The Sheet Membrane range of waterproofing products incorporates bituminous sheet membranes for a wide variety of roofing and tanking situations. The range comprises both APP and SBS torch applied products. Details for each product are contained in the individual Product Data Sheet.

**APP VS SBS**

**ARDEX provides both APP and SBS modified bituminous membranes**

APP – Atactic Polypropylene is used to improve the properties of the distilled bitumen basis. Provides heat and UV resistance required for our climate.

SBS – Styrene Butadiene Styrene is also used to improve the bitumen properties. Greater flexibility in cold temperatures. Not appropriate for applications where UV exposure is anticipated.

**PRODUCTS**

**ARDEX WPM 116**

2.7mm APP Bitumen Fibre backed base sheet

A polyester backed fibreglass reinforced modified bituminous membrane normally installed as a base layer in multi-layer Shelterbit systems. ARDEX WPM 116 (Shelterbit fibre-backed base sheet) has been specially designed for application to heat sensitive substrates such as timber or thermal insulation. It is also ideally suited for use as a base layer on rough or uneven surfaces, over sound existing membranes such as rubber, PVC, bitumen, acrylic and polyurethane. It can be loose laid, mechanically fastened, adhered with ARDEX WA 98 Adhesive or laid in hot-melt bitumen using the hot roll and pour method.

**ARDEX WPM 117**

2mm SBS Fiberglass Reinforced Bituminous Membrane *(Shelterstick Self-adhesive Membrane)*

A 2mm self-adhesive membrane providing absolute waterproofing with a high resistance to hydrostatic pressure. The Peel and Stick nature of ARDEX WPM 117 means no naked flames during the install - increasing the safety of application. ARDEX WPM 117 also has the added advantage of being able to be torched over with subsequent layers. ARDEX WPM 117 is also designed to be applied over heat sensitive substrates such as PVC, metals, insulation and in some instances; smooth faced waterproofing membranes (please seek advice from an ARDEX representative for approved membranes).

**ARDEX WPM 150**

3.0mm Combined reinforced APP Bitumen Membrane

A 3.0mm (nominal) thick combined reinforced (polyester & fibreglass) APP modified bituminous torch applied membrane. It is used as a base or mid layer in a multi-layer bituminous membrane system.

**ARDEX WPM 185**

4.5kg/m² Mineral Coated APP Bitumen Membrane *(Shelterbit Mineral Membrane)*

A 4.0mm (nominal) thick combined reinforced (polyester & fibreglass) APP modified bituminous torch applied membrane with a mineral slate finish. Designed as a cap layer in exposed membrane systems. Available in grey only.

**ARDEX WPM 188**

3mm Garden Tanking SBS Bitumen Membrane *(Shelterbit Garden Membrane)*

A 3mm (nominal) thick combined reinforced (polyester & fibreglass) with root inhibitors to prevent damage from plant roots. ARDEX WPM 188 has been designed for waterproofing landscape and planter box areas. It is also used in single or multi-layer systems in horizontal or vertical tanking applications. ARDEX WPM 188 is also suitable for colder climate conditions.

**ARDEX WPM 444**

4.1mm Reinforced APP Bitumen Membrane *(Shelterbit Phoenix Star)*

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).

**PRIMERS AND ADHESIVES**

**ARDEX WPM 240**

A solvent based bitumen modified primer to be used to seal and prepare the substrates prior to the installation of torch applied (Shelterbit) membranes. Colour: Black Liquid.

**ARDEX WA 98**

Specially formulated adhesive for ARDEX WPM 116, for full or partial adhesion to suitable substrate. Colour: Amber Liquid.
## ARDEX MODIFIED BITUMEN & SBS TORCH-ON MEMBRANES

