the Technical Literature. Sheet edges must be overlapped a minimum of 60mm as marked on the sheets. End laps must be a minimum of 100mm, with upper sheets lapped over lower sheets. Internal and external corners of single layer systems must be reinforced with an extra layer of membrane 300mm wide. Where two layer systems are specified lap joints must be staggered. Protection material must be installed before backfilling. Backfilling must commence immediately after the membrane is installed to ensure the membrane is not left exposed to sunlight or UV radiation.

Installation of the membranes must be completed by ARDEX approved applicator. who have experience in the application of self-adhesive membranes.

Two Layer DPM System

In critical areas a specifier may require a second layer of ARDEX WPM 3000X (Shelterseal 3000X) to be applied with laps staggered to the first layer.

PLASTERING OVER SHELTERSEAL

Coat affected area with ARDEX WPM 179 (Refer to page 45). Let coating dry then apply a second coat of ARDEX WPM 179. While still wet broadcast dry sand onto the surface. Let Dry. When dry, plaster area with normal plaster system.

This is to cover any Shelterseal that is finished above ground due to slope of site. It is not intended to cover roofing applications.

SAFETY DATA

ARDEX WPM 240 (Shelter Primer) is solvent based and classified as Dangerous Goods Class 3 Packaging Group II material. It is highly flammable and should be used with appropriate safety equipment. Avoid inhalation or contact with eyes.

First Aid: If swallowed do not induce vomiting, contact a doctor or Poisons Information Centre immediately. In case of contact with eyes rinse thoroughly with water.

Spills & Leaks: Restrict access to area. Prevent material entering sewers and restricted areas. If possible cover liquid with earth, sand or absorbent material. Flush area with water.

Fire: Eliminate all sources of ignition. Firefighters should wear full protective clothing and self contained breathing apparatus with full face mask. Use dry chemicals foam or carbon dioxide to extinguish fire.

STORAGE

All rolls of ARDEX WPM 3000X (Shelterseal 3000X) whether palletised or loose should be stored in a covered area protected against sunlight and UV radiation. Rolls should be stored in a vertical position on a smooth floor so as not to damage the edges.

PACKAGING

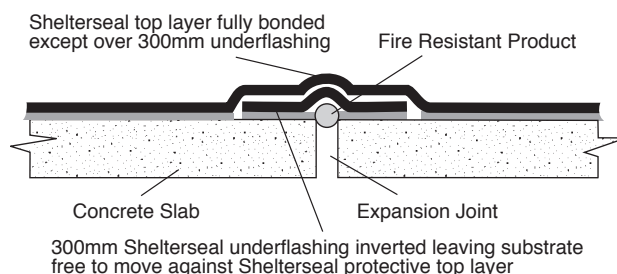
Roll size: 1m x 20m Roll weight: Approx 30kg

Other products: Shelter Primer 5 litres and 20 litres

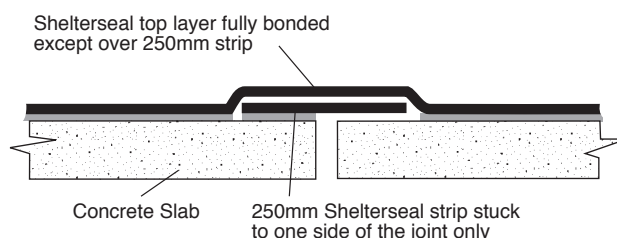
TECHNICAL PERFORMANCE DATA

Properties	Typical Values	Test Method
Thickness	1.5mm	UNI 8202
Weight	1.6kg	UNI 8202
Tensile strength long	4.35N/mm	ASTM D 638
Tensile strength trans	5.69N/mm	ASTM D 638
Longitudinal elongation of membrane	435%	ASTM D 638
Transverse elongation of membrane	380%	ASTM D 638
Tearing resistance long	83.01N	8202/9
Tearing resistance trans	73.74N	8202/9
Adhesion to primed concrete	4.9N/mm	ASTM D 1000
Adhesion to steel	5.8N/mm	ASTM D 1000
Puncture resistance	246N/65mm	ASTM E 154
Vapour transmission rate	0.3g/m/24hrs	ASTM E 96
Cold flexibility	-30°C	ASTM D 146
Environmental resistance	Conform	ASTM D 543

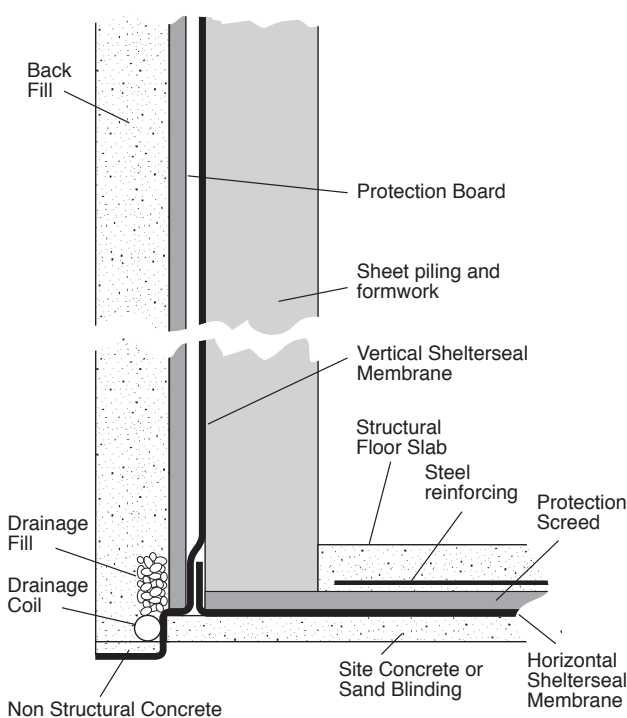
EXPANSION JOINT



CONSTRUCTION JOINT



BELOW GROUND DETAIL



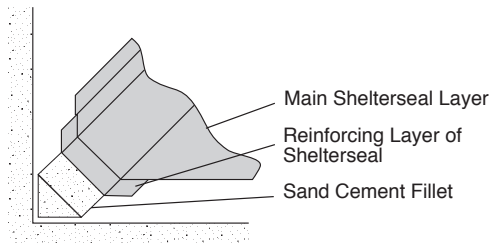
Typical details do not indicate number of layers required

ARDEX WPM 3000X

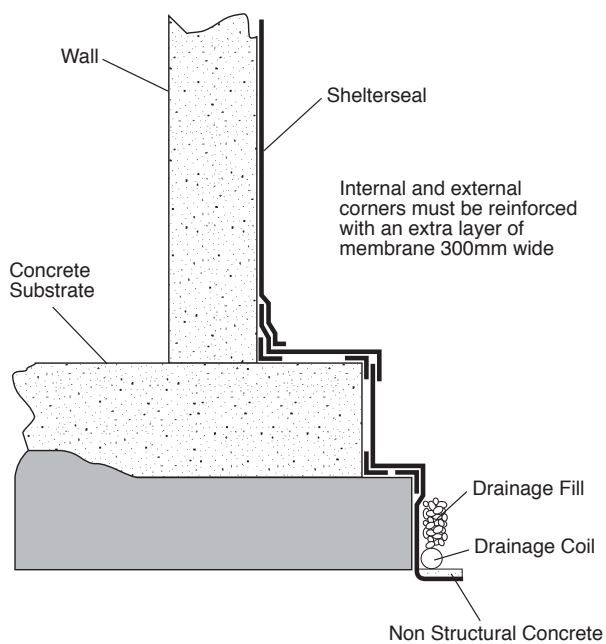
Shelterseal 3000X

Self Adhesive SBS Membrane

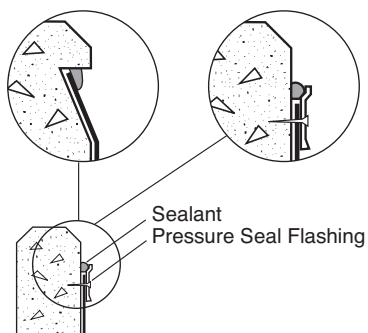
TYPICAL TURN UP DETAIL



REINFORCING OF CORNERS



FINISHING DETAIL OPTIONS





ARDEX WPM 5000HD

Shelterseal 5000HD

Self Adhesive SBS Membrane

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ARDEX WPM 5000HD

Shelterseal HD

Self Adhesive SBS Membrane



PRODUCT DESCRIPTION

ARDEX WPM 5000HD (Shelterseal HD) is an industrial strength “peel and stick” bituminous/asphalt membrane. ARDEX WPM 5000HD (Shelterseal HD) is reinforced with a layer of polypropylene mesh giving the product exceptionally high mechanical characteristics.

ARDEX WPM 5000HD (Shelterseal HD) is made from two structural components:

- Bitumen/asphalt compound modified with SBS and high tack resins
- A protective polypropylene mesh hot laminated to the bituminous/asphalt compound. This gives the membrane its mechanical and physical characteristics, such as heat and shape stability, chemical and puncture resistance

FEATURES/BENEFITS

Cold Application Installed without the use of open flames. Ideal for installation in restricted spaces.

High durability Polypropylene mesh reinforcement layer provides tough, puncture resistant finish.

Constant thickness The membrane is manufactured using the highest quality materials, standards and sheet manufacturing techniques.

Slip free surface Membrane provides an ideal, safe working surface.

ACCEPTABLE SUBSTRATES

- Concrete, renders and screeds
- Fibre cement sheets
- Structural or marine plywood

For use over other substrates including existing membranes contact ARDEX

TYPICAL APPLICATIONS

- Parking decks & car parks
- Vehicular traffic structures
- Expansion joints
- Underneath clay tiles or asphalt shingles
- Any applications where the waterproofing must have high mechanical characteristics

BASIC APPLICATION INSTRUCTIONS

Surface Preparation

Surfaces to which the ARDEX WPM 5000HD (Shelterseal HD) systems are installed must be properly prepared prior to installation. All surfaces must be clean, dry, smooth, free of sharp edges, loose or foreign materials, oil, grease, and other materials that may damage the membrane. If concrete has moisture on surface use gas torch to dry and warm before priming.

Priming

Prior to the application of the membrane all prepared surfaces except polystyrene block should be primed with ARDEX WPM 240 (Shelter Primer) at a rate of 5-6m² per litre and allowed to dry.

Membrane Installation

Starting at the lowest point, the membrane must be installed in accordance with the Technical Literature. Sheet edges must be overlapped a minimum of 60mm as marked on the sheets. End laps must be a minimum of 100mm, with upper sheets lapped over lower sheets. Internal and external corners of single layer systems must be reinforced with an extra layer of membrane 300mm wide. Where two layer systems are specified lap joints must be staggered. Protection material must be installed before backfilling. Backfilling must commence immediately after the membrane is installed to ensure the membrane is not left exposed to sunlight or UV radiation.

Installation of the membranes must be completed by tradespersons who have experience in the application of self-adhesive membranes.

Applying asphalt directly over ARDEX WPM 5000HD (Shelterseal HD)

The asphalt should be applied as soon as possible after the ARDEX WPM 5000HD (Shelterseal HD) membrane has been installed. ARDEX recommend applying a minimum 50mm compacted overlay for carpark areas. The topping should be applied at a temperature of between 120-150°C.

PLASTERING OVER SHELTERSEAL

Coat affected area with ARDEX WPM 179 (Refer to page 45). Let coating dry then apply a second coat of ARDEX WPM 179. While still wet broadcast dry sand onto the surface. Let Dry. When dry, plaster area with normal plaster system.

SAFETY DATA

ARDEX WPM 240 (Shelter Primer) is solvent based and classified as Dangerous Goods Class 3 Packaging Group II material. It is highly flammable and should be used with appropriate safety equipment. Avoid inhalation or contact with eyes.

First Aid: If swallowed do not induce vomiting, contact a doctor or Poisons Information Centre immediately. In case of contact with eyes rinse thoroughly with water.

Spills & Leaks: Restrict access to area. Prevent material entering sewers and restricted areas. If possible cover liquid with earth, sand or absorbent material. Flush area with water.

Fire: Eliminate all sources of ignition. Firefighters should wear full protective clothing and self contained breathing apparatus with full face mask. Use dry chemicals foam or carbon dioxide to extinguish fire.

STORAGE

ARDEX WPM 5000HD (Shelterseal HD) is supplied in white cardboard cartons. All rolls should be stored in a vertical position, covered area protected against UV radiation.

PACKAGING

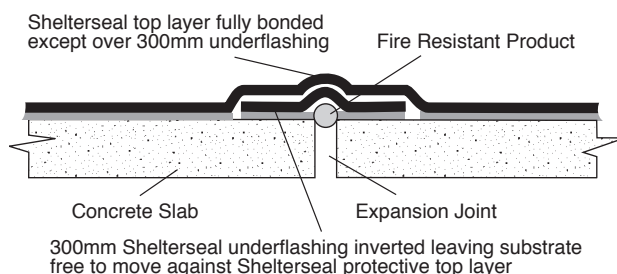
Roll size: 1m x 20m Roll weight: Approx 30kg

Other products: Shelter Primer 5 litres and 20 litres

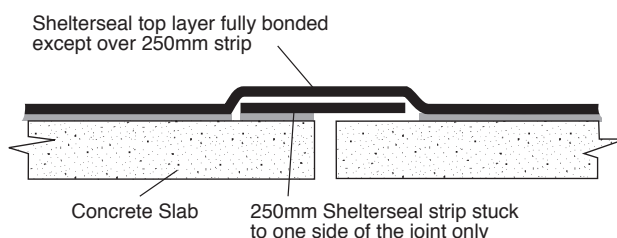
TECHNICAL PERFORMANCE DATA

Properties	Typical Values	Test Method
Thickness	1.5mm	UNI 8202
Weight	1.6kg	UNI 8202
Colour	Black	
Softening point	110°C	
Temperature resistance (maximum)	150°C	
Tensile strength (longitudinal)	152kg/8cm	
Tensile strength (transverse)	124kg/8cm	
Elongation (longitudinal)	32%	ASTM D638
Elongation (transverse)	21%	ASTM D638
Tearing (longitudinal)	350N	UNI 8202/9
Tearing (transverse)	300N	UNI 8202/9
Adhesion to primed concrete	4.9 N/mm	ASTM D1000
Adhesion to steel	5.8 N/mm	ASTM D1000
Puncture resistance	220 N/65mm	ASTM E 154
Vapour transmission rate	0.3g/m/24hrs	ASTM E 96
Cold flexibility	-30°C	ASTM D 146

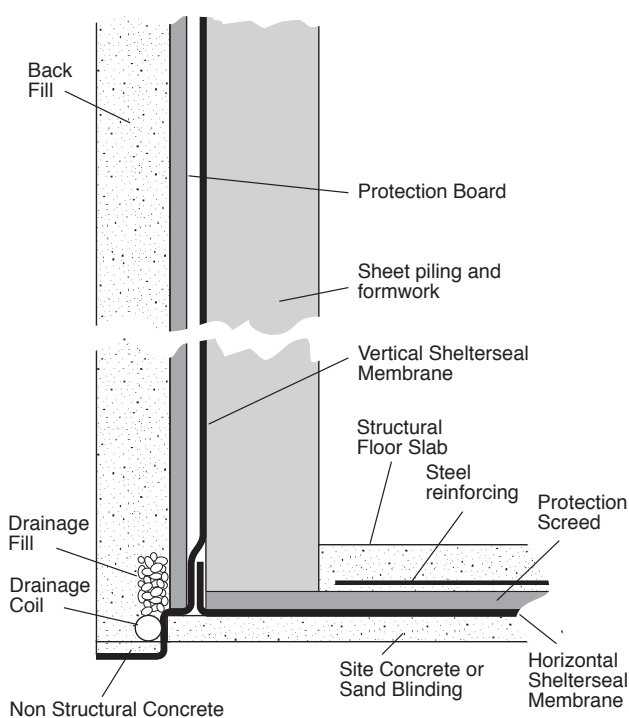
EXPANSION JOINT



CONSTRUCTION JOINT



BELOW GROUND DETAIL



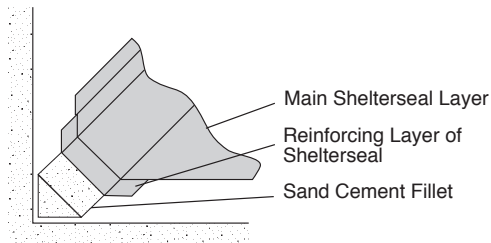
Typical details do not indicate number of layers required

ARDEX WPM 5000HD

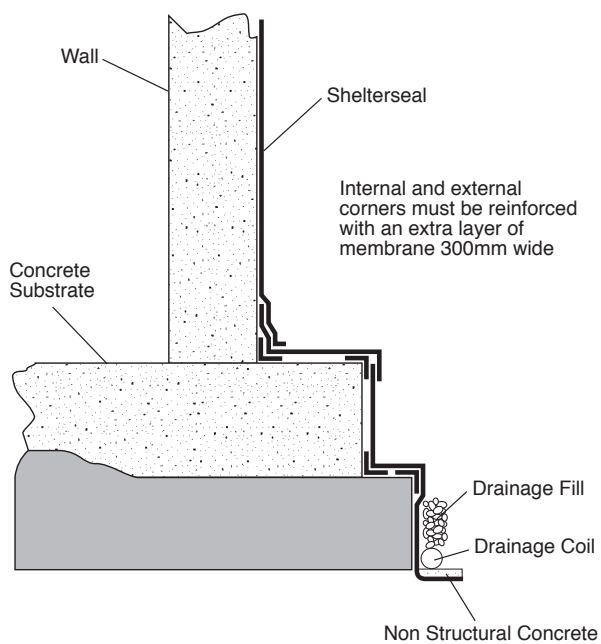
Shelterseal HD

Self Adhesive SBS Membrane

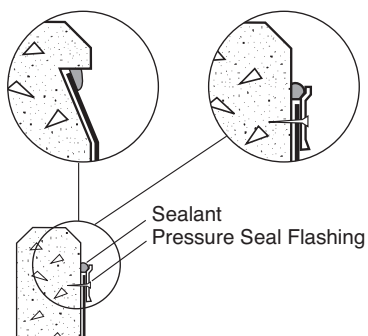
TYPICAL TURN UP DETAIL



REINFORCING OF CORNERS



FINISHING DETAIL OPTIONS





ARDEX WPM 240

Shelter Primer

Solvent Based Primer

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ARDEX WPM 240

Shelter Primer Solvent Based Primer

PRODUCT DESCRIPTION

ARDEX WPM 240 (Shelter Primer) is a solvent based bitumen modified primer to be used to seal and prepare the substrate prior to the installation of the Shelterbit torch-on and Shelterseal self adhesive membranes.

APPLICATION

Ensure that the surface to be primed is dry and free from dust, oil, paint, curing compounds and any other contaminating materials. Stir contents well before use. Apply by brush, roller or airless spray. ARDEX WPM 240 (Shelter Primer) must be dry before applying membrane.

COVERAGE

1 litre of ARDEX WPM 240 (Shelter Primer) will cover approximately 5m².

DRYING TIME

Allow 1-2 hours @ 23°C.

LIMITATIONS

ARDEX WPM 240 (Shelter Primer) should be used with appropriate mask and breathing apparatus in areas with poor ventilation/air flow.

PACKAGING

5L and 20L

STORAGE

12 months in the original unopened packaging stored @ 23°C.

IDENTIFICATION

Black liquid comprising bitumen dissolved in mineral spirits.

CLEAN UP

Wash equipment with ARDEX WA98S.

SAFETY DATA

First Aid:

Swallowed: Give water to clean mouth. Do not induce vomiting.

Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water.

Eyes: Hold open and flood with water for at least 15 minutes.

Inhalation: Remove to fresh air. If breathing is difficult administer oxygen.

If irritation continues seek medical attention promptly.



Liquid Membranes

3-27	Superflex Liquid System
4-13	Superflex Internal BRANZ Appraisal Superflex External BRANZ Appraisal
15-30	Ardex WPM 001 15 001 Bathroom & Balcony Premix - 1 Part 23 002 Bathroom & Balcony - 2 Part
31-34	Ardex WPM 155 Rapid 31 Undertile PU Membrane
35-36	Ardex WPM 240 35 Shelter Primer
37-38	Ardex WPM 247 37 Ardex WPM 247
39-42	Ardex WPM 179 39 Single Component Rubber
43-46	Ardex WPM 265 43 265 Water Based Primer
47-54	Ardex WPM 300 47 300 Epoxy Barrier Coating 51 368 Single Part Barrier Membrane
55-57	Ardex WPM 163 55 Single Component Acrylic Sealer



Superflex Liquid System

Undertile Waterproofing Membranes for Internal & External use

BRANZ Appraised

Certificate numbers 472 (2011), 473 (2011)

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BRANZ Appraised

Appraisal No.472 [2011]

BRANZ Appraisals

Technical Assessments of products
for building and construction

**BRANZ
APPRAISAL
No. 472 (2011)**

Amended 27 March 2015

**SUPERFLEX™ WET
AREA MEMBRANES**

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Product

1.1 Superflex™ Wet Area Membranes are premixed and two-part, liquid applied waterproofing membranes for use under ceramic or stone finishes in internal wet areas.



Scope

2.1 Superflex™ Wet Area Membranes have been appraised for use as waterproofing membranes for internal wet areas of buildings, within the following scope:

- on floor substrates of concrete, flooring grade particleboard, plywood, and fibre cement sheet tile underlay, and on wall substrates of wet area fibre cement sheet lining systems and wet area plasterboard lining systems; and,
- when protected from physical damage by ceramic or stone tile finishes; and,
- where floors are designed and constructed such that deflections do not exceed 1/360th of the span.

2.2 The use of Superflex™ Wet Area Membranes on concrete slabs where hydrostatic or vapour pressure is present is outside the scope of this Appraisal.

2.3 Building structural movement and control joints in the substrate must be carried through to the tile finish. The design and construction of the substrate and movement and control joints are specific to each building, and therefore the responsibility of the building designer and building contractor and are outside the scope of this Appraisal.

2.4 Ceramic or stone tile finishes are outside the scope of this Appraisal.

2.5 The membranes must be installed by Ardex New Zealand Ltd trained and approved applicators.

Building Regulations

New Zealand Building Code (NZBC)

3.1 in the opinion of BRANZ, Superflex™ Wet Area Membranes if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years. Superflex™ Wet Area Membranes meet this requirement. See Paragraph 9.1.

Clause E3 INTERNAL MOISTURE: Performance E3.3.6. Interior wet area floors and walls incorporating Superflex™ Wet Area Membranes will meet this requirement. See Paragraphs 11.1 - 11.6.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Superflex™ Wet Area Membranes meet this requirement and will not present a health hazard to people.

This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

Technical Specification

4.1 Materials supplied by Ardex New Zealand Ltd are as follows:

Superflex™ WPM001 Premixed Bathroom and Balcony

- A one part, polymer-based, ready-to-use, liquid-applied membrane containing micro-fibres, supplied as a light blue thixotropic paste in 6.5 kg (approximately 5 litres) and 20 kg (approximately 15 litres) pails.

Superflex™ WPM002 Two Part Bathroom and Balcony

- A fast drying, two part, flexible, cementitious-based, liquid applied membrane containing micro-fibres. It is supplied as Superflex™ WPM002 Part A Liquid in 10 and 20 kg pails and Superflex™ WPM002 Part B Powder in 10 kg multi-wall bags. When dry, the membrane is light grey in colour.

