



**SYSTEMARDEX**  
PREMIUM PERFORMANCE



**APP BITUMEN & SBS SHEET MEMBRANES**

# GUIDE TO TORCH APPLIED MEMBRANES

## APP BITUMEN & SBS SHEET MEMBRANES (SHELTERBIT SHEET MEMBRANES)

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 114

##### 4.0mm APP Vented Base Sheet

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 used as part of a multilayer waterproofing system where there may be potential moisture issues in the substrate.

#### 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 Fibreglass 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/m<sup>2</sup> 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, ADHESIVES AND SEALANTS

#### 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 BITUMINOUS ROOF SEALANT

ARDEX Bituminous Roof Sealant is a one component, easy-to-use, UV-stable sealant with bitumen-based solvents. It is used for gluing and sealing on roofs.

ARDEX MODIFIED BITUMEN & SBS TORCH-ON MEMBRANES						
	APP BASE SHEETS	SBS SELF ADHESIVE SHEETS	APP MEMBRANE SHEETS	SBS BITUMEN MEMBRANE	APP BITUMEN MEMBRANE	
	ARDEX WPM 114	ARDEX WPM 116	ARDEX WPM 117	ARDEX WPM 185	ARDEX WPM 188	ARDEX WPM 444
TECHNICAL PROPERTY	ARDEX VENTED BASE SHEET	ARDEX SHELTERBIT FIBRE BACK BASE SHEET	ARDEX SHELTERSTICK SELF-ADHESIVE MEMBRANE	ARDEX SHELTERBIT 3/150	ARDEX SHELTERBIT GARDEN TANKING MEMBRANE	ARDEX SHELTERBIT PHOENIX STAR (PLAIN)
Type	APP with SBS Strips	APP	SBS	APP	SBS	APP
Reinforcement	Polyester/Glass (180g/m <sup>2</sup> )	Fibreglass (50g/m <sup>2</sup> ) & Polyester (150g/m <sup>2</sup> )	Fibreglass	Fibreglass & Polyester (150g/m <sup>2</sup> )	Combined Polyester/Glass	Combined Polyester/Glass
Thickness/Weight	4.0mm	2.7mm	2.0mm	3.0mm	3.0mm	4.1mm
Top Surface	Sanded polymer	Torch Film	Torch Film	Sand	Slate Chip	Sand or Talc
Bottom Surface	Thermo-Adhesive strips	Polyester Fleece	Self-Adhesive	Torch Film	Torch Film	Torch Film
Tear Resistance (longitudinal)	150 N	100 N	130 N	130 N	130 N	150 N
Elongation (longitudinal)	35%	60%	35%	45%	40%	45%
Heat Stability	100°C	110°C	110°C	110°C	90°C	130°C
Cold Flexibility	- 10°C	- 5°C	- 10°C	- 5°C	- 20°C	- 15°C
Roll Size	1x10m	1x10m	1x15m	1x10m	1x10m	1x10m
Roll Weight (approx.)	45kg	30kg	35kg	35kg	36kg	40kg

## INSTALLATION DETAILS

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 5-6m<sup>2</sup> 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 (2.5m<sup>2</sup> 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.

