

Koolfoam BLACK PEARL[®] Roof Cavity Insulation INSTALLATION INSTRUCTIONS

Product Description

Koolfoam Black Pearl[®] Roof Cavity Insulation panels are either 1.2m long or 2.7m long with concertina cuts down both edges.

Tools

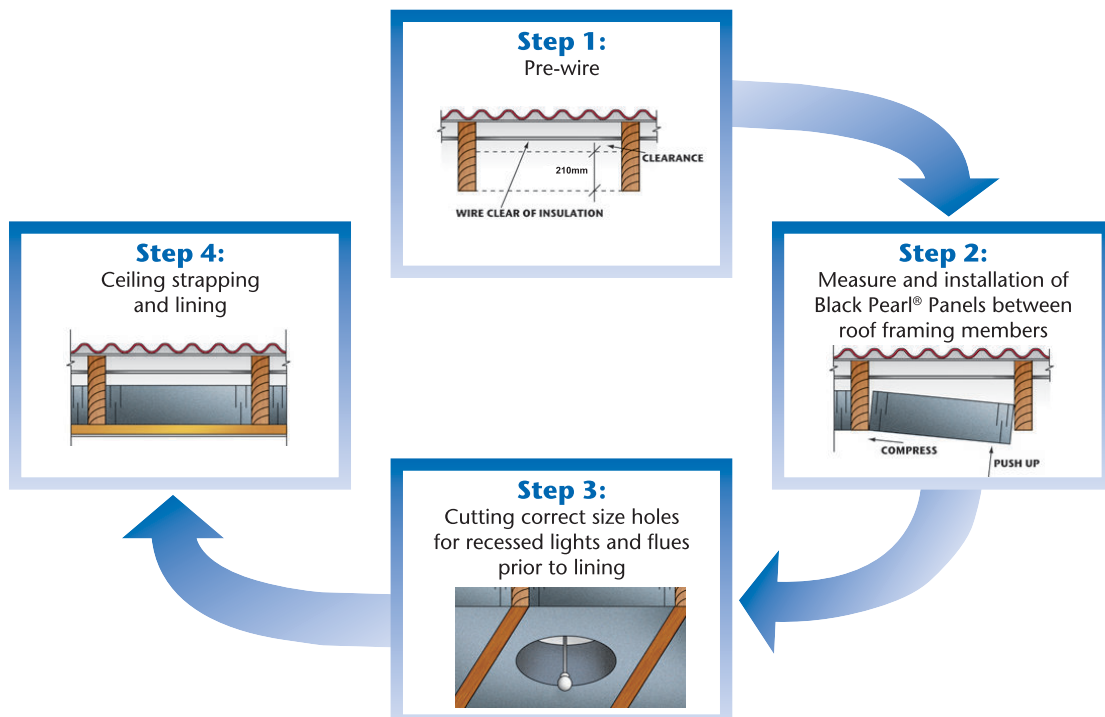
- Tape measure
- Stanley knife or hand saw
- Straight edge

Common Panel Sizes

360 x 1.2 x 210mm	R 6.6
560 x 1.2 x 210mm	R 6.6
860 x 1.2 x 210mm	R 6.6
360 x 2.7 x 210mm	R 6.6
560 x 2.7 x 210mm	R 6.6
860 x 2.7 x 210mm	R 6.6
Full sheets and custom sizes can be made	

Installation Procedure

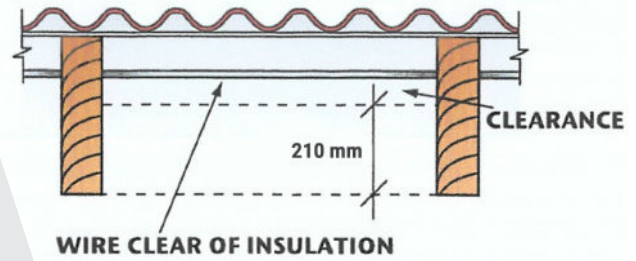
This guide should also be read in conjunction with NZS 4246 2006 Installing Insulation in Residential Buildings.