WPM 155 Rapid

- A one part, water-based polyurethane-acrylic, ready-to-use, liquid applied, rapid setting membrane. It is supplied as blue/grey colour in 4 and 15 litre pails.

Ardex STB Tape

- A uncured butyl tape with a fleece layer that is used in the ARDEX WPM 155 Rapid under tile waterproofing system.

Superflex™ Primer

- A water-based primer used to seal substrates and enhance the adhesion of the membranes. It is supplied as a red coloured liquid in 20 kg plastic containers.

Handling and Storage

5.1 All materials must be stored inside, up off concrete floors, in dry conditions, out of direct sunlight and out of freezing conditions. The membrane products have a shelf life of 12 months from date of manufacture in the original unopened packaging. Once opened, the products must be used within 3 months.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the Superflex™ Wet Area Membranes. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

7.1 Superflex™ Wet Area Membranes are for use in buildings where an impervious waterproof membrane is required to floors and walls to prevent damage to building elements and adjoining areas.

7.2 Superflex™ WPM002 Two Part and WPM 155 Rapid are designed to be used where a quicker curing time is required, such as in cool or humid conditions.

7.3 The membranes must be protected from physical damage by the application of ceramic or stone tile finishes.

7.4 Movement and control joints may be required depending on the shape and size of the building or room, and the tile finish specified. Design guidelines can be found in the BRANZ "Good Practice Guide Tiling".

7.5 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 AS/NZS 1170. In all cases framing must be provided so that the maximum span of the substrate as specified by the substrate manufacturer is met and all sheet edges are fully supported. Timber framing systems supporting the substrates must be constructed such that deflections do not exceed 1/360th of the span. Where NZS 3604 is used, the allowable joist spans given in Table 7.1 shall be reduced by 20%.

Substrates

Plywood

8.1 Plywood must be a minimum of 17 mm thick complying with AS/NZS 2269, CD Grade Structural with sanded C face upwards and treated to H3 (CCA treated). LOSP treated plywood must not be used. The plywood must be supported with dwangs or framing with a maximum span of 400 mm in each direction, fixed with 10g x 50 mm stainless steel countersunk head screws at 150 mm centres on the edges and 200 mm through the body of the sheets.

Fibre Cement Compressed Sheet/Fibre Cement Sheet Tile Underlay

8.2 Fibre cement compressed sheet must be manufactured to comply with the requirements of AS 2908.2 and must be specified by the manufacturer as being suitable for use as a wet area substrate. Fibre cement sheet tile underlay must be covered by a valid BRANZ Appraisal for use in internal wet areas. Installation must be in accordance with manufacturer's instructions.

Particleboard

8.3 Particleboard must be specified for the end use in accordance with NZS 3602.

Concrete and Concrete Masonry

8.4 Concrete and concrete masonry substrates must be to a specific engineering design meeting the requirements of the NZBC, such as concrete construction to NZS 3101 and NZS 3604 Concrete Slab-On-Ground Floors and Concrete masonry to NZS 4229 and NZS 4230.

Wet Area Wall Linings

8.5 Plasterboard wall linings must be manufactured to comply with AS/NZS 2588, and be covered by a valid BRANZ Appraisal for use in internal wet areas.

8.6 Fibre Cement Sheet must be covered by a valid BRANZ Appraisal for use in wet areas.

Durability

Serviceable Life

9.1 Superflex™ Wet Area Membranes, when subjected to normal conditions of environment and use, are expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tile finishes with a design service life of 15-25 years.

Maintenance

10.1 No maintenance of the membranes will be required provided significant substrate movement does not occur and the tile finish remains intact. Regular checks must be made of the tiled areas to ensure they are sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately by repairing the tiles, grouts and sealants.

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

10.3 Drainage outlets must be maintained to operate effectively, and ceramic or stone tile finishes must be kept clean.

Internal Moisture

11.1 Superflex™ Wet Area Membranes are impervious to water and when appropriately designed and installed will avoid the likelihood of water penetrating behind linings or entering concealed spaces.

11.2 Superflex™ Wet Area Membranes are suitable for use to contain accidental overflow to meet NZBC Clause E3.3.2. A means of Code Compliance for overflow is given in NZBC Acceptable Solution E3/AS1 Paragraph 2.

11.3 Surfaces must be finished with ceramic or stone tile finishes. A means of Code Compliance to NZBC Clause E3.3.3 and E3.3.4 is given in NZBC Acceptable Solution E3/AS1 Paragraph 3.1.1 (b), 3.1.2 (b) and 3.3.1 (b).

11.4 Falls in showers and shower areas must be a minimum of 1 in 50. In unenclosed showers, falls must extend a minimum of 1500 mm out from the shower rose. Floor wastes must be provided and the floor must fall to the outlet.

11.5 The waterproofing membrane must completely cover shower bases, and for unenclosed showers it must extend a minimum of 1500 mm out from the shower rose. Further design guidance on waterproofing wet areas, including waterproofing walls and junctions can be obtained from AS 3740, BRANZ "Good Practice Guide Tiling", and flooring and wallboard manufacturers.

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

Installation Information

Installation Skill Level Requirement

12.1 Installation of the membranes must be completed by Ardex New Zealand Ltd trained and approved applicators.

12.2 Installation of substrates must be completed by tradespersons with an understanding of internal wet area construction, in accordance with instructions given within the Ardex New Zealand Ltd Technical Literature and this Appraisal.

Preparation of Substrates

13.1 Substrates must be dry, clean and stable before installation commences. With surfaces that are even and free from nibs, sharp edges, dust, dirt or other materials such as oil, grease or concrete formwork release agents.

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

13.3 All voids, cracks, holes, joints and excessively rough areas must be filled to achieve an even and uniform surface. Junctions of substrate abutments, such as at wall/floor and wall/wall junctions must have fiberglass mesh installed as set out in the Technical Literature.

Membrane Installation

14.1 Installation must not be undertaken where the substrate surface temperature is below 10°C or above 35°C.

14.2 Superflex™ WPM002 Two Part Bathroom and Balcony liquid and dry components must be mixed and left to stand for 5 minutes before re-mixing, then applying. Superflex™ WPM001 Premixed Bathroom and Balcony and WPM 155 Rapid must be thoroughly stirred before application.

14.3 The membranes must be applied in a minimum of two coats at the rates set out in the Technical Literature to give a total finished thickness of 1.0 - 1.5 mm. Subsequent coats must be applied at an opposite direction to the previous coat.

14.4 Application can be made by roller (medium/long nap), brush (long bristle), or a flat steel trowel.

14.5 Reinforcement fabric is bedded into the wet layer between coats to provide movement protection at wall/wall and wall/floor junctions, and at any other areas such as joints in the flooring substrate, floor cracks or around penetrations in the membrane. ARDEX STB Tape must be used with WPM 155 to take advantage of the rapid/fast drying features.

14.6 Clean up may be undertaken with water.

Tiling

15.1 The membranes must be fully cured before tiling. The cured membranes must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.

15.2 Tiling must be undertaken in accordance with AS 3958.1 and the BRANZ "Good Practice Guide, Tiling". The compatibility of tile adhesive must be confirmed with the adhesive manufacturer or Ardex New Zealand Ltd.

Inspections

16.1 Critical areas of inspection 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, particularly installation to the correct thickness and use of reinforcement.
- Membrane curing and integrity prior to the installation of tiles including protection from mechanical damage during curing and prior to tile installation.

Health and Safety

17.1 Safe use and handling procedures for the membranes are provided in the Technical Literature. The materials must be used in conjunction with the relevant Material Safety Data Sheet.

Basis of Appraisal

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

Tests

18.1 The following testing of Superflex™ WPM001 Premixed Bathroom and Balcony and Superflex™ Two Part Bathroom and Balcony has been undertaken by Ardex Australia Pty Ltd research and development laboratory: water vapour transmission; water absorption; tensile strength and elongation before and after UV exposure, immersion in bleach, immersion in industrial detergent and immersion in water. Test methods and results were reviewed by BRANZ and found to be satisfactory.

18.2 The following testing of Superflex™ WPM001 Premixed Bathroom and Balcony was undertaken by the Commonwealth Scientific Industrial Research Organisation (CSIRO) Australia:

- In accordance with ANSI A118.10 for ICBO Evaluation Service - dimensional stability; waterproofness; shear strength to ceramic tile and cement mortar; and fungal and micro-organism resistance.

- In accordance with AS 1145 - behaviour under cyclic strain.

18.3 Testing of Superflex™ WPM001 Premixed Bathroom and Balcony and Superflex™ WPM002 Two Part Bathroom and Balcony has been undertaken by BRANZ for low temperature flexibility and peel adhesion after heat/humidity aging.

18.4 The following testing of WPM 155 Rapid was undertaken by various organisations:

- Durability testing to AS/NZS 4858 Appendix A including effect of heat aging, bleach, detergent and water on tensile strength and elongation.
- Cyclic movement resistance requirements of AS/NZS 4858:2004 Appendix B.
- Water Vapour Transmission using both wet and dry cup methods from ASTM E96.
- Water transmission behaviour following the procedures of AS/NZS 4858 Appendix C.

The above test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

19.1 An assessment was made of the durability of the Superflex™ Wet Area Membranes by BRANZ technical experts.

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

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

Quality

20.1 The manufacture of the 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.

20.2 The quality management system of membrane's manufacturer has been assessed and found to be satisfactory.

20.3 The quality of supply of the membrane system materials to the market is the responsibility of Ardex New Zealand Ltd.

20.4 Quality on site is the responsibility of the Ardex New Zealand Ltd approved and trained applicators.

20.5 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 New Zealand Ltd and this Appraisal.

20.6 Building owners are responsible for the maintenance of the tiling or stone finishing systems in accordance with the instructions of Ardex New Zealand Ltd.

Sources of Information

- AS 2908.2: 2000 Cellulose-cement products - flat sheet.
- AS 3740 - 2010 Waterproofing of wet areas within residential buildings.
- AS 3958.1: 1991 Guide to the installation of ceramic tiles.
- AS/NZS 1170: 2002 Structural design actions.
- AS/NZS 2269: 2008 Plywood - Structural.
- AS/NZS 4858 - 2004 Wet area membranes.
- NZS 3101: 2006 The design of concrete structures.
- NZS 3602: 2003 Timber and wood-based products for use in buildings.
- NZS 3604: 2011 Timber-framed buildings.
- NZS 4229: 1999 Concrete masonry buildings not requiring specific engineering design.
- NZS 4230: 1990 Code of practice for the design of masonry structures.
- Acceptable Solutions and Verification Methods for New Zealand Building Code External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 (Amendment 6, 14 February 2014).
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents.
- The Building Regulations 1992.
- Good Practice Guide Tiling, BRANZ, March 2004.
- Good Practice Guide Membrane Roofing, BRANZ, October 2003.



BRANZ

In the opinion of BRANZ, **Superflex™ Wet Area Membranes** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Ardex New Zealand Ltd**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - 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. **Ardex New Zealand:**
 - 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.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty 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 **Ardex New Zealand**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Ardex New Zealand** or any third party.

For BRANZ

P Burghout
Chief Executive

Date of issue: 15 April 2011

Amendment No. 1, dated 31 January 2012.

This Appraisal has been amended to update clause changes as required by the introduction of NZS 3604: 2011 and NZBC Acceptable Solution E2/AS1 Third Edition, Amendment 5.

Amendment No. 2, dated 27 March 2015.

This Appraisal has been amended to add WPM 155 Rapid.



BRANZ Appraised

Appraisal No.473 [2011]

BRANZ Appraisals

Technical Assessments of products
for building and construction

**BRANZ
APPRAISAL
No. 473 (2011)**

**SUPERFLEX™
EXTERNAL
WATERPROOFING
MEMBRANES**

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Product

1.1 Superflex™ External Waterproofing Membranes are liquid applied waterproofing membranes for use under ceramic or stone tile finishes on external decks and balconies.



Scope

2.1 Superflex™ External Waterproofing Membranes have been appraised for use as a waterproofing membrane for buildings within the following scope:

- scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with respect to building height and maximum floor plan areas; and,
- with timber supporting structures designed and constructed in accordance with the NZBC; and,
- with a substrate of fibre cement compressed sheet; and,
- with decks that have a maximum size of 40m².

2.2 Superflex™ External Waterproofing Membranes have also been appraised for use as a waterproofing membrane for external reinforced concrete 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.

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

- constructed to suitable falls (Refer Paragraph 12.3 – 12.9); and,
- with the membranes continually protected from exposure to UV (ultra violet) light and from physical damage by ceramic or stone tile finishes; and,
- with decks and balconies designed and constructed such that deflections do not exceed 1/360th of the span; and,
- with no steps within the deck level, no integral roof gardens and no down pipe discharging directly onto the deck.

2.4 Building structural movement and control joints in the substrate must be carried through to the tile finish. The design and construction of the substrate and movement and control joints are specific to each building, and therefore the responsibility of the building designer and building contractor and are outside the scope of this Appraisal.

2.5 Ceramic or stone tile finishes are outside the scope of this Appraisal.

2.6 The membranes must be installed by Ardex New Zealand Ltd approved and trained applicators.

Readers are advised to check the validity of this Appraisal by referring to the Valid Appraisals listing on the BRANZ website, or by contacting BRANZ.

Building Regulations

New Zealand Building Code (NZBC)

3.1 In the opinion of BRANZ, Superflex™ External Waterproofing Membranes, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 (b) 15 years. Superflex™ External Waterproofing Membranes will meet this requirement. See Paragraph 9.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.1 and E2.3.2. Decks and balconies incorporating Superflex™ External Waterproofing Membranes will meet these requirements. See Paragraphs 12.3 – 12.9.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Superflex™ External Waterproofing Membranes will meet this requirement and will not present a health hazard to people.

3.2 This is an Appraisal of an **Alternative Solution** in terms of New Zealand Building Code compliance.

Technical Specification

4.1 Materials supplied by Ardex New Zealand Ltd are as follows:

Superflex™ WPM001 Premixed Bathroom and Balcony

- A one part, polymer-based, ready-to-use, liquid-applied membrane containing micro-fibres, supplied as a light blue thixotropic paste in 6.5 kg (approximately 5 litres) and 20 kg (approximately 15 litres) pails.

Superflex™ WPM002 Two Part Bathroom and Balcony

- A fast drying, two part, flexible, cementitious-based, liquid applied membrane containing micro-fibres. It is supplied as Superflex™ WPM002 Part A Liquid in 10 and 20 kg pails and Superflex™ WPM002 Part B Powder in 10 kg multi-wall bags. When dry, the membrane is light grey in colour.

Superflex™ Primer

- A water-based primer used to seal substrates and enhance the adhesion of the membranes. It is supplied as a red coloured liquid in 20 kg plastic containers.

Handling and Storage

5.1 All materials must be stored inside, up off concrete floors, in dry conditions, out of direct sunlight and out of freezing conditions. The materials in the original unopened packaging have a shelf life of 12 months from date of manufacture. Once opened, the materials must be used within 3 months.

Technical Literature

6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Superflex™ External Waterproofing Membranes. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

7.1 Superflex™ External Waterproofing Membranes are for use on decks and balconies where an impervious waterproof membrane is required to prevent damage to building elements and adjoining areas.

7.2 The membranes must be protected from exposure to UV light and from physical damage by ceramic or stone tile finishes.

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, Membrane Roofing”

7.4 Movement and control joints may be required depending on the shape and size of the deck, and the finish specified. Design guidelines for control joints for tiles can be found in the BRANZ “Good Practice Guide, Tiling”.

7.5 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 AS/NZS 1170. 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. Timber framing systems supporting the substrates must be constructed such that deflections do not exceed 1/360th of the span. Where NZS 3604 is used, the allowable joist spans given in Table 7.1 shall be reduced by 20%.

Substrates

Fibre Cement Compressed Sheet

8.1 Fibre cement compressed sheet must be manufactured to comply with the requirements of AS 2908.2 and must be specified by the manufacturer as being suitable for use as an external decking substrate. The fibre cement sheet must be of a thickness to meet specific structural design requirements and must be secured to the structure to resist wind uplift and all other forces acting on the deck or balcony, such as deflection from gravity and live loads. Installation must be in accordance with instructions of the manufacturer.

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 Superflex™ External Waterproofing Membranes, when subjected to normal conditions of environment and use, are expected to have a serviceable life of at least 15 years and be compatible with ceramic or stone tiling finishes with a design service life of 15-25 years.

Maintenance

10.1 No maintenance of the membrane will be required provided significant substrate movement does not occur and the tile finish remains intact. Regular checks must be made of the tiling to ensure it is sound and will not allow moisture to penetrate. Any cracks or damage must be repaired immediately by repairing the tiling and any grout or sealant.

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

10.3 Drainage outlets must be maintained to operate effectively, and tile finishes must be kept clean. Cleaning materials that may affect polymer based membranes must not be used.

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 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 gives details aligned with NZBC Acceptable Solution E2/AS1.

12.2 When installed in accordance with this Appraisal and the Technical Literature, Superflex™ External Waterproofing Membranes will prevent the penetration of water and will therefore meet code compliance with NZBC Clause E2.3.2. The membrane is impervious to water and will give a weathertight deck or balcony.

12.3 The minimum fall to decks, balconies and gutters must be 1 in 60 and all falls must slope to an outlet. Inadequate falls will allow moisture to collect and increase the risk of deterioration of the membrane and tiling finish.

12.4 Superflex™ External Waterproofing Membranes are impermeable; therefore a means of dissipating construction moisture must be provided in the building design and construction to meet code compliance with NZBC Clause E2.3.6.

12.5 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 Appraisal.

Installation Information

Installation Skill Level Requirement

13.1 Installation of the membranes must be completed by Ardex New Zealand Ltd approved and trained applicators that have experience in the application of waterproofing membranes and understand waterproofing principles.

13.2 Installation of substrates must be completed by tradespersons with an understanding of deck and balcony construction, in accordance with instructions given within the Ardex New Zealand Ltd Technical Literature and this Appraisal.

Preparation of Substrates

14.1 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.

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

14.3 The moisture content of a timber substructure must be a maximum of 20% and fibre cement must be dry with no ponding water at time of membrane application. This will generally require the fibre cement sheets to be covered until just before the membranes are laid, to prevent rain wetting.

Membrane Installation

15.1 Installation must not be undertaken where the substrate surface temperature is below 10°C or above 35°C.

15.2 Superflex™ WPM002 Two Part Bathroom and Balcony liquid and dry components must be mixed and left to stand for 5 minutes before re-mixing, then applying. Superflex™ WPM001 Premixed Bathroom and Balcony must be thoroughly stirred before application.

15.3 The membranes must be applied in a minimum of two coats at the rates set out in the Technical Literature to give a total finished thickness of 1.5 mm. Subsequent coats must be applied in an opposite direction to the previous coat.

15.4 Application can be made by roller (medium/long nap), brush (long bristle), or a flat steel trowel.

15.5 Reinforcement fabric is bedded into the wet layer between coats to provide movement protection at wall/wall and wall/floor junctions, or any other areas such as joints in the flooring substrate, floor cracks, or around penetrations in the membrane.

15.6 It is strongly recommended to protect the membranes with temporary covers until it is fully cured in case of mechanical damage or rain wetting.

15.7 Clean up may be undertaken with water.

Tiling

16.1 The membranes must be fully cured before tiling. The cured membranes must be protected at all times to prevent mechanical damage, so may require temporary covers until the finishing is completed.

16.2 Tiling must be undertaken in accordance with AS 3958.1 and the BRANZ "Good Practice Guide, Tiling". The compatibility of tile adhesive must be confirmed with the adhesive manufacturer or Ardex New Zealand Ltd.

Inspections

17.1 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, particularly installation to the correct thickness and use of reinforcement.
- Membranes curing and integrity prior to the installation of tiles, including protection from moisture, frost and mechanical damage during curing.

Health and Safety

18.1 Safe use and handling procedures for the membrane systems are 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 The following testing of Superflex™ WPM001 Premixed Bathroom and Balcony and Superflex™ WPM003 Two Part Bathroom and Balcony has been undertaken by Ardex Australia Pty Ltd research and development laboratory: water vapour transmission; water absorption; tensile strength and elongation before and after UV exposure, immersion in bleach, immersion in industrial detergent and immersion in water. Test methods and results were reviewed by BRANZ and found to be satisfactory.

19.2 The following testing of Superflex™ WPM001 Premixed Bathroom and Balcony was undertaken by the Commonwealth Scientific Industrial Research Organisation (CSIRO) Australia:

- In accordance with ANSI A118.10 for ICBO Evaluation Service - dimensional stability; waterproofness; shear strength to ceramic tile and cement mortar; and fungal and micro-organism resistance.
- In accordance with AS 1145 – behaviour under cyclic strain.

19.3 Testing of Superflex™ WPM001 Premixed Bathroom and Balcony and Superflex™ 3 Two Part Bathroom and Balcony has been undertaken by BRANZ for low temperature flexibility and peel adhesion after heat/humidity aging.

The above test methods and results have been reviewed by BRANZ and found to be satisfactory.

Other Investigations

20.1 An assessment was made of the durability of the Superflex™ External Waterproofing Membranes by BRANZ technical experts.

21.2 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 membrane has not been examined by BRANZ, and details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.

21.2 The quality management system of the membrane's manufacturer has been assessed by BRANZ and found to be satisfactory.

21.3 The quality of supply of the membrane system materials to the market is the responsibility of Ardex New Zealand Ltd.

21.4 Quality on site is the responsibility of the Ardex New Zealand Ltd approved and trained applicators.

21.5 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 New Zealand Ltd and this Appraisal.

21.6 Building owners are responsible for the maintenance of the tiling systems in accordance with the instructions of Ardex New Zealand Ltd.

Sources of Information

- AS 2908.2: 2000 Cellulose-cement products – Flat sheet.
- AS 3958.1: 1991 Guide to the installation of ceramic tiles.
- AS/NZS 1170: 2002 Structural design actions.
- AS/NZS 4858 - 2004 Wet area membranes.
- NZS 3101: 1995 The design of concrete structures.
- NZS 3604: 1999 Timber framed buildings.
- NZS 3604: 2011 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 Department of Building and Housing, Third Edition May 2007.
- The Building Regulations 1992, up to, and including August 2008 Amendment.
- Good Practice Guide Tiling, BRANZ, March 2004.
- Good Practice Guide Membrane Roofing, BRANZ, October 2003.



BRANZ

In the opinion of BRANZ, **Superflex™ External Waterproofing Membranes** are fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided they are used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Ardex New Zealand Ltd**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - 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. **Ardex New Zealand Ltd**:
 - 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.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty 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 **Ardex New Zealand Ltd**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Ardex New Zealand Ltd** or any third party.