## SYSTEM RECOMMENDATIONS

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		SYSTEM/ MATERIALS WARRANTY
3 Layer Bitumen – Mineral Finish	WPM 240 / WPM 117 / WPM 150 / WPM 185	20 years
2 Layer Bitumen – Mineral Finish	WPM 240 / WPM 114 / WPM 185	20 years
2 Layer Bitumen – Mineral Finish	WPM 240 / WPM 150 or WPM 444 / WPM 185	15 – 20 years
3 Layer Vented Bitumen – Mineral Finish	WA 98 / WPM 116 / WPM 150 / WPM 185	20 years
2 Layer Vented Bitumen – Mineral Finish	WA 98 / WPM 116 / WPM 185	15 years
ROOFS & DECKS PROTECTED		
2 Layer Bitumen	WPM 240 / WPM 150 / WPM 444	15 – 20 years
2 Layer Bitumen	WPM 240 / WPM 117 / WPM 188	15 years
2 Layer Bitumen	WPM 240 / WPM 150 / WPM 150	15 years
ROOFS & DECKS LANDSCAPED		
2 Layer Bitumen with Root Inhibitor	WPM 240 / WPM 188 / WPM 188	15 – 20 years
2 Layer Bitumen with Root Inhibitor	WPM 240 / WPM 117 / WPM 188	15 years
1 Layer Bitumen with Root Inhibitor	WPM 240 / WPM 188	10 years
BELOW GRADE POSITIVE SIDE		
2 Layer Bitumen – Root Growth Inhibited	WPM 240 / WPM 188 / WPM 188	20 years
2 Layer Bitumen with Root Inhibitor	WPM 240 / WPM 117 / WPM 188	15 years
2 Layer Bitumen – Torch Film	WPM 240 / WPM 150 / WPM 150 or WPM 444	15 – 20 years
1 Layer SBS Bitumen – Sand Finish	WPM 240 / WPM 188	10 years
2 Layer Self Adhesive SBS Bitumen	WPM 240 / WPM 3000X / WPM 3000X	20 years

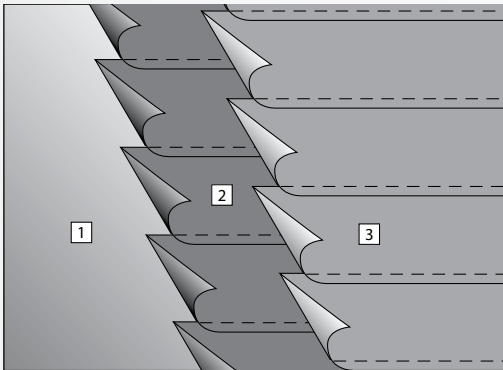
## INSTALLATION DETAILS

### SHEET LAYOUT

#### Application Details Two Plies System

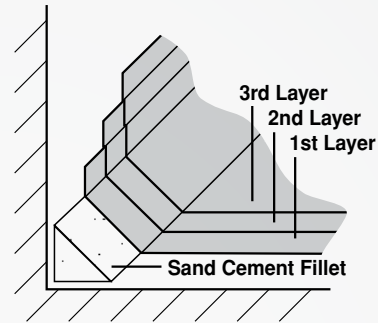
##### Staggered Layout for Finish Membrane

