



MASONS

Designed Smart, Built Tough.

PrimeTherm ERS PIR Insulation Board

Rigid Lightweight Board Insulation Solutions

TECHNICAL PRODUCT GUIDE | VOLUME 1.0

Concrete Underslab Insulation P.5

Concrete Slab Edge Insulation P.6

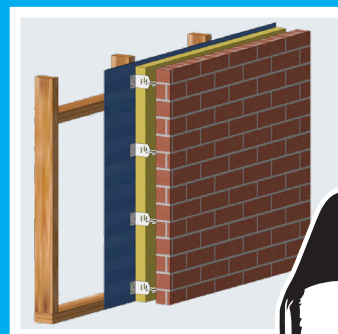
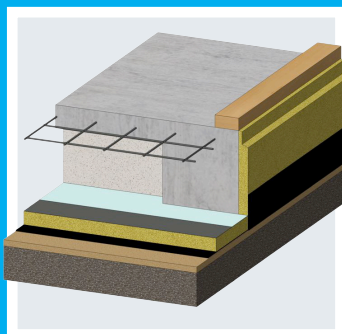
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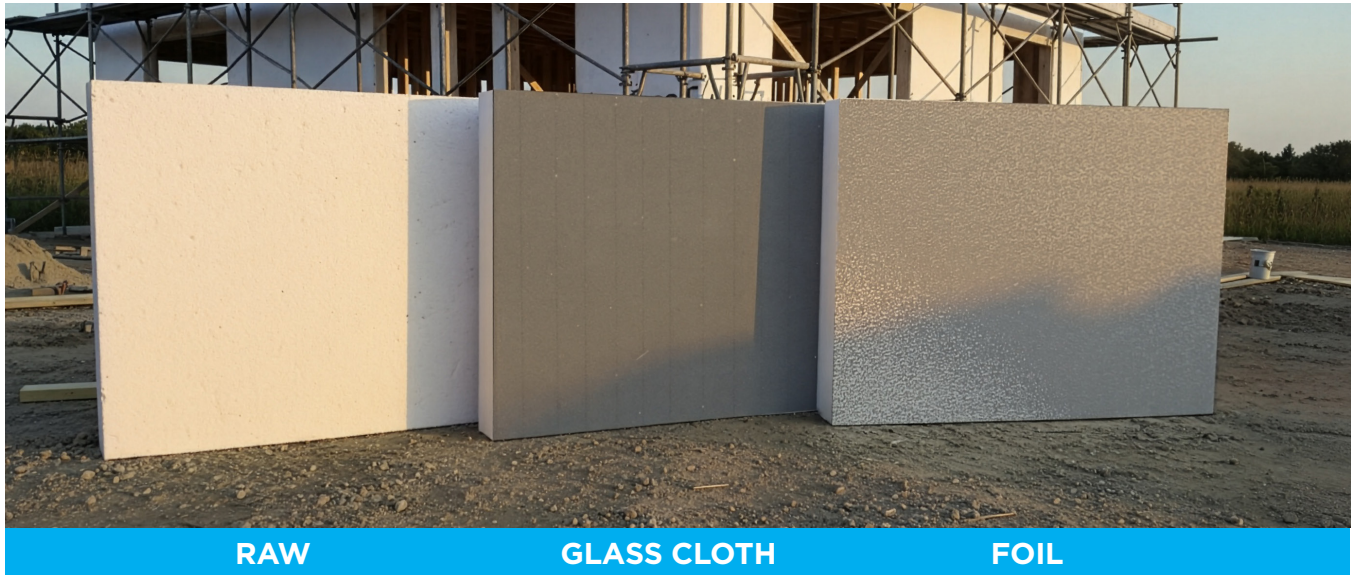
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Rigid Insulation Solutions for Superior Thermal Performance.



RAW

GLASS CLOTH

FOIL

PrimeTherm ERS PIR Insulation Board delivers high-performance thermal efficiency in a rigid, lightweight board designed for modern construction.

Manufactured from polyisocyanurate (PIR), PrimeTherm ERS offers outstanding insulation with minimal thickness, achieving higher R-Values often without the need of increasing structure depth just to accommodate the insulation. The closed-cell structure provides excellent moisture resistance, compressive strength, and long-term dimensional stability, ensuring reliable performance across all building types.

Suitable for roof, ceiling, wall, and concrete floor applications, PrimeTherm ERS helps meet and exceed NZ Building Code Clause H1 requirements for warmer, drier, and more energy-efficient buildings.

Easy to install, the PrimeTherm ERS range combines strength, efficiency, and sustainability, giving building designers and builders confidence with their projects.

INSULATION

PIR (Polyisocyanurate) insulation boards are widely recognised as a premium choice for thermal performance, offering unmatched efficiency and reliability in a variety of construction applications. Their closed-cell structure provides excellent thermal resistance ensuring long-lasting performance. The high-quality characteristics of PIR has earned it a strong reputation among architects, builders, and engineers worldwide as a dependable and high-performance insulation solution.

EXCEPTIONAL MOISTURE RESISTANCE

PIR insulation boards feature a closed-cell structure that resists water absorption, maintaining thermal performance even in damp or humid conditions. This moisture resistance reduces the risk of mould, degradation, and structural issues, providing long-term durability and reliable insulation.