For BRANZ

P Burghout
Chief Executive

Date of issue: 15 April 2011



ARDEX WPM 001

Superflex Bathroom & Balcony Premixed - 1 Part

Single Component Undertile Waterproofing Membrane

BRANZ Appraised

Low VOC content – meets Green Building Council of
Australia Green Star IEQ-13 requirements

Fast drying one part acrylic membrane

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

ARDEX WPM 001

Superflex Bathroom & Balcony Premixed - 1 Part Undertile Waterproofing Membrane



PRODUCT DESCRIPTION

Ardex WPM 001 (Superflex Bathroom & Balcony Premixed 1 Part) is a tough, ready to use waterproofing membrane specifically designed for use under tiles. Ardex WPM 001 has been uniquely formulated with synthetic microfibres to increase its strength and eliminate the need for a separate reinforcement mat. Ardex WPM 001 is based on the most advanced acrylic polymer technology, and is totally resistant to re-emulsification once cured.

Ardex WPM 001 is flexible, safe to use, low in odour, and is fully compatible with polymer modified tile adhesives. Ardex WPM 001 is one of the fastest drying one part acrylic membranes on the market – normally ready to tile in 48 hours @ 23°C.

Ardex WPM 001 meets the Green Building Council of Australia Green Star IEQ-13 requirements for Architectural Sealant when tested in accordance with SCAQMD Method 304-91 Determination of Volatile Organic Compounds (VOC) in Various Materials as referenced by South Coast Air Quality Management Division (SCAQMD) Rule 1168.

FEATURES/BENEFITS

- Fast drying Ardex WPM 001 can be tiled over in 48 hours in non critical areas*
- Liquid reinforced: Excellent strength, eliminates need for reinforcing mat
- Flexible: Accommodates normal building movement class 3 membrane as per AS/NZ 4858: 2004 Wet Area Membranes
- Advanced acrylic: Will not re-emulsify once cured
- Designed for tiling - Fully compatible with Ardex tile adhesive systems
- Water based, safe to use, low odour & easy cleaning
- CSIRO Appraisal #91 for undertile waterproofing in shower recesses
- Conforms to the requirements of AS/NZ 4858: 2004 Wet Area Membranes.
(Ref: CSIRO Report 3779)

*Critical areas include areas where the membrane is applied at greater than 0.5mm or over impermeable substances such as over bond breakers or incorporating other reinforcement. Longer drying times are necessary in these areas.

APPLICATION RANGE

Performance Levels

Commercial and residential

Location

Internal wet areas, balconies, decks, and other areas that will be tiled or otherwise protected from regular foot traffic.

Surfaces

Walls & floors

Substrates

Concrete

Cured for min. 28 days or sealed when set with one coat of Ardex WPM 300 (HydrEpoxy 300) at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. External wet concrete should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 as above.

Renders and screeds

Cured for min. 7 days or sealed when set with one coat of Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet render should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 as above.

Fibre cement

Suitable for wet area grade fibre cement.

Plasterboard

Wet area grade only.

Plywood

Structural plywood (PAA branded), marine grade or other wet area grade only.

Strandsarking

Strandsarking sheets are 3.60m x 800mm x 16.3mm. Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

TABLE 1

	Thickness per Coat		Total Dry Film Thickness (2 coats)	Theoretical Coverage		Per Unit
	Dry Film	Wet Film		Per coat	For 2 coats	
FLOORS	0.5mm	1.0mm	1.0mm	15m ²	7.5m ²	20kg(15L) unit
WALLS	0.25mm	0.5mm	0.5mm	30m ²	15m ²	20kg(15L) unit

Particleboard

Wet area grade, internal use only (special preparation is required – contact Ardex).

Permanent

In conditions of permanent immersion,

Immersion

It is recommended that Ardex WPM 002 (Superflex Two Part) is used. Must be covered with tiles for full immersion.

Contact Ardex for use over existing membranes, covering materials, and any other substrates not listed.

SPECIFICATION CLAUSE**ARDEX WPM 001 (Superflex Premixed)**

The waterproofing membrane shall be Ardex WPM 001: a one part acrylic modified fibre reinforced membrane formulated to provide a tough, long lasting water barrier under tiling systems.

PACKAGING

Single component: 20kg (approx 15 litres) or 6.5kg (approx 5 litres).

SHELF LIFE

12 months when stored in the original unopened packaging, in a dry place at 23°C. Do not store in direct sunlight. Replace lid tightly after use. Use remaining contents from part used containers within 3 months.

COVERAGE

Two coats are recommended for an effective waterproof membrane.

Coverage will vary depending on the porosity of the surface.

One 20kg (15 litre) unit will cover approximately 7.5-15m² (based on two coats) depending on area requirements between wall and floor surfaces to be treated. Refer Table I.

DRYING TIMES**Recoat time**

1-2 hours at (23°C/50% RH) between first and second coats. Alternatively, if a polyester mat is used between coats then the second coat can be applied whilst the first coat is still wet.

Dry through

The slowest drying areas are those where the membrane has been applied over a silicone bond breaker, eg. wall and floor junctions. The membrane cannot be tiled over until these critical areas are completely dry. Ardex WPM 001 is totally dry in 48 hours at 23°C/50% RH, but can take up to 72 hours at 10°C/50% RH in corners or for thick films.

Fully cured

The shower should not be used until the membrane has reached its full strength. Ardex WPM 001 membrane is fully cured after 3 days at 23°C, or after 5 days at 10°C.

Drying times will vary depending on humidity, surface temperature and surface porosity.

Do not apply on substrates where the surface temperature is below 10°C or above 35°C.

CLEANING

Wash hands, brushes, rollers, etc, with water while the membrane is still fresh. Remove cured material with mineral turpentine.

SAFETY PRECAUTIONS

Do not use the product in the following situations:

- Areas subject to negative hydrostatic pressure or rising damp, unless treated with Ardex WPM 300.
- Where the substrate is wet – wet surfaces can be sealed with one coat of Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight.
- Where rain is imminent.
- Where the membrane will be left exposed and subjected to regular foot traffic.
- On glazed, glass or other totally impervious surfaces (eg. areas pre-treated with water repellants).
- Where the surface temperature is below 10°C or greater than 35°C.
- All floor areas must have adequate falls either built into the substrate or achieved with a sand/cement screed prior to application of the Ardex WPM 001.

For substrates or situations other than those listed contact Ardex.

SAFETY DATA

Ardex WPM 001 is non-hazardous and non dangerous. It may produce discomfort of the eyes, respiratory tract and skin. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin. Wear eye/face protection. In case of contact with eyes, rinse with plenty of water and seek medical advice.

ARDEX WPM 001

Superflex Bathroom & Balcony Premixed - 1 Part Undertile Waterproofing Membrane

ADDITIONAL INFORMATION IS LISTED IN THE MATERIAL SAFETY DATA SHEET.

QUALITY PRODUCT

Ardex WPM 001 is manufactured and tested to Ardex procedures which are maintained in accordance with Quality System Standard ISO 9001.

USER NOTES

The technical details and recommendations contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is the responsibility of the user to ensure that the product is used in accordance with Ardex instructions and in applications for which they are intended.

APPLICATION

Apply Ardex WPM 001 by brush or roller. A medium nap (12-15mm pile) paint roller is recommended. New rollers should be dampened with water before being used for the first time.

For best results with a paint brush use a good quality, 50mm long bristle variety.

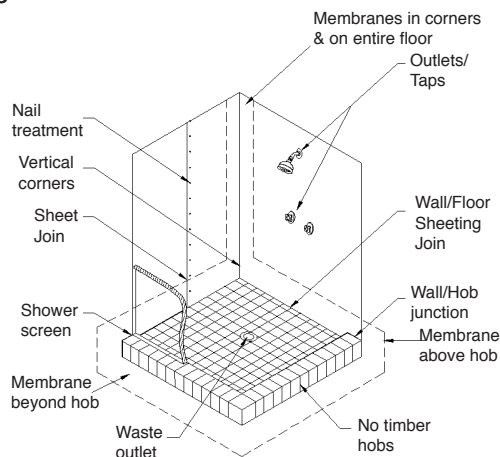
To achieve the required dry film thickness per coat, application must consist of laying the product onto the surface and light finish the surface. Do not try to apply in the same manner as a building paint. A conventional building paint is normally applied at 25-40 micrometers wet film thickness while Ardex WPM 001 needs to be applied at between 0.5 and 1.0 mm per coat depending on product and application (Refer Table 1).

Critical Areas:

INTERNAL WET AREAS

1. Construction should be in accordance with Australian 3740 - 2004 Waterproofing of wet areas

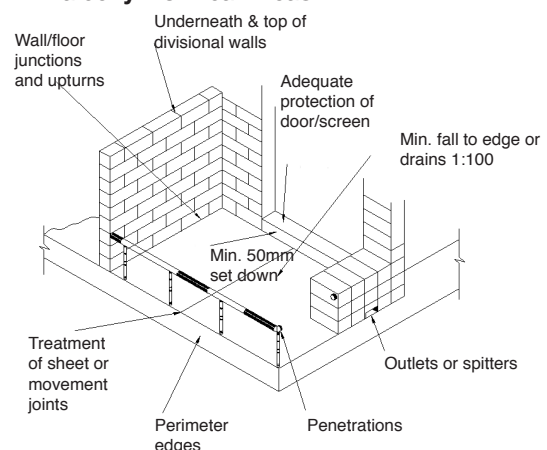
Fig.1 – Shower Recess – Critical Areas



within residential buildings.

2. All render and tile bed requirements should be completed before application of the membrane and tiles or other floor coverings should be direct bonded to the membrane.
3. Ensure wall & floor sheets are installed as per sheet manufacturer's recommendations.
4. Ensure suitable brick/concrete hobs are used (do not use timber).
5. Ensure that falls to the waste are min 1:60 (ie. approx. 30mm in 2mtr)) before waterproofing. Ensure outlet pipes are fixed securely and that the waste or drainage flanges are recessed into the floor.
6. Avoid sheet joints in shower recess floor. Ensure that sheets are securely fixed to the wall at the bottom edge, and sheet joints are sealed with a neutral cure silicone sealant spread approximately 6mm on either side of the joint.
7. Treat nail and screw holes with neutral cure silicone sealant.
8. Seal the perimeters of taps, shower outlets and waste outlets with neutral cure silicone sealant.
9. Apply a bead of neutral cure silicone sealant to all horizontal and vertical corners.
10. Apply a bead of neutral cure silicone sealant to the junction of the hob or angle and walls. Spreading the sealant to 6mm on either side of the joint.
11. Waste outlets shall incorporate a puddle flange or similar in accordance with AS3740 & the top surface shall be set flush with the surface to which the membrane is to be applied. A bead of neutral cure silicone shall be applied across the intersection of the puddle flange and the screed/floor.

Fig.2 – Balcony – Critical Areas



12. Apply the membrane to the entire shower recess floor and down into waste or drainage flange. Apply the membrane over the hob and at least 150mm beyond the outside edge of the hob (ideally to entire wet area floor).
13. Apply the membrane 1800mm up the walls or to the height of the shower rose within the shower recess.
14. Install the shower screen to inside edge of the hob.

BALCONIES AND DECKS

1. Ensure that the deck is constructed with falls to edge/drains of min 1:100 (ie. 20mm in 2m) or else achieve the fall with a sand/cement screed.
2. Ensure a min set down (step down) of 50mm to the finished floor level (ie. top of tiles).
3. Ensure suitable flashing is installed, ideally prior to the installation of the balcony screen/ sliding door.
4. Treat any sheet joints with a neutral cure silicone prior to waterproofing.
5. Prepare and seal all wall/floor junctions with a bead of neutral cure silicone.
6. Apply the membrane up the step down and as far up underneath the screen door flashing as possible (ideally waterproof prior to installing door).
7. Where possible, apply the membrane prior to building divisional walls, or other items such as planter boxes.
8. Apply the membrane to the entire balcony floor and at least 50mm up the wall above the top surface of the finished tiles and finished below the wall drainage vents.
9. Apply the membrane to the top of the parapets and divisional walls, or else install suitable metal capping.
10. Apply the membrane down over the front edge of the balcony onto the drip rail.
11. Carefully seal any gaps around balcony penetrations prior to applying the membrane.
12. Apply the membrane down into outlets and drains, ensuring excess material is removed.
13. Ensure all weep holes are above the membrane application area.

APPLICATION NOTES

Surface preparation

- Ensure all surfaces are structurally sound and totally dry. The pores of concrete surfaces should be open (absorbent surface). All sheet substrates must be securely fixed in accordance with the manufacturers instructions.
- Falls to outlets of at least 1:60 or approx. 30mm

in 2mtr (wet areas) or 1:100 externally, must be achieved prior to tiling.

- The surface to be coated should be free from dust, oil, paint, curing compounds and any other contaminating materials.
- Damaged concrete should be repaired (leveled) and surface defects including all cracks and sharp protrusions should be treated prior to the application of the membrane.
- Remove laitance on concrete or screeds by mechanical means.
- Highly dense (>40MPa) or steel trowelled concrete should be roughened by suitable mechanical means (shot blasting, grinding, etc).

Priming

The primer is a critical part of the waterproofing system. Apply one coat of Ardex WPM 265 (Sheltercoat/ Superflex Water Based Primer) by brush or roller to all areas to be waterproofed including the floor waste. Allow the primer to completely dry prior to the application of the Ardex WPM 001 membrane. This will take around 20-30 minutes depending upon weather conditions and porosity of the substrate. Coverage is approximately 6m² per litre. Plastic (eg. PVC) pipes should be primed with a solvent based plumbers pink primer. Prime metal surfaces with a suitable metal primer such as epoxy polyamide primer.

GENERAL APPLICATION

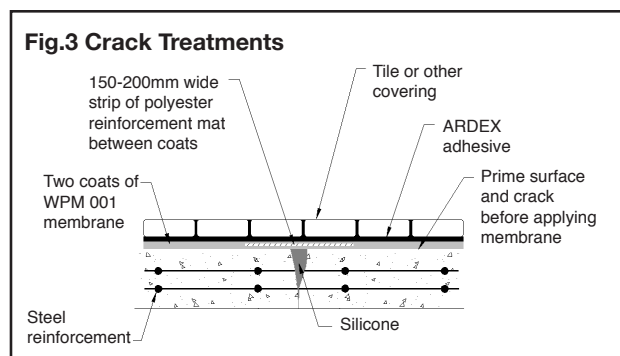
Crack preparation

Cracks <2mm:

Clean and remove any loose particles in the crack. Prime the crack and adjacent area carefully with Ardex WPM 265 and allow to dry before applying two coats of Ardex WPM 001 membrane in a band at least 200mm wide equidistantly across the crack, along the length of the crack.

Cracks 2-6mm:

(Refer Fig. 3) Prepare and prime the crack as above. Apply a bead of neutral cure silicone into the crack and extend it 6mm either side. Apply a 300mm wide band of Ardex WPM 001 equidistantly across the crack



ARDEX WPM 001

Superflex Bathroom & Balcony Premixed - 1 Part Undertile Waterproofing Membrane

along the entire length of the crack. Place a 190mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth preferably using a fluted roller, and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Cracks >6mm:

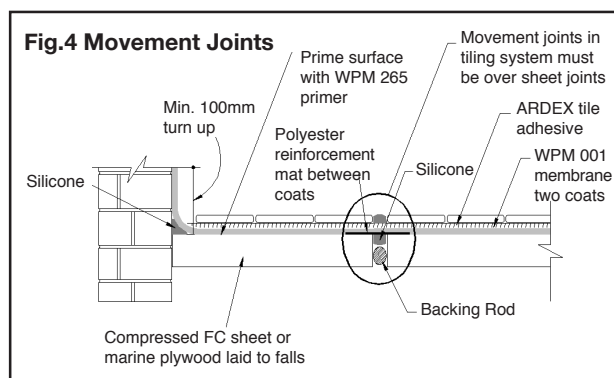
Contact your local Ardex representative.

Movement/construction joints

Movement joints (<6mm)

Use same procedure as in crack preparation.

Clean and prime the joint before filling it with a bead of neutral cure silicone and extending it 6mm each side of joint. Apply a 300mm wide band of Ardex WPM 001 equidistantly across the crack along the entire length of the crack. Place a 190mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the mat and



remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Construction joints (>6mm)

Use the same procedure as above, but replace the reinforcing mat with 120mm of Ardex Coving Bandage. Note: if tiling, movement joints should be taken to the surface of the tiles. Fill the joints between the tiles immediately above the movement joints with an appropriate joint sealant. (Refer Fig.4)

Corners & coving areas

After priming with Ardex WPM 265 and allowing to dry, apply a generous bead (12mm) of neutral cure silicone sealant to seal all junctions between two substrates in coving areas and corners. Smooth over the silicone so that it extends 6mm up the wall and 6mm over the floor

and allow to touch dry.

Apply a first coat of Ardex WPM 001 to the area and allow the membrane to dry.

Apply a second coat ensuring that excess product is removed from the junction (the final dry film thickness should be minimum of 1.0mm). Alternatively, if a polyester reinforcement mat is used between coats then the second coat can be applied as soon as the mat is fully bedded into the first coat.

WALL/FLOOR JUNCTION

After priming with Ardex WPM 265 and allowing to dry, apply a generous bead (12mm) of neutral cure silicone sealant to seal all junctions between two substrates. Smooth over the silicone so that it extends 6mm up the wall and 6mm over the floor and allow to touch dry. Place a 190mm wide band of Ardex "Deckweb" polyester woven mat reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. The Ardex WPM 001 should be applied to at least 100 mm up the wall surfaces as per the recommendations for the application of Ardex WPM 001 to floors.

Walls

Two coats of Ardex WPM 001 are required to achieve a minimum total dry film thickness of 0.5mm.

After priming with Ardex WPM 265 and allowing to dry, apply two coats of Ardex WPM 001 (to achieve a minimum dry film thickness of 0.5mm) in two opposite directions. Wall sheet joints should be treated with a neutral cure silicone, PVC duct tape or base jointing compound. In balcony situations take the membrane up underneath any existing cover flashing or install appropriate flashing. Allow the first coat to dry before applying the second coat.

Floors

Two coats of Ardex WPM 001 are required to achieve a minimum total dry film thickness of 1.0mm. The flooring recommendations should be extended at least 150 mm up all perimeter walls.

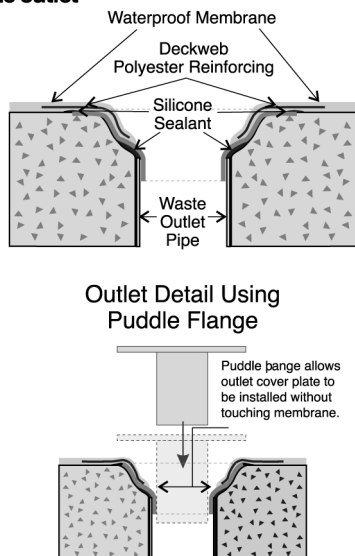
Prime the surface with Ardex WPM 265 and allow to dry.

Apply the first coat over the primed surface and allow it to dry (1-2 hours at 23°C, 50%RH) before applying a second coat in an opposite direction. In shower recesses a drainage flange must be installed on all timber/sheeted floors, and are strongly recommended on all other substrates. Where possible rebate the flange into the floor. Seal the perimeter of the flange with neutral cure silicone treatment. If a flange is not installed the membrane must be applied down into the pipe. (Refer Fig.5) Allow the membrane to dry completely before tiling. Refer drying times above.

Waste Outlet

Prime the surface with Ardex WPM 265 and allow to dry. Surfaces of the outlet flange must be primed with an appropriate primer.

Fig.5 – Waste outlet

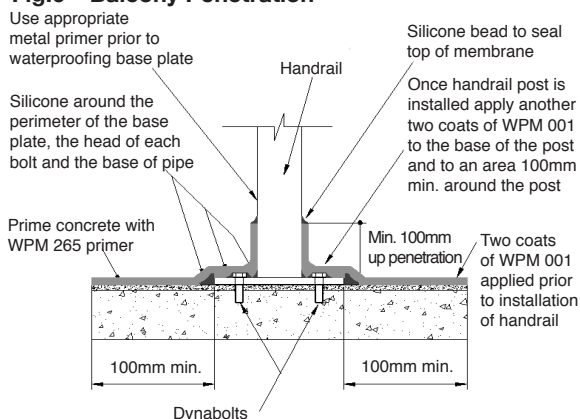


Apply Ardex WPM 001 over the adjacent floor surface extending down into the waste outlet flange overlapping the edge of flange by at least 30mm. Place Ardex “Deckweb” polyester woven mat reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. (Refer Fig. 5)

Balcony penetrations (Refer Fig.6)

All upstands are to be mechanically fixed through the membrane, which must be fabricated with a base plate flange.

Fig.6 – Balcony Penetration



Prime the metal with an appropriate metal primer such as an epoxy polyamide primer and allow to dry. Apply a 10mm bead of neutral cure silicone around the perimeter of the penetration. Apply the first coat of Ardex WPM 001 on the substrate and the flanged metal.

Allow first coat to dry before applying a second coat ensuring a finished dry film thickness of no less than 1.0mm is achieved. Place a suitable flashing collar around the penetration sealing it with a suitable sealant.

Tiling systems

It is advisable to conduct a flood test of the shower once the membrane has cured (normally after 72 hours), and before the tiling commences. A broad range of Ardex tile adhesives can be used over Ardex membranes. Contact Ardex or your nearest Ardex stockist for advice on the most suitable system.

TECHNICAL DATA

Ardex WPM 001 (Superflex Premixed) Characteristics of liquid

Form & Colour	Blue viscous paste
Type	Single part
Specific Gravity	Approx. 1.34kg/litre
pH of Liquid	8.5
Viscosity of Liquid (RVT Brookfield, spindle 7 speed 10)	52,000cps
Non Volatile Matter (volume) AS1321.10	50.3%±1
Tensile Strength 7 days dry AS1145	1.04 MPa
Full Cure	1.92 MPa
Elongation at Break 7 days dry AS1145	780%

Conforms to requirements of class 3 membrane of AS/NZ 4858: 2004 Wet Area Membranes.

NOTE: Most of the tests have been carried out in the Ardex laboratory under standard conditions (23±2°C, 50±5% R.H)



ARDEX WPM 002

Superflex Bathroom & Balcony - 2 Part

2 Part Undertile Waterproofing Membrane

BRANZ Appraised

Rapid Drying Time

Two Component Undertile Waterproofing Membrane

Advanced acrylic – will not re-emulsify

Liquid reinforced – eliminates the need for reinforcing mat

Water based – safe to use, low odour and easy cleaning

Meets class III category for AS/NZ 4858 Wet Area Membranes

Low VOC content – meets Green Building Council of Australia

Green Star IEQ-13 requirements

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

ARDEX WPM 002

Superflex Bathroom & Balcony - 2 Part 2 Part Undertile Waterproofing Membrane



PRODUCT DESCRIPTION

Ardex WPM 002 (Superflex Bathroom & Balcony 2 Part) is a tough, fast drying two component waterproofing membrane specifically designed for use under tiles. The product has been uniquely formulated with synthetic microfibres to increase its strength and eliminate the need for a separate reinforcement mat. Ardex WPM 002 is based on the most advanced acrylic polymer technology, and is totally resistant to re-emulsification.

Ardex WPM 002 is flexible, safe to use, low in odour, and is fully compatible with polymer modified tile adhesives. Ardex WPM 002 is one of the fastest drying acrylic membranes on the market – normally ready to tile in 16-24 hours @ 23°C.

