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# ARDEX WARM ROOF SOLUTIONS

H1 ENERGY EFFICIENCY

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**SYSTEMARDEX**  
PREMIUM PERFORMANCE



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# THE FUTURE OF ROOFING

**ARDEX has been producing roofing membrane systems worldwide for over 50 years. We offer a complete range of high performing roofing solutions as individual as your building.**

Already a strong trend internationally, we're bringing the benefits of warm roofing to New Zealand buildings. Enhance thermal control by adding superior insulation directly below the roof cladding, creating warmer, healthier, more energy efficient buildings.

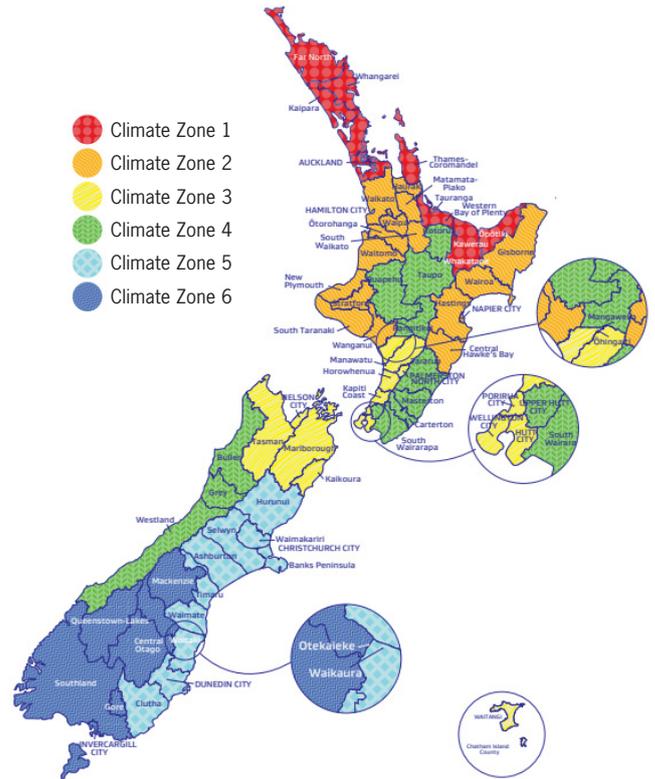
Warm roofs are an attractive solution for designers when it comes to meeting the changes to Building Code H1/AS1 and H1/AS2. Offering low height build up while achieving excellent R-values with a range of cladding finishes to suit specific customer needs. Consider an ARDEX warm roof solution for your next project, be it a traditional substrate or one constructed from metal deck which could show savings to the cost of the project.



# WHAT IS H1?

The recent changes to Building Code: H1 Energy efficiency have been implemented to improve the comfort and efficiency of our Kiwi homes and workspaces.

According to the Ministry of Business, Innovation and Employment (MBIE) the updates to H1 will achieve a reduction of around 23% energy use in the heating and cooling of large non-residential buildings and a potential reduction of up to 40% in new residential buildings. In addition, these changes should positively impact occupants health and help towards New Zealand's climate change mitigation commitments.



**TABLE 1**

Table details changes to roof insulation requirements within the new edition of H1/AS1 and H1/VM1 for housing and small buildings.

### Minimum construction R-Values

Building element	Climate Zone					
	1	2	3	4	5	6
Roof	R6.6					

**TABLE 2**

Table details changes to roofing insulation requirements and also the creation of new documents for large buildings - H1/AS2 and H1/VM2

### Minimum construction R-Values

	Climate Zone					
	1	2	3	4	5	6
Roof	R3.5	R4.0	R5.0	R5.4	R6.0	R7.0

## COMPLIANCE PATHWAYS

There are three methods of demonstrating compliance with Building Code clause H1.