<table>
<thead>
<tr>
<th>TECHNICAL PROPERTY</th>
<th>APP BASE SHEETS</th>
<th>SBS SELF ADHESIVE SHEETS</th>
<th>APP MEMBRANE SHEETS</th>
<th>SBS BITUMEN MEMBRANE</th>
<th>APP BITUMEN MEMBRANE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARDEX WPM 116</td>
<td>ARDEX WPM 117</td>
<td>ARDEX WPM 150</td>
<td>ARDEX WPM 185</td>
<td>ARDEX WPM 188</td>
<td>ARDEX WPM 444</td>
</tr>
<tr>
<td>Type</td>
<td>APP</td>
<td>APP</td>
<td>APP</td>
<td>SBS</td>
<td>APP</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>Fibreglass (50g/m²) &amp; Polyester (150g/m²)</td>
<td>Fibreglass</td>
<td>Fibreglass &amp; Polyester (150g/m²)</td>
<td>Combined Polyester/Glass</td>
<td>Combined Polyester/Glass</td>
</tr>
<tr>
<td>Thickness/weight</td>
<td>2.7mm</td>
<td>2.0mm</td>
<td>3.0mm</td>
<td>4.5 k/m²</td>
<td>3.0mm</td>
</tr>
<tr>
<td>Top Surface</td>
<td>Torch Film</td>
<td>Torch Film</td>
<td>Sand</td>
<td>Slate Chip</td>
<td>Torch Film</td>
</tr>
<tr>
<td>Bottom Surface</td>
<td>Polyester fleece</td>
<td>Self-Adhesive</td>
<td>Torch Film</td>
<td>Torch Film</td>
<td>Torch Film</td>
</tr>
<tr>
<td>Tear Resistance (longitudinal)</td>
<td>100 N</td>
<td>130 N</td>
<td>130 N</td>
<td>130 N</td>
<td>130 N</td>
</tr>
<tr>
<td>Elongation (longitudinal)</td>
<td>60%</td>
<td>35%</td>
<td>45%</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Heat Stability</td>
<td>110°C</td>
<td>110°C</td>
<td>110°C</td>
<td>110°C</td>
<td>90°C</td>
</tr>
<tr>
<td>Cold Flexibility</td>
<td>– 5°C</td>
<td>– 10°C</td>
<td>– 5°C</td>
<td>– 5°C</td>
<td>– 20°C</td>
</tr>
<tr>
<td>Roll Size</td>
<td>1x10m</td>
<td>1x15m</td>
<td>1x10m</td>
<td>1x8m</td>
<td>1x10m</td>
</tr>
<tr>
<td>Roll Weight (approx.)</td>
<td>30kg</td>
<td>35kg</td>
<td>35kg</td>
<td>36kg</td>
<td>35kg</td>
</tr>
</tbody>
</table>
This recommendation has been prepared for the general installation of an ARDEX Torch Applied 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 ARDEX torch applied membranes should be carried out by an Approved Installer of ARDEX waterproofing membranes. Installation shall be strictly in accordance with the Manufacturer's recommendations. All materials used in conjunction with the ARDEX Torch Applied Membrane 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**
Surfaces to which the ARDEX Torch Applied Membrane 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. Concrete must be 28 days old, screeds must be 7 days and substrate must be dry.

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

Plywood substrates should be structurally sound, fixed with 3mm gaps between all sheets, and countersunk screws fixed to plywood manufacturer’s specifications. **Staples and nails are not suitable under any circumstances.** Wooden substrates with right angled internal corners should have a timber triangular fillet 50mm x 50mm screwed to each corner. External corners should be rounded to reduce wear on edges and allow an improved finish.

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

**PRIMING**
Prior to the application of ARDEX Torch Applied Membranes, all prepared surfaces shall be primed with ARDEX WPM 240 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 Base Sheets.

Refer to ARDEX WA 98 Adhesive and approximate coverage (2.5m² per/L – dependent on substrate porosity) of the WA 98 etc.

**MEMBRANE SYSTEM COMBINATION**
ARDEX Torch Applied Membranes can be used in various combinations, refer to ARDEX Torch Applied Membrane System Recommendation in this section for your individual waterproofing requirement.

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

**PROTECTION**
An ARDEX protection board must be used prior to backfilling or when topping is required.

**SAFETY PRECAUTIONS**
ARDEX Torch Applied Membranes are non-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.
ARDEX Torch Applied 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 local ARDEX representative to select the most appropriate solution.