Ardex WPM 002 meets the Green Building Council of Australia Green Star IEQ-13 requirements for Architectural Sealant when tested in accordance with SCAQMD Method 304-91 Determination of Volatile Organic Compounds (VOC) in Various Materials as referenced by South Coast Air Quality Management Division (SCAQMD) Rule 1168.

FEATURES/BENEFITS

Fast drying Ardex WPM 002 can be tiled over in 16-24 hours, or 4 hours @ 23°C/50% RH in non critical areas*.

Features benefits

- Liquid reinforced: Excellent strength, eliminates need for reinforcing mat.
- Flexible: Accommodates normal building movement.
- Advanced acrylic: Will not re-emulsify.
- Designed for tiling: Fully compatible with ABA/Ardex tile systems adhesives.
- Water based, safe to use, low odour and easy cleaning for undertile waterproofing in shower recesses by independent testing authority.
- Excellent exterior.
- Conforms to the requirements of AS/NZ 4858:2004 Wet Area Membranes (Ref: CSIRO Report 3879)

*Critical areas include areas where the membrane is applied at greater than 0.5mm or over impermeable substances such as over bond breakers or incorporating other reinforcement. Longer drying times are necessary in these areas.

APPLICATION RANGE

Performance levels

Commercial and residential.

Location

Internal and external wet areas, balconies, decks, and other areas that will be tiled or otherwise protected from regular foot traffic.

Surfaces

Walls and floors.

Substrates

Concrete

Cured for min. 28 days or sealed when set with one coat Ardex WPM 300 (HydrEpoxy 300) at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet concrete should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 as above.

Renders and Screeds

Cured for min. 7 days or sealed when set with one coat Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight. Wet render should be allowed to dry thoroughly or sealed with one coat of Ardex WPM 300 as above.

Fibre cement

Wet area grade only.

Plasterboard

Wet area grade only.

Plywood

Structural plywood (PAA branded) or marine grade or other wet area grade only. Not recommended for external use (refer Ardex).

Strandsarking

Strandsarking sheets are 3.60m x 800mm x 16.3mm. Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

TABLE 1

	Thickness per coat		Total dry film thickness (2 coats)	Theoretical coverage		Per unit
	Dry film	Wet film		Per coat	For 2 coats	
FLOORS	0.6mm	0.9mm	1.2mm	32m ²	16m ²	40kg kit
WALLS	0.4mm	0.6mm	0.8mm	48m ²	24m ²	40kg kit

Particleboard

Wet area grade, internal use only (special preparation is required – contact Ardex). Not recommended for external use (refer Ardex).

Permanent Immersion

In conditions of permanent immersion, it is recommended that WPM 002 must be covered with tiles for full immersion applications.

Contact Ardex for use over existing membranes, covering materials, and any other substrates not listed.

SPECIFICATION CLAUSE

Ardex WPM 002 (Superflex Two Part)

The waterproofing membrane shall be Ardex WPM 002, a two component cementitious acrylic modified fibre reinforced membrane formulated to provide a tough, long lasting water barrier under tiling systems.

PACKAGING

Two component: 20kg (approx 20 litres) liquid pail/ 2 x 10kg bags powder.

SHELF LIFE

12 months when stored in the original unopened packaging, in a dry place at 23°C. Do not store in direct sunlight. Replace lid tightly after use. Use remaining contents from part used containers within 3 months.

COVERAGE

Two coats are recommended for an effective waterproof membrane. Coverage will vary depending on the porosity of the surface.

One 40kg kit will cover approximately 16-24m (based on two coats) depending on area requirements between wall and floor surfaces to be treated.

DRYING TIMES

Curing time will vary depending on temperature and humidity.

Recoat time

1-2 hours (23°C/50% RH) between first and second coats. Alternatively, if a polyester mat is used between coats then the second coat can be applied whilst the first coat is still wet.

Dry through

The slowest drying areas are those where the membrane has been applied over a silicone bond breaker, eg. wall and floor junctions. The membrane cannot be tiled over until these critical areas are completely dry.

Ardex WPM 002 membrane is totally dry in 16 hours at 23°C/50% RH but can take up to 24 hours at 10°C / 50% RH in corners or for thick films.

In areas where bond breakers or additional reinforcement are not used, Ardex WPM 002 can be tiled over after 4 hours at 23°C / 50% RH.

Fully cured

The shower should not be used until the membrane has reached its full strength. Normally Ardex WPM 002 membranes are fully cured after 3 days at 23°C, or after 5 days at 10°C.

Drying times will vary depending on humidity, surface temperature and surface porosity.

Do not apply on substrates where the surface temperature is below 10°C or above 35°C.

CLEANING

Wash hands, brushes, rollers, etc, with water while the membrane is still fresh. Remove cured material with mineral turpentine.

SAFETY PRECAUTIONS

Do not use the product in the following situations:

- Areas subject to negative hydrostatic pressure or rising damp, unless treated with Ardex WPM 300.
- Where the substrate is wet – wet surfaces can be sealed with one coat of Ardex WPM 300 at a coverage rate of 3.0 square metres per litre and allowed to cure overnight.
- Where rain is imminent.
- Where the membrane will be left exposed and subjected to regular foot traffic.
- On glazed, glass or other totally impervious surfaces (eg. areas pre-treated with water repellants).
- Where the surface temperature is below 10°C or greater than 35°C.
- All floor areas must have adequate falls either built into the substrate or achieved with a sand/cement screed prior to application of the Ardex WPM 002.

For substrates or situations other than those listed contact Ardex.

SAFETY DATA

Ardex WPM 002 Part A is non-hazardous. It may produce discomfort of the eyes, respiratory tract and skin. It should not be swallowed or inhaled. Avoid contact with skin and wear eye/face protection. In case of contact with eyes, rinse with plenty of water and contact a doctor or Poisons Information Centre.

ARDEX WPM 002

Superflex Bathroom & Balcony - 2 Part 2 Part Undertile Waterproofing Membrane

Ardex WPM 002 Part B contains cement and is therefore hazardous. It may cause burns and serious damage to eyes. Do not breathe dust and avoid contact with eyes. Wear dust masks, goggles and gloves when handling. Keep container locked up and in a well ventilated place.

ADDITIONAL INFORMATION IS LISTED IN THE MATERIAL SAFETY DATA SHEET.

APPLICATION

Apply Ardex WPM 002 by brush or roller. A medium nap (12–15mm pile) paint roller is recommended. New rollers should be dampened with water before being used for the first time.

For best results with a paint brush use a good quality, 50mm long bristle variety.

To achieve the required dry film thickness per coat application must consist of laying the product onto the surface and light finish the surface. Do not try to apply in the same manner as a building paint. A conventional building paint is normally applied at 25–40 micrometers wet film thickness while Ardex WPM 002 needs to be applied at between 0.6 and 0.9 mm per coat depending on product and application (Refer Table 1).

Critical areas:

INTERNAL WET AREAS

1. Construction should be in accordance with Australian 3740 - 2004 Waterproofing of wet areas within residential buildings.
2. All render and tile bed requirements should be completed before application of the membrane and tiles or other floor coverings should be direct bonded to the membrane.
3. Ensure wall and floor sheets are installed as per sheet manufacturer's recommendations.
4. Ensure suitable brick/concrete hobs are used (do not use timber), and that the top of the hob does

not slope outwards.

5. Ensure that falls to the waste are min 1:60 (ie. approx. 30mm in 2m) before waterproofing. Ensure outlet pipes are fixed securely and that the waste or drainage flanges are recessed into the floor.
6. Avoid sheet joints in shower recess floor. Ensure that sheets are securely fixed to the wall at the bottom edge, and sheet joints are sealed with a neutral cured silicone sealant spread approximately 6mm on either side of the joint.
7. Treat nail and screw holes with neutral cure silicone sealant.
8. Seal the perimeters of taps, shower outlets and waste outlets with neutral cure silicone sealant.
9. Apply a bead of neutral cure silicone sealant to all horizontal and vertical corners, and spread to 6mm on either side of joint.
10. Apply a bead of neutral cure silicone sealant to the junction of the hob or angle and walls, and spread to 6mm on either side of joint.
11. Waste outlets shall incorporate a puddle flange or similar in accordance with AS3740 and the top surface shall be set flush with the surface to which the membrane is to be applied. A bead of neutral cure silicone shall be applied across the intersection of the puddle flange and the screed/floor.
12. Apply the membrane to the entire shower recess floor and down into waste or drainage flange. Apply the membrane over the hob and at least 150mm beyond the outside edge of the hob (ideally to entire wet area floor).
13. Apply the membrane 1800mm up the walls or to the height of the shower rose within the shower recess.
14. Install the shower screen to inside edge of the hob.

BALCONIES AND DECKS

Fig.1 – Shower recess – critical areas

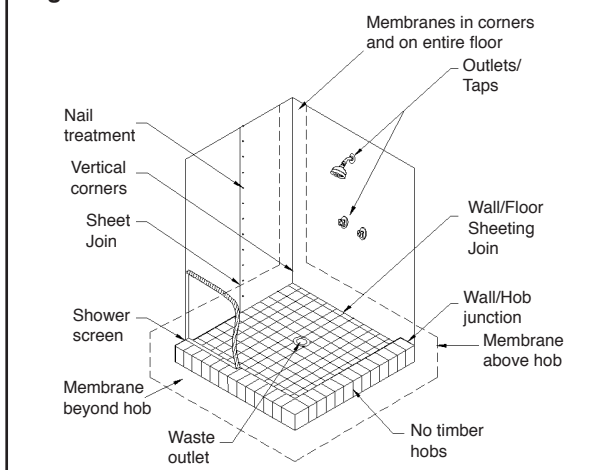
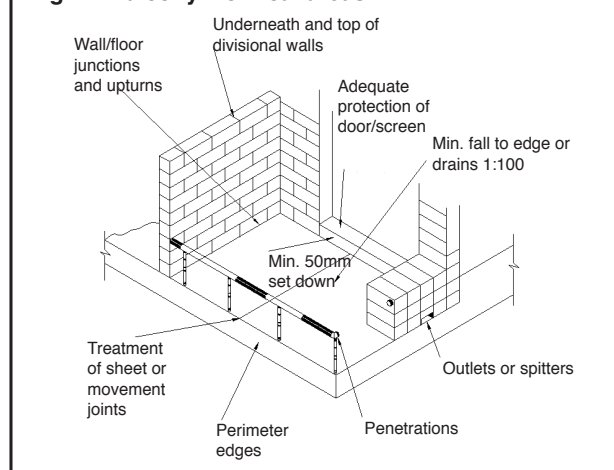


Fig.2 – Balcony – critical areas



1. Ensure that the deck is constructed with falls to edge/drains of min 1:100 (ie. 20mm in 2m) or else achieve the fall with a sand/cement screed.
2. Ensure a min set down (step down) of 50mm to the finished floor level (ie. top of tiles).
3. Ensure suitable flashing is installed, ideally prior to the installation of the balcony screen/sliding door.
4. Treat any sheet joints with a neutral cure silicone prior to waterproofing.
5. Prepare and seal all wall/floor junctions with a bead of neutral cure silicone.
6. Apply the membrane up the step down and as far up underneath the screen door flashing as possible (ideally waterproof prior to installing door).
7. Where possible, apply the membrane prior to building divisional walls.
8. Apply the membrane to the entire balcony floor and at least 50mm up the wall above the top surface of the finished tiles and finished below the wall drainage vents.
9. Apply the membrane to the top of the parapets and divisional walls, or else install suitable metal capping.
10. Apply the membrane down over the front edge of the balcony onto the drip rail.
11. Carefully seal any gaps around balcony penetrations prior to applying the membrane.
12. Apply the membrane down into outlets and drains, ensuring excess material is removed.
13. Ensure all weep holes are above the membrane application area.

APPLICATION NOTES

Surface preparation

- Ensure all surfaces are structurally sound and totally dry. The pores of concrete surfaces should be open (absorbent surface). All sheet substrates must be securely fixed in accordance with the manufacturers instructions.
- Falls to outlets of at least 1:60 or approx. 30mm in 2m (wet areas) or 1:100 externally, must be achieved prior to tiling.
- The surface to be coated should be free from dust, oil, paint, curing compounds and any other contaminating materials.
- Damaged concrete should be repaired (leveled) and surface defects including all cracks and sharp protrusions should be treated prior to the application of the membrane.
- Remove laitance on concrete or screeds by mechanical means.

- Highly dense (>40MPa) or steel trowelled concrete should be roughened by suitable mechanical means (shot blasting, grinding, etc).

Priming

The primer is a critical part of the waterproofing system. Apply one coat of Ardex WPM 265 (Sheltercoat/ Superflex Water Based Primer) by brush or roller to all areas to be waterproofed including the floor waste. Allow the primer to be completely dry prior to the application of the Ardex WPM 002 membrane. This will take around 20-30 minutes depending upon weather conditions and porosity of the substrate. Coverage is approximately 6m² per litre. Plastic (eg. PVC) pipes should be primed with a solvent based plumbers pink primer. Prime metal surfaces with a suitable metal primer such as epoxy polyamide primer.

GENERAL APPLICATION

Crack preparation

Cracks <2mm:

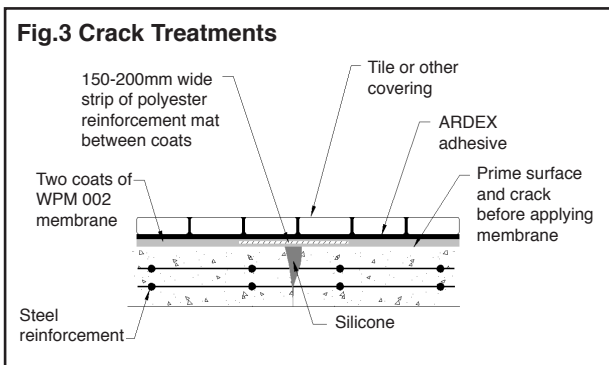
Clean and remove any loose particles in the crack. Prime the crack and adjacent area carefully with Ardex WPM 265 and allow to dry before applying two coats of Ardex WPM 002 membrane, in a band at least 200mm wide equidistantly across the crack, along the length of the crack.

Cracks 2-6mm:

(Refer Fig. 3) prepare and prime the crack as above. Apply a bead of neutral cure silicone into the crack and extend it 6mm either side. Apply a 300mm wide band of Ardex WPM 002 equidistantly across the crack along the entire length of the crack. Place a 190mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Cracks >6mm:

Contact your local Ardex representative.



ARDEX WPM 002

Superflex Bathroom & Balcony - 2 Part 2 Part Undertile Waterproofing Membrane

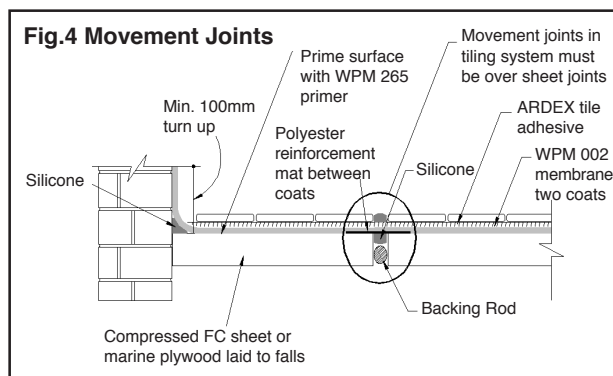
Movement/construction joints

Movement joints (<6mm)

Clean and prime the joint before filling it with a bead of neutral cure silicone and extending it 6mm each side of joint. Apply a 300mm wide band of Ardex WPM 002 equidistantly across the crack along the entire length of the crack. Place a 190mm wide band of Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat.

Construction joints (>6mm)

Use the same procedure as above, but replace the reinforcing mat with 120mm of Ardex Coving Bandage. Note: if tiling, movement joints should be taken to the surface of the tiles. Fill the joints between the tiles immediately above the movement joints with an appropriate joint sealant. (Refer Fig.4)



Corners and coving areas

After priming with Ardex WPM 265 and allowing to dry, apply a generous bead (16mm) of neutral cure silicone sealant in coving areas and corners. (Refer Fig.5) Smooth over the silicone so that it extends 8mm up the wall and 8mm over the floor and allow to touch dry.

Apply a first coat of Ardex WPM 002 to the area and allow the membrane to dry.

Apply a second coat ensuring that excess product is removed from the junction (the final dry film thickness should be around 1.2mm) Alternatively, if a polyester reinforcement mat is used between coats then the second coat can be applied as soon as the mat is fully bedded into the first coat.

WALL/FLOOR JUNCTION

After priming with Ardex Superflex WPM 265 and allowing to dry, apply a generous bead (16mm) of neutral cure silicone sealant to seal all junctions between two substrates. Smooth over the silicone so that it extends 8mm up the wall and 8mm over the floor and allow to touch dry. Place a 190mm wide band of

Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. The Ardex WPM 002 should be applied to at least 150mm up the wall surfaces as per the recommendations for the application of Ardex WPM 002 to floors.

Walls

Two coats of Ardex WPM 002 are required to achieve a minimum total dry film thickness of 0.8mm.

After priming with Ardex Superflex WPM 265 and allowing to dry, apply two coats of Ardex WPM 002 (to achieve a minimum dry film thickness of 0.8mm) in two opposite directions. Wall sheets joints should be treated with a neutral cure silicone, PVC duct tape or base jointing compound. In balcony situations take the membrane up underneath any existing cover flashing or install appropriate flashing. Allow the first coat to dry before applying the second coat.

Floors

Two coats of Ardex WPM 002 are required to achieve a minimum total dry film thickness of 1.2mm. The flooring recommendations should be extended at least 150mm up all perimeter walls.

Prime the surface with Ardex WPM 265 water based primer and allow to dry.

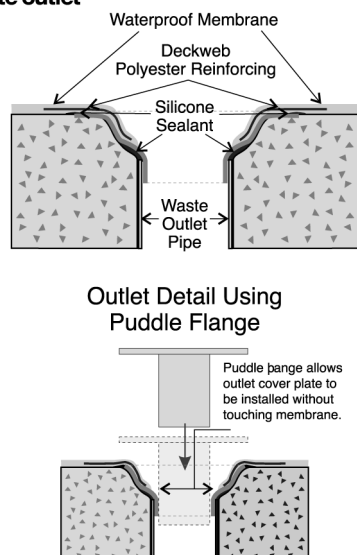
Apply the first coat over the primed surface and allow it to dry (1-2 hours at 23°C, 50% RH) before applying a second coat in an opposite direction. In shower recesses a drainage flange must be installed on all timber/sheeted floors, and are strongly recommended on all other substrates. Where possible rebate the flange into the floor. Seal the perimeter of the flange with neutral cure silicone treatment. If a flange is not installed the membrane must be applied down into the pipe. (Refer Fig.5) Allow the membrane to dry completely before tiling. Refer drying times above.

Waste outlet

Prime the surface with Ardex WPM 265 and allow to dry. Surfaces of outlet flange must be primed with an appropriate primer.

Apply Ardex WPM 002 over the adjacent floor surface extending down into the waste outlet pipe overlapping the pipe surfaces by at least 30mm. Place Ardex "Deckweb" polyester woven cloth reinforcement over the applied membrane. Thoroughly wet out the cloth and remove all creases in, or air pockets under the mat. Immediately apply a second coat to completely fill the mat. (Refer Fig. 5).

Fig.5 – Waste outlet



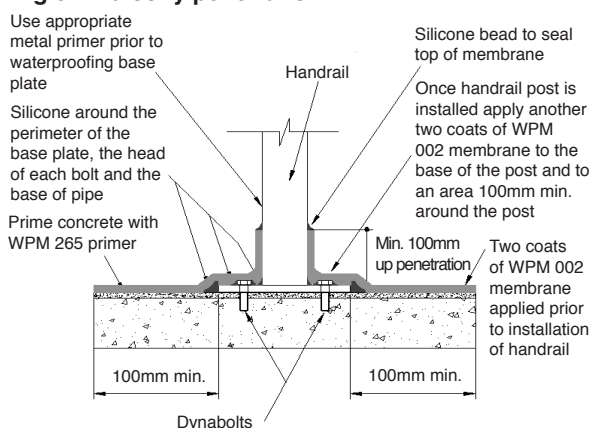
Balcony penetrations (Refer Fig.6)

All upstands are to be mechanically fixed through the membrane, which must be fabricated with a base plate flange.

Prime the metal with an appropriate metal primer such as an epoxy polyamide primer and allow to dry. Apply a 10mm bead of neutral cure silicone around the perimeter of the penetration. Apply the first coat of Ardex WPM 002 on the substrate and the flanged metal.

Allow first coat to dry before applying a second coat ensuring a finished dry film thickness of no less than 1.2mm is achieved. Place a suitable flashing collar around the penetration sealing it with a suitable sealant.

Fig.6 – Balcony penetration



Tiling systems

It is advisable to conduct a flood test of the shower once the membrane has cured (normally after 48 hours), and before the tiling commences. A broad range of Ardex tile adhesives can be used over Ardex Superflex membranes. Contact Ardex or your nearest Ardex stockist for advice on the most suitable system.

QUALITY PRODUCT

Ardex WPM 002 is manufactured and tested to Ardex procedures which are maintained in accordance with Quality System Standard ISO 9001.

USER NOTES

The technical details and recommendations contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is the responsibility of the user to ensure that the product is used in accordance with Ardex instructions and in applications for which they are intended.

TECHNICAL DATA

Ardex WPM 002

Characteristics of components

Form & Colour	Liquid: white, medium viscosity
	Powder: off white

Characteristics of mixed product

Mixing Ratio	1:1 by weight
SG of mixed product	1.44kg/litre
Non Volatile Matter	77±1%
Colour	light grey/green

Characteristics of cured membrane

Shore A hardness ASTM D2240

– dry film	85 – 90
– wet film	75 – 80

Tensile Strength

7 days dry AS1145	1.7 MPa
Full Cure 28 days:	2.9 MPa

Elongation at Break

7 days dry AS1145	332%
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NOTE: Most of the tests have been carried out in the Ardex laboratory under standard conditions (23±2°C, 50±5% RH)



ARDEX WPM155 *Rapid*

(Undertile PU Acrylic Hybrid Membrane)

Tile in 4 hours

Ardex STB Tape and Liquid Membrane

Modified polyurethane acrylic waterproof membrane

Excellent adhesion with ARDEX tile adhesives

Extended coverage for minimising cost

Environmentally friendly – solvent free, suitable for confined areas

Class III Membrane – as per AS/NZS4858 Wet Area Membranes

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ARDEX WPM155 *Rapid*

(Undertile PU Acrylic Hybrid Membrane)

DESCRIPTION

Water-based polyurethane-acrylic waterproofing membrane developed for high performance under-tile waterproofing.

- Tough flexible film.
- Long shelf life.
- Meets Green Building Council of Australia Greenstar requirements IEQ-13, IEQ-11.
- Can be tiled over – good adhesion with ARDEX tile adhesives.
- Excellent adhesion to a wide range of substrates.
- Fast drying.
- Class III Membrane, as per AS/NZS 4858 Wet Area Membranes.

RANGE OF APPLICATIONS

For commercial and residential internal/external wet areas, balconies, decks and other areas that will be tiled or otherwise protected from regular foot traffic. Not suitable for permanent immersed conditions. For conditions of permanent immersion, it is recommended that ARDEX WPM 002 (Superflex Two Part) is used. For further information please call ARDEX Technical Services.

