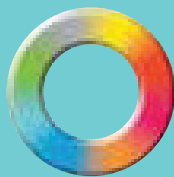

ARDEX WARM ROOF SOLUTIONS

H1 ENERGY
EFFICIENCY



SYSTEM**ARDEX**
PREMIUM PERFORMANCE





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, and 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. They offer 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 saving 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.

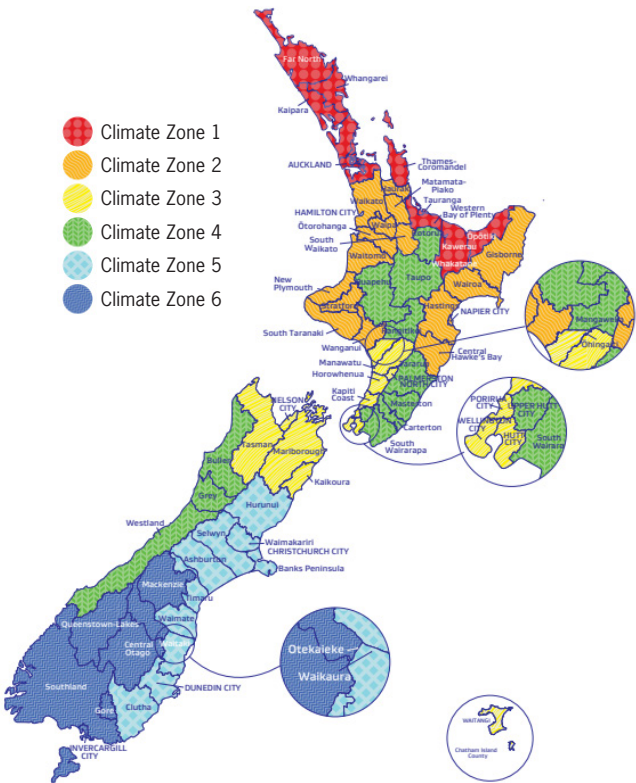


TABLE 1

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

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 300m² 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 300m² 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

ARDEX ROOF SOLUTIONS

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.

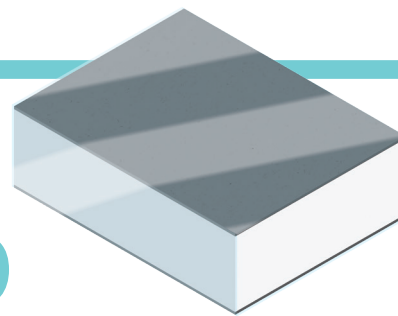
ARDEX is committed to sustainability and recently, achieved carbonreduce certification from Toitū Envirocare. ARDEX has a long-term plan in place to reduce carbon emissions and minimise climate impact, with an annual audit of gross emissions completed by Toitū to measure progress.



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 1.4m x 2.4m

Thickness (mm)	R-Value @ 23°C (mK/W)	Weight (kg/m²)
20	0.93	0.97
25	1.17	1.19
30	1.40	1.41
40	1.87	1.85
50	2.34	2.29
60	2.80	2.73
70	3.27	3.17
75	3.50	3.39
80	3.74	3.61
90	4.21	4.05
100	4.67	4.49
140	6.54	6.25
150	7.01	6.69

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

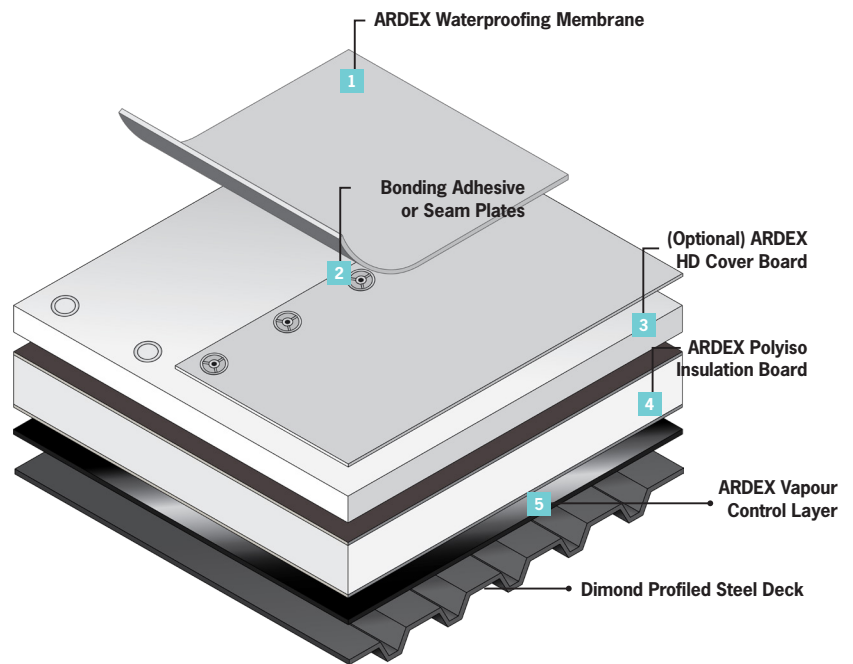
- Manufactured in an ISO 9001 Registered Facility
- Manufactured and tested to AS1366.2/ASTM 2498.