Step 1: Pre-wire

Electrical cables if possible should be installed above the top side of the Black Pearl® Insulation prior to installing the insulation panels.

If there is contact between the wiring and the Black Pearl® Insulation ensure the cables are separated as outlined in the Methods To Avoid Contact section of this document.



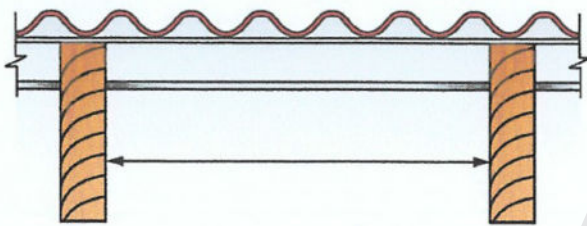
Step 1: Pre-wire

Methods To Avoid Contact

- Ensure a gap is maintained between the insulation and the wiring.
- Sleeve cables in conduit.
- Use polythene or polypropylene tape between the cables and the Black Pearl® Insulation.
- Use cables with a non migratory PVC sheath.
- Separate electrical cables from insulation panels with a strip of paper.

Pre-Record Position Of Recessed Lights

It is recommended that the layout of the recessed lights are pre-recorded prior to installing the insulation.

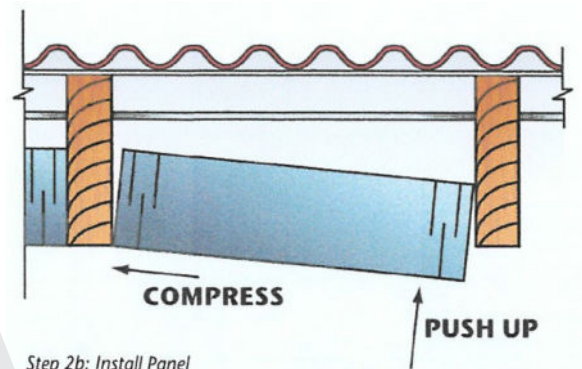


Step 2a: Measure

Step 2: Measuring and Installing Black Pearl® Panels

Step 2a: Measure the open distance between the roof framing members. Select the correct size panel or cut the panel slightly oversize.

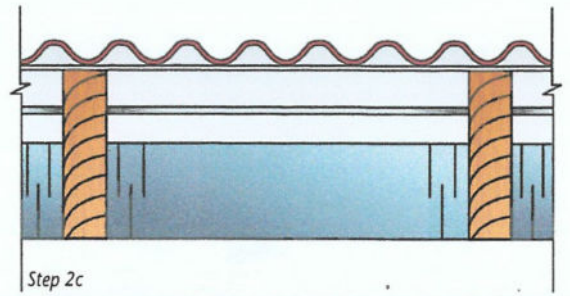
Step 2b: Push one side of the insulation panel up against the side of the roof rafter compressing the concertina edge, then press the other side of the insulation panel in between the roof rafter ensuring a snug friction fit and the insulation panels do not protrude below the underside of the framing member. Repeat this process for each framing bay ensuring the ends of the panels are butted tightly together.



Step 2b: Install Panel



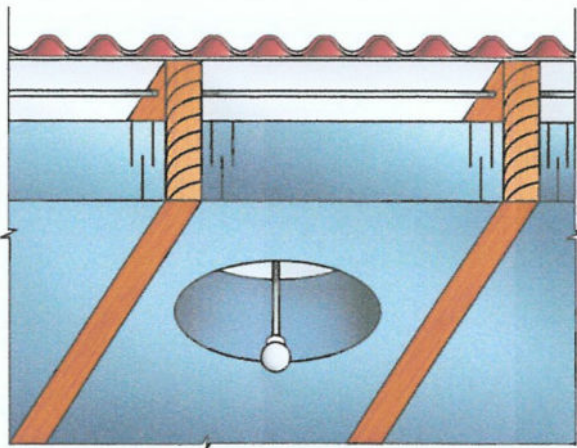
Step 2b: Ensure the entire roof area is insulated and that there are no visible gaps. If there are gaps, fill them neatly with off cuts of Black Pearl® Insulation or expandable foam around plumbing pipes and penetrations.