SUBSTRATES

Concrete

Cured for minimum 28 days, wet concrete should be allowed to dry thoroughly or sealed with one coat of ARDEX WPM 300 at coverage rate of 3.0m² per litre.

Renders and screeds

Cured for min 7 days. Wet render should be allowed to dry thoroughly or sealed with one coat of ARDEX WPM 300 at coverage rate of 3.0m² per litre and allowed to cure overnight.

Fibre cement sheets

Wet area grades only.

Plywood

Structural plywood (PAA branded) or marine grade or other wet area grade only. Not recommended for external use (refer ARDEX).

Strandsarking

Strandsarking sheets are 3.60m x 800mm x 16.3mm. Strandsarking sheets shall be laid with staggered joints. (brick bond) The edges of all sheets shall be supported with dwangs or framing. The maximum allowable spacing for supporting roof framing is 400mm.

When a roof has a pitch below 2 degrees it is recommended to use Strandfloor H3.1.

Strandsarking sheets may be butt jointed with an Ardex release tape used over the join.

Fixings.

Shall be 50mm x 4.8mm diameter stainless steel screws fixed at 150mm centres.

If fixings are bought into 100mm centres on the intermediate supports this will allow use in wind zones very high and extra high without any further treatment. Fixings must be positioned no closer than 10mm from the sheet edges.

PRIMERS

ARDEX WPM 155 Rapid is suitable to use over ARDEX P9, ARDEX WPM 300, or WPM 270 or WPM 265 or ARDEX Multiprime and Abaprime.

APPLICATION TYPES

STANDARD APPLICATION

ARDEX WPM 155 Rapid should be thoroughly mixed to a uniform consistency and ensure the coating is applied evenly at recommended coverage rates. Mobile joints should be reinforced using Deckweb and the membrane must be lapped to intrusions such as waste outlets in accordance with AS 3740. Apply ARDEX WPM 155 Rapid by brush or roller. A medium nap (8–12mm pile) or 50mm long bristle paint brush is recommended.

COVERAGE

This will vary with the porosity of the substrates. Two coats are recommended to get optimum performance.

For floors

A minimum dry film thickness of 1.0mm is required. A 20kg unit (15 Litres) will cover approximately 8.6m² (based on two coats). A 5.3kg (4 Litres) will cover approximately 2.3m².

For walls

A minimum dry film thickness of 0.5mm is required. A 20kg unit (15 Litres) will cover approximately 17.2m². A 5.3kg unit (4 Litres) will cover approximately 4.6m².

DRYING TIME

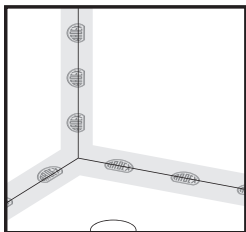
Recoat time is 1–2 hours between first and second coats. Drying time on flat surfaces under standard conditions is 4 hours. However, dry through time will be slowest in areas where ARDEX WPM 155 Rapid is applied over neutral cure silicone bond breaker, or is reinforced. Make sure these areas are dry before tiling, this will generally be 24 hours after the last application at 23 deg and 50% RH. Drying times will vary depending on humidity, surface temperature and porosity of substrates.

RAPID APPLICATION

ARDEX WPM 155 Rapid should be thoroughly mixed to a uniform consistency and ensure the coating is applied evenly at recommended coverage rates.

All junctions and joints should have ARDEX STB Tape applied. See Ardex website for detailed video on application of this tape. www.ardexaustralia.com

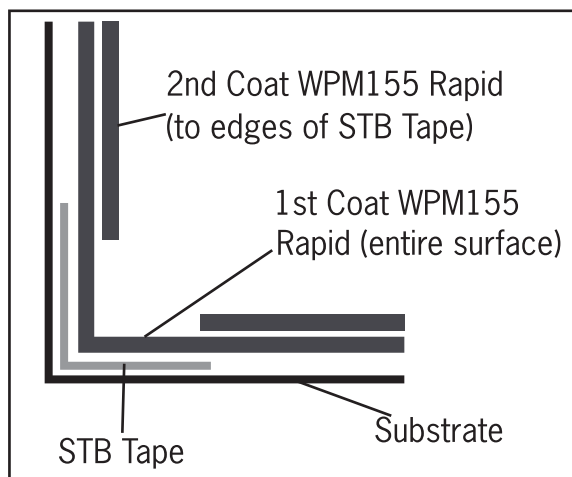
1. Ensure area is free from contaminants and clean making sure to remove all dust and prime fibre cement sheet with an approved primer (listed in the primers section). Apply the tape and use a roller to ensure that a secure bond is made between the tape and substrate and carefully moulded into the corners.



2. Apply a coating of WPM 155 Rapid to the entire area to be waterproofed using a brush or roller, a medium nap (8–12mm pile) or 50mm long bristle paint brush is recommended. This first coat should be applied at 0.5mm (wet film thickness) to provide a 0.25mm dry film thickness. Allow to dry. Dry time is approximately 1-2 hours.

3. Apply a second coat of the WPM155 Rapid membrane at a thickness of 0.5mm (wet film thickness) to provide a dry film thickness of 0.25mm. This will provide in total a dry film thickness of 0.5mm total dry film thickness.

Note: The second coat needs to only be applied up to the edge of the ARDEX STB Tape (as pictured below)



Tiling can begin once the second coat has dried which is generally 3 hours at 23°C in undertile applications. Drying times will vary depending on humidity, surface temperature and porosity of substrates.

The membrane must be lapped to intrusions such as waste outlets in accordance with AS 3740.

COVERAGE

This will vary with the porosity of the substrates. Two coats are recommended to get optimum performance.

A 20kg unit (15 Litres) will cover approximately 17.2m².
A 5.3kg unit (4 Litres) will cover approximately 4.6m².

PACKAGING

ARDEX WPM155 Rapid Liquid Membrane 20kg (approximately 15 litres) and 5.3kg (approximately 4 litres).

ARDEX STB 15-75 Tape roll - 75mm wide x 15 metres in length.

SHELF LIFE

12 months when stored in the original unopened packaging in a dry place at 23°C.

CLEANING

Wash hands, brushes, rollers with water while product is still fresh. For cured material, use mineral turpentine.

PRECAUTIONS

All surfaces must be structurally sound, dry and free from all surface contaminants.

Do not use ARDEX WPM 155 Rapid under the following conditions:

- Areas subject to negative hydrostatic pressure or rising damp, unless treated with ARDEX WPM 300.
- Wet substrates or green screeds/concrete – need to be sealed with one coat ARDEX WPM 300 as described earlier.
- Surface temperatures below 10°C or greater than 35°C.
- Do not expose to prolonged UV conditions.

SAFETY DATA

ARDEX WPM 155 Rapid is a non-hazardous and non-dangerous product. Wear protective clothing when handling.

Wash off splashes with clean water. In case of eye contamination, rinse thoroughly with clean water. If irritation persists, seek medical advice.

Additional information is listed in the material safety data sheet.

TECHNICAL DATA

Colour: Blue/Grey

Properties of the cured membrane

Tensile strength: 1.2 MPa

MPa AS1145

% Elongation: >350%

Shore A Hardness: 65-75

Water vapor transmission

(AS4858/ASTME96): 1.2g/24hrs/m²

VOC content: 42g/L

Durability (AS4858): Pass

DISCLAIMER

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May 2013



ARDEX WPM 240

Shelter Primer

Solvent Based Primer

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ARDEX WPM 240

Shelter Primer Solvent Based Primer

PRODUCT DESCRIPTION

ARDEX WPM 240 (Shelter Primer) is a solvent based bitumen modified primer to be used to seal and prepare the substrate prior to the installation of the Shelterbit torch-on and Shelterseal self adhesive membranes.

APPLICATION

Ensure that the surface to be primed is dry and free from dust, oil, paint, curing compounds and any other contaminating materials. Stir contents well before use. Apply by brush, roller or airless spray. ARDEX WPM 240 (Shelter Primer) must be dry before applying membrane.

COVERAGE

1 litre of ARDEX WPM 240 (Shelter Primer) will cover approximately 5m².

DRYING TIME

Allow 1-2 hours @ 23°C.

LIMITATIONS

ARDEX WPM 240 (Shelter Primer) should be used with appropriate mask and breathing apparatus in areas with poor ventilation/air flow.

PACKAGING

5L and 20L

STORAGE

12 months in the original unopened packaging stored @ 23°C.

IDENTIFICATION

Black liquid comprising bitumen dissolved in mineral spirits.

CLEAN UP

Wash equipment with ARDEX WA98S.

SAFETY DATA

First Aid:

Swallowed: Give water to clean mouth. Do not induce vomiting.

Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water.

Eyes: Hold open and flood with water for at least 15 minutes.

Inhalation: Remove to fresh air. If breathing is difficult administer oxygen.

If irritation continues seek medical attention promptly.



ARDEX WPM 247

Shelter Primer

Water based Primer

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ARDEX WPM 247

Water Based Shelter Primer

PRODUCT DESCRIPTION

ARDEX WPM 247 (Shelter Primer) is a water based bitumen modified primer to be used to seal and prepare the substrate prior to the installation of the Shelterbit torch-on and Shelterseal self adhesive membranes.

APPLICATION

Ensure that the surface to be primed is dry and free from dust, oil, paint, curing compounds and any other contaminating materials. Stir contents well before use. Apply by brush or roller. ARDEX WPM 247 (Shelter Primer) must be dry before applying membrane.

COVERAGE

1 litre of ARDEX WPM 247 (Shelter Primer) will cover approximately 6m².

DRYING TIME

Allow 1-2 hours @ 23°C.

LIMITATIONS

ARDEX WPM 247 (Shelter Primer) should be used with appropriate mask and breathing apparatus in areas with poor ventilation/air flow.

PACKAGING

5L and 20L containers

STORAGE

12 months in the original unopened packaging stored at @ 23°C.

IDENTIFICATION

Black liquid comprising bitumen suspended in water.

SAFETY DATA

First Aid:

Swallowed: Give water to clean mouth. **Do NOT** induce vomiting. Contact Doctor or Poisons information Centre.

Skin: Remove contaminated clothing. Wash skin thoroughly with soap and water. **Do NOT** use solvents to remove bitumen material from skin. Bitumen may be removed using vegetable or medicinal paraffin oil.

Eyes: Holding eye(s) open, immediately irrigate (s) with water for at least 15 minutes. Seek medical advice.

Inhalation: Not known to be a problem. Remove patient to a well ventilated area. Recovery should be rapid after removal from exposure.

Hair: Solidified bitumen in eyelashes, hair etc. can be removed by gently wiping with lint soaked in medicinal paraffin oil.



ARDEX WPM 179

Single Component Rubber Waterproofing Membrane

Quick Drying – designed for fast track installations

Used in conjunction with WPM 172 Rapid Cure Membrane

Chemical Resistance – for a wide range of chemicals

Water Based – safe to use, low in VOC & odour

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ARDEX WPM 179

Single Component Rubber Waterproofing Membrane

PRODUCT DESCRIPTION

ARDEX WPM 179 is a one component liquid applied, latex modified, bituminous elastomeric waterproofing membrane. When cured it forms a permanently flexible waterproof lining to most building surfaces. ARDEX WPM 179 is predominately used as a patching or repair membrane for use in conjunction with ARDEX WPM 172 Rapid Cure Rubber Waterproofing Membrane. ARDEX WPM 179 is water based, has almost no odour and is safe to use.

FEATURES/BENEFITS

- Easily applied: single pack, high build, long pot life.
- Excellent adhesion to substrates
- High elongation – excellent crack bridging capabilities
- Retains flexibility at low temperatures
- Resists ponding water (once fully cured)
- Water based – environmentally friendly and safe to use
- Excellent Chemical Resistance properties
- Conforms to AS4654.2 – 2009 waterproof membranes for exterior use

ACCEPTABLE SUBSTRATES

- Concrete structures and concrete formwork
- Cement/sand screeds/renders – cured for a min 28 days and 14 days respectively. Alternatively apply a barrier coat of ARDEX WPM 300 (HydrEpoxy 300) as a barrier coating to fresh or wet substrates.
- Masonry and concrete blocks – voids filled, sharp edges and protrusions should be removed to give a flush finish.
- Steel

TYPICAL APPLICATIONS

- Below ground tanking, basements and retaining walls (not negative hydrostatic situations)
- Bridge decks and concrete structures
- Planter boxes
- Terraces/Balconies (protected)
- Concrete protection from chemicals and water ingress
- Corrosion protection of metal roofs and structures
- Waterproof liners for sewage and containment ponds, dams and tanks
- Underground Structures / Tunnel lining

BASIC APPLICATION INSTRUCTIONS

Surface preparation

The surface to be coated should be clean, sound and free from oils, greases and flaking paint. New concrete should be cured for 28 days (or a barrier coat of ARDEX WPM 300 (HydrEpoxy 300) applied) prior to application of membrane and the surface pores must be open. All cracks or holes exceeding 2mm are to be repaired before application commences. Surface may be slightly damp but must be free from seeping moisture. Surface to which the coating is to be applied should be smooth with no sharp edges to ensure a uniform film thickness is achieved.

Priming

ARDEX WPM 179 is self-priming on most surfaces and a primer is therefore not necessary. Wet or freshly placed concrete surfaces should be sealed with Ardex WPM 300 (HydrEpoxy 300) in one coat at a coverage rate of 3.0 square metres per litre. Porous substrates such as aerated concrete should be primed with Ardex WPM 179 Single Component Rubber Waterproof Membrane mixed with 50% water.

Application

ARDEX WPM 179 can be applied by brush or trowel to the substrate over the entire area to be repaired or waterproofed. Allow 2-4 hours between coats for ARDEX WPM 179 unless a reinforcement material is used between coats. In this case, the second coat can be applied immediately after the mat has been installed in the first coat. The membrane is fully dry in 24 hours, after which should be protected with ARDEX protection boards or geotextile fabric coated drainage cell.

COVERAGE AND THICKNESS

As a patching/repair membrane one coat of ARDEX WPM 179 will cover approximately 15m² (dry film thickness of 0.6mm). If two coats are required ARDEX WPM 179 will cover approximately 7-8m² (dry film thickness of 1.0mm).

DETAILING OF PETRUSIONS AND EXPANSION JOINTS

ARDEX WPM 179 can be directly applied onto penetrating PVC pipes, re-bars and metal fixings providing a seamless waterproofing layer. Expansion joints and corners should be covered using ARDEX Waterproofing Detail Tape.

DRYING TIME

ARDEX WPM 179 is fully dry in 24-48 hours at 25°C and 50% relative humidity. After which it should be protected with ARDEX protection boards or geotextile coated drainage cell.

SAFETY DATA

ARDEX WPM 179 is non-hazardous and non-dangerous. Do not breathe gas/fumes/vapour/spray. Wear eye/face protection. Use only in well ventilated areas. Keep

container tightly closed and in a well ventilated place. In case of contact with eyes, rinse with plenty of water. In event of irritation seek medical advice.

ADDITIONAL INFORMATION IS LISTED IN THE MATERIAL SAFETY DATA SHEET.

STORAGE

ARDEX WPM 179 is sold in 15kg pails. Shelf life is 12 months when stored in the original unopened container, in a dry place at 25°C. Do not store in direct sunlight. Replace lid tightly after use.

CLEAN UP & DISPOSAL

Clean all equipment in fresh water immediately after use. Remove cured material with mineral turpentine or white spirits. Dispose of containers in compliance with all relevant local authorities, state, and federal regulations.

TECHNICAL PERFORMANCE DATA

Appearance and odour:	Thick black fluid, slight odour
Specific gravity:	Approx 1.05kg/L
Application temperature:	10°C – 35°C
Drying Time:	(@23°C, 50% RH)
Recoat	2-4 hours
Hard Dry	24-48 hours
Tensile Strength:	6 days @23°C, 50% RH plus 24 hrs at 70°C, 1.2MPa
Elongation at break:	6 days @23°C, 50% RH plus 24 hours at 70°C, 450%

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Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific

INSTALLATION RECOMMENDATIONS

The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. you should make yourself familiar with them.



ARDEX WPM 265

Sheltercoat/Superflex Water Based Primer

Creates a positive bond between the substrate and most water based coatings

Can be used on substrates like new and old concrete, timber and compressed fibre boards

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ARDEX WPM 265

Sheltercoat/Superflex Water Based Primer

PRODUCT DESCRIPTION

Ardex WPM 265 (Sheltercoat/Superflex Water Based Primer) is a red water based acrylic primer designed to seal the substrate and enhance the adhesion qualities of Ardex Superflex waterproofing membranes. The distinctive colour makes it easy to identify when the primer has been applied. Ardex WPM 265 is fast drying, non-toxic and can be used on a wide variety of substrates.

FEATURES/BENEFITS

- Promotes bonding between membrane & substrate
- Suitable for most substrates
- Easy application and cleaning
- Primed surfaces are easily identified

RANGE OF APPLICATION

A heavy duty water based primer formulated to penetrate and seal absorbent surfaces making them a sound base for waterproofing. For commercial and residential use, both internal and external.

Surfaces

Walls and floors

Substrates

Fibre cement sheets

Plywood (structural PAA and marine)

Particle board (wet area)

Concrete, renders and screeds

Masonry and concrete blocks

Plasterboard surfaces do not require priming

SURFACE PREPARATION

Ensure that the surface to be primed is free from loose materials, dust, oil, paint, curing compounds and any other contaminating materials. Remove laitance and roughen dense concrete by mechanical means.

New concrete should be left a minimum of 28 days and new render a minimum of 7 days before application commences. All cracks or holes exceeding 2mm are to be repaired before application commences.

APPLICATION

Apply one coat of the primer by brush, long nap roller, conventional or airless spray over entire area to be waterproofed including cracks. If the substrate is porous, a second coat may be required. Allow primer to dry before applying Superflex waterproofing membrane.

MIXING

Not required. Do not add water or other materials to the primer.

COVERAGE

One (1) litre will cover approximately 6 square metres. Coverage will vary depending on the porosity of the surface.

DRYING TIME

Touch dry in around 20-30 minutes, at 23°C, 50% RH. Drying time will vary depending on humidity, temperature and surface porosity. Important: Ardex WPM 265 must be dry prior to the application of the Ardex membrane.

CLEANING

Wash brushes and rollers with clean water.

PRECAUTIONS

- Do not apply when surface temperature is outside range 5-30°C.
- Do not use on glazed, impervious or silicone treated surfaces.
- Metal surfaces must be primed with an appropriate metal primer.
- Do not empty excess primer back into original pack as this may cause contamination.
- Highly dense or steel trowelled substrates may require Ardex WPM 270 (Sheltercoat Solvent Based Primer) to achieve optimal adhesion.
- For substrates other than those listed contact Ardex.

PACKAGING

20L plastic pail.

STORAGE

Ardex WPM 265 has a 12 month shelf life when stored in the original unopened packaging, in a dry place above 6°C.

QUALITY PRODUCT

Ardex WPM 265 is manufactured and tested to Ardex procedures which are maintained in accordance with Quality System Standard ISO 9001. Material Safety Data Sheets are available from Ardex upon request.

USER NOTES

The technical details and recommendations contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is responsibility of the user to ensure that the product is used in accordance with Ardex instructions and in applications for which they are intended.

TECHNICAL DATA

Product Identity

Form:	one part, acrylic based liquid
Dried Colour:	red
Specific Gravity:	approx 1.03
pH:	8 - 9

Application Properties

Drying Time:	20 - 30 minutes @ 23°C, 50% RH
Coverage:	6m ² /litre
Method:	roller, brush, conventional or airless spray

SAFETY DATA

Ardex WPM 265 is non-toxic. However, the contents should not be swallowed or inhaled. In case of eye contamination, rinse thoroughly with clean water. If irritation continues seek medical advice.



ARDEX WPM 300

HydrEpoxy 300

Water resistant, prevents rising damp, efflorescence and withstands hydrostatic pressure

Excellent adhesive to most substrates including damp surfaces and freshly laid green concrete

Safe to use in sensitive locations

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ARDEX WPM 300

HydrEpoxy 300

Water Based Epoxy Membrane

PRODUCT DESCRIPTION

Ardex WPM 300 (HydrEpoxy 300) is a two component water based epoxy polyamide membrane/barrier coating.

Approved for use with potable (drinking) water, independent testing confirms conformity with the requirements of AS4020.2000 & BS6920.

FEATURES/BENEFITS

- Non-flammable & negligible odour.
- Can be applied to damp surfaces.
- Can be safely applied to freshly laid hardened (green) concrete.
- Conforms to requirements of the:-
Building Code of Australia
as a waterproofing membrane.
- Conforms to the requirements of:
Australian standard 4020 – 2000
and **British Standard 6920**
for use in contact with potable water.
- When applied directly to the substrate the cured membrane will withstand 250kPa of hydrostatic pressure which is equivalent to a 25 metre head of water.
- When used wet on wet over Ardex WPM 256 (HydrEpoxy 256) the cured membrane will withstand 400kPa of pressure which is equivalent to 40 metre head of water.
- No maximum recoat time provided surface is clean and free from surface contaminants.
- Can be overcoated using almost any decorative or industrial finishing paint.
- Safe to use in sensitive locations (e.g. around food or habitable areas) and environmentally sound.
- Prevents rising damp and the formation of efflorescence when used as a single coat barrier coat.
- Has excellent adhesion to most substrates including brick, masonry, concrete block, concrete, stone and timber.
- Easy clean-up using water.

TYPICAL APPLICATIONS

- As a low water vapour transmission coating in the building and construction industries and as a barrier/seal coating over freshly laid or damp concrete.

- As a hydrostatic pressure resistant waterproofing membrane to prevent water seepage or dampness penetration through to the interior of walls and floors.
- As a waterproofing barrier on the negative side in below grade surfaces such as basements, tunnels, liftwells, retaining walls and car parks.
- As a waterproofing membrane or barrier coating over freshly laid hardened (green) concrete, prior to the application of conventional levelling compounds, carpet and tile adhesives.
- As a waterproofing membrane in tanking applications, including potable water containment.
- As a barrier seal coating over damp, green or efflorescence producing concrete prior to overcoating with conventional building paints.

LIMITATIONS

The product should be applied whilst the surface temperature is between 10–35°C. The product will cease to cure below 10°C, but will recommence curing when the temperature rises above 10°C. Curing time will also be adversely affected in situations where relative humidity is >85%.

In enclosed areas, ventilation must be provided during the curing cycle to enable adequate evaporation of the water.

Care should be taken when sandwiching adhesives between Ardex WPM 300 and floor coverings to ensure the water vapour transmission of the covering is sufficient to allow the solvent to escape.

Ardex WPM 300 is not classified as a trafficable membrane.

BASIC APPLICATION INSTRUCTIONS

Surface Preparation

All surfaces to be treated must be structurally sound; and existing coatings, adhesives, efflorescence should be removed to achieve maximum bond strength and resistance to hydrostatic pressure. Surfaces must be cleaned free of dirt, grease, oil, or other surface contaminants.

Holes, non-structural cracks or other surface deformities should be filled with Ardex WPM 300 epoxy mortar or Ardex concrete repair systems and allowed to cure for 2-3 hours before coating is applied.

Installation

Each component should be individually mixed to form an homogenous component.