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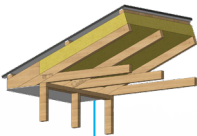
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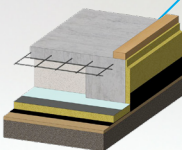
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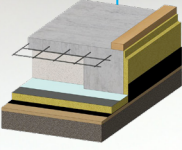
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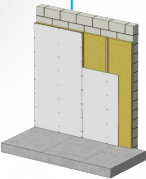
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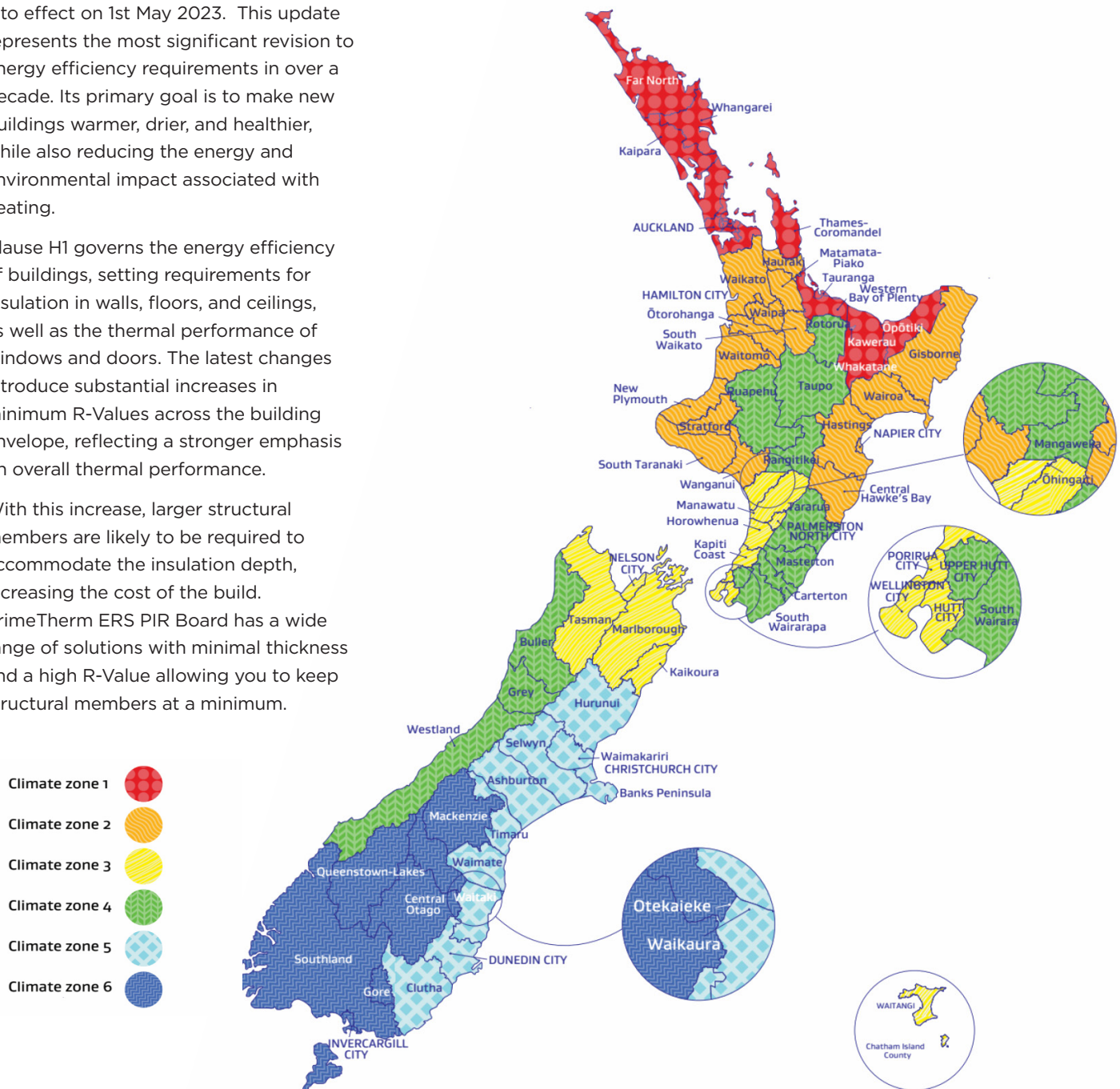
Clause H1, NZBC

In line with the New Zealand Building Code, Clause H1 was updated and came into effect on 1st May 2023. This update represents the most significant revision to energy efficiency requirements in over a decade. Its primary goal is to make new buildings warmer, drier, and healthier, while also reducing the energy and environmental impact associated with heating.

Clause H1 governs the energy efficiency of buildings, setting requirements for insulation in walls, floors, and ceilings, as well as the thermal performance of windows and doors. The latest changes introduce substantial increases in minimum R-Values across the building envelope, reflecting a stronger emphasis on overall thermal performance.

With this increase, larger structural members are likely to be required to accommodate the insulation depth, increasing the cost of the build. PrimeTherm ERS PIR Board has a wide range of solutions with minimal thickness and a high R-Value allowing you to keep structural members at a minimum.

MAP OF NEW ZEALAND CLIMATE ZONES



Building element	Climate zone					
	1	2	3	4	5	6
Roof	R6.6					
Windows	R0.46				R0.50	
Wall	R2.0			R2.0		
Slab-on-ground floors	R1.5			R1.5	R1.6	R1.7
Other floors	R2.5			R2.8	R3.0	



PIR BOARD

Thickness of board (mm)	FR class **	Sizes (mm)	Facings
20	B2	2400 x 1200	Raw, Glass Cloth, Foil
25	B2	2400 x 1200	Raw, Glass Cloth, Foil
30	B2	2400 x 1200	Raw, Glass Cloth, Foil
50	B2	2400 x 1200	Raw, Glass Cloth, Foil.
80	B2	2400 x 1200	Raw, Glass Cloth, Foil
90	B2	2400 x 1200	Raw, Glass Cloth, Foil
120	B2	2400 x 1200	Raw, Glass Cloth, Foil
140	B2	2400 x 1200	Raw, Glass Cloth, Foil
150	B2	2400 x 1200	Raw, Glass Cloth, Foil
Pre shaped slab edge	FR class **	Sizes (mm)	Facings
22	B2	2400 x 270	Glass cloth
22	B2	2400 x 300	Glass cloth
22	B2	2400 x 380	Glass cloth

NB. Some board sizes and facings may need to be ordered to specification. Check with Masons what is held in stock. B1 FR grade is available to order.

FIRE CLASSIFICATION

Core classification: GB 8624-2012 B2 (normal flammability). Approximate EN 13501-1 equivalence: Class E. In NZ, this equates to a Group 3-4 material. Boards must be concealed behind Group-rated linings (e.g. plasterboard Group 1-S, fibre-cement) for interior use. Not permitted as exposed linings.

PrimeTherm ERS Aluminum foil facer tested to AS/NZS 1530.3.1999 Ignite-ability, Flame propagation and heat release Index's - 0. Smoke developed index - 1.

WVTR (WATER VAPOUR TRANSMISSION RATE)

Aluminum foil faced PIR board is not permeable to water vapour. Fibre glass cloth and un-faced PIR board are slightly more permeable. They are not 'breathable'. WVTR circa 350 ($\mu\text{p}/\text{m}^2.\text{s}$).

DIMENSIONAL STABILITY

Less than 1% change at tested temperatures and RH.

MECHANICAL PROPERTIES & THERMAL PERFORMANCE - R-VALUES

Facing Type	0.022mm thickness W m-k	R-Value $\text{m}^2 \text{K}/\text{W}$ Tested	R-Value after aging* (estimated)	Density kg/m^3	Compressive strength KPA
All	22	0.99**	0.84	60	158
All	25	1.13	0.85	60	158
All	50	2.25	2.03	40	158
All	80	3.60	3.24	40	158
All	100	4.50	4.05	40	158
All	120	5.41	4.86	40	158

* What is the Aged R-Value? R-Value is a measure of thermal resistance -R.

