

# OVER RAFTER INSULATION

**For the purpose of this installation: a rafter is defined as a simply supported timber beam with its ends prevented from lateral movement and torsional rotation about its longitudinal axis.**

## Over Rafter Roof Insulation System Design Notes:

- Screwed connections fixing battens/purlins to rafters through IsoBoard panels in combination with standard lateral bracing can be considered to provide sufficient lateral restraint to timber beams under gravity load with the following limitations:
  - Two screws per joint fixed at 30 degree angle to the vertical, inclined towards direction of the batten.
  - Maximum rafter span length is 6 m;
  - Maximum spacing between braced battens/purlins is 600 mm;
  - Maximum rafter size is 50 mm x 228 mm (Minimum rafter width is 50 mm);
  - Maximum imposed live load on the roof is 0,5 kPa;
  - Dimensions exceeding above limitations have not been evaluated for Agrément test purposes.
  - Bracing to rafters shall be provided as per the ITC guidelines with a minimum of one braced bay every 7 m or six rafters, whichever is the least. **NB. The above limitations can be exceeded if other bracing elements are introduced to provide lateral restraint to the top of the rafters.**
- Fix purlins/battens through IsoBoard using minimum 150 x 4.4 mm timberfix or equivalent screws for purlins/battens of up to 76 mm depth. Pre-drill guide holes to ensure screws are centered on rafter member. Screws provide adequate resistance to uplift forces. Bracing members shall be fixed to rafters using three timberfix or equivalent screws at each end of the bracing member.
- Please see tables below describing the limitation of the spacing of the battens/purlins and rafters, depending on the roof covering type, as well as the dimensions of the batten/purlin
- Battens/Purlins and Rafter top chord members shall be SA Pine Grade 4 or better.
- IsoBoard is a thermal insulator and does not possess the qualities of a good sound absorption material. Where steel roof sheeting is used, a layer of 75 mm fibre insulation can be laid over the IsoBoard to assist with the dampening of weather noise.

The following guidelines ensure that the compressive bearing pressure of IsoBoard is not exceeded.

Member sizes Battens on Rafter (mm on mm)	Maximum allowed Supporting area (m <sup>2</sup> )	Examples of limits Batten x Rafter (mm x mm)
38 x 50	0.195	310 x 629
38 x 75	0.257	310 x 945
50 x 50	0.293	350 x 735
50 x 75	0.385	350 x 1100

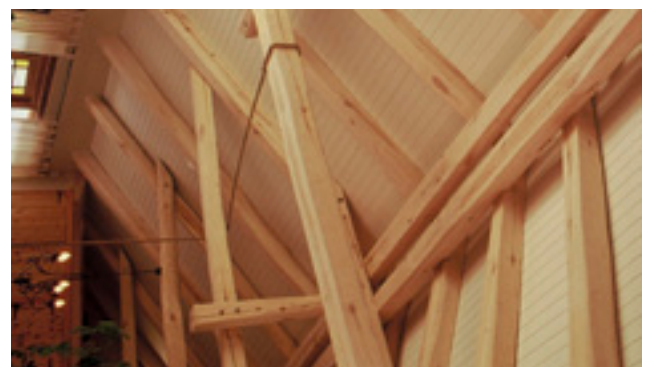


**Table 2 : Spacing limits for purlins and rafter of sheeted roofs**

Member sizes Purlin on Rafter (mm on mm)	Maximum allowed Supporting area (m <sup>2</sup> )	Examples of spacing limits Purlin x Rafter (mm x mm)
38 x 50	0.323	600 x 535
38 x 75	0.484	600 x 806
50 x 50	0.425	600 x 705 705 x 600
50 x 75	0.635	1000 x 635 800 x 790 1050 x 600

## Suggested Bill of Quantity Specification:

IsoBoard high density 32-36 kg/m<sup>3</sup> rigid extruded polystyrene 100% closed cell insulation board of \_\_\_mm thickness and 600 mm width with IsoPine/edge bevelled finish laid horizontally over trusses and secured with timberfix screws through purlins/battens. Purlin/Batten dimensions \_\_\_mm x \_\_\_mm fixed at \_\_\_mm on truss spacings of \_\_\_mm.