Thoroughly mix the two components in the ratio of 1:1 by volume until a homogeneous blend is obtained. Only mix as much as may be used within the pot life and avoid excessive aeration during mixing.

The first coat should be thinned with water, as required depending on the porosity of the surface to be coated (up to 20% for dense surface to 5% for more porous surfaces) to ensure optimum penetration. Thinning of the second coat should be avoided since this increases the difficulty in achieving the required dry film thickness.

When the product is to be applied to dry concrete it is advisable to wet the surface with a fine mist of water before application and allow to just surface dry.

Floors—Spread the material using a squeegee or stiff nylon broom to achieve coverage and finish using a long nap roller.

Walls—Apply the product by roller or spray taking care to achieve required coverage.

Care must be taken to work the material into the surface to fill voids and avoid pinholing. A minimum of two coats is recommended and care should be taken to ensure uniformity of material and the required coverage is maintained. When finishing it is necessary to lay the material onto the surface and lightly finish to achieve the required dry film thickness per coat.

The coverage rate for all surfaces should be a total of 1.5 square metres per litre (3.0 square metres per litre per coat) to achieve optimum properties. In the event that this coverage rate is not achieved in two coats, further coats should be applied to achieve a total uniform coverage rate of 1.5 square metres per litre.

Allow to cure for 24 hours before applying adhesives, mortars, levelling compounds, decorative coatings or other surface treatments. Care is necessary to ensure the waterproofing membrane coating is not damaged in any way during subsequent treatments.

It is recommended that the final coating applied to floor surfaces should be allowed to cure for at least 3 days before further treatment to minimize the risks of mechanical damage.

PACKAGING

4L kit

20L kit

SAFETY PRECAUTIONS

Ardex WPM 300 Part A and Part B are hazardous goods and may cause sensitization by skin contact. They are harmful by inhalation, in contact with skin and if swallowed. Keep containers tightly closed in a well ventilated place. Avoid contact with skin and eyes. It is strongly recommended that protective clothing is worn at all times during use of epoxy material to prevent contact with skin.

ADDITIONAL INFORMATION IS LISTED IN THE MATERIAL SAFETY DATA SHEET.

CLEAN UP

Wash all equipment in water or water/detergent immediately on completion.

TECHNICAL DATA

Colour	Grey, Black
Finish	Semi-gloss going to matt with aging
Volume solids	44%
Mixing ratio	1:1 (Part A:/Part B) by volume
Coverage	Must be applied at a rate of 1.5 square metres per litre to achieve an effective waterproofing membrane. Minimum two coats are recommended to achieve uniform coverage.
Wet Film Thickness	300 micrometers per coat
Recoat time	4 hours @ 25°C, 50% RH
Full cure	7 days @ 25°C, 50% RH
Pot life	2 hours @ 25°C 1 hour @ 35°C

The recommended wet film thickness specified produces a nominal dry film thickness of 150 micrometers per coat or 300 micrometers for two coats. The apparent dry film thickness will reduce depending on the porosity of the substrate, however the product absorbed by the substrate forms part of the waterproofing function.



ARDEX WPM 368

Single Part Barrier Membrane

Water resistant, prevents rising damp, substrate efflorescence and withstands hydrostatic pressure

Leading edge innovative technology for liquid applied membranes

Excellent adhesion to most substrates including damp surfaces and freshly laid green concrete

Built in mechanical key, sand blinding not required

Suitable for under tiles and under floor levellers

Suitable as an incontinence barrier to concrete floors prior to carpet and carpet tile installation

ARDEX Australia Pty Ltd
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Seven Hills NSW 2147
Phone: 1300 788 780
Fax: 1300 780 102
Email: technicalservices@ardexaustralia.com
Internet: www.ardexaustralia.com

ARDEX New Zealand Ltd
32 Lane Street
Woolston, Christchurch 8241
Phone: 0800 227 339
Fax: (03) 384 9779
Email: info@ardexnz.com
Internet: www.ardex.co.nz

ARDEX WPM 368

Single Part Barrier Membrane

DESCRIPTION

ARDEX WPM 368 is a single component acrylic copolymer membrane that will prevent rising damp, efflorescence and will resist negative hydrostatic pressure when used in accordance with the technical data sheet. It has excellent adhesion to most substrates including brick, masonry, concrete block, concrete, stone and is simple to use by brush, roller or airless spray machine.

ARDEX WPM 368 single part damp-proof is safe to use and can be over-coated using almost any decorative paint. ARDEX WPM 368 can be applied to damp surfaces and freshly laid hardened (green) concrete and conforms to the Building Code of Australia as a waterproof membrane.

FEATURES/BENEFITS

- Non-flammable and negligible odour.
- Can be applied to damp surfaces.
- Can be safely applied to freshly laid hardened (green) concrete.
- When applied directly to the substrate (dual coat system) the cured membrane will withstand 250kPa of hydrostatic pressure which is equivalent to a 25 metre head of water.
- Can be over coated using almost any decorative or industrial finishing paint.
- Prevents rising damp and the formation of efflorescence when used as a dual coat system.

TYPICAL APPLICATIONS

- As a low water vapour transmission coating in the building and construction industries and as a barrier/seal coating over freshly laid or damp concrete.
- As a hydrostatic pressure resistant waterproofing membrane to prevent water seepage or dampness penetration through to the interior of walls and floors.
- As a waterproofing barrier on the negative side in below grade surfaces such as basements, tunnels, lift wells, retaining walls and carparks.
- As a waterproofing membrane or barrier coating over freshly laid hardened (green) concrete, prior to the application of conventional levelling compounds, carpet and tile adhesives.
- As a barrier seal coating over damp, green or efflorescence producing concrete prior to over coating with conventional building paints.
- For use as a waterproof barrier prior to applying ARDEX floor levellers and tile adhesives.

BASIC APPLICATION INSTRUCTIONS

Surface preparation

All surfaces to be treated must be structurally sound; and existing coatings, adhesives, efflorescence should be removed to achieve maximum bond strength and resistance to hydrostatic pressure. Surfaces must be cleaned free of dirt, grease, oil, or other surface contaminants.

Holes, non-structural cracks or other surface deformities should be filled with ARDEX WPM 405 (Sheltercrete Additive), sand/cement mortar, or ARDEX concrete repair systems and allowed to cure for 2–3 hours before coating is applied.

Installation

Floors – Apply the material using a roller or spray to achieve coverage and finish using a long nap roller.

Walls – Apply the product by roller or spray taking care to achieve required coverage. When the product is to be applied to dry concrete it is advisable to wet the surface with a fine mist of water before application and allow to just surface dry.

Care must be taken to work the material into the surface to fill voids and avoid pinholing, a minimum of one coat for reducing efflorescence and two coats required for rising damp, waterproofing and waterproofing negative side walls. Care should be taken to ensure uniformity of material and the required coverage is achieved. It is necessary to lay the material onto the surface and lightly finish achieving the required dry film thickness per coat.

TILING APPLICATIONS

Substrates such as screeds and renders should be normally allowed to dry for 7 days prior to the fixing of ceramic tiles. Alternatively ARDEX WPM 368 can be applied in one coat by brush or roller application at a coverage rate of 3m²/L or a WFT of 0.3mm per coat. Broadcast sand is not required.

FLOORING APPLICATIONS

Where concrete subfloors are damp (moisture content exceeds 5.5% or have a relative humidity of above 70%) ARDEX WPM 368 can be applied as a moisture barrier. Two coats are applied at 3m²/L or a WFT of 0.3mm per coat. A single coat of ARDEX WPM 368 applied at 3m²/L per coat acts as a moisture stop for 'green concrete' not subject to rising damp or permanent moisture. Broadcast sand is not required.

LIMITATIONS

Tiling can commence after 24 hours cure of ARDEX WPM 368 although should not exceed a maximum of five days. Installer is to ensure that there is no surface contamination or membrane puncture during this period. If left exposed for longer than five days or contamination has occurred, clean with a damp cloth and apply another coat of ARDEX WPM 368. The product should be applied whilst the surface temperature is between 10–35°C. The product will cease to cure below 10°C. Curing time will also be adversely affected in situations where relative humidity is >85%.

ARDEX WPM 368 is not classified as a trafficable or UV stable membrane. It is not suited for potable water applications.

COVERAGE

One coat of ARDEX WPM 368 is required to reduce efflorescence or as a moisture resistant coating over green concrete. The coverage rate should be 3m²/L, or a WFT of 0.3mm per coat. In areas that are affected by hydrostatic pressure, two coats are applied at 3m²/L or a WFT of 0.3mm per coat. In the event that this coverage rate is not achieved in 2 coats, further coats should be applied to achieve a uniform coverage rate of 3m²/L. Recoat time is 2–4 hours depending on ambient temperatures.

DRYING TIME

Allow ARDEX WPM 368 to cure for 24 hours before applying adhesives, mortars, decorative coatings or other surface treatments. Care is necessary to ensure the waterproofing membrane is not damaged during subsequent treatments.

PACKAGING/SHELF LIFE

ARDEX WPM 368 comes in 20kg pail. Shelf life is 12 months when stored in the original unopened packaging, in a dry place at 23°C. Do not store in direct sunlight. Replace lid tightly after use. Use remaining contents from part used containers within one month.

SAFETY PRECAUTIONS

Wear gloves when working, If the product enters the eyes, wash with clean water for at least 15 minutes and seek medical advice. If swallowed do not induce vomiting, give glass of water and contact a doctor. ADDITIONAL INFORMATION IS LISTED IN THE MATERIAL SAFETY DATA SHEET.

THINNING AND CLEAN UP

Wash all equipment in water or water/detergent immediately on completion.

TECHNICAL PERFORMANCE DATA

Colour	Grey
Finish	Semi-gloss going to matt with aging
Volume solids	50%
Coverage	Must be applied at a rate of 3m ² /L, or a WFT of 0.3mm per coat to achieve an effective waterproofing membrane (two coats total)
W.F.T.	300 micrometers (0.3mm) per coat
Recoat time	2–4 hours @ 25°C and 50% R.H.
Full cure	7 days @ 25°C and 50% R.H.

GUARANTEE

ARDEX Australia Pty Ltd (“we” or “us”) guarantees this product (“our goods”) is free from manufacturing defects and will perform to any applicable specification published by us for 10 years from the date of purchase. Our liability under this guarantee is limited at our option to replacement of the product, repair of any damage to the immediate surface or area of application of the product, or compensation, in each case if we are satisfied loss or damage was due to a breach of this guarantee.

This guarantee does not apply if damage or loss is due to failure to follow published instructions or any act or circumstance beyond our control, including shade variations and efflorescence. If you wish to make a claim under this guarantee you must notify us (ARDEX Australia Pty Ltd, 20 Powers Road Seven Hills NSW 2147; Toll Free: 1800 224 070; Email: technicalservices@ardexaustralia.com) and provide evidence of your purchase of the product within 30 days of any alleged loss or damage occurring. We reserve the right to ask you for satisfactory evidence of any alleged loss or damage. Any claim under this guarantee is at your cost. This guarantee is in addition to any rights or remedies you may have as a “consumer” under the Australian Consumer Law and to that extent you need to be aware that: “Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure”.

DISCLAIMER

The technical details, recommendations and other information contained in this data sheet are given in good faith and represent best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable Australian Standard, our instructions and recommendations are only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice building regulations or industry guidelines may affect specific installation recommendations.

The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them. © ARDEX Australia Pty Ltd 2013. All aforementioned products are the trade marks of ARDEX Australia Pty Ltd, its licensors and affiliates.



ARDEX WPM 163

Sheltercoat DPM 163 Penetrative Sealer

Single Component Polyurethane Dispersion Sealer

Requires only a short downtime for application. Trafficable within 24 hours

Penetrates and cures within the pores of the surface providing a seal for extended service life

Good flexibility properties to withstand substrate expansion and contraction

Can be applied to damp surfaces and freshly laid concrete

Non-flammable and very low odour

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ARDEX WPM 163

Sheltercoat DPM 163 Penetrative Sealer

Single Component Polyurethane Dispersion Sealer

PRODUCT DESCRIPTION

Ardex WPM 163 (Sheltercoat DPM 163) is a one component water based urethane modified acrylic water resistant protective sealer that penetrates and cures within the pores of the surface being sealed. Ardex WPM 163 is semi permeable allowing the surface to breathe and is not a waterproof membrane that will resist ponding water.

FEATURES/BENEFITS

- Interior or exterior use.
- Used as an Incontinence barrier for concrete floors in health care institutions.
- Water white and is stable to ultra violet exposure.
- Requires only short downtime for application. Four coats can be applied within the same day allowing light trafficking within 24 hours.
- Penetrates and cures within the pores of the surface being sealed to provide extended service life.
- Provides high abrasion resistance since the wear properties are dependent on the base substrate.
- Can be recoated at any time.
- Good flexibility properties to withstand substrate expansion and contraction.
- Non-flammable and very low odour.
- Surface tolerant and flexible.

TYPICAL USES

- As an economical single component sealer and dust suppressant for warehouse and showroom concrete floors to suppress dust formation and dirt collection with minimum down-time.
- As a water resistant sealer for external concrete or masonry walls to prevent water ingress while allowing the substrate to breathe to prevent internal surface condensation.
- As a grease and oil resistant sealer for concrete and masonry paths, paved areas, pool surrounds, etc.
- As an easily applied water resisting sealer for concrete, roof tiles, brick, stone, slate and masonry to inhibit water penetration
- As a protective sealer for sandstone to minimize dirt and atmospheric grime to develop while allowing the sandstone to breathe.
- As a sealer for timber wall paneling.

LIMITATIONS

The product should be applied whilst the surface temperature is between 10- 35°C. Drying time is adversely affected by low temperature and in situations where relative humidity is >85%.

Apply only using multiple thin film application.

Do not apply if rain is imminent.

DO not leave containers open for long period of time.

NOTE: Sealing a surface will decrease slip resistance in wet conditions.

SURFACE PREPARATION

All surfaces must be cleaned free from dust, dirt, grease, oil, previous surface coatings or adhesive and other surface contaminants.

Ardex WPM 163 is a clear sealer and any contamination, surface texture irregularities, or stains existing at the time of coating will be evident, and probably emphasised, in the final finish.

APPLICATION

Thoroughly mix the product before use. Ardex WPM 163 may be applied by brush, roller or low volume spray application techniques and should be applied in multiple thin films only to allow for maximum penetration allowing 30 minutes to 1 hour at 25°C between coats.

Care should be taken not to apply excess material in each coat when using brush or roller. Application of excess material per coat will result in the product bridging the pores preventing penetration.

Ardex WPM 163 should preferably be applied to damp or moist substrates that are surface dry and not wet. Excess water in the substrate will hinder the penetration of the product.

The number of coats required will vary depending on the porosity of the substrate. Apply sufficient material to fill all surface pores. Two coats are normally sufficient on steel trowelled concrete while clay pavers are likely to require four coats.

Allow 24 hours curing before subjecting to light pedestrian traffic, three days for rubber wheeled traffic, seven days for full cure and maximum traffic loading.

CLEANING & THINNING

Ardex WPM 163 normally does not require thinning for application. For very fine grained substrates, thin with up to 10% of fresh clean water.

Wash all equipment in warm water or water/detergent immediately on completion of the work.

TECHNICAL DATA

Colour	Clear/water white
Finish	Semi-gloss going to mat with external exposure aging
Typical coverage	15m ² /ltr per coat depending on the porosity of the substrate
Typical no. of coats	2-4 depending on the substrate porosity & surface finish desired
Recoat time	30 min to 1 hour @ 25°C, 50% R.H.
Full cure	7 days @ 25°C, 50% R.H.
UV Exposure	Resistant

SAFETY PRECAUTIONS

Ardex WPM 163 is non-hazardous; non-dangerous goods.

Avoid contact with skin and eyes and avoid breathing vapour or spray mist. Wear eye protection and protective gloves when mixing and using.

FIRST AID

If poisoning occurs, contact a doctor or the Poisons Information Centre. If swallowed, do NOT induce vomiting. Give a glass of water. If skin contact occurs, remove contaminated clothing and wash skin thoroughly. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

ADDITIONAL INFORMATION IS LISTED IN THE MATERIAL SAFETY DATA SHEET.



Accessories

- 4-6** **For Butynol®, Torch-on & EPDM membranes**
 - 6** **Undertile**
 - 8-9** **For TPO (Thermoplastic Polyolefin)**
 - 9** **Additional Items**
 - 11-12** **Membrane Clamp Waste**
 - 13-14** **Lo Rise Roof Vent**
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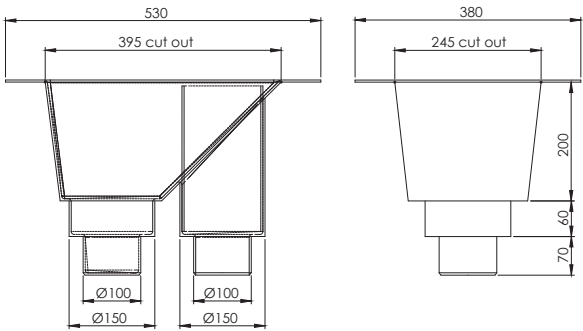
Accessories


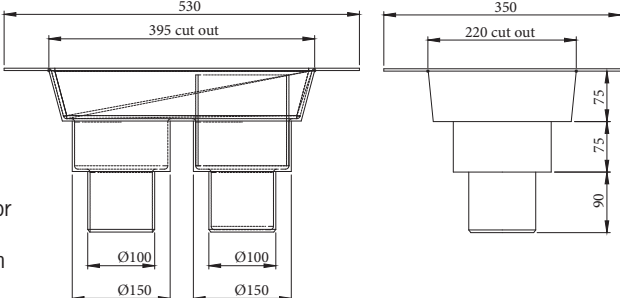
For use with Butynol®, EPDM, TPO, Undertile and Torch-on waterproofing membranes


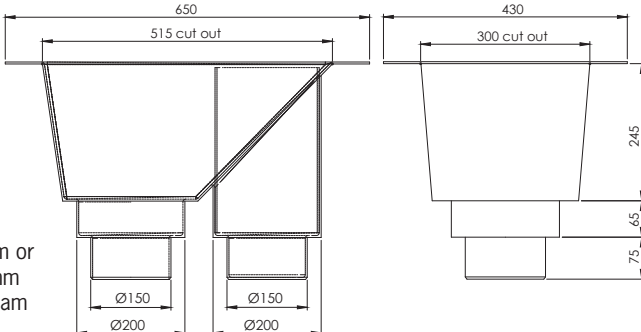
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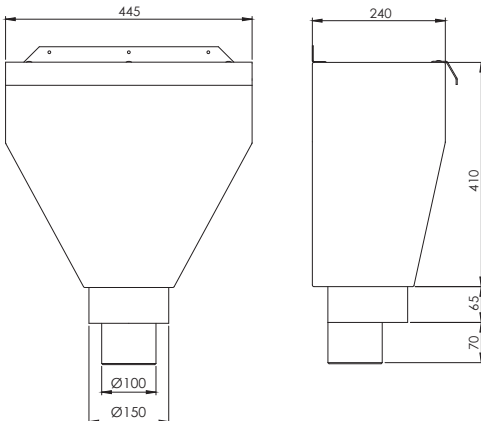
ACCESSORIES


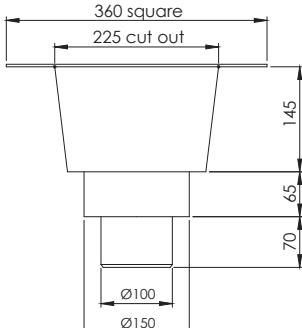
ARDEX BUTYNOL®, TORCH ON & EPDM MEMBRANES

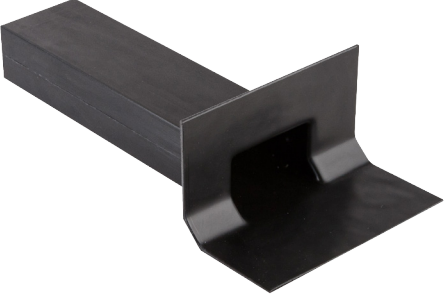
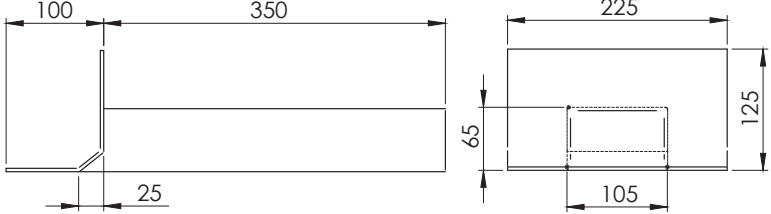
10804	Rainhead	 <p>Moulded rainhead with overflow. To suit 100mm or 150mm downpipe. 50mm rim allows for 50mm seam tape on edge.</p>	
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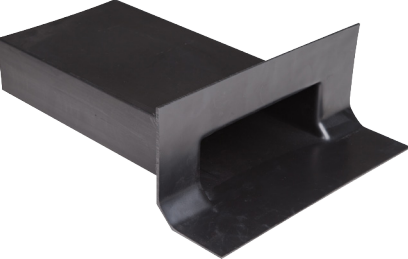
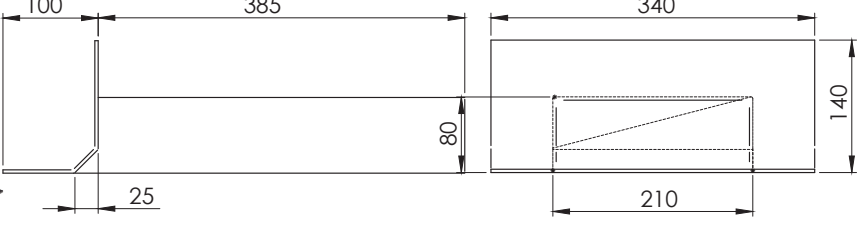
10805	Rainhead	 <p>Moulded rainhead with overflow. To suit 100mm or 150mm downpipe. 50mm rim allows for 50mm seam tape on edge.</p>	
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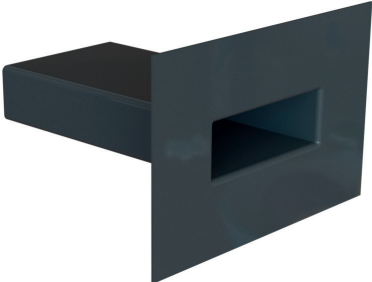
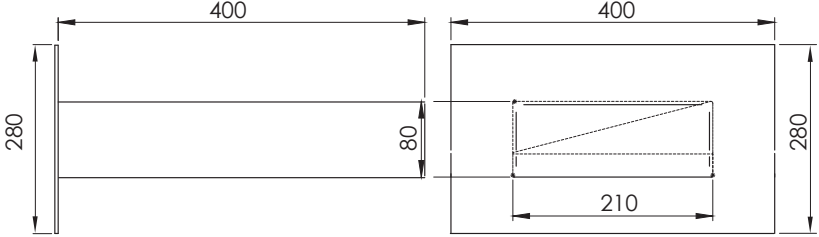
10806	Rainhead	 <p>Moulded rainhead with overflow. To suit 150mm or 200mm downpipe. 50mm rim allows for 50mm seam tape on edge.</p>	
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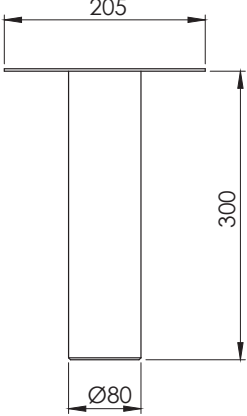
10803	External Rainhead	 <p>Moulded rainhead with metal fixing strip. To suit 100mm or 150mm downpipe. Can be used in conjunction with 10276 Scupper.</p>	
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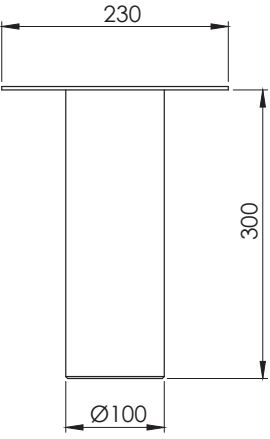
10802	Square Rainhead	 <p>Moulded rainhead, 295mm square. To suit 100mm or 150mm downpipe. 50mm rim allows for 50mm seam tape on edge.</p>	
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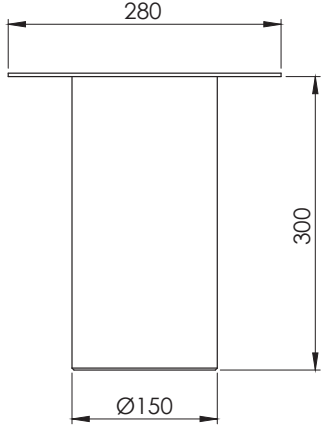
10275	Scupper	  <p>Allows overflow to take rainwater safely through parapet wall. 105mm channel with a 2° fall.</p>
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10276	Scupper	  <p>Allows overflow to take rainwater safely through parapet wall. 210mm channel with a 2° fall. Meets E2/AS1 requirements.</p>
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23321	2° Scupper Overflow	  <p>Allows overflow to take rainwater safely through parapet wall. 210mm channel with a 2° fall.</p>
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10784	80mm Dropper	 
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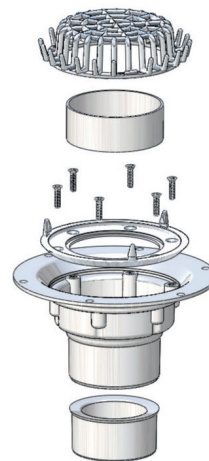
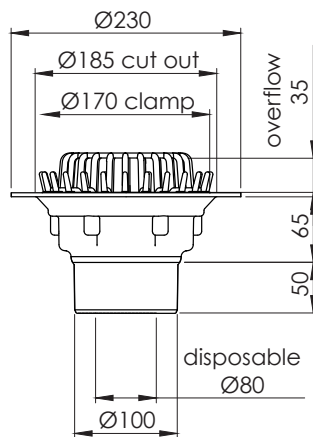
10785	100mm Dropper	 
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10786	150mm Dropper	 
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19837 **Stainless Steel Leaf Guard Drain**



