

CONQUEROR INSULATION BOARD

TECHNICAL SPECIFICATIONS AND PROFILES



Conqueror NZ Ltd has a policy of continuous product improvement; we reserve the right to change design or specifications without prior notice.



CONQUEROR

PRODUCT INFORMATION

Polyisocyanurate (PIR) insulation is suitable for use in buildings, extensions and renovations, and is one of the most effective insulation materials used in construction. PIR insulation core sandwiched between two high performance paper/foil facings creates a durable, light weight insulation board with superior performance and reduced material cost.

Thickness (mm)	20	30	40	50	60	75	90	100
R Value at 15°C (mK/W)	0.97	1.46	1.95	2.43	2.92	3.65	4.38	4.87
R Value at 23°C (mK/W)	0.93	1.40	1.87	2.34	2.80	3.50	4.21	4.67
Weight (kg/m ²)	0.97	1.41	1.85	2.29	2.73	3.39	4.05	4.49

Weight for glass fabric/glass fabric facings

FIRE PERFORMANCE

AS 1366.2-1992, ISO5660.1.

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

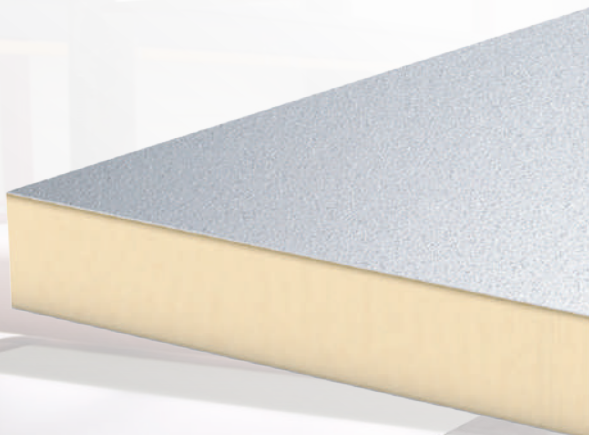
MOISTURE ABSORPTION

The PIR core has a closed cell structure, making it highly resistant to water absorption, and suitable for use in damp environments. The Aluminium Foil Board has a higher vapour resistance due to its foil facing.

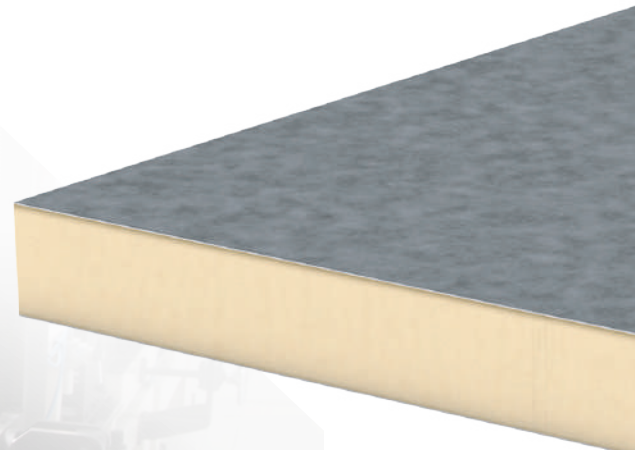
PRODUCT PROPERTIES

Density	38-42kg/m ³
Compressive strength	≥0.09MPa
Shear strength	≥0.11MPa
Water vapour transmission rate	10-15 g/m ² .24h
Thermal conductivity at 15°C	0.0205 W/m.K
Thermal conductivity at 23°C	0.0214 W/m.K
Dimensional stability	≤3% (70C/95%RH,20hrs)
	≤1% (-10C,20hrs)
Width	900-1200mm
Length	Up to 5500mm
Thickness (mm)	20, 30, 40, 50, 60, 75, 90 and 100