PIR board R-Values reduce slowly post production. Typical PIR board R-Value reduction is thinner boards up to >13-15%. Thicker boards circa >10% R-Values stabilise after approx. 2 years.

Building designers use aged R-Values for an accurate thermal modelling of the building performance.

** In keeping with the PIR Board industry in NZ and common available slab edge design calculators, Masons suggests using an input value of R 1.0 for Masons SlabEdge

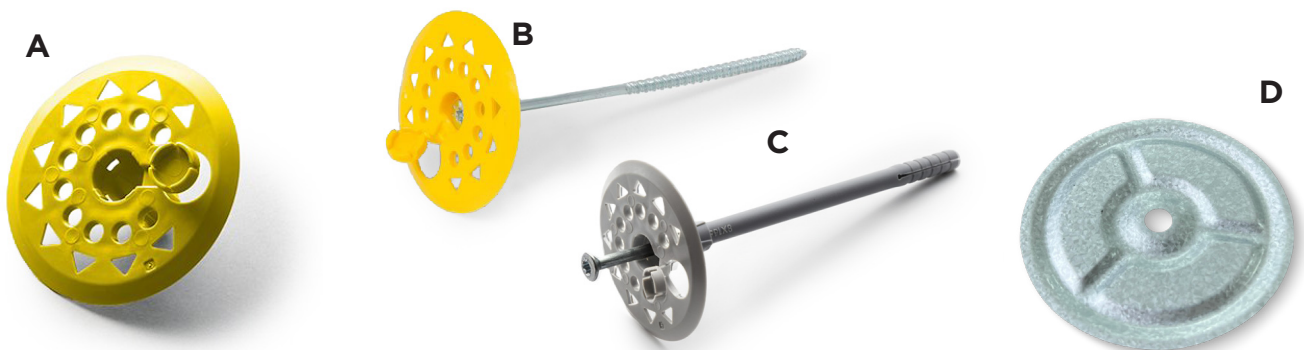
PIR BOARD FIXINGS

A	Use	Masons code	Central hole / outside diameter	Washer diameter	Description	Quantity
	WOOD FIXING WASHER ONLY	PB-NF46191PGIALLO	6 mm/60 mm	60mm	Easier 60mmØ washer with 6mmØ hole	100pcs
	Polypropylene multi purpose washer with cap	PB-NF46190PGRIGIO	8 mm/60 mm	60mm	Easier 60mmØ washer with 8mmØ hole	100pcs

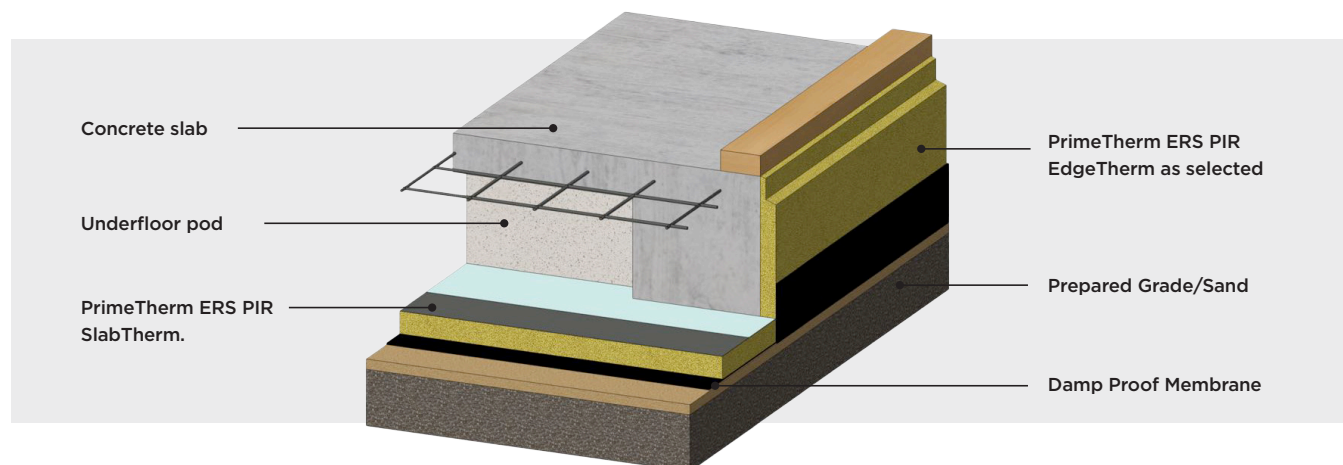
B	Use	Masons code	Screw diameter / length	Min. Anchoring depth	Maximum PIR thickness to be fixed	Head external diameter	Description	Quantity
	WOOD FIXING WASHER & SCREW Polypropylene multi purpose washer and cap with screw	PB-NF46162	M6 x 100mm	30mm	70mm	60mm	Pp anchor w/cert screw for wood	100pcs
		PB-NF46163	M6 x 120mm	30mm	90mm	60mm	Pp anchor w/cert screw for wood 60x120	100pcs
		PB-NF46164	M6 x140mm	30mm	110mm	60mm	Pp anchor w/cert wood 60x140mm	100pcs
		PB-NF46165	M6 x 160mmx	30mm	130mm	60mm	Pp anchor w/cert wood 60x160	100pcs

C	Use	Masons code	Screw diameter / Length	PIR board thickness Flush washer	PIR board thickness with washer counter sunk 20mm into the board	Head external diameter	Installation method	Description	Quantity
	MASONRY FIXING Polypropylene washer, nylon anchor and cap with screw	PB-NF46801A	8 x 100mm	60mm	80mm	60mm	Drill hole, insert anchor & screw to expand both with hammer and screw	100mm wall anchor 8mm	100pcs
		PB-NF46802A	8 x 120mm	80mm	100mm	60mm	Drill hole, insert anchor & screw to expand both with hammer and screw	120mm wall anchor 8mm	100pcs
		PB-NF46803A	8 x 135mm	Min. 40 of embedment depth required	120mm	60mm	Drill hole, insert anchor & screw to expand both with hammer and screw	135mm wall anchor 8mm	100pcs

D	Use	Masons code	Diameter	Thickness	Description	Quantity
	Multi Purpose Galvalume steel load spreading washer for PIR board	PB-STEELPLATE	71mm	0.6mm	Galvanised steel plate 71mm x 0.6 x 4mm	500pcs



Concrete Underslab Insulation



THE PRODUCT

PrimeTherm ERS SlabTherm combines strength and efficiency, in one advanced insulation solution. Designed for residential and commercial concrete slab applications in New Zealand conditions, increasing thermal performance by protecting the concrete slab from heat-loss. Improves energy efficiency to decrease heating and cooling costs over the life of the building, reducing the need for in-slab heating. SlabTherm ensures comfort by contributing to a warm, dry and healthy space.