Clearance To Roof Underlay

Refer to NZS 4846 2006 for minimum clearance between the roof underlay and the insulation.

Step 3: Cutting correct size holes for recessed lights & flues prior to lining



Step 3: Cut correct size hole for recessed lights

– Lights And Flues

Black Pearl® Insulation Panels must be separated from all sources of heat and naked flames. A side clearance of 200mm minimum is recommended between flues and heat sources and Black Pearl® Insulation. Refer NZS 4246 2006

– Recessed Lights

Once the Black Pearl® Insulation Panels are in place cut the appropriate size holes for the recessed light fittings. For non CA rated recessed lights refer to NZS 4246 2006 and Figure 1. For CA rated recessed lights refer to

Auxiliary Equipment –Refer NZS 4246 2006

Insulation shall not be installed over the top of auxiliary equipment e.g. transformers.

A clearance shall be maintained between the transformer and the luminaire at the minimum distance set out in the manufacturer's installation instructions or in accordance with figure 1.

Recommended clearances between Black Pearl® Insulation and recessed lights:

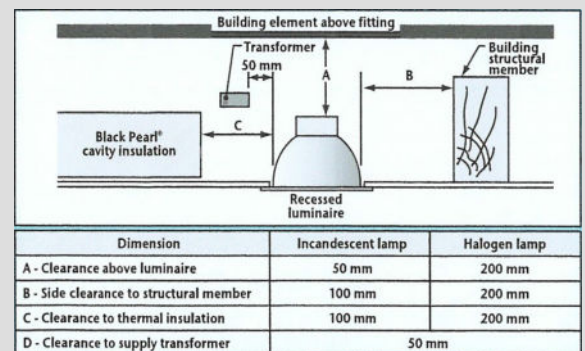


Figure 1 – Recessed light fitting



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EXPANDED POLYSTYRENE

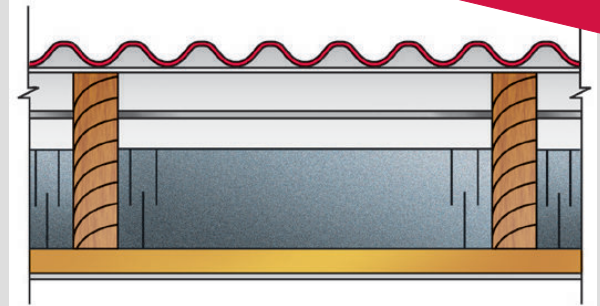
BLACK PEARL®

Innovation in Insulation

Step 4: Ceiling Strapping And Lining

Once the insulation panels are in place then the ceiling.

Strapping can be installed.



Step 4: Strap & line



SAFETY INSTRUCTIONS

CAUTION ELECTRIC CABLES AND EQUIPMENT PARTIALLY OR COMPLETELY SURROUNDED WITH BULK THERMAL INSULATION MAY OVERHEAT AND FAIL. THIS APPLIES TO WIRING INSTALLED PRIOR TO 1989. READ THE INSTRUCTIONS ACCOMPANYING THIS PACK.

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KOOLFOAM BLACK PEARL Cavity Insulation

Advantages of Black Pearl Cavity Insulation

- High thermal performance with thinner product
- Thinner product allows the structure to be smaller and lighter
- Cut to common size with easy fit concertina edges
- No sagging
- Increase eco-efficiency
- Can reduce overall cost

Roof Cavity Insulation

Code Requirements			
Climate Zone	1	2	3
	R6.6	R6.6	R6.6
Black Pearl	210mm = R 6.76		
Black Pearl	210mm = R 6.76		

Black Pearl allows the designer to use smaller structural roof framing members and still achieve the required thermal performance.