PRODUCT PROPERTIES

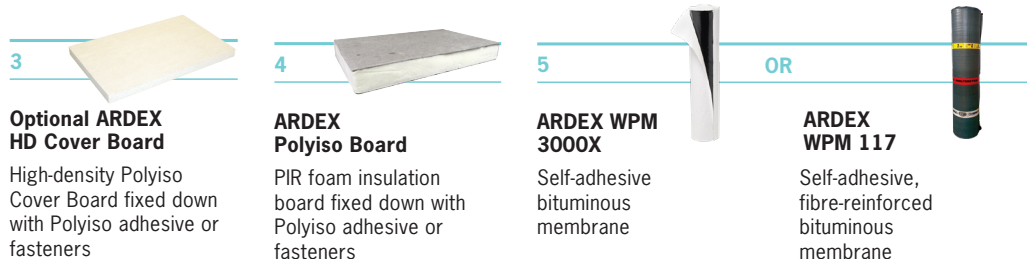
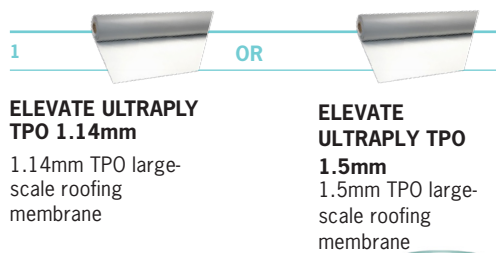
Property	Value
Density	38 ~ 42 kg/m³
Compressive Strength	≥0.15 MPa
Shear Strength	≥0.11 MPa
Dimensional Stability	≥3% (70°C @ 95%RH for 20hrs) ≥1% (-10°C @ 95%RH for 20hrs)
Width	1200 mm
Length	2400 mm
Water Vapour Transmission Rate	10-15g/ m².24 hours

WARM ROOF SYSTEM METAL DECK

ULTRAPLY TPO



Option A UltraPly TPO

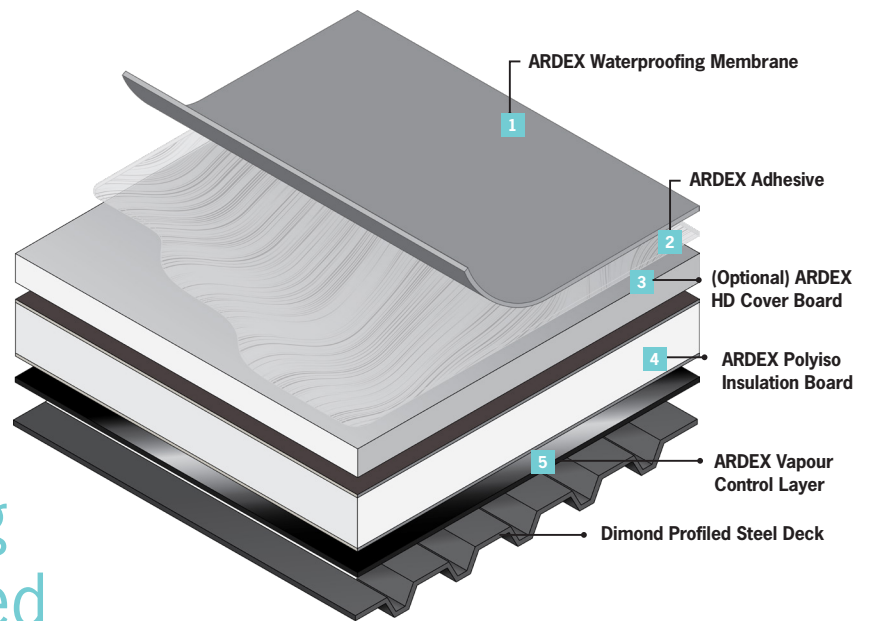


ARCHITECTS, SPECIFIERS AND DESIGNERS

For specification support and project assistance, please contact ARDEX on 0800 227 339, speak to your local ARDEX representative or visit ardex.co.nz