Combined with PrimeTherm ERS EdgeTherm, the R-Value of a 100m² floor slab with an area / perimeter ratio of 2.5 should well exceed the minimum R-Values required for Climate Zones 1-6.

1. THERMAL BREAK FROM GROUND

- Reduces heat loss into the ground.
- Helps meet NZ Building Code H1 requirements.

2. LONG-TERM DURABILITY

- Rot-proof and chemically stable—PIR will not degrade over time when properly installed.
- Low maintenance and high performance over the life of the building.
- Maintains insulation performance over time.

3. IMPROVES INDOOR COMFORT

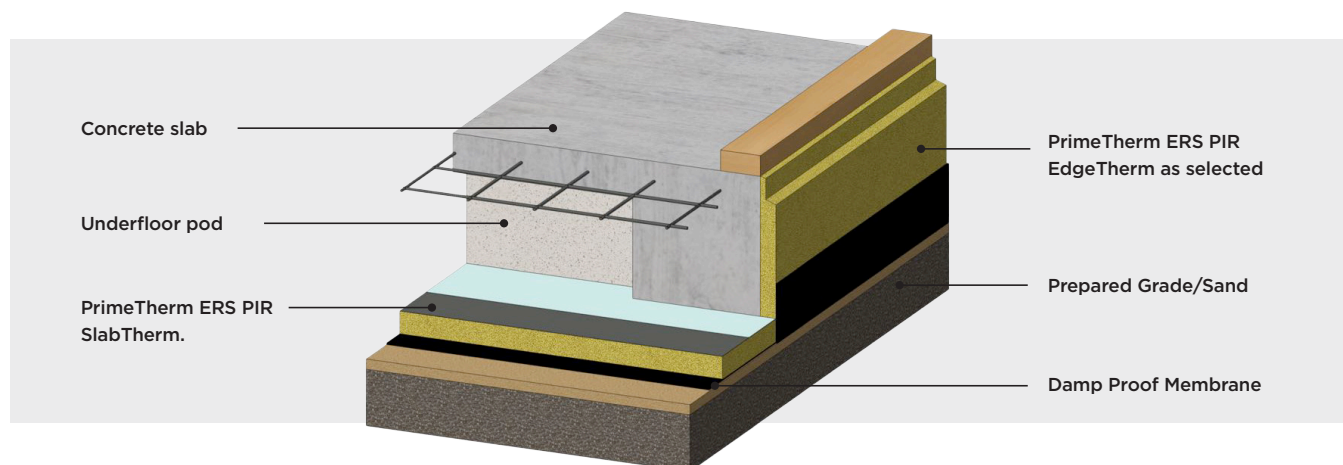
- Prevents cold floors and improves internal temperature stability.
- Especially beneficial for ground-floor commercial spaces, offices, and public facilities.

PRODUCT SELECTION SLABTHERM

Thickness	R-Value m ² /K/W	Length (mm)	Width (mm)
50	2.03	2400	1200
80	3.24	2400	1200
120	4.86	2400	1200

N.B. These applications are intended as an overview; exact technical details are provided in the Design and Installation Guide.

Concrete Slab Edge Insulation



THE PRODUCT

PrimeTherm ERS EdgeTherm is designed for New Zealand conditions, increasing thermal performance by protecting the concrete slab from heat-loss. Improves energy efficiency to decrease heating and cooling costs over the life of the building, reducing the need for in-slab heating. EdgeTherm ensures comfort by contributing to a warm, dry and healthy space. It is presented as a post pour option and comes with a glass fibre finish ready for plastering.

Combined with PrimeTherm ERS SlabTherm 50mm, the R-Value of a 100m² floor slab with an area / perimeter ratio of 2.5 should well exceed the minimum R-Values required for Climate Zones 1-6.

In keeping with the PIR Board industry in NZ and common available slab edge design calculators, Masons suggests using an input value of R 1.0 for Masons Slab Edge.

1. THERMAL EFFICIENCY

- Reduces heat loss through the edges of the concrete slab.
- Helps meet NZ Building Code H1 requirements.
- Contributes to a healthier, drier indoor space.

2. EASE OF INSTALLATION

- Lightweight and easy to handle.

3. DURABILITY & PERFORMANCE

- Rot-proof and chemically stable – PIR will not degrade over time when properly installed.
- Low maintenance and high performance over the life of the building.

4. IMPROVES INDOOR COMFORT

- Helps prevent cold floors and improves internal temperature stability.

PRODUCT SELECTION

EdgeTherm	Thickness	R-Value m ² /K/W*	Length (mm)	Height (mm)
Glass Faced	22	0.99	2400	270
	22	0.99	2400	300
	22	0.99	2400	380

* R-Value when manufactured

ADDITIONAL COMPONENTS

Soudal Gorilla
Grab Adhesive



N.B. These applications are intended as an overview; exact technical details are provided in the Design and Installation Guide.

Warm Ceiling Insulation

THE PRODUCT

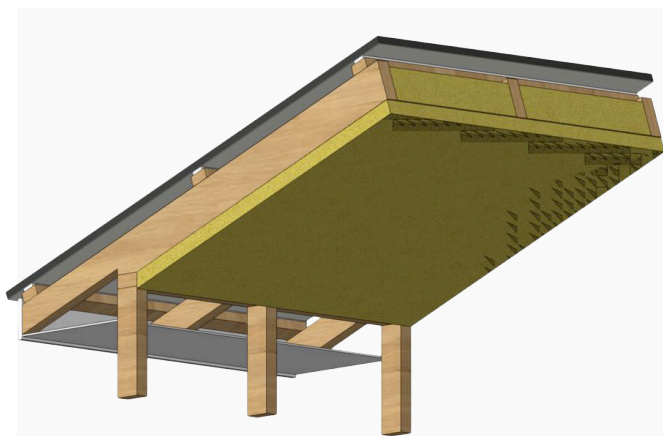
PrimeTherm ERS WarmCeiling is designed for New Zealand's unique climate and delivers exceptional thermal performance keeping interiors warm in winter and cool in summer. WarmCeiling provides an effective thermal barrier, improving energy efficiency.