- 1 – First layer
- 2 – Second layer
- 3 – Third layer

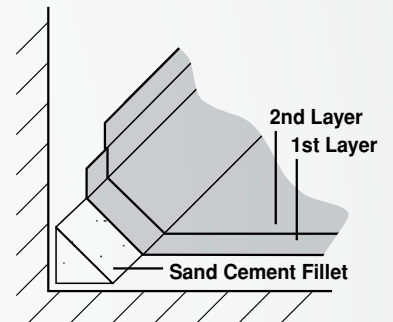


### TYPICAL TURN UP DETAILS – NON-EXPOSED MEMBRANE

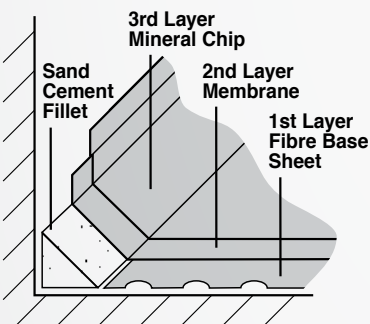
#### Three Layer System



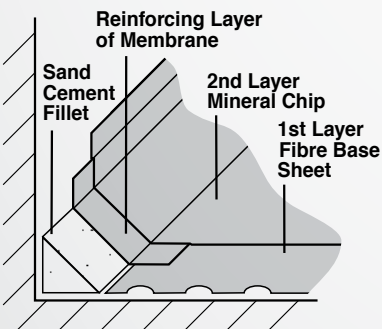
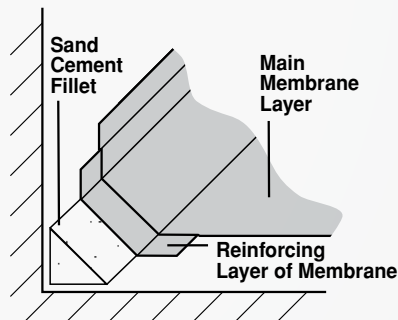
#### Two Layer System