WARM ROOF SYSTEM METAL DECK

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



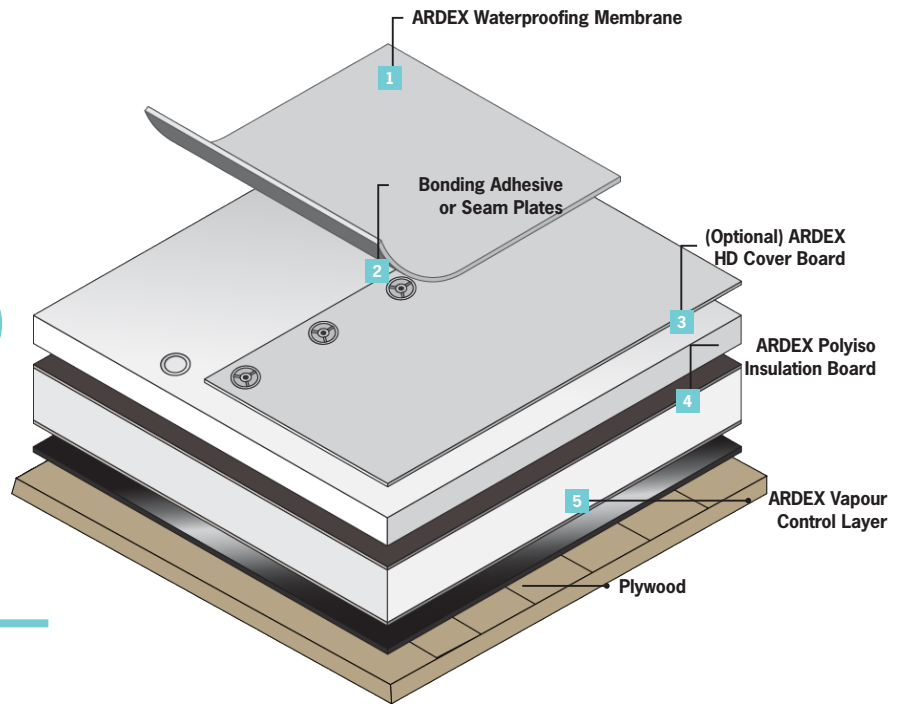
**ARDEX
WPM 117**
Self-adhesive,
fibre-reinforced
bituminous
membrane

ARCHITECTS, SPECIFIERS AND DESIGNERS

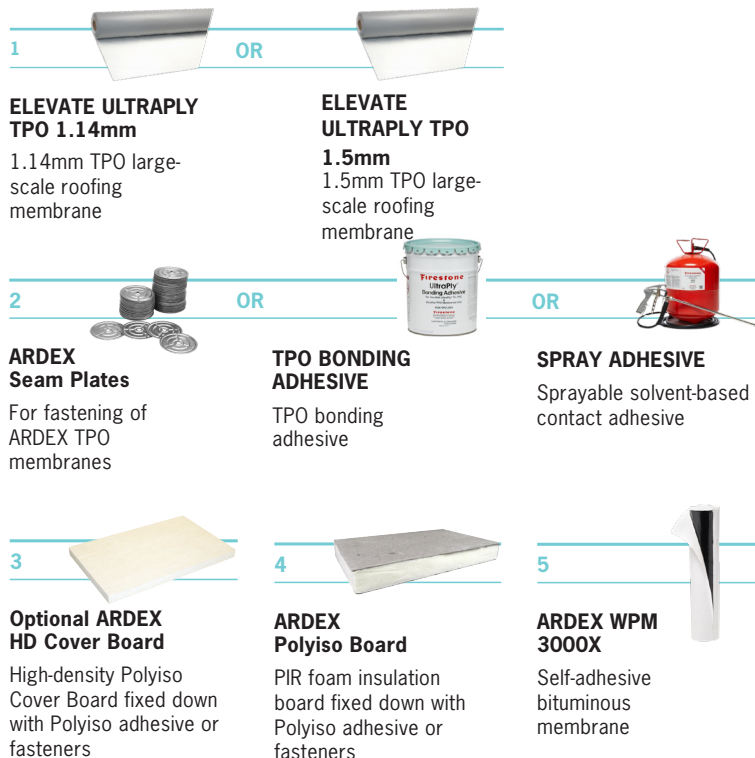
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WARM ROOF SYSTEM PLYWOOD