This will decrease heating and cooling costs over the life of the building ensuring comfort by contributing to a warm, dry and healthy environment. Lightweight and easy to install, it fits neatly between rafters and ceiling joists and is ideal for new builds, renovations and retrofits.



ROOF PERIMETER INSULATION

- 90mm thick PIR installed between bottom chords or ceiling joists should exceed the requirements of R3.3 for 500mm wide perimeter insulation reducing the need for compressing the insulation around the perimeter.



SKILLION ROOF EXAMPLES

- Ceiling battens over PrimeTherm ERS WarmCeiling insulation providing thermal break to rafters with WarmCeiling insulation between.
- Ceiling battens over PrimeTherm ERS WarmCeiling insulation providing thermal break to rafters with loft insulation between.
- Each design option is likely to exceed a construction R-Value of R6.6 and will vary depending on project specific factors assessed in detail by the designer by carrying out a calculated analysis of the roof build up.



TRUSSED ROOFS - EXAMPLES

- Ceiling battens over PrimeTherm ERS WarmCeiling insulation providing thermal break to bottom chord with loft insulation between rafters.
- Ceiling battens over PrimeTherm ERS WarmCeiling insulation providing thermal break to rafters with PIR insulation between.
- Each design option is likely to exceed a construction R-Value of R6.6 and will vary depending on project specific factors assessed in detail by the designer by carrying out a calculated analysis of the roof build up.



THERMAL COMFORT
Year-round comfort
and climate balance



DURABLE
Rot-proof and
chemically stable



EASY INSTALLATION
Lightweight and easy
to install



MOISTURE RESISTANT
Closed-cell structure
prevents water absorption

1. THERMAL EFFICIENCY

- Reduces heat loss through the ceiling.
- Helps meet NZ Building Code H1 requirements.
- Contributes to a healthier, warmer, drier indoor space by improving internal temperature stability.



2. EASE OF INSTALLATION

- Lightweight and easy to handle.

3. DURABILITY & PERFORMANCE

- Rot-proof and chemically stable – PIR will not degrade over time when properly installed.
- Low maintenance and high performance over the life of the building.

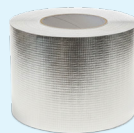
TYPICAL PRODUCT SELECTION

	Thickness	R-Value m ² /K/W	Length (mm)	Width (mm)
Foil, Glass fibre or no faced (raw)	50	2.03	2400	1200
	80	3.24	2400	1200
	120	4.86	2400	1200

Additional components	Masons Code	Length (mm)	Width (mm)
Aluminium Tape	FOILTAPE50mmx50m	5000	50
Aluminium Tape	FOILTAPE80MMX50M	5000	80
Aluminium Tape	FOILTAPE100MMX50M	5000	100

ADDITIONAL COMPONENTS

**Masons
Aluminium Tape**
(for Aluminium
faced sheets)



**Soudal Gorilla
Pro Expanding
Foam Click & Fix**



N.B. These applications are intended as an overview; exact technical details are provided in the Design and Installation Guide.

Warm Roof Insulation



THE PRODUCT

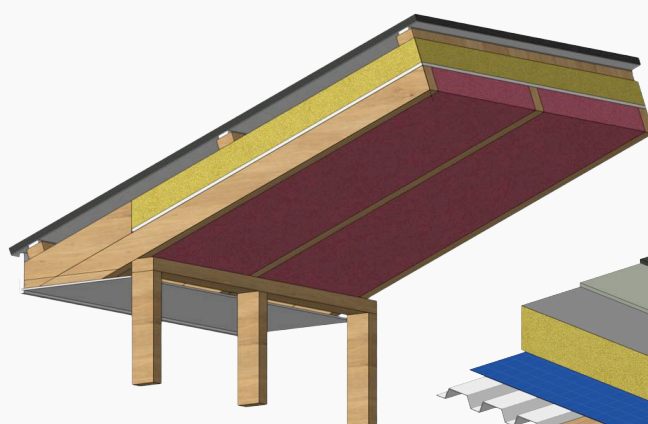
PrimeTherm ERS WarmRoof - Discover the smarter way to insulate with PIR WarmRoof Insulation - the high performance solution for modern energy efficiency. PrimeTherm ERS WarmRoof provides superior thermal performance in a lightweight, durable board that's easy to install above your roof deck. By keeping the entire structure warm, PrimeTherm ERS WarmRoof reduces heat loss, prevents condensation and helps create a more comfortable living space all year round.



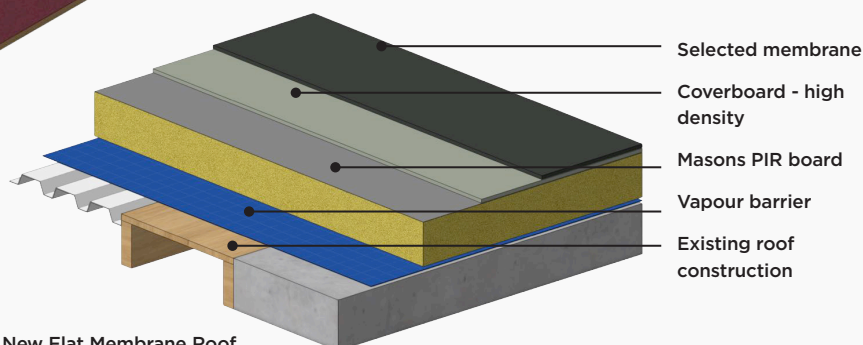
New Residential Longrun roofing
- Trussed or Skillion



New Residential Longrun roofing
- Exposed Rafter Skillion roof



New Residential Longrun roofing
- Skillion



New Flat Membrane Roof

The examples provided are for illustrative purposes only. Each design option will vary depending on project specific factors and should be assessed in detail by the designer before finalising.



THERMAL COMFORT

Year-round comfort and climate balance



DURABLE

Rot-proof and chemically stable



EASY INSTALLATION

Lightweight and easy to install



MOISTURE RESISTANT

Closed-cell structure prevents water absorption

WHETHER YOU'RE RENOVATING A FLAT ROOF OR BUILDING NEW, PRIMETHERM ERS WARMROOF OFFERS:

1. SUPERIOR ENERGY EFFICIENCY

By keeping the roof structure within the insulated layer, heat loss is minimised and the building maintains a more stable indoor temperature all year round.

2. REDUCED RISK OF CONDENSATION

The warm roof system moves the dew point to the roof deckline, helping to prevent the formation of condensation that can cause dampness and long term damage.

3. COMPLIANCE AND SUSTAINABILITY

Warm roof systems help meet building regulations for thermal performance, reduce carbon emissions and improve overall building sustainability.