Aluminium Foil Skin



Glass Fabric Skin



1. DIRECT FIXING

1.1 DIRECT FIXING OF THE BOARDS TO CONCRETE SOFFIT

- The boards are produced in the standard size of 2400 x 1200mm. They must be fixed directly to the concrete soffit using a minimum of 11 insulation fasteners, with incorporated washer head diameter of 30 mm (min). The fasteners should provide a minimum embedment of 40mm into the solid substrate and they must be evenly distributed over the entire surface of the board. (Note: The substrate and fixing materials must be fit for purpose. Design loading on the board is not to exceed 0.375kPa for this fixing pattern. Additional fixings may be required when the boards are subjected to greater wind loads.) Please contact Conqueror NZ for advice.
- Use two rows of 4 fasteners along the length, between 50 to 150mm from edge of the board; and 3 fasteners along the middle in an offset position from the exterior rows of fasteners as shown in figure 1.2.
- The board joints can be staggered or aligned as shown in Figures 1.2 and 1.3. Repeat steps to install the board in a continuous layer on the underside of the concrete soffit.



Figure 1.0. Direct fix to concrete soffit

- If required, tape all joints with a minimum 96mm wide insulation tape. Ensure to seal around the perimeter and joints, this will prevent air flow between any air cavities formed below or above the boards.



Figure 1.2. Board joints aligned. Fastener pattern (11 fixings per board)



Figure 1.3. Board joints staggered



Figure 1.4. Insulation fastener

1. DIRECT FIXING (continued)

1.2 DIRECT FIXING OF THE BOARDS TO MASONRY AND / CONCRETE WALL

1.2.1 WITH CONSTRUCTION ADHESIVE BONDING

- Using construction adhesive, the board can be installed directly to dry and structurally sound walls free from moisture penetration. The wall should also be free from contaminant (e.g. oil, grease, paint) that may affect the adhesive bonding.
- Ensure the existing walls are straight and plumb and remove any protrusions that could result in an irregular surface finish.
- Apply a continuous bead of construction adhesive around the perimeter of the wall, and penetrations such as doors and windows.
- Apply 25mm diameter blobs of construction adhesive at 300mm CRS across the width and height, to the back of the board, or directly on to the wall. Ensure that no blob is closer than 25mm to any edge of the board to ensure a clean joint between boards.
- Align the board on the wall so that all joints butt tightly and apply pressure to ensure the board is plumb and true.
- Temporary support may be required to support the board, in cases where the construction adhesive does not develop immediate grab.



Figure 1.5. Concrete wall

- Mechanical fixings may be used to complement the adhesive bond. In this case, after the adhesive has set, use 2 mechanical fixings at the mid height of the board, 15mm from the edge, with a 25mm nominal embedment into the wall.
- Mechanical fixings should be positioned in the tapered edge of the plasterboard which will be covered after installation.
- Repeat steps to install the boards and ensure there are no gaps between segments or abutments with other materials.



Figure 1.6. Masonry brick or block wall

1.2.2 WITH MECHANICAL FIXING

- The boards can be mechanically fixed, if an acceptable adhesive bond cannot be achieved due to the wall surface conditions.
- Screws should be fixed at a maximum of 600mm CRS horizontally and 300mm vertically as shown in figure 1.6. (Note: The substrate and fixing materials must be fit for purpose. Design loading on the board is not to exceed 0.375kPa for this fixing pattern. Additional fixings may be required when the boards are subjected to greater wind loads.) Please contact Conqueror NZ for advice.
- Ensure that the existing walls are straight and plumb and remove any protrusions that may result in an irregular surface finish.
- Predrill the wall substrate using a suitable masonry drill bit. Insert the masonry anchor with a minimum embedment of 25mm into the solid substrate.
- Ensure the fixings are driven straight, with the heads embedded just below the surface of the plasterboard. Do not overdrive screws.