Schedule method for houses and buildings less than 300m<sup>2</sup> and window area no greater than 30%. To understand where this method can be used consult the BRANZ Schedule Method Tool <https://www.branz.co.nz/energy-efficiency/h1-schedule-method-tool/>

Calculation method allows for different combinations of insulation solutions for houses and buildings less than 300m<sup>2</sup> and window area no greater than 40%. Consult the BRANZ Calculation Method Tool <https://www.branz.co.nz/energy-efficiency/h1-calculation-method-tool/>

Modelling method. Larger buildings (excluding industrial buildings) and those with window areas greater than 40% are likely to require thermal modelling, in this situation consult a professional

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# ARDEX ROOF SOLUTIONS

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Specifying the installation of an ARDEX total roofing system provides you with a single source of quality design, quality materials and warranty responsibility.

**Specify ARDEX trained installers:** ARDEX offers training programmes for roofers, ensuring that they have the knowledge and skills necessary to install ARDEX products correctly.

Market leading **System ARDEX warranty** is project specific and warrants that the System ARDEX combination of products that form the total system are free from defects, are 100% compatible and the solution combination of products are suitable for the purpose intended. The period warranted will be project specific. Involve ARDEX at the start of your project to access this warranty.

ARDEX offer a **wide range** of roofing membrane options to meet your clients aesthetic needs and budget. From the locally manufactured WeldTec® range, to TPO and torch on options from world leading manufacturers, ARDEX high-quality roofing products that are designed to meet the specific needs of the New Zealand climate. These products are designed to withstand extreme weather conditions, such as high winds and heavy rain, helping ensure that the roof remains watertight and secure.

**Local expertise** and support from a team of experienced roofing experts who can provide advice and guidance on the best roofing solutions for your specific needs. ARDEX help you with specifications and design advice, compliance support, product supply right through to completion, ARDEX provides the complete package.

ARDEX is committed to sustainability and recently, achieved carbonreduce certification from Toitū Envirocare. ARDEX has a long-term plan in place to reduce carbon emissions and minimise climate impact, with an annual audit of gross emissions completed by Toitū to measure progress.



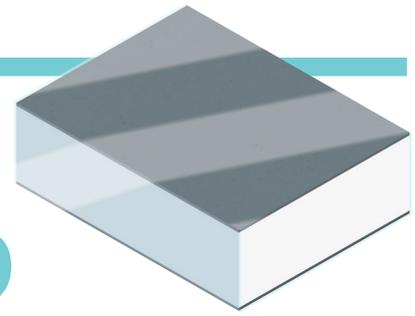
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## MECHANICALLY FIXED VS FULLY ADHERED SYSTEM

A Mechanically Fixed System will decrease the thermal performance of the entire system. The ideal solution is to install two layers offset and use the twin pack polyiso system to avoid the majority of thermal bridging.



# ARDEX PIR INSULATION BOARD



High R-values at lower thickness is what sets polyisocyanurate (PIR) insulation boards apart from other forms of insulation, making it ideal for commercial and residential roofing applications where space is a premium. ARDEX PIR board roofing insulation consists of a closed-cell polyiso foam core laminated with a glass reinforced mat facer on both surfaces. The foam technology does not contribute to the depletion of the earth's ozone layer (zero ODP) and uses a HCFC-free blowing agent.

This lightweight, easy-to-handle insulation is suited for direct application onto steel roof, concrete or wood deck and provides outstanding thermal resistance, dimensional stability and compressive strength.

## R-VALUE AND THICKNESSES

Available in flat boards of 1.2m x 2.4m

Thickness (mm)	R-Value @ 15°C (mK/W)	Weight (kg/m <sup>2</sup> )
20	0.97	0.97
25	1.22	1.19
30	1.46	1.41
40	1.95	1.85
50	2.43	2.29
60	2.92	2.73
70	3.41	3.17
75	3.65	3.39
80	3.90	3.61
90	4.38	4.05
100	4.87	4.49
140	6.82	6.25

## DURABILITY STATEMENT

As PIR does not sag or absorb moisture you can be confident of consistent performance which will last the full lifetime of the building. PIR is a hydrophobic product, meaning it does not absorb water. This allows the thermal performance and integrity of the product to be retained regardless of water exposure.

## FIRE PERFORMANCE

PIR will self-extinguish as soon as cause of fire is removed. PIR foam is a thermosetting material. It does not melt, flow or drip when exposed to fire and it will form a strong char that helps protect the foam core and prevent flame spread within the panels.

