**TECHNICAL MANUAL**
IBOARD PIR Insulation Boards

1. **Introduction**
2. **Physical Properties**
3. **Fire Performance**
4. **Installation**

### 1.1 About This Manual:

This manual has been developed to effectively assist fabricators and contractors to work with IBOARD. Due to the uncontrollable conditions onsite and different methods of job scope, as well as the variable skills and judgment of installers and the quality of equipment, tools, etc, the suggestions and recommendations contained in this manual are provided without warranty. The information and recommendations herein are believed to be correct at time of publishing.

BLUECHIP reserves the right to revise the contents of this manual without prior notice. Any construction or use of the product must be in accordance with all local zoning and/or building codes and in accordance with the current NCC at the time of use. Except as contained in a written warranty certificate, the supplier does not provide any other warranty, either express or implied, and shall not be liable for any damages, including consequential damages.

### 1.2 Company Background:

Founded in 2003 by five brothers, BLUECHIP has grown every year since to become one of Australia's leading suppliers of architectural building envelopes. BLUECHIP's product range covers the complete system from the structure out including all types of cladding materials, composite decking, sub-framing, insulation, waterproofing and fixings.

With offices in Sydney, Melbourne and Perth, BLUECHIP has supplied more than 3,000,000m2 of materials to Australian projects since 2003. Our commitment to innovation and ongoing investment in R&D ensures BLUECHIP will continue to lead the market with BCA/NCC compliant facade solutions in the years ahead.

For architects and consultants, BLUECHIP's wide range of different materials and 'complete-system' approach enables the creation of inspiring high-performance facades. For builders and contractors, BLUECHIP's large local stock, well established supply chains and genuine appreciation for our clients means you can trust us to deliver as promised every time.

### 1.3 Company Details:


Company: Blue Chip Group Pty Ltd
ABN: 98 162 282 064
Locations: Sydney | Melbourne | Brisbane | Perth
Phone: 1300 945 123
Email: sales@bluechipgroup.net.au


**Important Note:**
If non-combustible insulation is required, such as in the external walls of type A or B construction buildings, use IROCK insulation instead. If a Group 1 or 2 fire rating is required for exposed internal lining applications such as soffits, use IROCK, IROCK PLUS or IBOARD MAX.

BLUECHIP
Insulation Products

## 1.4 Product Description:

### PIR Insulation Board
IBOARD rigid insulation board is composed of a closed-cell thermoset polyisocyanurate foam core with two reflective foil facings. Tested in accordance with AS/NZ standards to comply with BCA/NCC requirements in concealed applications, IBOARD rigid insulation is manufactured using CFC/HCFC-free blowing agents that have zero Ozone Depletion Potential (ODP). Providing superior fire safety and higher R-values from less thickness, IBOARD rigid insulation gives sustained thermal performance over time and is widely used in brick cavity, frame-wall and concealed soffit applications.

### Superior Fire Performance
IBOARD rigid insulation offers superior results than alternative products when tested to AS 1530.3, the relevant Australian fire standard for concealed wall and soffit applications.

### Superior Ageing Performance
Due to it's outstanding resistance to moisture and excellent compressive strength, IBOARD rigid insulation offers much better thermal ageing performance than other products.

### 100% Non-corrosive
Unlike some other insulation products, IBOARD core material is 100% non-corrosive and will not cause corrosion issues if it comes in contact with structural steel or fixings.

### Zero Formaldehyde
IBOARD rigid insulation contains zero traces of formaldehyde and it is fibre-free making it non-irritant to the skin, non-allergenic and safer compared to other products.

### Higher R-value
IBOARD rigid insulation provides excellent thermal properties with one of the lowest thermal conductivity ratings of any insulation material on the market at 0.024 W/mK.

### Environmentally Friendly
IBOARD rigid insulation is manufactured in Europe under strict quality control using only CFC/HCFC free blowing agents which have Zero Ozone Depletion Potential (ODP).

### Clear Cavity Maintained
When IBOARD rigid insulation is used in wall cavity applications a clear cavity is still maintained making the cavity easily accessible for services such as electricity and water.