ULTRAPLY TPO



Option A UltraPly TPO

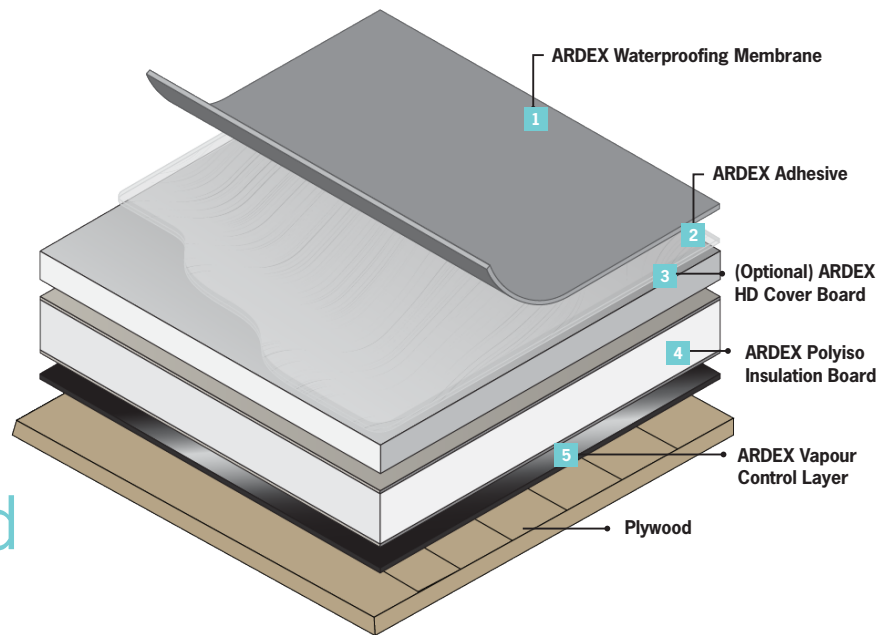


ARCHITECTS, SPECIFIERS AND DESIGNERS

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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



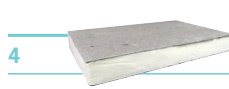
ARDEX WPM 247

Water-based
bitumen primer



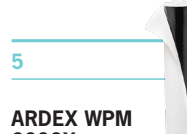
Optional ARDEX HD Cover Board

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



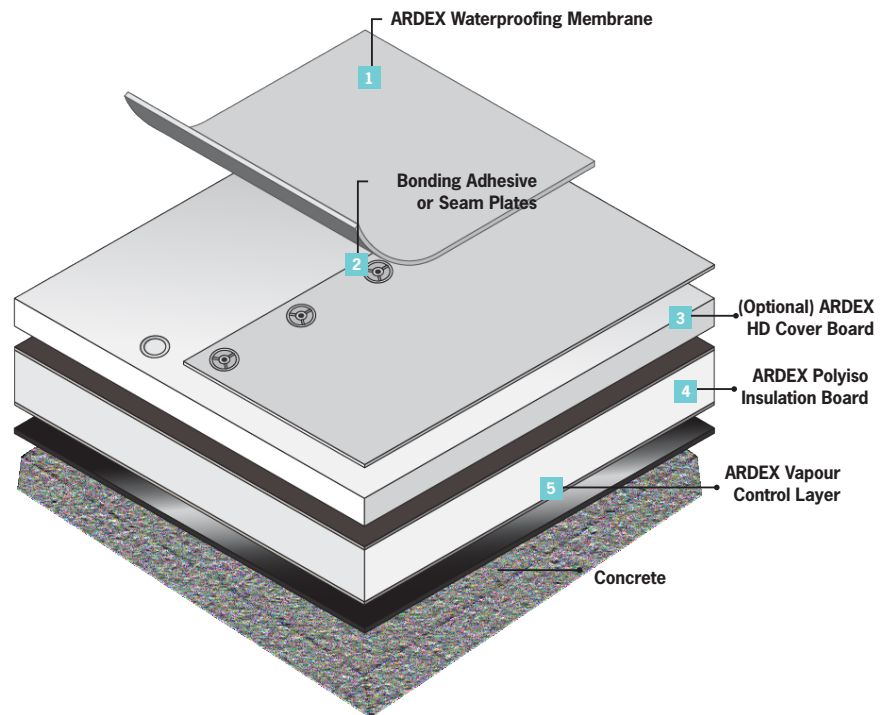
ARDEX WPM 117

Self-adhesive,
fibre-reinforced
bituminous
membrane

ARCHITECTS, SPECIFIERS AND DESIGNERS

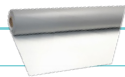
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WARM ROOF SYSTEM CONCRETE ULTRAPLY TPO