### Waterproofing Systems

#### Roofs & Decks Exposed

<table>
<thead>
<tr>
<th>System Configuration</th>
<th>Materials</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Layer Bitumen – Mineral Finish</td>
<td>WPM 240 / WPM 117 / WPM 150 / WPM 185</td>
<td>20 years</td>
</tr>
<tr>
<td>2 Layer Bitumen – Mineral Finish</td>
<td>WPM 240 / WPM 150 or WPM 444 / WPM 185</td>
<td>15 – 20 years</td>
</tr>
<tr>
<td>3 Layer Vented Bitumen – Mineral Finish</td>
<td>WA 98 / WPM 116 / WPM 150 / WPM 185</td>
<td>20 years</td>
</tr>
<tr>
<td>2 Layer Vented Bitumen – Mineral Finish</td>
<td>WA 98 / WPM 116 / WPM 185</td>
<td>15 years</td>
</tr>
</tbody>
</table>

#### Roofs & Decks Protected

<table>
<thead>
<tr>
<th>System Configuration</th>
<th>Materials</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Layer Bitumen</td>
<td>WPM 240 / WPM 150 / WPM 444</td>
<td>15 – 20 years</td>
</tr>
<tr>
<td>2 Layer Bitumen</td>
<td>WPM 240 / WPM 117 / WPM 188</td>
<td>15 years</td>
</tr>
<tr>
<td>2 Layer Bitumen</td>
<td>WPM 240 / WPM 150 / WPM 150</td>
<td>15 years</td>
</tr>
</tbody>
</table>

#### Roofs & Decks Landscaped

<table>
<thead>
<tr>
<th>System Configuration</th>
<th>Materials</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Layer Bitumen with Root Inhibitor</td>
<td>WPM 240 / WPM 188 / WPM 188</td>
<td>15 – 20 years</td>
</tr>
<tr>
<td>2 Layer Bitumen with Root Inhibitor</td>
<td>WPM 240 / WPM 117 / WPM 188</td>
<td>15 years</td>
</tr>
<tr>
<td>1 Layer Bitumen with Root Inhibitor</td>
<td>WPM 240 / WPM 188</td>
<td>10 years</td>
</tr>
</tbody>
</table>

#### Below Grade Positive Side

<table>
<thead>
<tr>
<th>System Configuration</th>
<th>Materials</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Layer Bitumen – Root Growth Inhibited</td>
<td>WPM 240 / WPM 188 / WPM 188</td>
<td>20 years</td>
</tr>
<tr>
<td>2 Layer Bitumen – Root Growth Inhibited</td>
<td>WPM 240 / WPM 117 / WPM 188</td>
<td>15 years</td>
</tr>
<tr>
<td>2 Layer Bitumen – Torch Film</td>
<td>WPM 240 / WPM 150 / WPM 150 or WPM 444</td>
<td>15 – 20 years</td>
</tr>
<tr>
<td>1 Layer SBS Bitumen – Sand Finish</td>
<td>WPM 240 / WPM 188</td>
<td>10 years</td>
</tr>
<tr>
<td>2 Layer Self Adhesive SBS Bitumen</td>
<td>WPM 240 / WPM 3000X / WPM 3000X</td>
<td>20 years</td>
</tr>
<tr>
<td>1 Layer Self Adhesive SBS Bitumen</td>
<td>WPM 240 / WPM 3000X</td>
<td>10 years</td>
</tr>
</tbody>
</table>
INSTALLATION DETAILS

ARDEX TORCH APPLIED MEMBRANE

SHEET LAYOUT

Application Details Two Plies System
Staggered Layout for Finish Membrane
1 – First layer
2 – Second layer
3 – Third layer

TYPICAL TURN UP DETAILS – EXPOSED MEMBRANE

Sand Cement Fillet
3rd Layer
2nd Layer
1st Layer
Fibre Base Sheet
Membrane

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TYPICAL TURN UP DETAILS – NON-EXPOSED MEMBRANE

Three Layer System

Two Layer System

Single Layer System

PRESSURE SEAL FLASHING

Flexible Sealant
ARDEX Pressure Seal
Mechanical Fixing
Base Layer Sheet
Cap Layer Sheet
CUT IN FLASHING
- Cap Layer Cut into Wall
- Cap Layer Sheet
- Base Layer Sheet

LIQUID MEMBRANE FLASHING
- ARDEX WPM 330 or ARDEX WPM 310 Facade Coating
- ARDEX WPM 179 with Deckweb reinforcement
- Bitumen Sheet
- Membrane System
- Coving

CAPPING DETAIL
- Capping
- Sand cement fillet
- Membrane
- 300mm base sheet
- Concrete

CONSTRUCTION JOINT
- Shelterbit top layer fully bonded except over 250mm strip
- 250mm Shelterbit strip stuck to one side of the joint only
- Concrete slab