2. FIXING TO METAL OR TIMBER BATTENS

- If direct fixing is not possible due to uneven surface or the presence of mechanical services, the boards can be fixed to metal or timber battens.
- Suitable metal battens or 50 x 25 mm timber battens are required at 600mm CRS. This will result in three rows of battens, lining up with the two edges and the centre of the boards. The battens are to be fixed to the soffit as per manufacturer's recommendations.

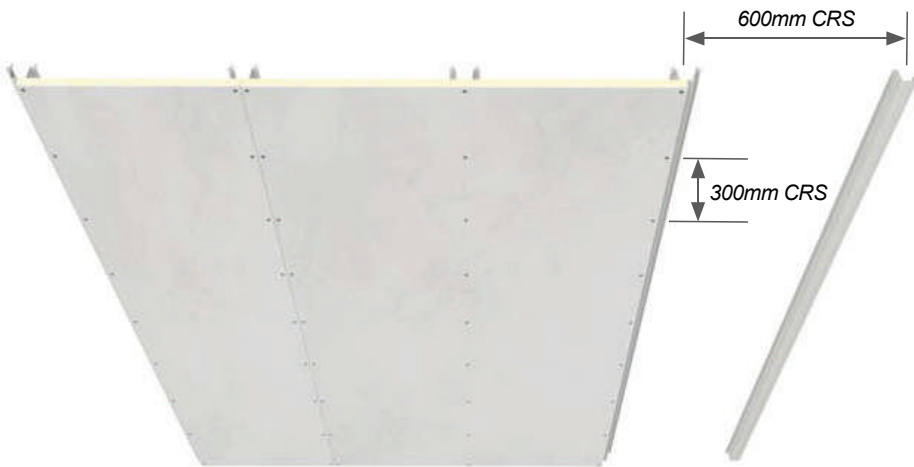


Figure 1.6. Masonry brick or block wall



Figure 1.6. Masonry brick or block wall

- Use screws at a maximum of 300mm CRS to fix the boards to the furring metal battens. For timber battens use screws or nails at a maximum of 200mm CRS. The screws or nails must be in rows less than 600mm apart. (Note: The substrate and fixing materials must be fit for purpose. Design loading on the board is not to exceed 0.375kPa for this fixing pattern. Additional fixings may be required when the boards are subjected to greater wind loads. Please contact Conqueror NZ for advice.