**ISO BOARD**<sup>®</sup>  
Produced by Isofoam SA (Pty) Ltd Reg no: CK 95/03958/07  
*It's a whole new season*

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## Installation guidelines:

1. Lay IsoBoard horizontally across rafters ensuring butt joints are effected over rafter.
2. Fix double sided tape to rafter to prevent boards moving during the installation process if necessary.
3. Guide holes must be pre-drilled in the battens/purlins before fixing through IsoBoard into rafters. Fix screws two per joint at 30 degrees to the vertical in direction of purlin/batten.
4. A quarter round or similar edge can be secured to the rafter beneath the IsoBoard to finish the installation.
5. Fix a counter batten between purlins running along the rafter to secure IsoBoard to prevent uplift. Alternatively, secure each board with screws and washers. Do not overtighten the screws, which may cause the board to deflect.
6. Paint visible face of IsoBoard with two coats of good quality Acrylic or PVA. IsoBoard can be painted before installation.
7. Install fibrous sound insulation above the IsoBoard below steel sheet roofs if required.

## Ordering Information

- IsoBoard thermal insulation is available in standard lengths of 8, 6, and 4.8 m, and halves thereof. Regional Distribution stores may carry additional standard lengths.
- Thickness range: 25 mm, 30 mm, 40 mm and 50 mm.
- IsoBoard can be ordered with the Isopine surface finish, which looks similar to a tongue and groove pine surface, having grooves at 100 mm centers down the length of the board, or, with beveled edge, to achieve a panelled finish.
- IsoBoard is 600 mm in width, with a tongue and groove edge profile to enable adjacent boards to interlock.
- Please consult a representative for the appropriate thickness for use in your region.

### Gauteng Sales

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f. 012 653 0782

northsales@isoboard.com

### Cape Sales

t. 021 983 1140

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southsales@isoboard.com

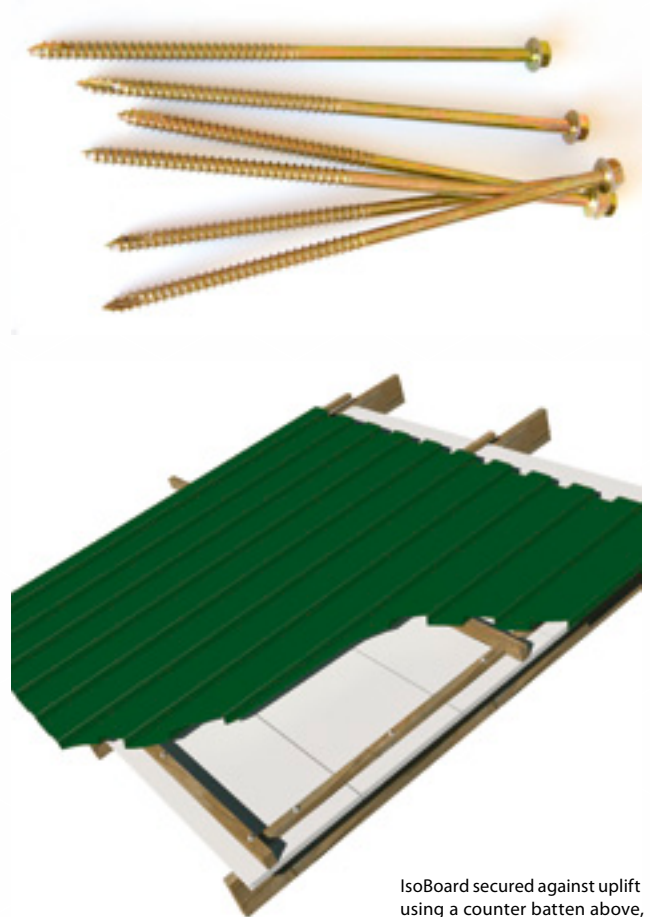
### kwaZulu Natal Sales

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IsoBoard secured against uplift using a counter batten above, and screws and washer below



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