N.B. The use of a vapour blocker at ceiling level and, or Masons Passive Roof Ventilation system maybe required according to the building type and location.

PRODUCT SELECTION EXAMPLE

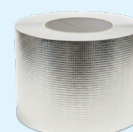
WarmRoof	Thickness	R-Value m ² /K/W	Length (mm)	Width (mm)
Foil faced	50	2.03	2400	1200
Foil faced	80	3.24	2400	1200
Foil faced	120	4.86	2400	1200

Fibreglass faced board may also be considered

Additional components	Masons Code	Length (mm)	Width (mm)
Aluminium Tape	FOILTAPE50mmx50m	5000	50
Aluminium Tape	FOILTAPE80MMX50M	5000	80
Aluminium Tape	FOILTAPE100MMX50M	5000	100

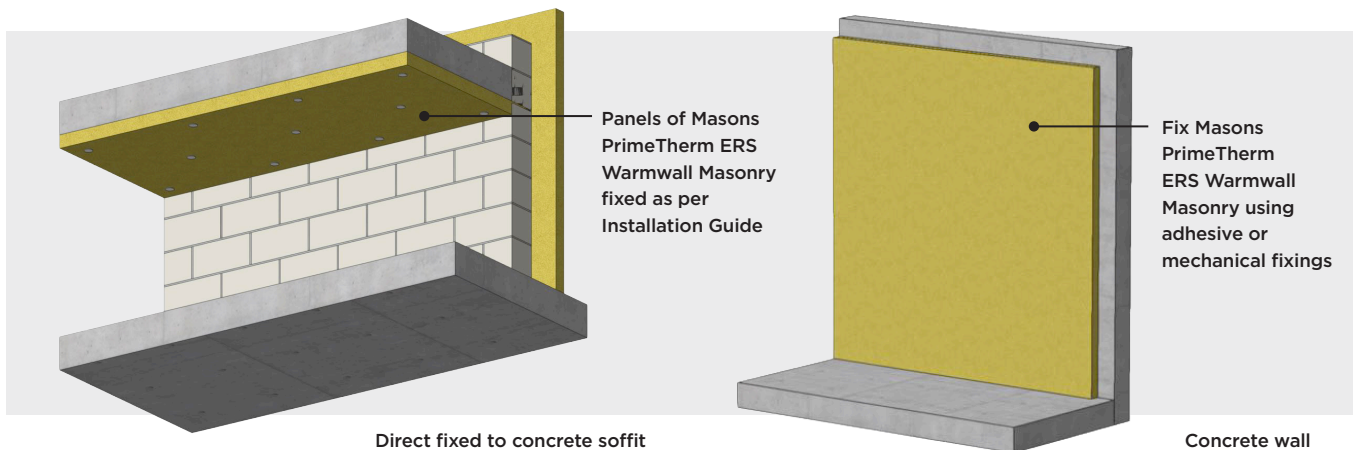
ADDITIONAL COMPONENTS

Masons Aluminium tape (for Aluminium faced sheets).



N.B. These applications are intended as an overview; exact technical details are provided in the Design and Installation Guide.

Concrete Masonry Insulation



THE PRODUCT

PrimeTherm ERS WarmWall Masonry is a rigid PIR insulation solution designed for insulating the internal face of concrete and masonry walls and soffits. Manufactured from closed-cell polyisocyanurate (PIR), it provides high thermal resistance in a slim profile, making it ideal for commercial, industrial and multi-residential buildings with exposed concrete or blockwork.

Installed internally, WarmWall Masonry improves thermal performance without altering external façades, while contributing to warmer, drier and more energy-efficient buildings that meet New Zealand Building Code Clause H1 requirements.

ADDITIONAL COMPONENTS

Insulation fixings (masonry anchors with washers)

Adhesive (where specified)

Joint sealing tape (foil or flashing tape)

WHY USE WARMWALL MASONRY

HIGH THERMAL PERFORMANCE

- Reduces heat loss through concrete and masonry walls and soffits
- Helps meet NZBC H1 energy efficiency requirements
- Improves internal temperature stability in thermal mass structures

MOISTURE & CONDENSATION MANAGEMENT

- Closed-cell PIR resists moisture absorption
- Reduces condensation risk on cold internal surfaces
- Contributes to healthier internal environments

VERSATILE INTERNAL APPLICATION

- Suitable for concrete walls, blockwork and soffits
- Can be mechanically fixed, adhesively bonded, or installed as a combined system
- Compatible with plasterboard linings where required for fire or aesthetic compliance

TYPICAL APPLICATIONS

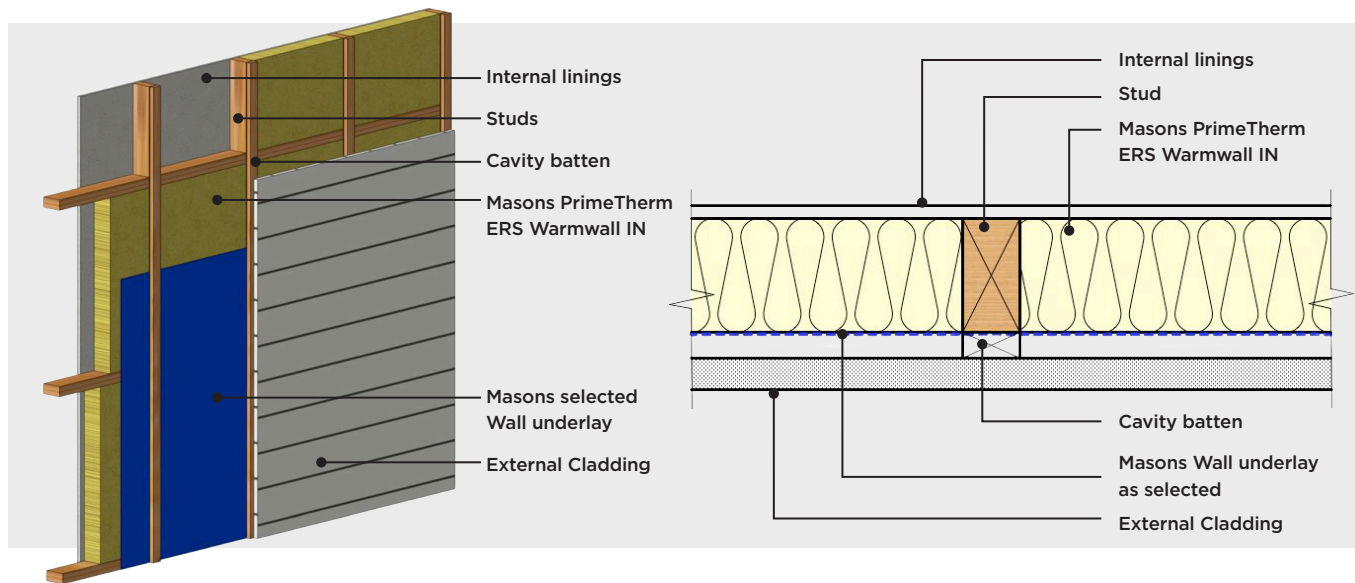
- Commercial and industrial buildings
- Schools, community halls and public facilities
- Warehouses and storage buildings
- Office fit-outs with exposed concrete or masonry

PRODUCT SELECTION - WARMWALL MASONRY

- Available in multiple thicknesses to suit climate zone and project-specific R-Value requirements. Boards are supplied in 2400 x 1200mm sheets with thicknesses typically ranging from 25mm to 150mm.