ARDEX POLYSIO has been classified to NZBC verification method C/VM2 Group 2-S

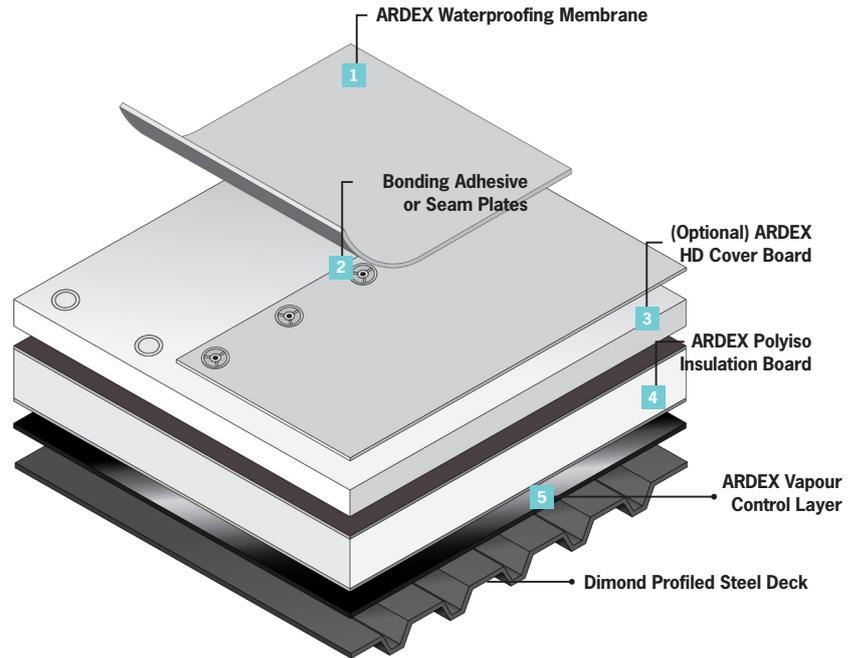
- Manufactured in an ISO 9001 Registered Facility
- Manufactured and tested to AS1366.2/ASTM 2498.

## PRODUCT PROPERTIES

Property	Value
Density	38 ~ 42 kg/m <sup>3</sup>
Compressive Strength	≥0.09 MPa
Shear Strength	≥0.11 MPa
Thermal Conductivity @ 15°C	0.0205 W/m.K
Thermal Conductivity @ 23°C	0.0214 W/m.K
Dimensional Stability	≥3% (70°C @ 95%RH for 20hrs) ≥1% (-10°C @ 95%RH for 20hrs)
Width	900 ~ 1,200 mm
Length	Up to 6,000 mm
Water Vapour Transmission Rate	10-15g/m <sup>2</sup> .24 hours