Wall Cavity Insulation

Code Requirements			
Climate Zone	1	2	3
	R 2.0	R 2.0	R 2.0
Black Pearl	65mm = R 2.09		

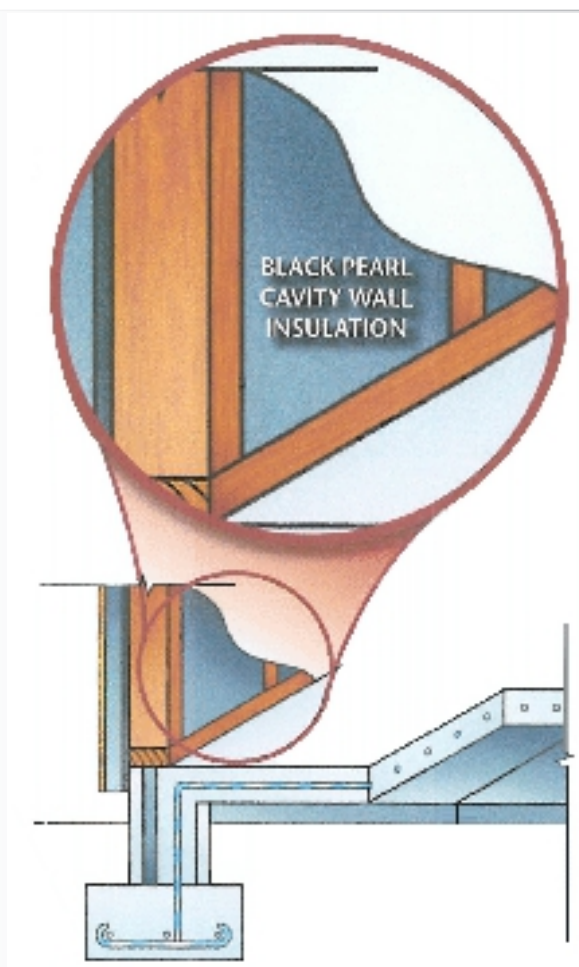
Floor Cavity Insulation

Code Requirements		
Climate Zone	1-2-3	4-5-6
	R 2.5	
	80mm	100mm

Note: Please refer back to the Black Pearl thermal tables for further R value information. Climate Zone R value requirements are referenced from NZS 4218 and refer to construction R value

Cavity Insulation is available in the following lengths:

1.2 2.4 2.7
Example – 2.7 x 550 x 50mm



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KOOLFOAM BLACK PEARL Performance

Black Pearl

N. Z Building Code requirements
Formed Plastic building materials

As required by the NZBC for all formed plastic must be protected from ignition by the following:

- Installing flame barriers
- Providing fire resistant surface finishes
- Restricting the flame propagation properties of the foamed plastics to permitted levels

Fire Behaviour

Koolform Black Pearl is made for Neopor with a flame retardant. The flame retardant reduces the flammability and spread of flame on the surface of the foam if an ignition source comes in direct contact with the foam.

Electrical Wiring

The following options are recommended:

- Separate PVC Cable from contact with the Black Pearl Insulation
- Sleeve cables in conduit when in contact
- Use Polyethylene or polypropylene tape between PVC and Black Pearl.
- Use cable with a non migratory PVC sheath.
- Separate electrical cable from insulation panels with a strip of paper.