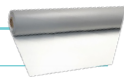


Option A UltraPly TPO

1



OR



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

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

2



OR



OR



ARDEX Seam Plates
For fastening of ARDEX TPO membranes

TPO BONDING ADHESIVE
TPO bonding adhesive

SPRAY ADHESIVE
Sprayable solvent-based contact adhesive

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



OR



OR



ARDEX WPM 3000X
Self-adhesive bituminous membrane

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

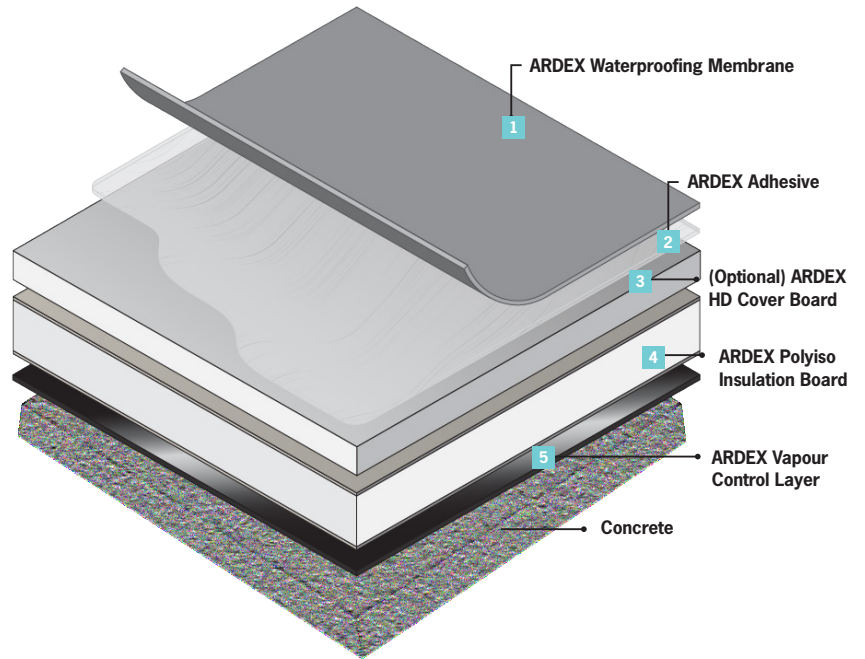
ARDEX WPM 300
Two component water based epoxy membrane

ARCHITECTS, SPECIFIERS AND DESIGNERS

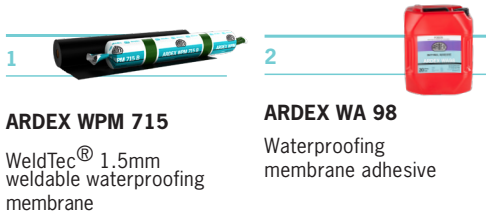
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WARM ROOF SYSTEM CONCRETE

WeldTec Roofing
and Torch Applied



Option B Weldtec® WPM 715



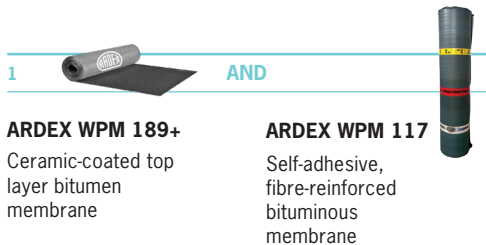
ARDEX WPM 715

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

ARDEX WPM 117

Self-adhesive, fibre-reinforced bituminous membrane



ARDEX WPM 240

Solvent-based bitumen primer

ARDEX WPM 247

Water-based bitumen primer

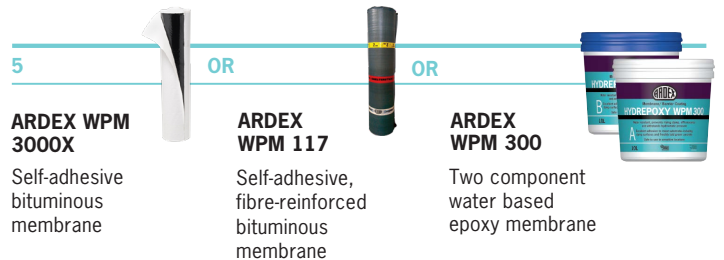


Optional ARDEX HD Cover Board

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

ARDEX WPM 117

Self-adhesive, fibre-reinforced bituminous membrane

ARDEX WPM 300

Two component water based epoxy membrane

ARCHITECTS, SPECIFIERS AND DESIGNERS

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NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There is no handwriting or other markings on the paper.

This image shows a full page of blank, lined paper. It features approximately 20 horizontal blue or grey lines spaced evenly apart, typical of notebook paper. The lines extend across the entire width of the page, leaving small margins at the top and bottom. There are no vertical lines, text, or other markings on the page.

NOTES

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July 2023