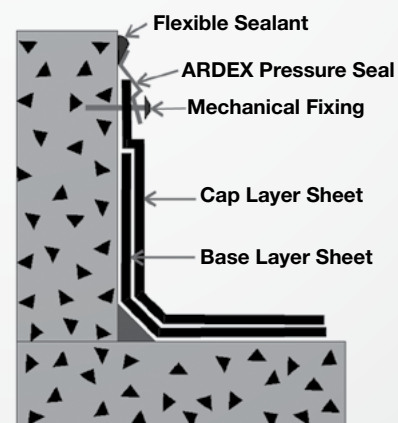
### TYPICAL TURN UP DETAILS – EXPOSED MEMBRANE



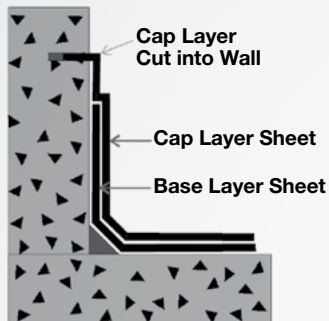
#### Single Layer System



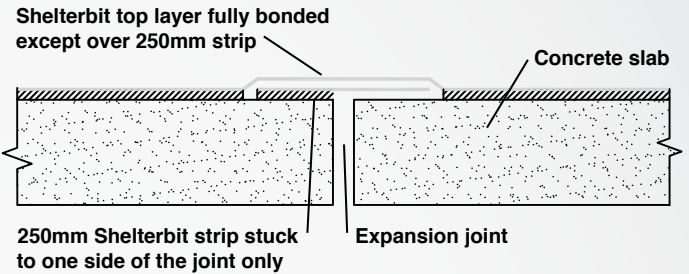
### PRESSURE SEAL FLASHING



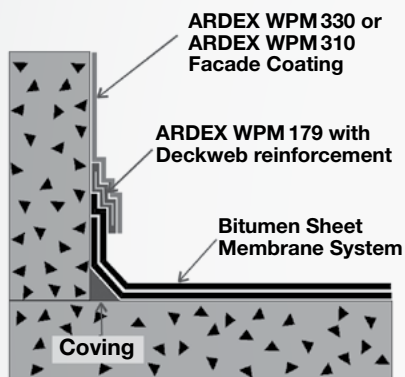
## CUT IN FLASHING



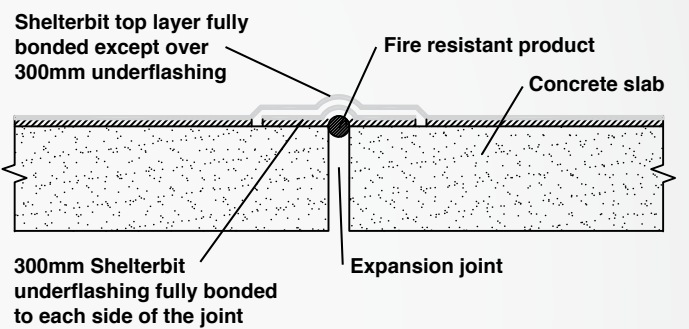
## CONSTRUCTION JOINT



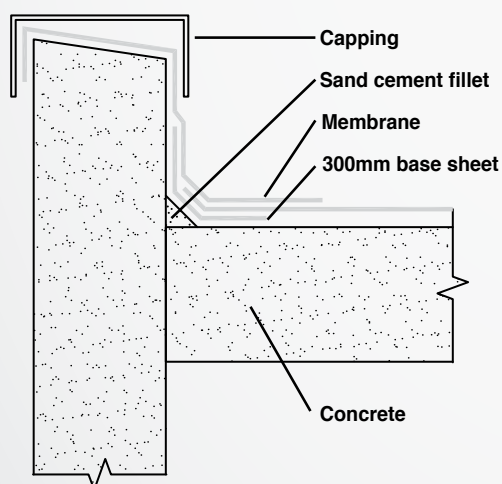