N.B. These applications are intended as an overview; exact technical details are provided in the Design and Installation Guide.

Warm Wall Interior Insulation



THE PRODUCT

PrimeTherm ERS WarmWall IN is a high-performance PIR insulation board designed to be installed between timber or steel wall framing members. It delivers superior thermal efficiency in a rigid, non-compressible format that maintains performance over time, even in demanding New Zealand conditions.

WarmWall IN is ideal for residential and light commercial framed wall systems, providing high R-Values with minimal wall depth and helping designers meet updated NZBC Clause H1 requirements.

ADDITIONAL COMPONENTS

Wall underlay (as selected)

Cavity battens

Foil or joint sealing tape
(where required)

WHY USE WARMWALL IN

MAXIMISED R-VALUE IN LIMITED WALL DEPTH

- High thermal resistance per millimetre
- Reduces the need for deeper framing
- Ideal where space constraints exist

DIMENSIONAL STABILITY & DURABILITY

- Will not sag, slump or compress over time
- Maintains thermal performance for the life of the building
- Resistant to moisture uptake due to closed-cell structure

DESIGNED FOR NZ FRAMED WALLS

- Suitable for timber or steel framing
- Easily cut for a precise friction fit
- Compatible with standard wall underlays and internal linings

TYPICAL APPLICATIONS

- Residential external walls
- Light commercial framed buildings
- New builds and renovations
- Hybrid wall systems where internal insulation is required

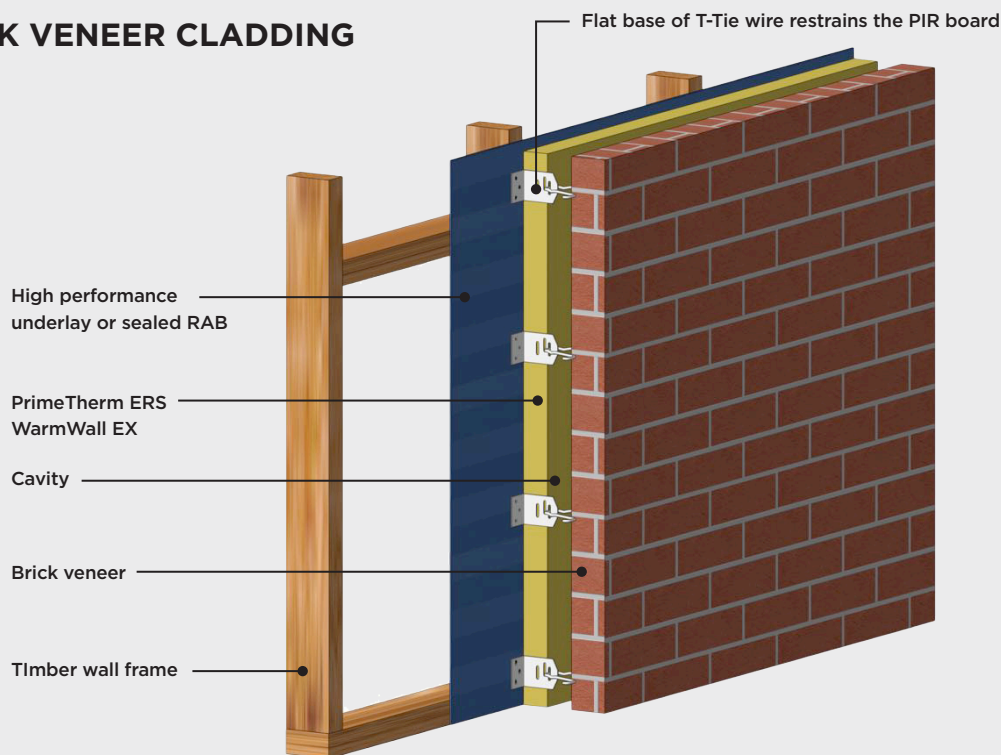
PRODUCT SELECTION - WARMWALL IN

- WarmWall IN is available in a range of thicknesses to achieve required wall R-Values when installed in accordance with NZS 4246:2016.

N.B. These applications are intended as an overview; exact technical details are provided in the Design and Installation Guide.

Warm Wall Exterior Insulation

BRICK VENEER CLADDING



THE PRODUCT

PrimeTherm ERS WarmWall EX is a continuous external wall insulation system designed to be installed to the outside face of wall framing. Using foil-faced PIR insulation boards, WarmWall EX significantly increases wall assembly thermal performance by reducing thermal bridging through framing members.

Installed externally, WarmWall EX forms part of a high-performance wall envelope, improving energy efficiency, condensation control, and long-term building durability.