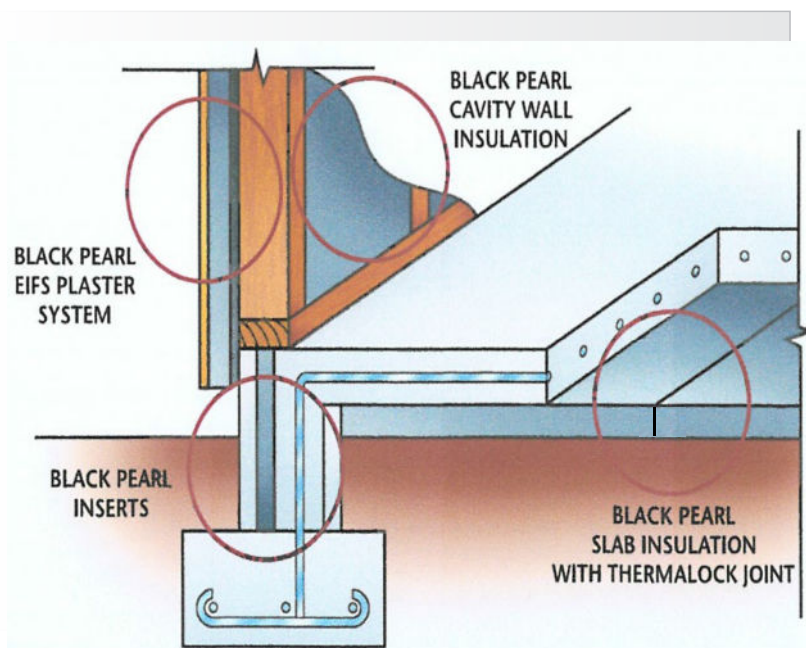
BLACK PEARL Flame Propagation

KoolFoam Black Pearl is made from the raw material Neopor,

Neopor contains a flame retardant

Testing

KoolFoam Black Pearl has been tested for Flame Propagation to the internationally recognised test AS 2122. 1-1993 and complies with all classes of Black Pearl produced.



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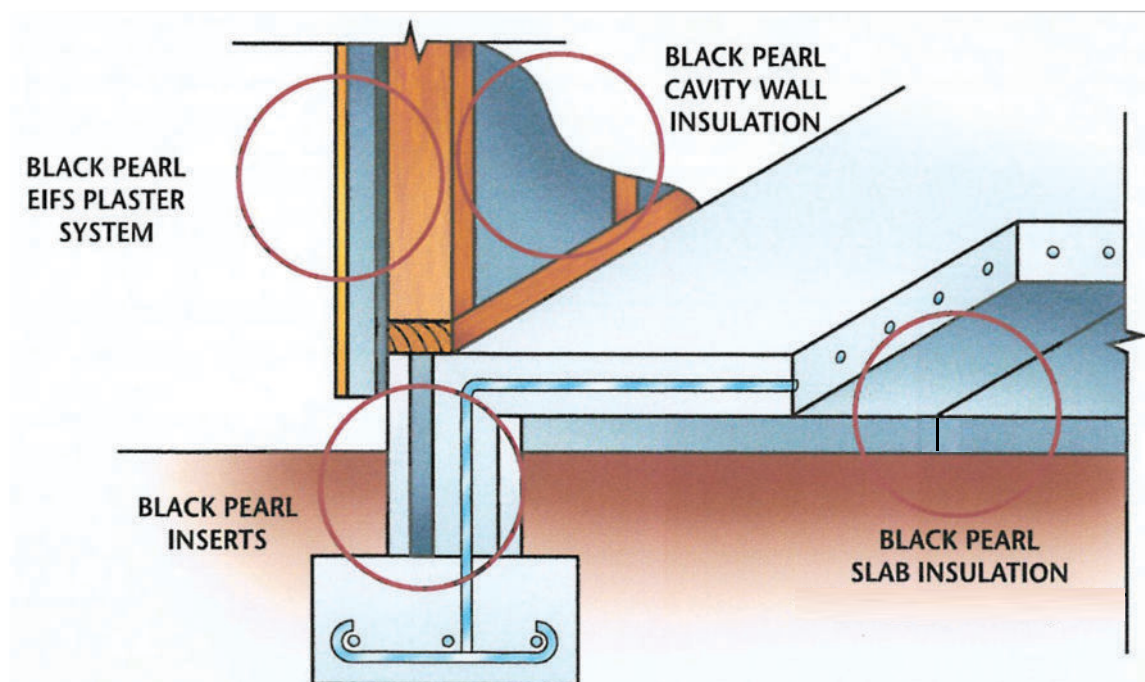
KOOLFOAM BLACK PEARL

Applications

Black Pearl Offers designers the ability to achieve high thermal performance with a thinner products.