# WARM ROOF SYSTEM METAL DECK

## ULTRAPLY TPO



### Option A UltraPly TPO



**ELEVATE ULTRAPLY TPO 1.14mm**  
1.14mm TPO large-scale roofing membrane

**ELEVATE ULTRAPLY TPO 1.5mm**  
1.5mm TPO large-scale roofing membrane



**ARDEX Seam Plates**  
For fastening of ARDEX TPO membranes

**TPO BONDING ADHESIVE**  
TPO bonding adhesive

**ULTRAPLY™ TPO SPRAY ADHESIVE**  
Sprayable solvent-based contact adhesive



**Optional ARDEX HD Cover Board**  
High-density Polyiso Cover Board fixed down with Polyiso adhesive or fasteners

**ARDEX Polyiso Board**  
PIR foam insulation board fixed down with Polyiso adhesive or fasteners

**ARDEX WPM 3000X**  
Self-adhesive bituminous membrane

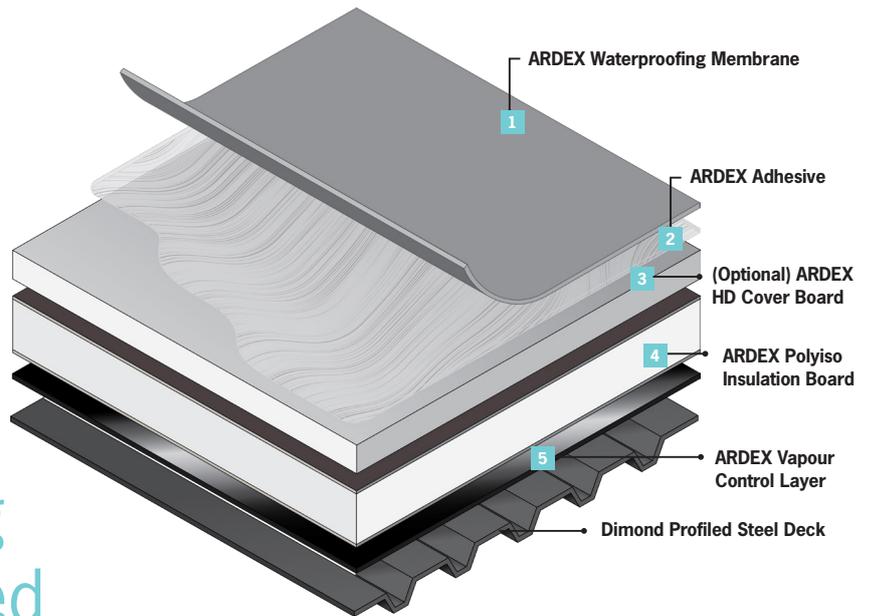
**ARDEX WPM 117**  
Self-adhesive, fibre-reinforced bituminous membrane

### ARCHITECTS, SPECIFIERS AND DESIGNERS

For specification support and project assistance, please contact ARDEX on 0800 227 339, speak to your local ARDEX representative or visit [ardex.co.nz](http://ardex.co.nz)

# WARM ROOF SYSTEM METAL DECK

## WeldTec Roofing and Torch Applied



### Option B Weldtec® WPM 715



**1**  
**ARDEX WPM 715**  
WeldTec® 1.5mm weldable waterproofing membrane



**2**  
**ARDEX WA 98**  
Waterproofing membrane adhesive

### Option C Torch Applied



**1**  
**ARDEX WPM 189+**  
Ceramic-coated top layer bitumen membrane

AND



**ARDEX WPM 117**  
Self-adhesive, fibre-reinforced bituminous membrane



**2**  
**ARDEX WPM 240**  
Solvent-based bitumen primer

OR



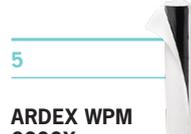
**ARDEX WPM 247**  
Water-based bitumen primer



**3**  
**Optional ARDEX HD Cover Board**  
High-density Polyiso Cover Board fixed down with Polyiso adhesive or fasteners