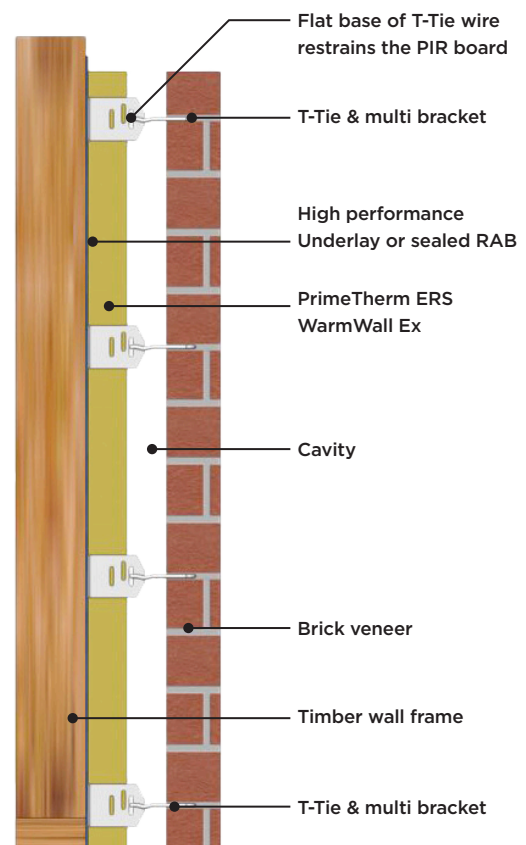
WHY USE WARMWALL EX

CONTINUOUS THERMAL BARRIER

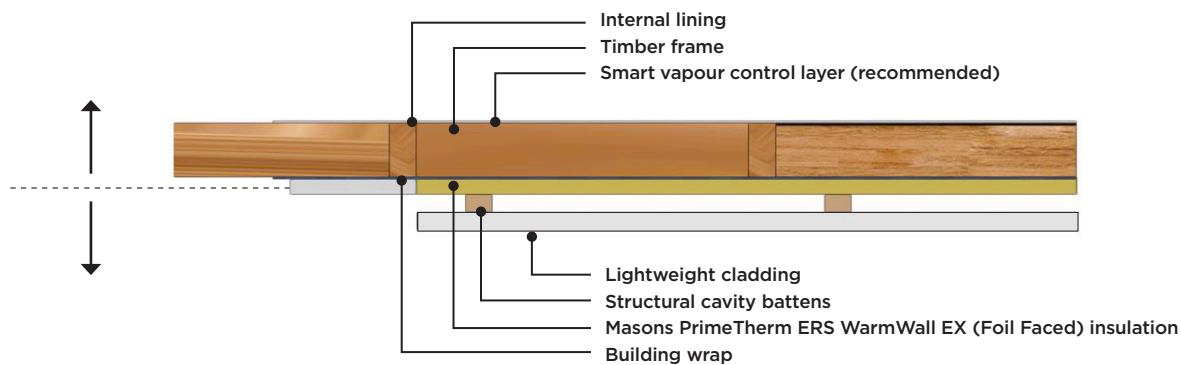
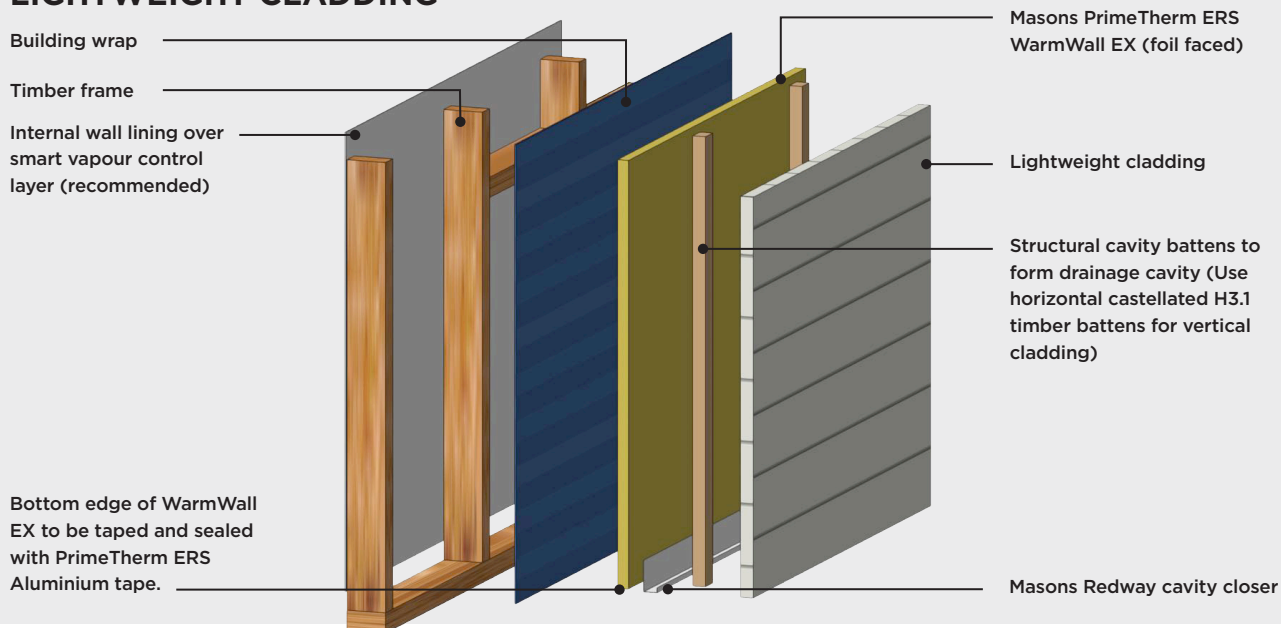
- Minimises thermal bridging through studs
- Significantly improves overall wall construction R-Values
- Helps exceed NZBC Clause H1 requirements

MOISTURE & DEW POINT CONTROL

- Positions insulation outside the framing zone
- Helps keep the dew point safely outside structural elements
- Reduces interstitial condensation risk



LIGHTWEIGHT CLADDING



VERSATILE CLADDING COMPATIBILITY

- Suitable for brick veneer and lightweight cladding systems
- Compatible with cavity battens and proprietary fixing systems
- Enables high-performance wall design without increasing internal wall thickness

TYPICAL APPLICATIONS

- Residential external walls
- Commercial and mixed-use buildings
- Brick veneer construction
- Lightweight cladding systems

PRODUCT SELECTION - WARMWALL EX

- WarmWall EX panels are supplied in 2400 x 1200mm sheets, with thicknesses typically ranging from 50mm to 120mm. System configuration varies depending on cladding type, cavity width and fixing method.

N.B. These applications are intended as an overview; exact technical details are provided in the Design and Installation Guide.

ADDITIONAL COMPONENTS

Stainless steel T-ties and multi-brackets (brick veneer)

Structural cavity battens (lightweight cladding)

Temporary fixings

High-performance wall underlay or sealed RAB

Need help obtaining Prime ERS PIR Board?

Contact your Masons representative for help and advice.

Alternatively contact your building materials supplier, insulation specialist, builder or plasterer for quotation and supply of Prime Therm ERS PIR Board.

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Your 24/7 resource for:

- Installation Guides
- Specification Documentation
- Compliance Documentation
- Data Sheets
- Brochures
- CAD Drawings



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Designed Smart, Built Tough.

Masons is a New Zealand owned family business supplying products and systems that help buildings perform at their best. We focus on the complete building envelope, reducing risk and removing guesswork. And when you need support, you get clear, practical advice from people who really know our products.

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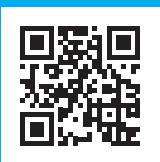


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