This allows smaller structural members to be used for example in skillion roof construction 210mm of Black Pearl = R 6.6.

- Under slab Insulation
- Slab edge Insulation (pre coated)
- Framed cavity Insulation - Roof - Wall - Floor
- EIFS (exterior insulating finishing system) Timber and steel frame
- EIFA masonry overlay (Thermal Mass Solution)
- Masonry wall insulation (Interior Insulation Solution)
- Pre cast panel insulation
- Panel wall construction
- Warm roof (membrane underlay)



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KOOLFOAM BLACK PEARL Slab Insulation
KOOLFOAM THERMALOCK jointing system

Advantages of Black Pearl Cavity Insulation

- 20% better thermal performance than white EPS
- Thinner sheets can be used to achieve relevant R values
- No glare when installing
- Low water absorption
- Excellent Compressive strength
- Increased Eco efficiency
- Complies with all aspects of As1366 1992

Compressive Strength Tables

Type	@1% Compressive Stress kPa	@10% Compressive Stress kPa	Density kg/m ³
Black Pearl	62	125	22
S Grade White	51	88	16
H Grade White	63	122	22

What is specify?

The insulation used under a concrete floor should be specified according to the compression strength of the product & the R value of the product.

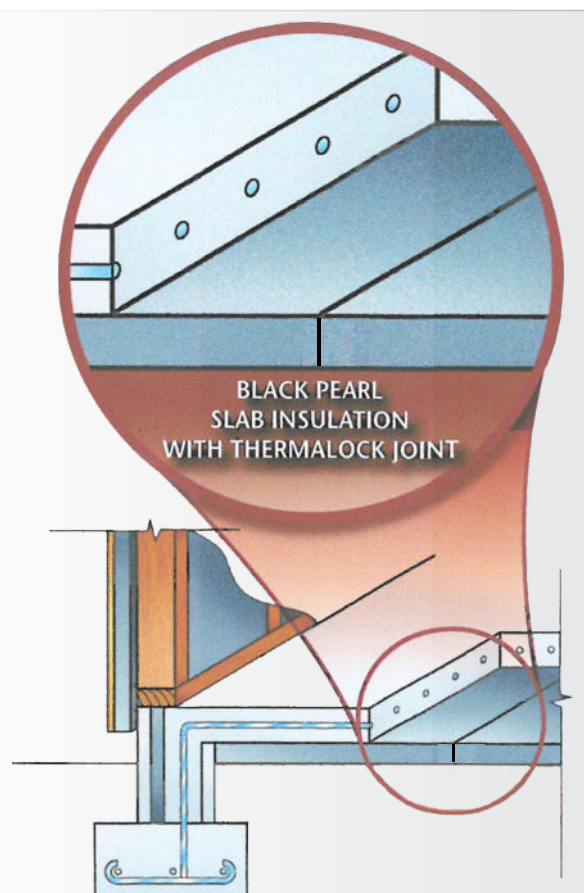
Heated floors under the NZBC & NZS 4218 require an R value of R 2.5

Black Pearl	R 2.5	=	80 mm
S Grade White	R 2.5	=	100 mm
H Grade White	R 2.5	=	90 mm

Note: Please refer back to the Black Pearl thermal tables for further R value information. Climate Zone R value requirements are referenced from NZS 4218 and refer to construction R value

ADVANTAGES Koolfoam Thermalock Jointing system

- No sheet separation
- Eliminates thermal bridges
- Speed construction



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