**4**  
**ARDEX Polyiso Board**  
PIR foam insulation board fixed down with Polyiso adhesive or fasteners



**5**  
**ARDEX WPM 3000X**  
Self-adhesive bituminous membrane

OR



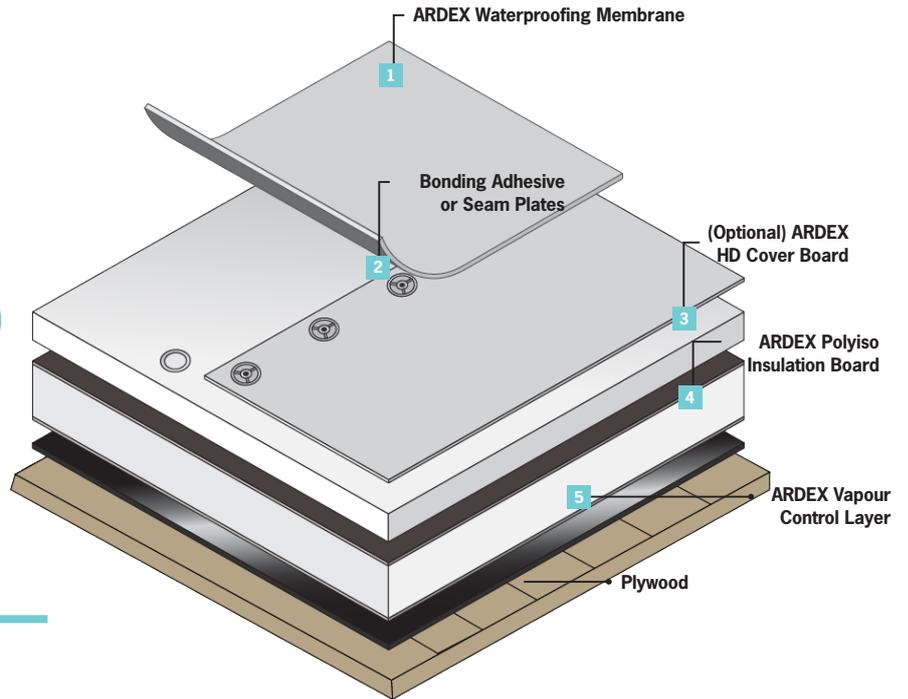
**ARDEX WPM 117**  
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# WARM ROOF SYSTEM PLYWOOD

## ULTRAPLY TPO



### Option A UltraPly TPO



#### ELEVATE ULTRAPLY TPO 1.14mm

1.14mm TPO large-scale roofing membrane

#### ELEVATE ULTRAPLY TPO 1.5mm

1.5mm TPO large-scale roofing membrane



#### ARDEX Seam Plates

For fastening of ARDEX TPO membranes

#### TPO BONDING ADHESIVE

TPO bonding adhesive

#### ULTRAPLY™ TPO SPRAY ADHESIVE

Sprayable solvent-based contact adhesive



#### Optional ARDEX HD Cover Board

High-density Polyiso Cover Board fixed down with Polyiso adhesive or fasteners

#### ARDEX Polyiso Board

PIR foam insulation board fixed down with Polyiso adhesive or fasteners

#### ARDEX WPM 3000X

Self-adhesive bituminous membrane

#### ARDEX WPM 117

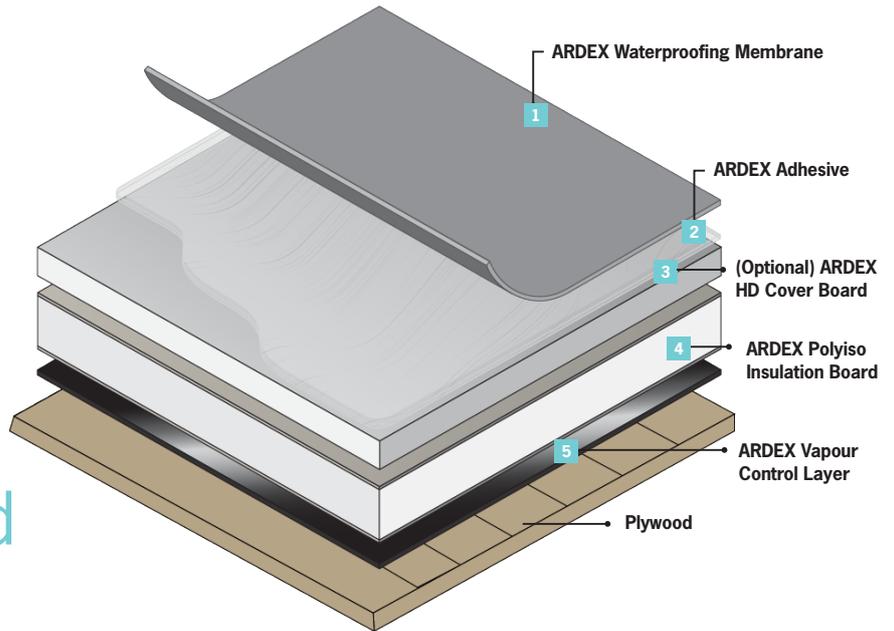
Self-adhesive, fibre-reinforced bituminous membrane