## LIQUID MEMBRANE FLASHING



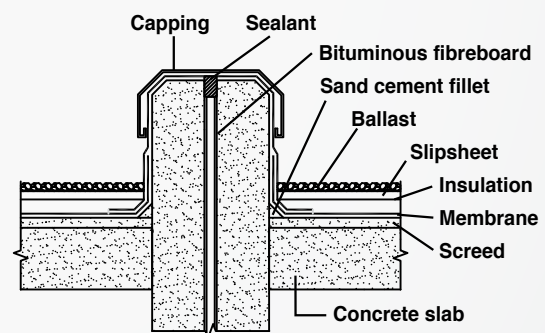
## EXPANSION JOINT



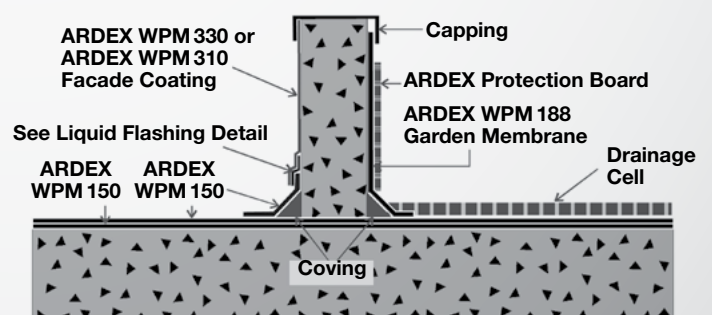
## CAPPING DETAIL



## ALTERNATE EXPANSION JOINT

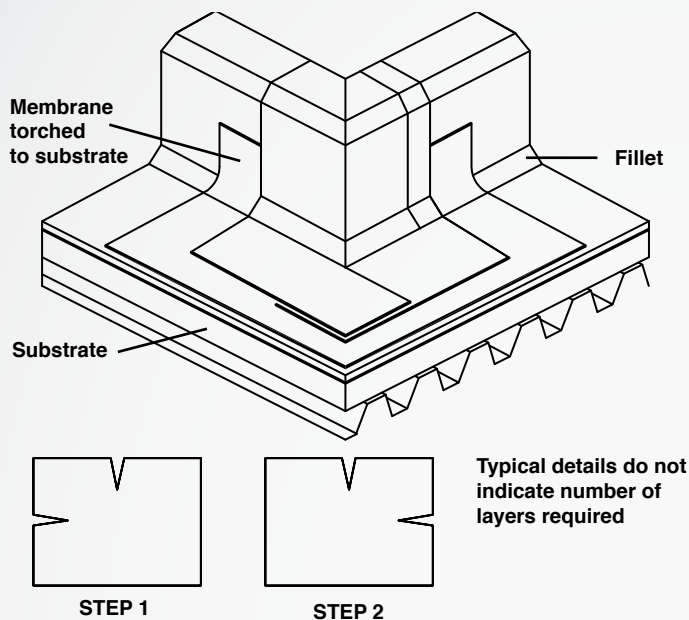


## GARDEN BED/PLANTER BOX DETAIL

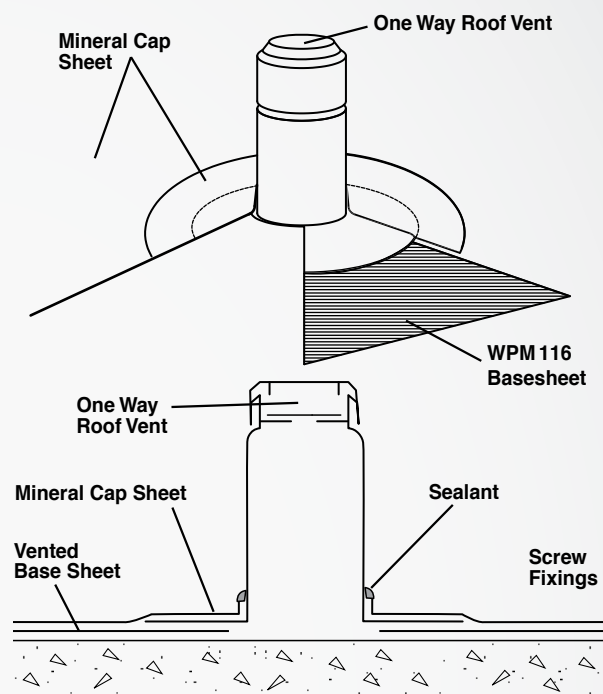




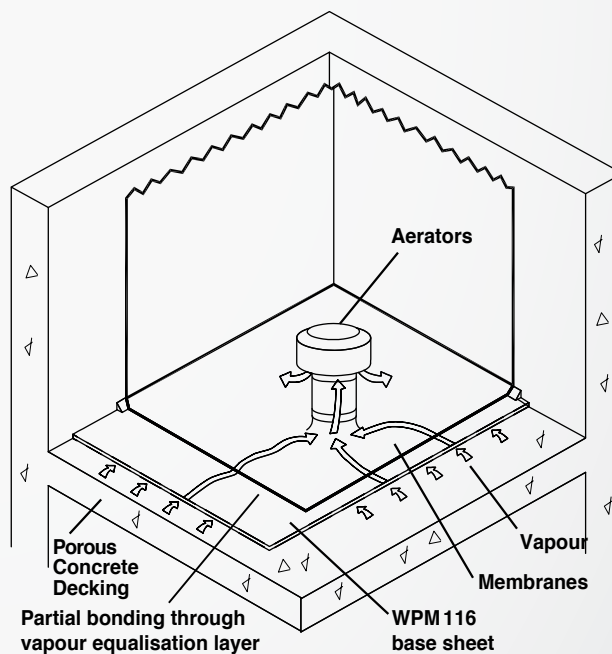
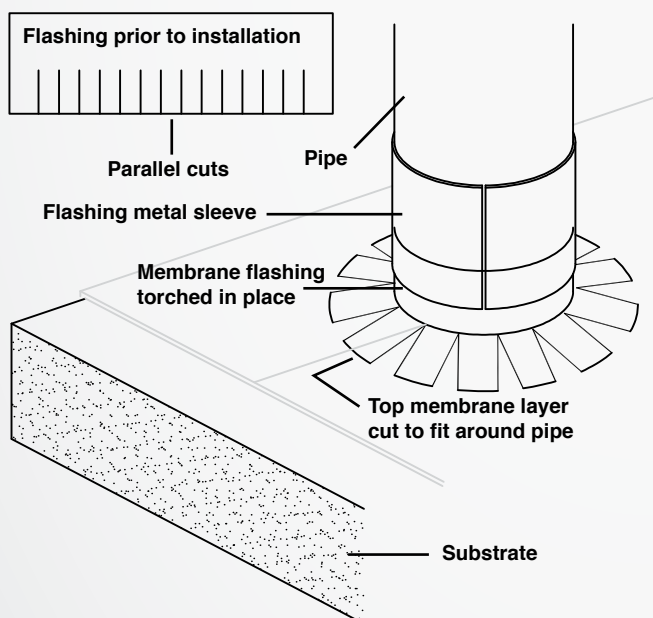
## OUTSIDE CORNER