EXPANSION JOINT
- Shelterbit top layer fully bonded except over 300mm under flashing
- 300mm Shelterbit under flashing fully bonded to each side of the joint
- Concrete slab
- Fire resistant product

ALTERNATE EXPANSION JOINT
- Capping
- Sealant
- Bituminous fibreboard
- Sand cement fillet
- Ballast
- Slipsheet
- Insulation
- Membrane
- Screed
- Concrete slab

GARDEN BED/PLANTER BOX DETAIL
- ARDEX WPM 330 or ARDEX WPM 310 Facade Coating
- ARDEX WPM 188 Garden Membrane
- Drainage Cell
- Capping
- See Liquid Flashing Detail
- ARDEX WPM 150 Garden Membrane
MECHANICAL FIXING OVER FOAM 2 LAYER SYSTEM

ARDEX WPM 150/185

ARDEX WPM 116
Fibre Base Sheet

Mechanical Fixing

Overlapping
ARDEX WPM 116
Fibre Base Sheet

Foam
Insulation

MECHANICAL FIXING OVER FOAM 3 LAYER SYSTEM

ARDEX WPM 150/185

ARDEX WPM 150

Mechanical Fixing

Overlapping
ARDEX WPM 116
Fibre Base Sheet

Foam
Insulation

TYPICAL OUTLET DETAIL

Membrane
Grate
Membrane underflashing

Concrete
Outlet insert

ROOF EDGE – MECHANICALLY FIXED

Mechanical fixing

Metal capping

Fillet

Substrate

WPM116 Basesheet

Shelterbit mineral

Shelterbit 2nd layer torched onto Basesheet

ROOF EDGE ON LOAD BEARING WALL

Metal Flashing (optional)

Mastic/Sealant

Chase

Fillet

ARDEX Torch Applied Membrane Flashing turned into chase

ARDEX Torch Applied Membrane Base Sheet

Substrate

Torched to Base Sheet
Porous Concrete Decking
Aerators
Vapour Membranes

WPM116 base sheet
Partial bonding through vapour equalisation layer

Substrate
Fillet

STEP 1
STEP 2

Typical details do not indicate number of layers required

OUTSIDE CORNER

PIPE FLASHING

Flashing prior to installation

Parallel cuts
Pipe
Flashing metal sleeve
Membrane flashing torched in place

Top membrane layer cut to fit around pipe
Substrate

ONE WAY VENT INSTALLATION

Mineral Cap Sheet
One Way Roof Vent
WPM116 Basesheet

Sealant
Vented Base Sheet

Flashing prior to installation

Mineral Cap Sheet
One Way Roof Vent

Pipe
Flashing metal sleeve
Membrane flashing torched in place

Top membrane layer cut to fit around pipe
Substrate

Aerators

Porous Concrete Decking
Partial bonding through vapour equalisation layer
WPM116 base sheet
**SKYLIGHT FLASHING**

- Cover flashing extends under skylight moulding
- Membrane base sheet to substrate
- Fillet
- Substrate

**IRMA ROOF OVERFLOW**

- Wall or Parapet
- Metal Flashing
- Gravel Retainer
- Dress Membrane into Overflow Pipe
- Ballast
- Filter Fabric
- Insulation
- Membrane
- Concrete
- Overflow

**TYPICAL IRMA ROOF DETAIL**

- Sealant
- Pressure Seal Flashing
- Sand/Cement Fillet
- Ballast
- Filter Fabric
- Insulation
- Membrane
- Primer
- Concrete

**IRMA ROOF OUTLET & GRAVEL RETAINER**

- Grate
- Ballast
- Screed
- Filter Fabric
- Insulation
- Membrane
- Concrete
- Outlet Insert

**Cavity Flashing**

- Weep Holes
- Ballast
- Filter Fabric
- Insulation
- Membrane as specified
- Concrete
**Below Grade Detail**

**Preferred Option**

- Top of ARDEX bitumen mineral turned and sealed into chase. Terminated in accordance with Australian Standards.
- Protection Board
- Sheet piling and formwork
- Vertical ARDEX bitumen membrane
- Structural floor slab
- Steel reinforcing
- Protection screed
- Horizontal ARDEX bitumen membrane
- Blinding slab

**Important Note:**

Drainage core should always be positioned lower than the horizontal membrane.

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**NOTE**

More details can be found on [www.ardexaustralia.com](http://www.ardexaustralia.com)

**DISCLAIMER**

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You should make yourself familiar with them.

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