### ARCHITECTS, SPECIFIERS AND DESIGNERS

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# WARM ROOF SYSTEM PLYWOOD

WeldTec Roofing and Torch Applied



## Option B Weldtec® WPM 715



**ARDEX WPM 715**  
WeldTec® 1.5mm weldable waterproofing membrane



**ARDEX WA 98**  
Waterproofing membrane adhesive

## Option C Torch Applied



**ARDEX WPM 189+**  
Ceramic-coated top layer bitumen membrane

AND



**ARDEX WPM 117**  
Self-adhesive, fibre-reinforced bituminous membrane



**ARDEX WPM 240**  
Solvent-based bitumen primer

OR



**ARDEX WPM 247**  
Water-based bitumen primer



**Optional ARDEX HD Cover Board**  
High-density Polyiso Cover Board fixed down with Polyiso adhesive or fasteners



**ARDEX Polyiso Board**  
PIR foam insulation board fixed down with Polyiso adhesive or fasteners



**ARDEX WPM 3000X**  
Self-adhesive bituminous membrane

OR

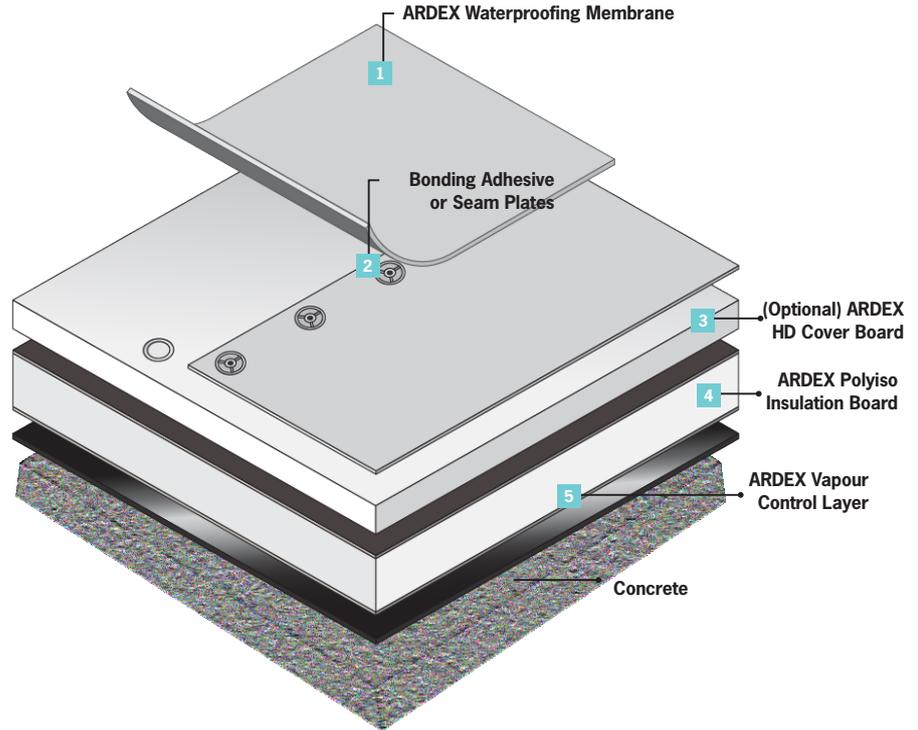


**ARDEX WPM 117**  
Self-adhesive, fibre-reinforced bituminous membrane

## ARCHITECTS, SPECIFIERS AND DESIGNERS

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# WARM ROOF SYSTEM CONCRETE ULTRAPLY TPO