## ONE WAY VENT INSTALLATION

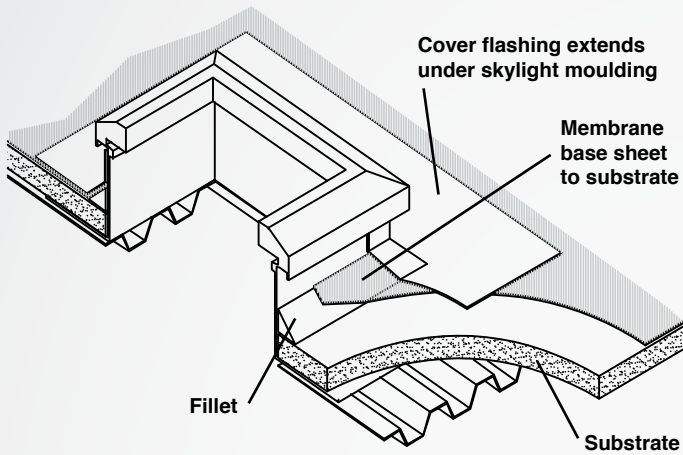


## PIPE FLASHING

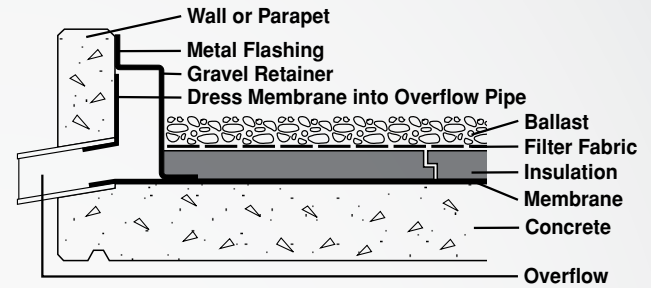


## INSTALLATION DETAILS

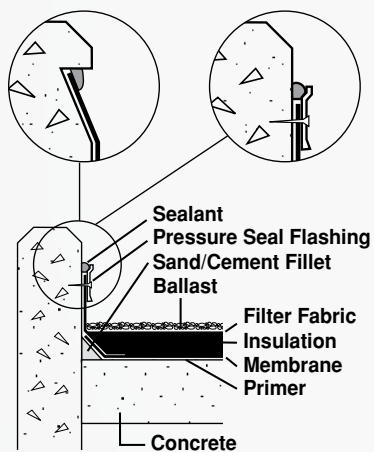
### SKYLIGHT FLASHING



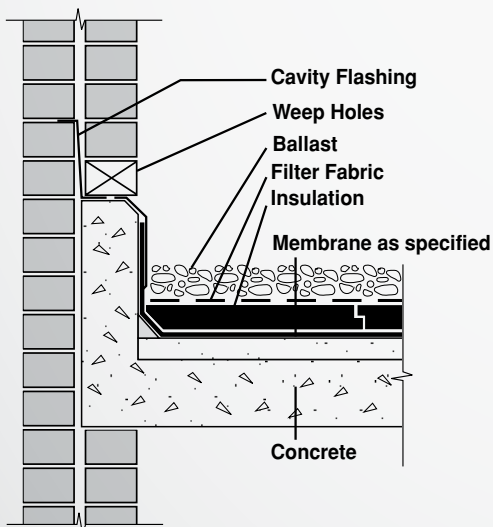
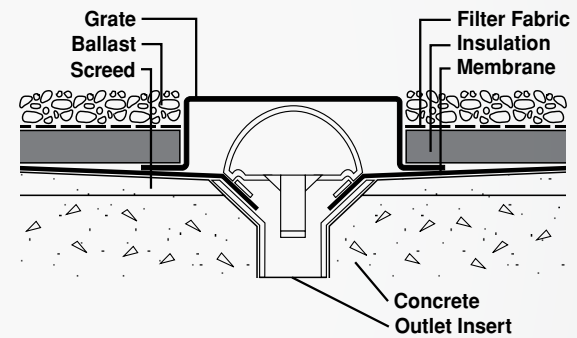
### IRMA ROOF OVERFLOW