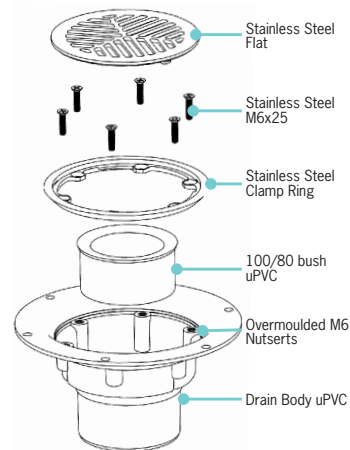
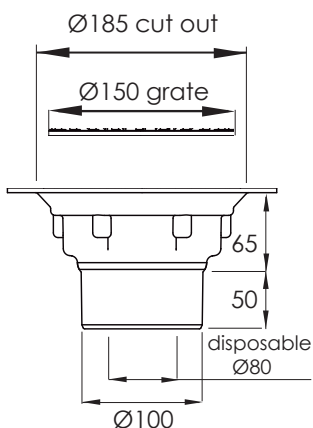
Stainless steel deck dome with 80mm or 100mm fitting and the overflow included in the package. Replaces the Dome Deck Drain (10783, 10782, 12565, 12564)



22090 **Stainless Steel Deck Drain**



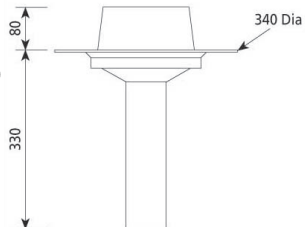
Replaces the Chrome Deck Drain (10778, 10777)



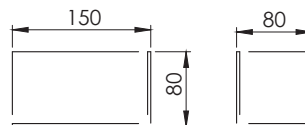
10563 **150mm Drain**
10562 **100mm Drain**
10564 **80mm Drain**



3 piece unit with clamp

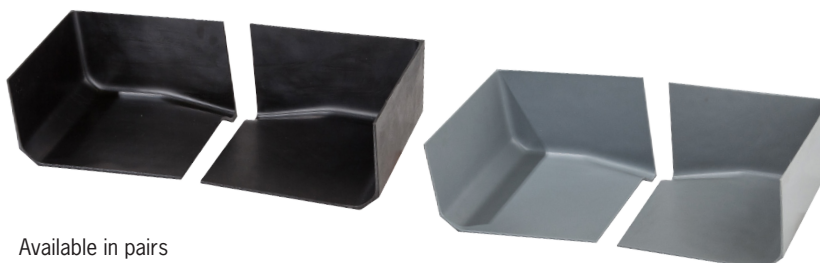


22123 **Parallel Kickout Flashings - Grey**
22122 **Parallel Kickout Flashings - Black**

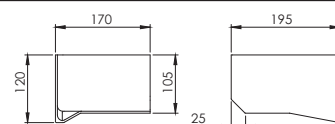


Available in pairs

10270 **Kickout Flashings - Black**
10271 **Kickout Flashings - Grey**



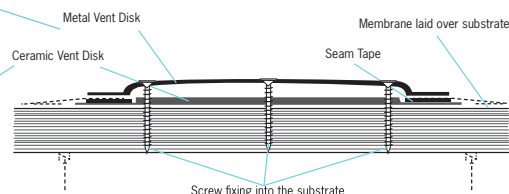
Available in pairs



11195 **Lo Rise Roof Vent**



Available in boxes of 5 units
 Internal Diameter - 120mm
 Height - 15mm



10277

Roof Vent



One-way ventilator made from spun aluminium. For use on concrete or plywood substrates.

10815

Roof Vent - Grey

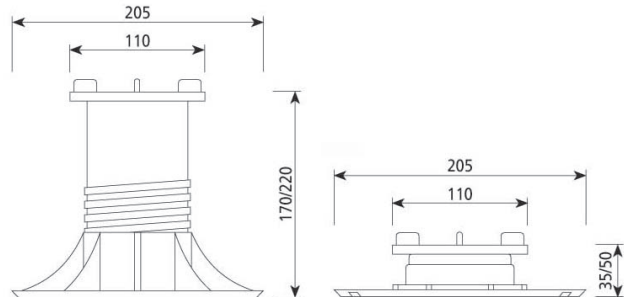


One-way ventilator made from moulded polyethelene. For use on concrete or plywood substrates.

Maxi Adjustable Paver Support



An adjustable height paving support for floating paving systems. Available on indent order.



13183	Paver Support 37.5mm - 50mm
11203	Paver Support 50mm - 75mm
11201	Paver Support 75mm - 120mm
11202	Paver Support 120mm - 170mm
11206	Paver Support 170mm - 215mm

10842 Paver Support

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



Deck Jak System

16229 Deck Jak Spacer



Simple paver support. Minimum height 65mm, maximum 105mm.

16227 Narrow Fin Deck Jak

Tile support suitable for use with Timber Panels, Structural Tiles, Natural Stone and Pavers.



8000007 Base Plate

Diameter 200mm
Additional fall 2° built in.
Minimal stocks held.



10796

Leafguard



Moulded from tough PVC to suit 100-180mm outlets

10585

Leafguard




Moulded from tough PVC to suit 80-140mm outlets such as the 100mm Dropper 10785.

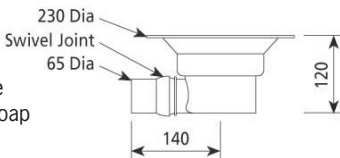

ACCESSORIES

ARDEX UNDERTILE MEMBRANES


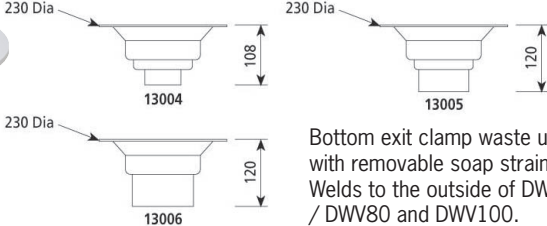
12676	Membrane Clamp Waste Unit
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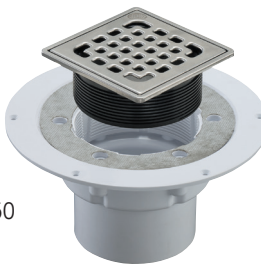
Side exit clamp waste unit with removable soap strainer. Welds to the outside of DWV50.

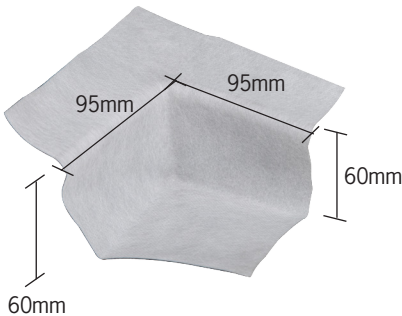
13004	Fastflow Clamp Waste Unit
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Bottom exit clamp waste unit with removable soap strainer. Welds to the outside of DWV50 / DWV80 and DWV100.




19883	Undertile Corners
-------	-------------------



Internal and external corner detailing for the ARDEX WPM 750 and ARDEX WPM 1000 membrane systems.

19884	Undertile Profiles
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Used for edge detailing with the ARDEX WPM 1000 membrane systems.

9m long x 220mm (with 70mm fold)

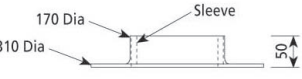
ACCESSORIES

ARDEX TPO (Thermoplastic Polyolefin)

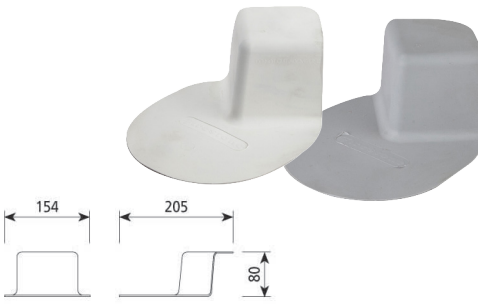
12957	Pourable Pocket - White
12958	Pourable Pocket - Grey



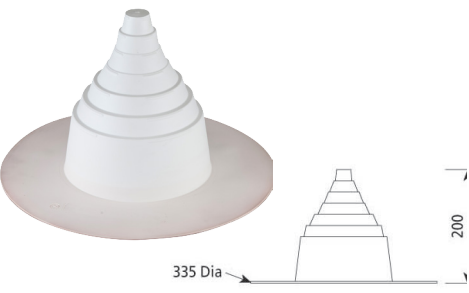
For sealing difficult roof penetrations



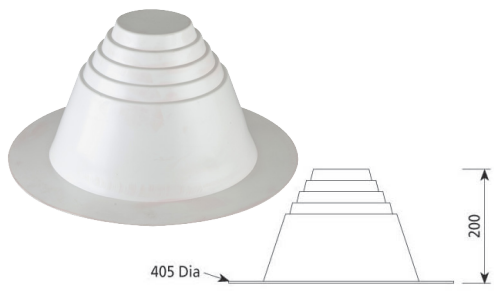
11053	Internal/External Corner White
12842	Internal/External Corner Grey

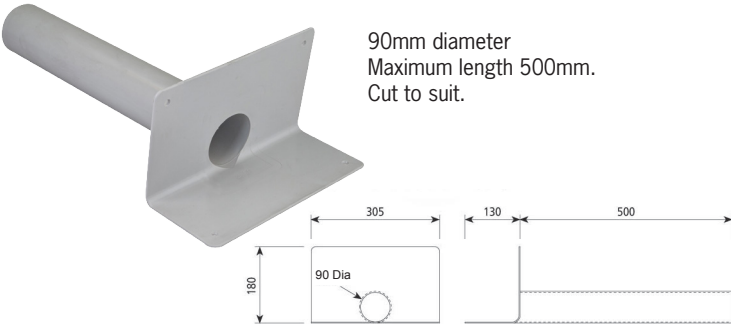

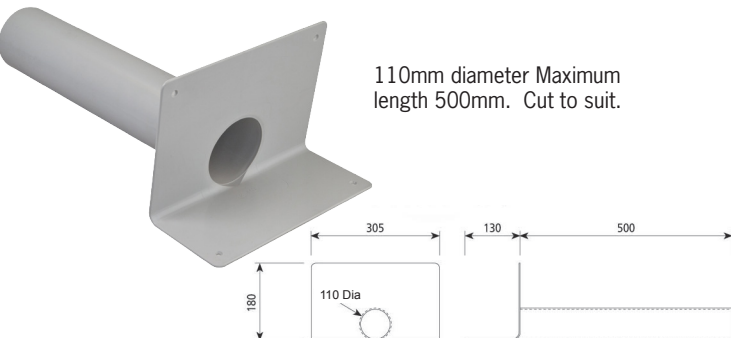



11055	Pipe Boot - Small to Medium
11057	Pipe Boot - Grey



12605	Pipe Boot - Medium - Large
11058	Pipe Boot - Grey



13471	TPO Scupper 90mm	 <p>90mm diameter Maximum length 500mm. Cut to suit.</p>	13467	TPO Downpipe Connector 90mm	 <p>Connects with 13471 and 13472 TPO Scuppers. 75mm TPO Downpipe Connector also available on indent order.</p>
			13468	TPO Downpipe Connector 110mm	
13472	TPO Scupper 110mm	 <p>110mm diameter Maximum length 500mm. Cut to suit.</p>	13469	TPO Downpipe Socket 90mm	 <p>Enables two scuppers to be joined together to provide waterproofing both sides of a parapet. 125mm socket also available on indent order.</p>
			13470	TPO Downpipe Socket 110mm	

ACCESSORIES

ADDITIONAL ITEMS

10522	Rubber Roller	 <p>For detailing sheet membranes</p>	8000007	Probe	 <p>For checking welds on TPO membranes</p>	10918	Brass Roller	 <p>For detailing sheet membranes</p>	8000007	Triac PID	 <p>Digital micro processor temperature control</p>
10465	Long Handle Roller	 <p>For detailing sheet membranes</p>	10801	Pressure Bar	 <p>For terminating sheet membranes</p> <p>38mm x 2.4m long</p>	22154	Plunger Can	 <p>Convenient solvent dispenser</p>	8000007	Uniroof E	 <p>Hot air welding machine</p>
13264	Green Right Mix Bucket	 <p>20 litre mixing bucket</p>	11030	Water Gauging Bucket		73201	30L Mixing Bucket				
8000007	Versicell	 <p>Drainage system for ARDEX Living Roof Systems. Available on indent order.</p>	19492	Deck Cradle		8000007	Triac S	 <p>Manual temperature Control</p>			



Membrane Clamp Waste

Multiple Positioning Outlet for Shower Waste

To be used in conjunction with WPM 750 Undertile Butynol®

DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

Membrane Clamp Waste

Multiple Positioning Outlet for Shower Waste

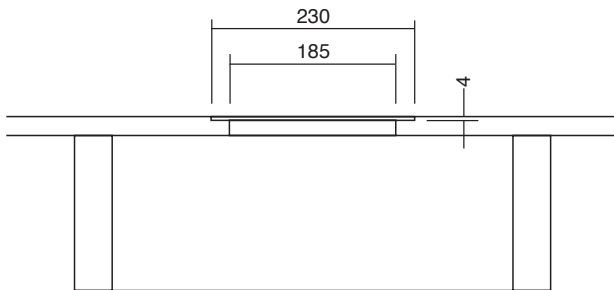
MEMBRANE CLAMP WASTE SPECIFICATION

The Ardex Membrane Clamp Waste unit facilitates fast, clean handling of shower waste. A multiple positioning outlet allows correct plumbing alignment.

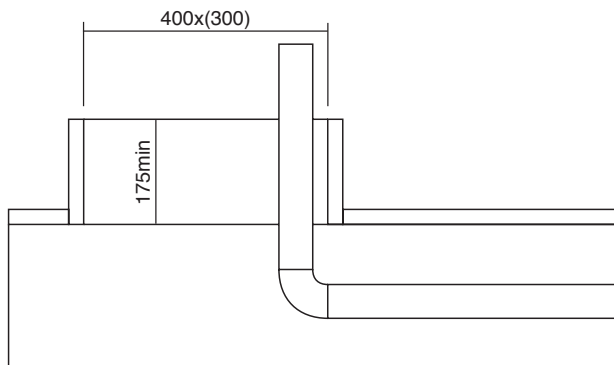
INSTALLATION

BUILDERS INFORMATION

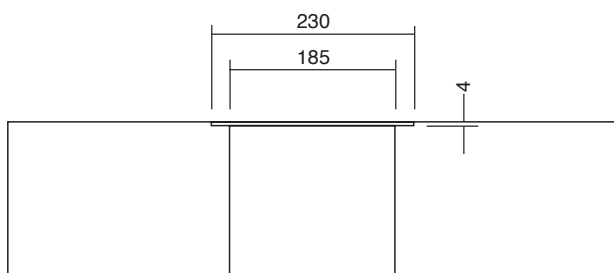
Wooden Floor Establish centre of waste position and cut a hole in floor Ø185. For flush mounting rebate for flange to Ø230x4mm deep. Reposition joist to clear waste body if necessary. Install additional cross-joists to strengthen floor at this area.



Ground Slab Establish centre of installed waste position and box out 450x300x175 minimum depth.



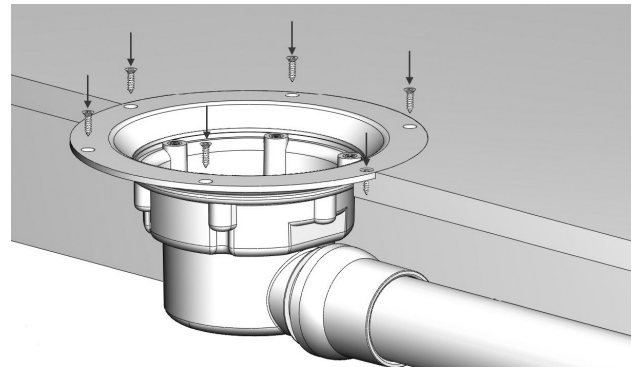
Suspended Slab Establish centre of installed waste position and core-drill to Ø190. For flush mounting rebate for flange to Ø230x4mm deep.



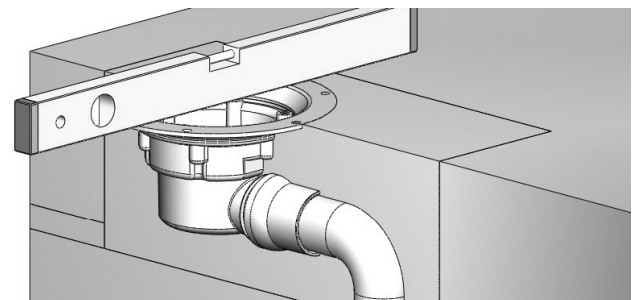
The unit offers secure secondary containment when used with Ardex WPM 750 Undertile Butynol®. It is an accessory product that has been specifically designed to work within a sheet membrane waterproofing system.

PLUMBERS INFORMATION

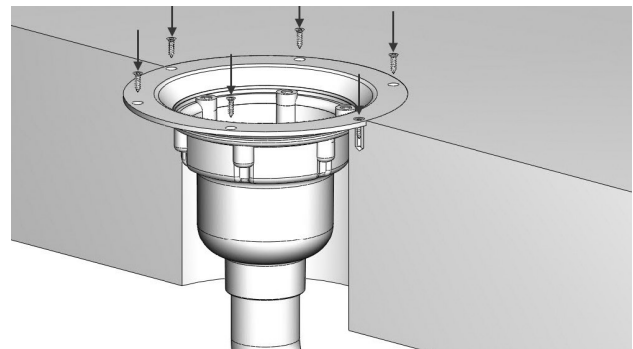
Wooden Floor Test-fit waste to establish DWV position and alignments. Screw waste to flooring with 6x 8gx16 CSK SS screws. Install DWV to AS/NZ3500.



Ground Slab Test-fit waste to establish DWV position and alignments ensuring flange will be level in both directions to finished screed height. Install DWV to AS/NZ3500. Back-fill waste with suitable concrete checking for final level of the flange.



Suspended Slab Test-fit waste to establish DWV position and alignments. Either glue waste body flange to floor or screw waste to flooring with 6x 8gx16 CSK SS screws with suitable masonry anchors. Install DWV to AS/NZ3500.





