IsoBoard Insulation installed over purlin under roof sheet. — In South Africa, the bulk of retail and industrial buildings are steel-sheet clad frames, where 70% of the heat gain is through the roof. IsoBoard over purlin insulation is the most cost effective method of achieving thermal efficiency in these buildings.

Typical uses for IsoBoard in this application:

- **Industrial developments** to improve staff comfort and productivity;
- **Agricultural applications** such as poultry-, pig-, mushroom-, crocodile- and fish-farming requiring consistent optimum growth conditions;
- **Temperature controlled** environments such as vegetable, flower and fruit processing areas and wine cellars;
- **Warehouses** containing perishable and temperature sensitive goods;
- **Retail developments** to provide comfort and reduce air conditioning costs.

**Suggested Bill of Quantity Specification:**

IsoBoard high density 32-36kg/m³ rigid extruded polystyrene 100% closed cell insulation board of __mm thickness and 600 mm wide, with tongue and groove joints, fixed concurrently with roof covering, over steel purlins at approximately __mm centres, with 5 mm gap between boards butt-joined on top of purlins.

Please note: IsoBoard (laminated with any decorative facing e.g. vinyl) should not be installed over purlin, as this will reduce its efficacy in limiting flame spread.

**Site Handling Instructions:**

1. Handle and install with care to prevent damage to board edges.
2. Store boards flat within original packaging until required.
3. Protect from adverse weather conditions and direct sunlight for the storage period.
4. IsoBoard is easily cut to length using a sharp blade or hacksaw.
5. In potentially dusty conditions during or after construction, wipe boards clean with a weak softened water solution immediately prior to over purlin installation. This removes possible static charges present on the board surface which attract dirt and dust.

Please contact IsoBoard for any queries with respect to the above.

**Over Purlin: Guidelines**

1. For minimum deflection, do not exceed recommended spans as per table overleaf, use T-sections to support board where spanning limits per thickness is exceeded.
2. Wipe boards before installation to remove static.
3. Use masonite spacers or slipsheet where Isoboard is directly in contact with Chromadek roofsheets. Slip sheeting is not necessary with cliplock systems, galvanized and aluzinc roof sheets.
4. Butt join boards over purlins.
5. Install roof ridge vents above IsoBoard of 40 mm or thicker to prevent excessive heat buildup.
6. IsoBoard can follow a 5m radius.
7. Please consult a representative for the appropriate thickness of IsoBoard for use in your region.
8. The board is an extrusion and flow lines can be visible. Paint with two coats of good quality matt acrylic paint and/or edge bevel board for aesthetically finished requirements.
9. Fit boards below purlins using retrofit H sections.

**Ordering IsoBoard for the over purlin application.**

- Standard stock lengths and thicknesses are generally available through your nearest Regional Distribution Centre. Contact us for a quotation.
- Order IsoBoard with slip-sheet for use under Chromadek or similar painted roof sheet.
- Order IsoBoard with square edge profile if board is to be supported by T or H-sections.
- Consult with a representative.
- Standard lengths from 4.8 m to 7.2 m in 0.6 m increments and in 8 m and halves for 25, 30, 40, 50 mm boards. Tolerance ± 5 mm. Enquire availability of lengths of thicker board.
The recommended over purlin under roof sheet installation method for IsoBoard.

1. Wipe boards clean with a softened water solution immediately prior to installation. This removes any static charges built-up during the transport and handling of the board, preventing dust particles from adhering to the board.

2. Boards are laid from apex to eave, always beginning and ending on a purlin. Where necessary, boards are to be butt-joined centrally on top of purlins, with a 5 mm expansion gap between boards. Note: Butt-joined/Staggered boards may not align due to width tolerance.

3. Longitudinal jointing is effected using the tongue and groove edge profile, enabling the boards to support each other and lock together tightly. Fix roof sheet concurrently with IsoBoard so that IsoBoard is secured positively between purlins and roof sheets, using roof screws.

4. Masonite spacers or a factory applied polyethylene laminated kraft slip-sheet is required to separate IsoBoard from Chromadek finished roof sheets, to prevent possible noise caused by different rates of expansion.

5. See table below for recommended purlin spacing limitations for unsupported IsoBoard allowing for a 15 mm deflection at mid-span.

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Maximum Purlin Spacing</th>
<th>Domestic &amp; chromadek</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 mm</td>
<td>1100 mm</td>
<td>900 mm</td>
</tr>
<tr>
<td>30 mm</td>
<td>1400 mm</td>
<td>1200 mm</td>
</tr>
<tr>
<td>40 mm and thicker</td>
<td>1600 mm</td>
<td>1500 mm</td>
</tr>
</tbody>
</table>

6. Note: The recommended purlin spacings are reduced under Chromadek due to the higher temperature buildup, and for the higher aesthetic requirement in domestic applications. IsoBoard can be supported using aluminium T-sections, should purlin spacings exceed the recommended maximum.

7. In Industrial and Commercial applications where the designed purlin spacing exceeds that recommended for IsoBoard, please consult your nearest IsoBoard Regional Distribution Centre for installation advice.

8. Profiled roofing closures or coverstrips should be used, where damage by birds or vermin to exposed board ends can be expected.

9. The full text of the Large Scale Fire Test as conducted by the CSIR Building Technology unit with respect to the over purlin installation method is available on the IsoBoard website.

10. We recommend that roof ridge air vents are installed for IsoBoard of 40 mm or thicker, particularly under chromadek roof sheets. Hot air ventilation prevents deflection through heat build-up above the board.