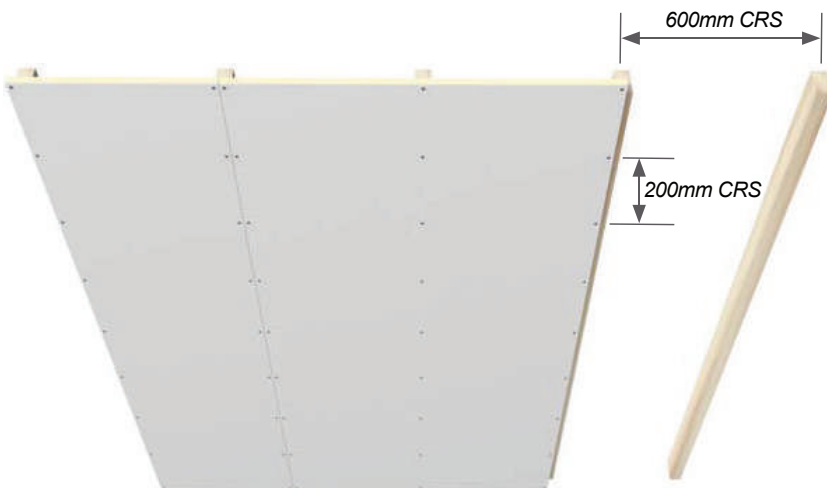


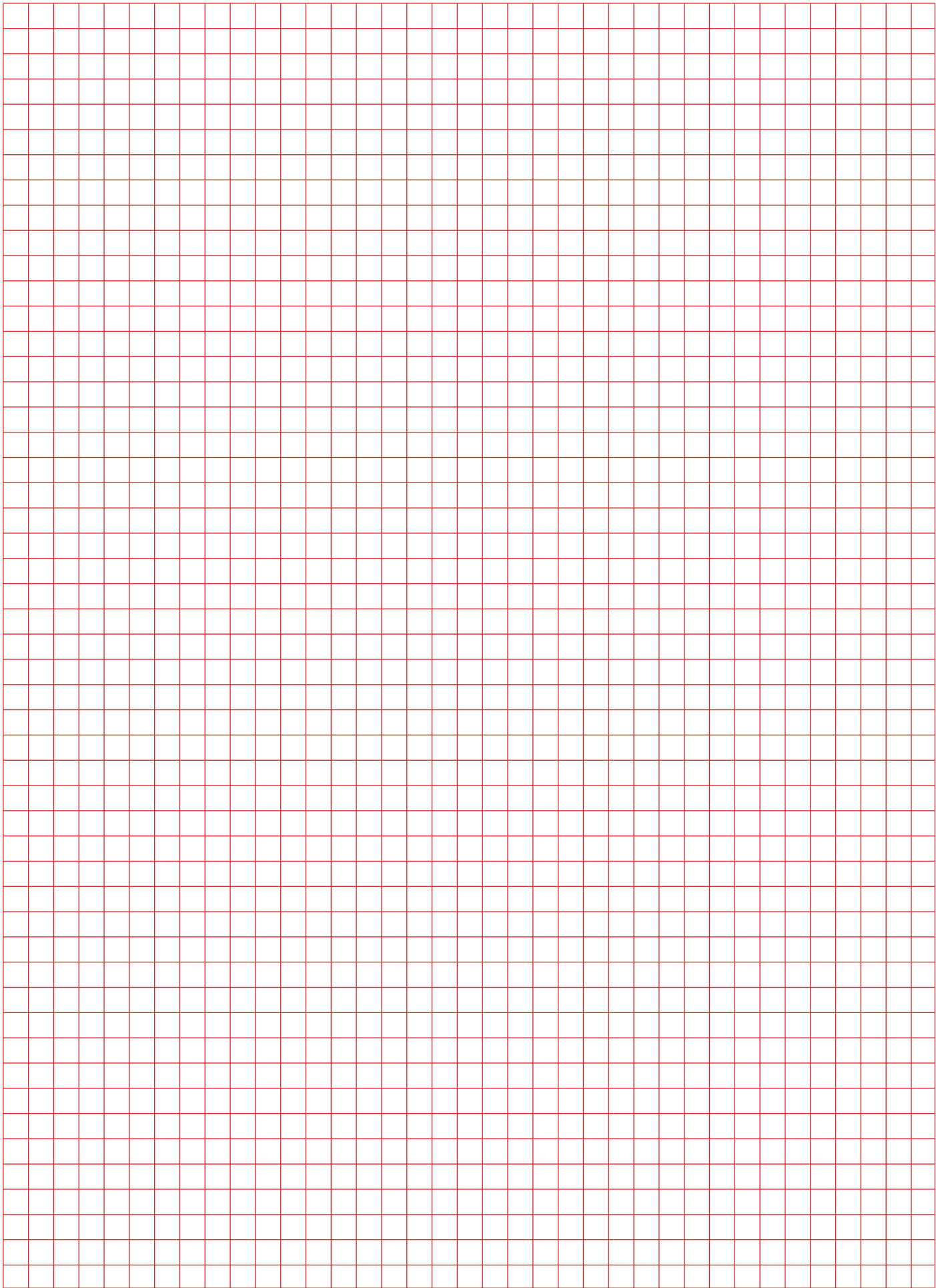
Figure 1.6. Masonry brick or block wall



Figure 1.6. Masonry brick or block wall

3. SERVICE PENETRATIONS

- Installation of the boards should tightly fit around penetrations and fire collars to reduce the effect of thermal bridging. Use appropriate methods to fill in the gaps where there is danger of overheating around flues, electrical cables and equipment.



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