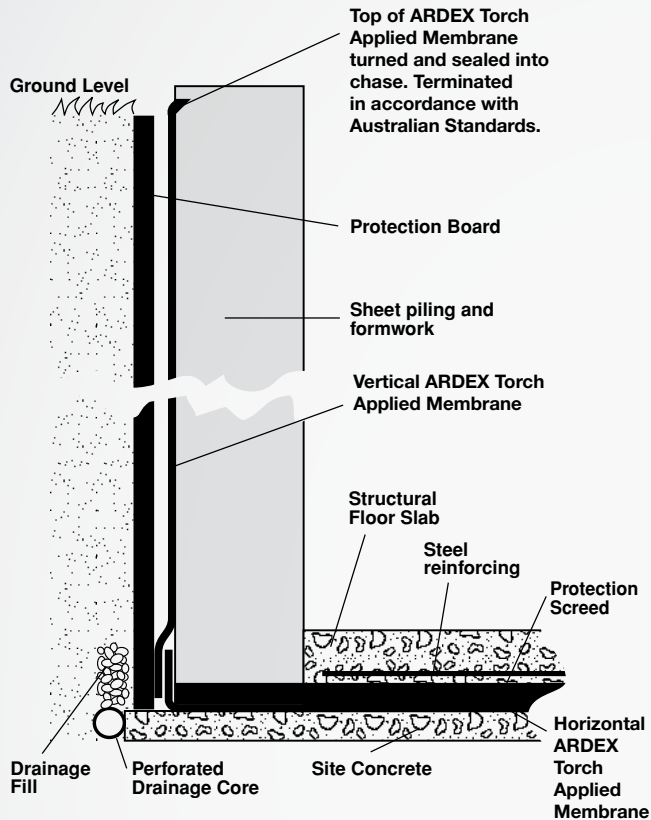
### TYPICAL IRMA ROOF DETAIL



### IRMA ROOF OUTLET & GRAVEL RETAINER

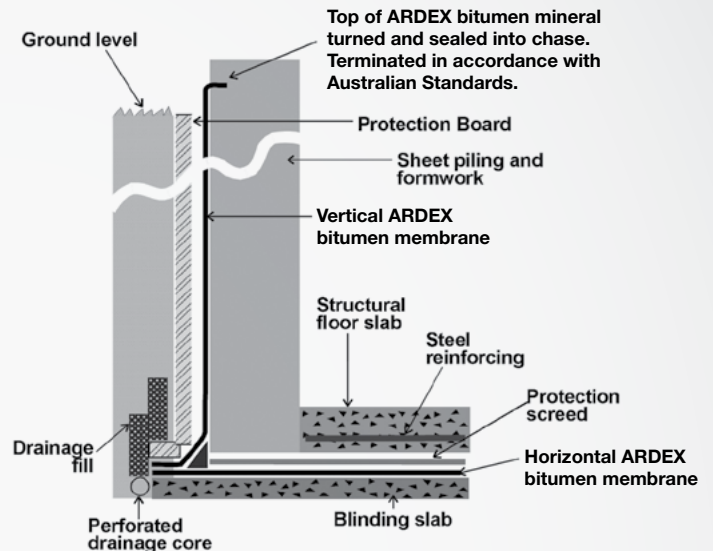


## BELOW GRADE DETAIL



## BELOW GRADE DETAIL

### Preferred Option



### Important Note:

Drainage core should always be positioned lower than the horizontal membrane

### NOTE

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

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