**Option A**  
UltraPly TPO

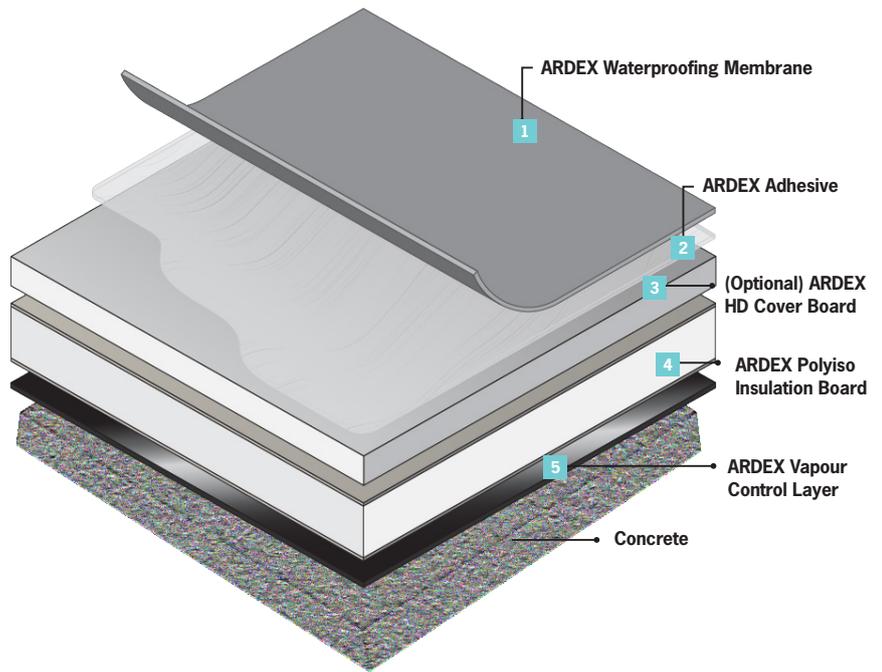
<p>1</p> <p><b>ELEVATE ULTRAPLY TPO 1.14mm</b> 1.14mm TPO large-scale roofing membrane</p> <p><b>ELEVATE ULTRAPLY TPO 1.5mm</b> 1.5mm TPO large-scale roofing membrane</p>	<p>OR</p>	<p>2</p> <p><b>ARDEX Seam Plates</b> For fastening of ARDEX TPO membranes</p> <p><b>TPO BONDING ADHESIVE</b> TPO bonding adhesive</p> <p><b>ULTRAPLY™ TPO SPRAY ADHESIVE</b> Sprayable solvent-based contact adhesive</p>
<p>3</p> <p><b>Optional ARDEX HD Cover Board</b> High-density Polyiso Cover Board fixed down with Polyiso adhesive or fasteners</p>	<p>OR</p>	<p>4</p> <p><b>ARDEX Polyiso Board</b> PIR foam insulation board fixed down with Polyiso adhesive or fasteners</p>
<p>5</p> <p><b>ARDEX WPM 3000X</b> Self-adhesive bituminous membrane</p> <p><b>ARDEX WPM 117</b> Self-adhesive, fibre-reinforced bituminous membrane</p> <p><b>ARDEX WPM 300</b> Two component water based epoxy membrane</p>	<p>OR</p>	<p>OR</p>

**ARCHITECTS,  
SPECIFIERS AND  
DESIGNERS**

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# WARM ROOF SYSTEM CONCRETE

WeldTec Roofing  
and Torch Applied



**Option B**  
Weldtec® WPM 715

**1**

**ARDEX WPM 715**  
WeldTec® 1.5mm weldable waterproofing membrane

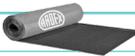
**2**



**ARDEX WA 98**  
Waterproofing membrane adhesive

**Option C**  
Torch Applied

**1**



**ARDEX WPM 189+**  
Ceramic-coated top layer bitumen membrane

**AND**



**ARDEX WPM 117**  
Self-adhesive, fibre-reinforced bituminous membrane

**2**



**ARDEX WPM 240**  
Solvent-based bitumen primer

**OR**



**ARDEX WPM 247**  
Water-based bitumen primer

**3**



**Optional ARDEX HD Cover Board**  
High-density Polyiso Cover Board fixed down with Polyiso adhesive or fasteners

**4**



**ARDEX Polyiso Board**  
PIR foam insulation board fixed down with Polyiso adhesive or fasteners

**5**



**ARDEX WPM 3000X**  
Self-adhesive bituminous membrane

**OR**



**ARDEX WPM 117**  
Self-adhesive, fibre-reinforced bituminous membrane

**OR**



**ARDEX WPM 300**  
Two component water based epoxy membrane

**ARCHITECTS,  
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May 2023