

REPURPOSED PIR BOARD

Suitable application for sub-floors, cavity walls and between loft joists

KR BON source offcuts of cladding panels or panels being deconstructed from building sites and repurpose the PIR insulation within. Only panels produced post 2004 are repurposed to guarantee that the panels do not contain ODS (Ozone Depleting Substances) such as CFC's and HCFC's.



Product Composition

The repurposed PIR (Polyisocyanurate) board is produced by mixing chemicals with a blowing agent forming bubbles to create the thermoset plastic foam.

This creates a closed cell board as the air bubbles are independent and not linked together.

The mixture is poured on to a steel skin and as it expands, another steel skin placed on top, creating adhesion between the material with no fixing agent required and forming a composite panel.

The composition of the PIR board helps control moisture and condensation, eliminates air infiltration, reduces convective currents in walls and lofts and is effective in applications at low & high temperatures.



Thermal Testing

The k-value of the reclaimed PIR board and thermal values have been determined through various samples tested by BRSUK, members of the CIBSE (Chartered Institution of Building Services Engineers). This testing has determined the 0.031 k-value of the repurposed PIR board which is comparable to new PIR board k-value of 0.022. Visit our website to view the full report.

Specification

Sizes: 550mmx940mm or 275mmx940mm | Corner Finishing: Square Edged | Edge Finishing: Straight Edged

Description	PIR Panel Thickness										
	40	50	60	70	80	90	100	120	135	140	150
Insulation Depth (mm) ±	40	50	60	70	80	90	100	120	135	140	150
Lambda/ K Value (W/m.K) (Thermal Conductivity)	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
R-Value (m ² .K/W) (Thermal Resistance)	1.29	1.61	1.94	2.26	2.58	2.90	3.23	3.87	4.35	4.52	4.84
Panel weight ± 0.032 kg/ m ² at stated depth	1.28	1.60	1.92	2.24	2.56	2.88	3.20	3.84	4.32	4.48	4.80
Panel length (mm)	940	940	940	940	940	940	940	940	940	940	940
Panel width (mm)	550	550	550	550	550	550	550	550	550	550	550
Panel weight ±kg / sheet at stated depth & size	0.66	0.83	0.99	1.16	1.32	1.49	1.65	1.99	2.23	2.32	2.48
Panel length (mm)	940	940	940	940	940	940	940	940	940	940	940
Panel width (mm)	275	275	275	275	275	275	275	275	275	275	275
Panel weight ±kg / sheet at stated depth & size	0.33	0.41	0.50	0.58	0.66	0.74	0.83	0.99	1.12	1.16	1.24
Kingspan TF70 Rigid PIR Board for comparison											
Lambda/ K Value (W/m.K) (Thermal Conductivity)	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022
R-Value (m ² .K/W) (Thermal Resistance)	1.80	2.25	2.70	3.15	3.61	4.06	4.51	5.41	6.08	6.31	6.76

Building Standards

Building Regulations is devolved to the Scottish Parliament. Where PIR with a Euroclass D, E or F (BS EN 13501-1) can be used in the built environment and is dictated by the Building (Scotland) Regulations 2004, as amended and in particular Regulation 8 and 9. Guidance is provided in the latest edition of the domestic and non-domestic Technical Handbooks. General section 0.8 for Regulation 8 and Section 2: Fire (Standards 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.14) Building standards: Building regulations - gov.scot. The user of the PIR board is required to satisfy themselves that the intended use of the product meets all relevant national Building Regulations and guidance and local, national and other applicable standards relevant for the construction or application, including requirements in relation to fire and applicable height restrictions. The most up to date guidance can be found here: www.gov.scot

Applications for use

Suitable use for the repurposed PIR board include, as per 'Building (Scotland) Regulations 2004' the following, with guidance provided in the latest edition of the domestic and non-domestic Technical Handbooks, Section 2: Fire Building standards technical handbook 2019: domestic - gov.scot. For more information visit: www.gov.scot



2.2.0 Conversions

In the case of conversions, as specified in regulation 4, the building as converted shall meet the requirements of this standard in so far as is reasonably practicable, and in no case be worse than before the conversion (regulation 12, schedule 6).

2.2.6 Combustibility Separating Walls

In a building with no storey at a height above 18m, separating walls may be constructed from combustible products provided the appropriate fire resistance duration is maintained.



2.2.6 Combustibility Separating Floors

In a domestic building with no storey at a height above 18m, separating floors may be constructed from combustible products.

2.8.1 Roof Coverings

Where a building is more than 24m from the boundary, the roof may be of any material, including materials of high vulnerability classification.



Product Fire Standards

Fire testing has not been carried out by KR Cladding so it has been allocated the lowest fire rating possible for PIR board of F. Kingspan producers of the PIR board have carried out EN ISO 11925-2 testing, where the flames are directly impinged on the core of the PIR panel contained within their RW, SRW, Kingzip, LP and Five Crown panel, and tested compliant to these regulations.

The full report is entitled, 'Kingspan Reaction Fire Classification RW Range b-s1d0'. Fire testing was also carried out to EN13501 part 1 report for KS1000RW with Quadcore panels as per 'Class WF 389005 KS1000-KS2000 RW Range 40mm-150mm 2017' test results. Both test results can be viewed on our website.

Product Lifespan

The product is anticipated to perform with little or no change to its performance for >25 years if installed and maintained in a dry environment.

Repurposed PIR Panel Process

Composite Cladding panels post 2004 (to avoid any ODS) are sourced and selected to ensure they are fit for purpose. The panels are then passed through a bespoke cutting machine to remove the steel skins either side of the composite panel to ensure a smooth finish and a consistent depth to the panel and to remove the high cores / crowns. The panels are then resized with specialist PIR cutting saws.

Storage

PIR boards should be stored under cover. If left outside they will deteriorate over time. If a board is damaged, it should not be used. PIR boards should be kept a safe distance away from any heat source (hot works, open flames, sparks, hot surfaces, or other ignition sources) at all times.

Manual Handling

Protective gloves should be worn when carrying or handling insulation boards to protect hands and wash hands thoroughly after handling as a matter of good occupational hygiene.

Cutting & Drilling

Dust mask and safety glasses should be worn if cutting and drilling PIR boards to prevent dust inhalation and dust ingress to eyes. Inhalation of dust may cause respiratory irritation and other health conditions. These works should be carried out in a well ventilated area and dust from the process should be collected and disposed of. If in doubt following inhalation of dust, get medical attention promptly.

Installation Guidance

The PIR boards should be cut to fit tightly in their position and in most cases the joints between boards should also be taped to optimise resistance to moisture transmission and fire.

Disposal

Surplus product and offcuts can be returned to KR BON to be reused, please get in touch prior to drop off.

H&S Considerations

Only Composite Panels post 2004 are repurposed to guarantee the PIR board contains no ODS (Ozone Depleting Substances).

Environmental

38.2kg of Co2eq emissions is prevented per m2 of 100mm thick composite PIR board that is repurposed. 13.1kg of waste is diverted from landfill for each m2 of composite cladding panel that is repurposed (this is based on an average 76.25mm core depth of panel).