Engineered solutions
for tiling, flooring and
waterproofing projects

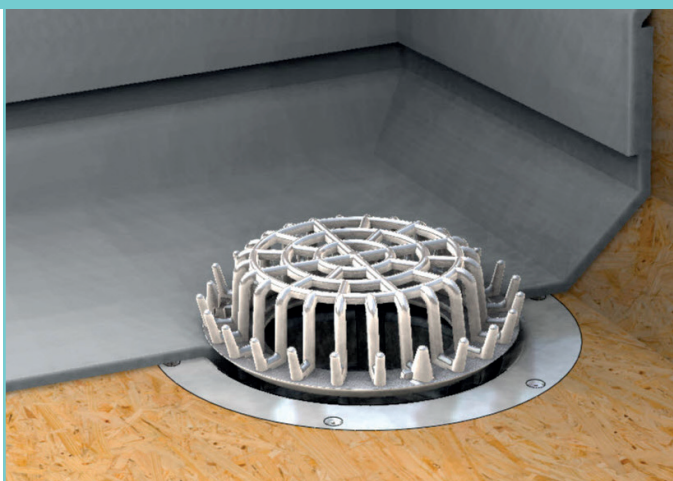
DOMED MEMBRANE OUTLET

Stainless Steel Clamped Roofing Outlet

For Commercial & Residential Installations

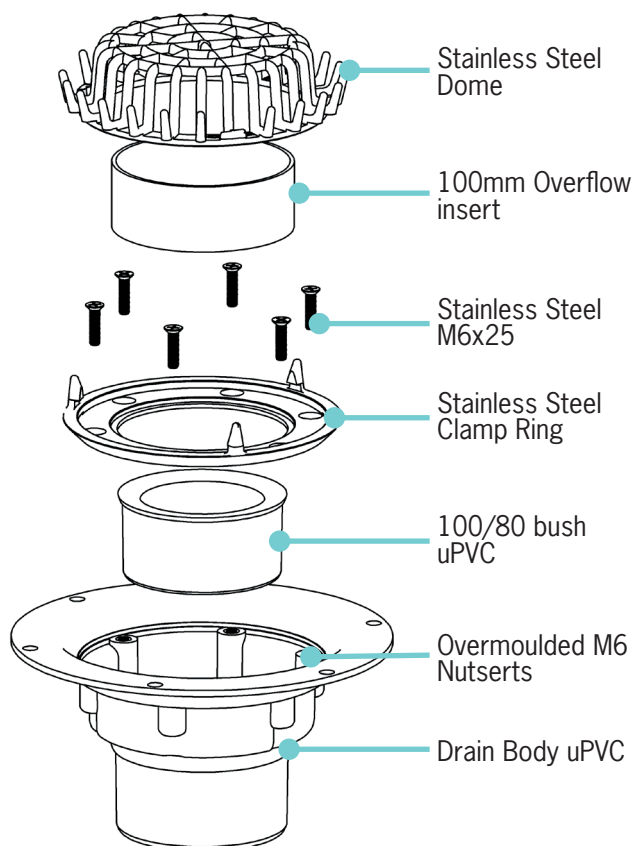
Stainless Steel clamped outlet for Membranes

- Stainless Steel Dome with extended leaf guard
- M6x25 machine screws for sound installations
- Stainless Steel interlocking Clamp Ring
- Over-moulded custom machine nuts - cannot be 'cranked out' and will not yield over time
- Clamping force over 7 tons - delivering peace of mind
- Disposable optional overflow insert
- Disposable optional 100/80mm reducer bush
- Engineered clamping range 0-8mm membrane thickness for multi-layer and torch-on

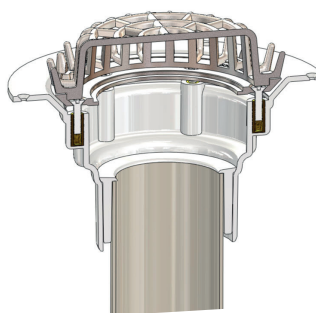


Product Parts

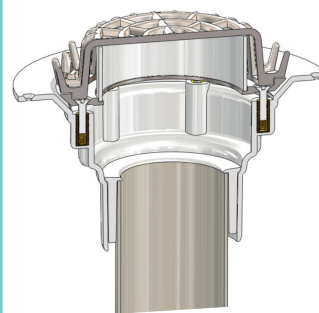
1 product adapts to 4 applications



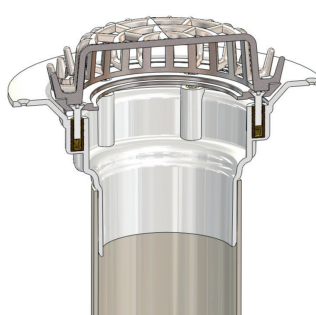
80mm Drain



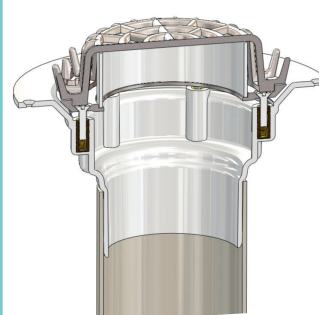
80mm Overflow



100mm Drain



100mm Overflow



FLAT MEMBRANE OUTLET

Stainless Steel Clamped Roofing Outlet

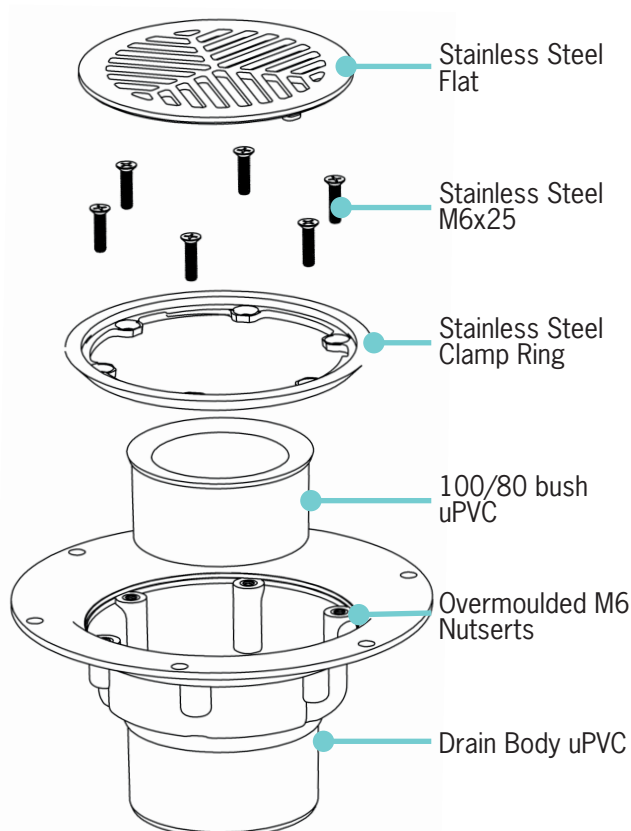
For Commercial & Residential Installations

Stainless Steel clamped outlet for Membranes

- Stainless Steel Flat Lid
- M6x25 machine screws for sound installations
- Stainless Steel interlocking Clamp Ring
- Over-moulded custom machine nuts - cannot be 'cranked out' and will not yield over time
- Clamping force over 7 tons - delivering peace of mind
- Disposable optional 100/80mm reducer bush
- Engineered clamping range 0-8mm membrane thickness for multi-layer and torch-on

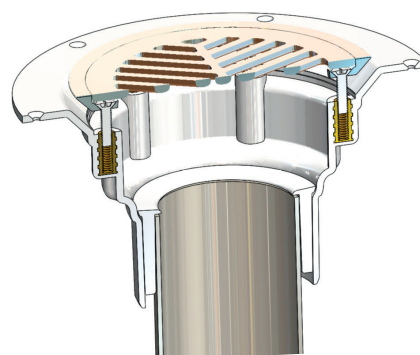


Product Parts

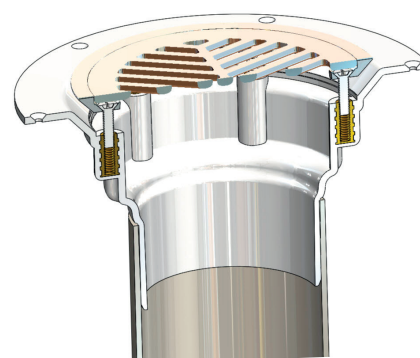


1 product adapts to 2 applications

80mm Drain



100mm Drain



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 WELLINGTON Ph (04) 568 5949 Fax (04) 568 6376
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SYSTEM ARDEX
 PREMIUM PERFORMANCE



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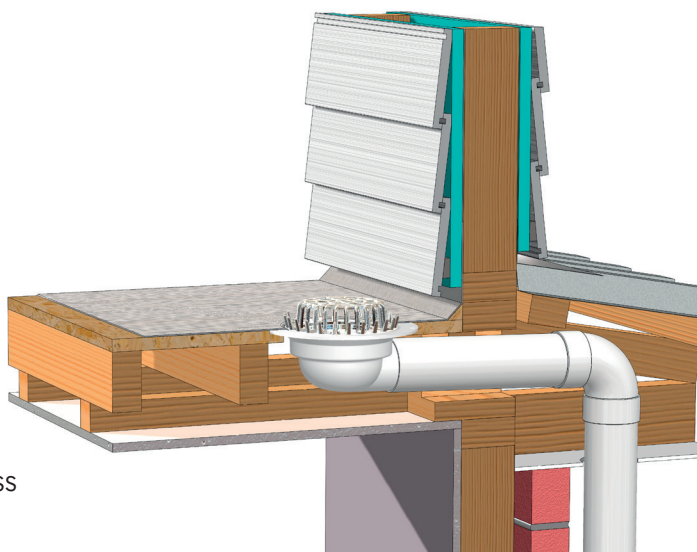
80MM SIDE EXIT MEMBRANE OUTLET

Stainless Steel Clamped Roofing Outlet

For Commercial & Residential Installations

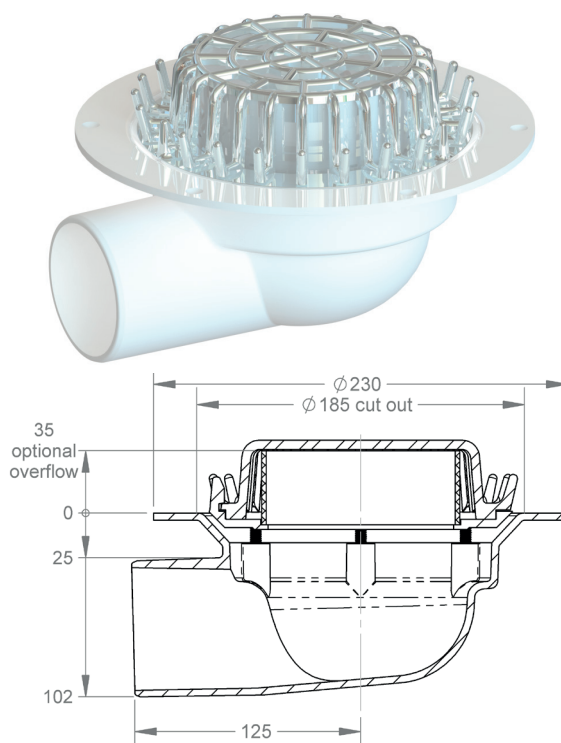
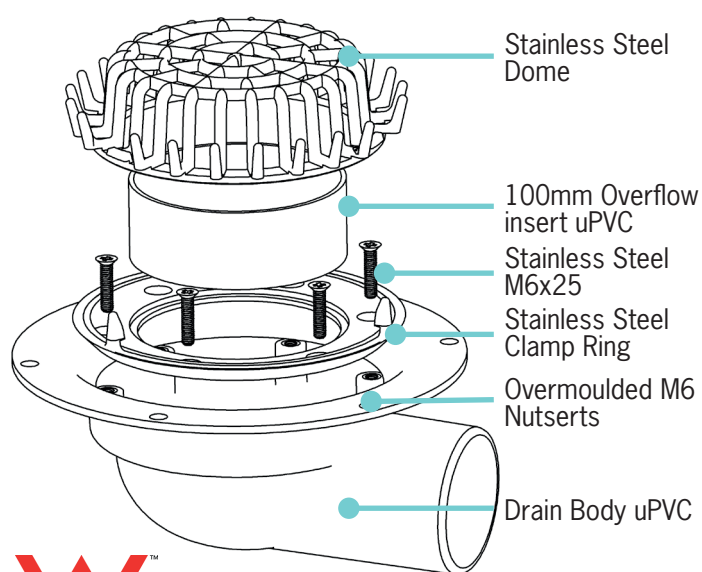
Stainless Steel clamped outlet for Membranes

- Stainless Steel Dome with extended leaf guard
- Fully compliant with E2 : 80mm pipe
- M6x25 machine screws for sound installations
- Stainless Steel interlocking Clamp Ring
- Over-moulded custom machine nuts
- cannot be 'cranked out' and will not yield over time
- Clamping force over 9 tons - delivering peace of mind
- Disposable optional overflow insert
- Engineered clamping range 0-8mm membrane thickness
for multi-layer and torch-on



Product Parts

SE80mm Drain / SE80mm Overflow Drain



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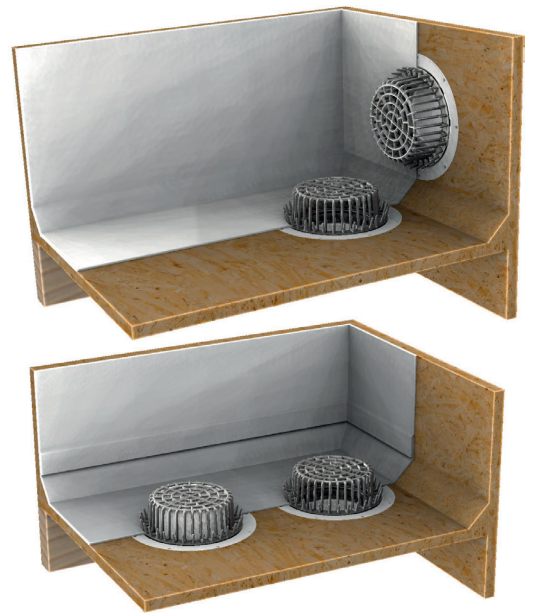
150MM DOMED MEMBRANE OUTLET

Stainless Steel Clamped Roofing Outlet

For Commercial & Residential Installations

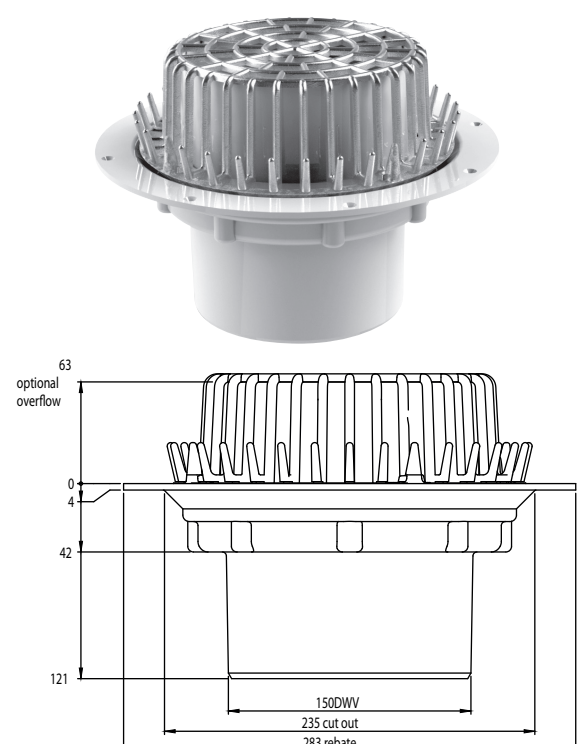
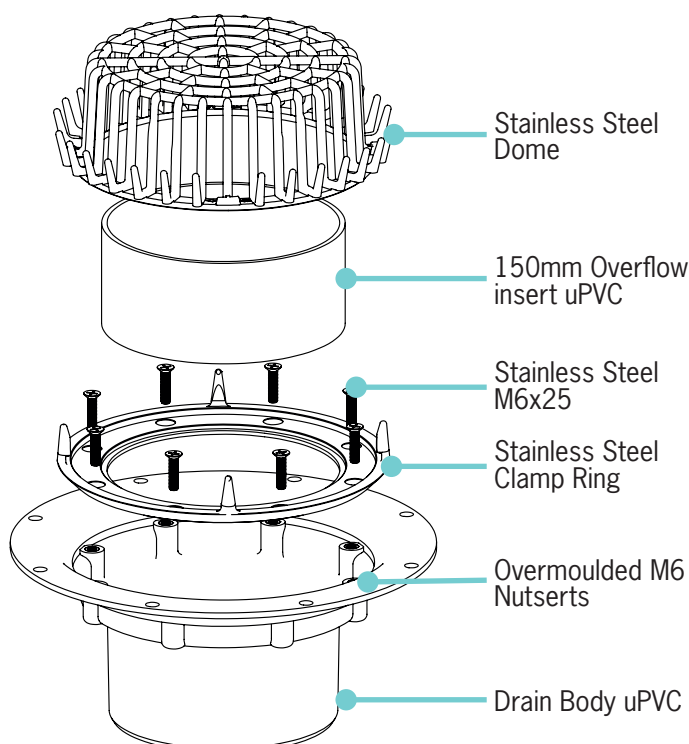
Stainless Steel clamped outlet for Membranes

- Stainless Steel Dome with extended leaf guard
- M6x25 machine screws for sound installations
- Stainless Steel interlocking Clamp Ring
- Over-moulded custom machine nuts - cannot be 'cranked out' and will not yield over time
- Clamping force over 9 tons - delivering peace of mind
- Disposable optional overflow insert
- Engineered clamping range 0-8mm membrane thickness for multi-layer and torch-on



Product Parts

150mm Drain / 150mm Overflow Drain



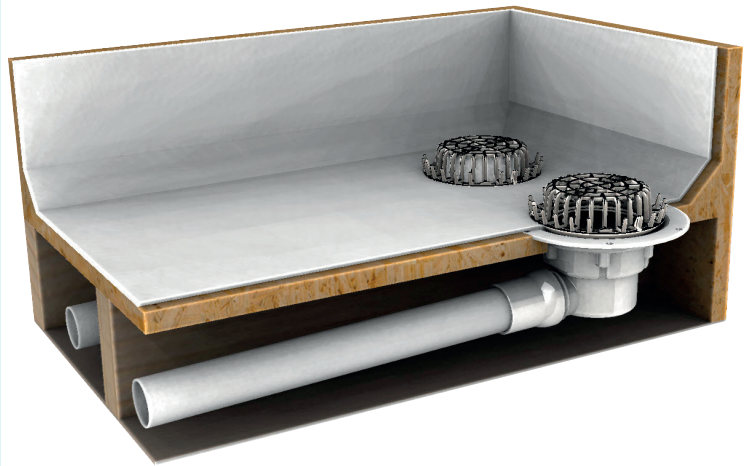
CLAMPED ROOF DRAIN OUTLET RANGE

Stainless Steel Clamped Roofing Outlet

For Commercial & Residential Installations

Stainless Steel clamped outlet for Membranes

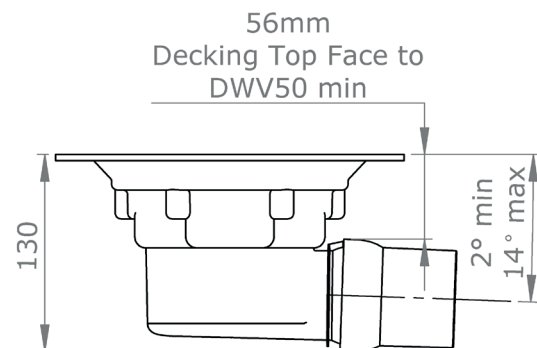
- Stainless Steel Flat Lid
- M6x25 machine screws for sound installations
- Stainless Steel interlocking Clamp Ring
- Over-moulded custom machine nuts - cannot be 'cranked out' and will not yield over time
- Clamping force over 7 tons - delivering peace of mind
- Disposable optional 100/80mm reducer bush
- Engineered clamping range 0-8mm membrane thickness for multi-layer and torch-on



Product Range



Side Exit 50mm
Low Profile Waste
for use in restricted
height applications
such as skillion
roofs



Bottom Exit Outlets for small decks through to large commercial applications



50mm



80mm



100/80mm



150mm



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SYSTEM ARDEX
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Lo-Rise Roof Vent

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LO-Rise Roof Vent

Installation Instructions

Product contents

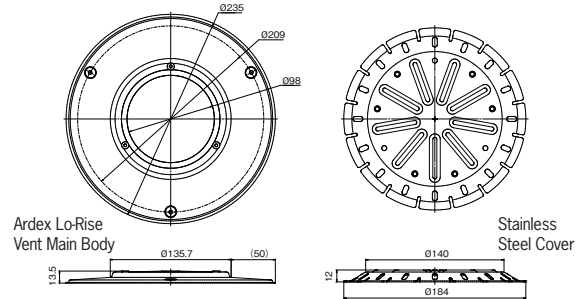


Each set includes:

- Lo-Rise Vent main body: 1
- Stainless steel cover: 1
- Stainless steel cover screw: 3
- Lo-Rise Vent screw: 3
- Nylon plug: 3
- Protection Sticker: 1

Each package contains 5 sets

Dimensions



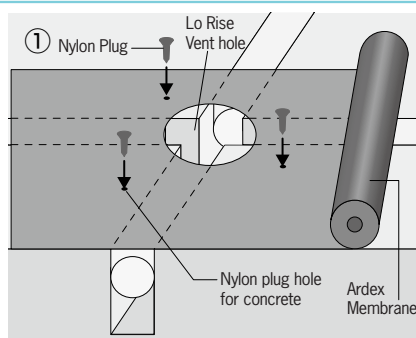
Warning

Gloves (or any other protection gear) should be worn when handling the product in order to avoid any injury

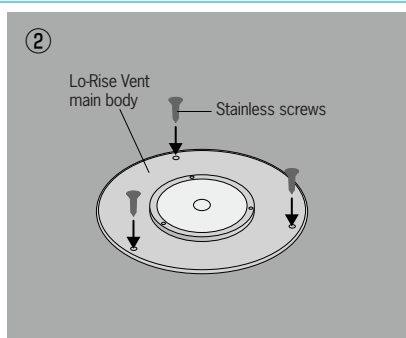


An installation example for Ardex Membrane, using joint intersections.

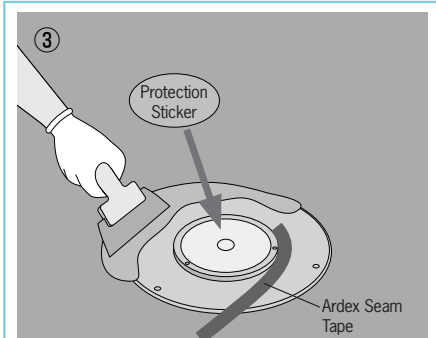
* This is only an example. For the actual installation, please follow specific instructions provided by each manufacturer.



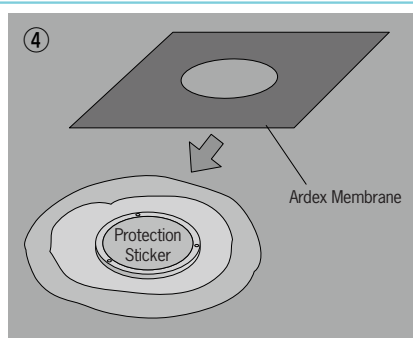
After the joint arrangement has been done, place the Ardex Membrane. Cut out a hole (Ø100mm) in the area of the joint intersection. Drill (Ø 5mm) through the predrilled holes in the main body of vent into the base material and fix in the nylon plugs provided.



Place the Lo-Rise Vent main body on the substrate in line with the nylon plugs, and secure it with the screws provided.

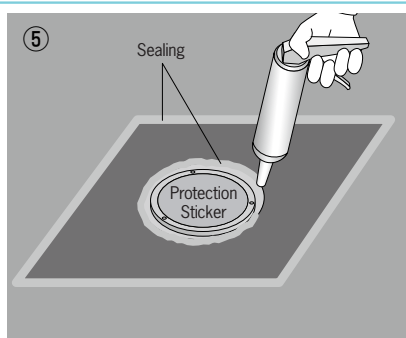


Attach the protection sticker provided onto the ventilation area to protect ceramic disc from excess adhesive. Apply seam primer and seam tape to buffed area.

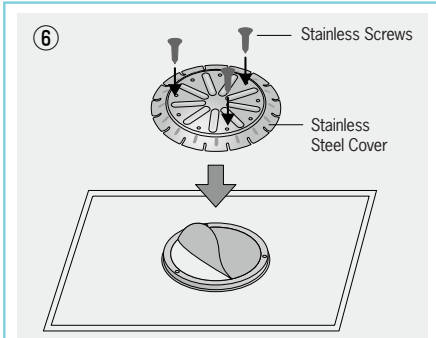


Attach the Ardex Membrane sheet by adhesives* onto the Lo-Rise Vent main body.

*WA98 adhesive to main membrane and seam primer over seam tape.



Seal all around the Ardex Membrane.



Remove the protection sticker, attach the stainless steel cover onto the Lo-Rise Vent main body using the fitting screws provided.