### Micro Cell Technology
IBOARD core material has a much finer cell structure with extremely low water absorbtion compared to other products (<0.6%) so it's R-value is retained long-term and it is rot and mould proof.

### Important Note:
If non-combustible insulation is required, such as in the external walls of type A or B construction buildings, use IROCK insulation instead. If a Group 1 or 2 fire rating is required for exposed internal lining applications such as soffits, use IROCK, IROCK PLUS or IBOARD MAX.

## 1.5 More Information:
IBOARD PIR Insulation Boards

BLUECHIP
Insulation Products

## 2.1 Physical Properties – Technical Data

| ITEM | TEST STANDARD | UNIT | RESULT |
|---|---|---|---|
| Unit Weight (Density) | Actual | Kg/m3 | 32 |
| Aged Thermal Conductivity | EN 13165 | W/mK | 0.024 |
| Emittance of Foil Facings | ASTM E408-71 | E | 0.05 |
| Material R-value at 0.022W/mK | | | |
| ▪ 30mm Thickness | ASTM C518 | R-value | 1.25 |
| ▪ 40mm Thickness | ASTM C518 | R-value | 1.67 |
| ▪ 50mm Thickness | ASTM C518 | R-value | 2.08 |
| ▪ 60mm Thickness | ASTM C518 | R-value | 2.50 |
| ▪ 70mm Thickness | ASTM C518 | R-value | 2.92 |
| ▪ 80mm Thickness | ASTM C518 | R-value | 3.33 |
| ▪ 90mm Thickness | ASTM C518 | R-value | 3.75 |
| ▪ 100mm Thickness | ASTM C518 | R-value | 4.17 |
| ▪ 110mm Thickness | ASTM C518 | R-value | 4.58 |
| ▪ 120mm Thickness | ASTM C518 | R-value | 5.00 |
| Compressive Strength | | | |
| ▪ 0% Deformation | EN 826 | kPa | 110 |
| ▪ 10% Deformation | EN 826 | kPa | 150 |
| Tensile Strength | EN 1607 | kPa | 80 |
| Closed Cells | Actual | % | 90-95 |
| Dry Delamination | AS 4201.1 | - | Pass |
| Wet Delamination | AS 4202.2 | - | Pass |
| Surface Corrosion | AS 4859.1 | - | Pass |
| Water Vapour Diffusion | | | |
| ▪ PIR Foam | Actual | μ | 60 |
| ▪ Foil Facings | Actual | μ | 100,000 |
| Water Absorption (After 28 Days Total Immersion) | EN 12087 | % | 1 |
| Water Absorption (Partial Immersion) | EN 1609 | % | 0.1 |
| Formaldehyde Content | Actual | % | 0 |
| CFC/HCFC Content | Actual | % | 0 |
| Ozone Depletion Potential (ODP) | Actual | % | 0 |
| Corrosive Content | Actual | % | 0 |

## 3.1 Fire Performance – In accordance with NCC 2022, Table S7C7, insulation materials.

IBOARD is designed for concealed internal applications where it is not exposed as a wall or ceiling lining such as brick cavity walls, soffits with suspended ceilings and frame walls.

| ITEM | TEST STANDARD | UNIT | RESULT |
|---|---|---|---|
| Ignitability Index | AS 1530.3 | - | 0 |
| Spread of Flame Index | AS 1530.3 | - | 0 |
| Heat Evolved Index | AS 1530.3 | - | 0 |
| Smoke Developed Index | AS 1530.3 | - | 2 |

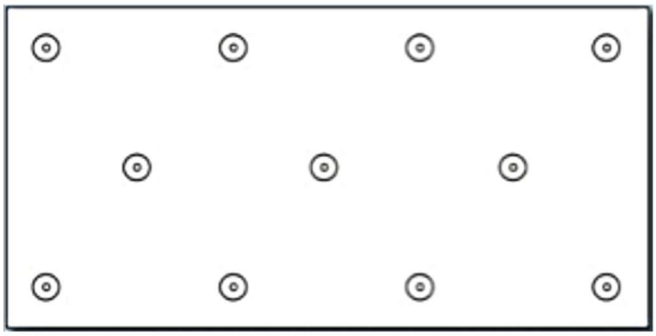
## 4.1 IBOARD Installation in Double Brick Cavity Application:

- Construct the inner leaf to at least an appropriate level to allow installation of IBOARD insulation boards to proceed.
- Remove excess mortar and mortar droppings from exposed edges of any installed IBOARD insulation boards.
- Measure and create holes in the IBOARD insulation boards as required to allow for wall ties to protrude through.
- Apply the IBOARD insulation boards to the external face of the internal leaf and secure in place using the wall ties and IBOARD universal retaining clips.
- Tape around the wall ties and along all the IBOARD insulation board joints with INSULTAPE Reinforced Foil Tape.
- When taping a stiff plastic scraper or blade must be used to apply appropriate pressure to the tape. Surfaces must be sufficiently cleaned to ensure they are dry and free from dust, oil or grease to ensure long-term tape adhesion.
- The outer leaf is then built up to the level of the top of the IBOARD insulation boards and the above process is repeated until the full height of the wall is reached.
- The insulation boards shall be installed in accordance with the latest version of the Australian NCC/BCA as well as any other government regulations or requirements at any given time and for any project.

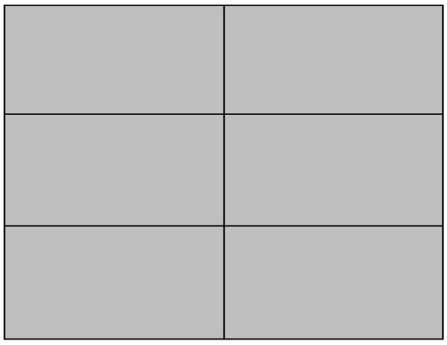
**Important Information:**
The instructions in this brochure are for illustration purposes only and are not meant to replace a licensed professional. Any construction or use of the product must be in accordance with all local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction or use of this product. The consumer or contractor should take all necessary steps to ensure the safety of everyone involved in the project, including, but not limited to, wearing the appropriate safety equipment. Except as contained in a written warranty, the supplier does not provide any other warranty, either express or implied, and shall not be liable for any damages, including consequential damages.

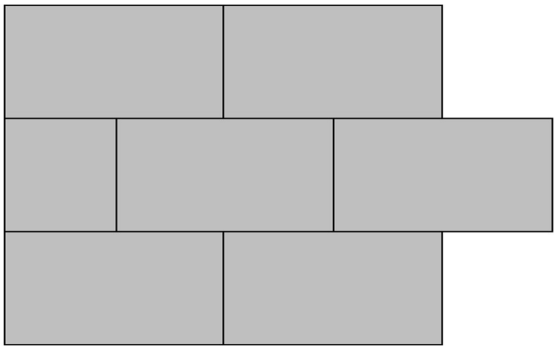
**4.2 IBOARD Installation in Concealed Soffit Applications (Suspended Ceiling):**

- IBOARD insulation boards can be fully restrained to a concrete soffit by the use of a minimum number of 11 appropriate fasteners with a minimum head diameter of 35 mm.
- The fasteners should be evenly distributed over the whole area of the board and must offer a minimum 40 mm penetration into a solid substrate. Alternatively, a designer can calculate the required design strength to identify a suitable embedment for the design loading of a project and/or application.
- Standard fastener layout is 4 x fasteners along each length (no less than 50mm and no more than 150 mm from edge of board) with additional 3 x fasteners along the middle of the board length-wise for total 11 fasteners. (See below detail).



- Where the board may be subject to external wind pressure, the requirement for additional fixings should be assessed in accordance with appropriate Australian standards.
- Consideration should be given to the material the fixing is made from and should be deemed appropriate for the application, exposure and required fire rating by the fixing manufacturer.
- Board joints can be either staggered or squared (See below detail).





- Cutting should be carried out by using a fine-toothed saw or by scoring with a sharp knife, snapping the board over a straight edge and then cutting the facing on the other side. Ensure accurate trimming to achieve close-butting joints and continuity of insulation.
- For all fixing methods board joints should be taped with a minimum 96 mm wide foil tape carefully following all taping specific instructions below (See next page).

**4.2 IBOARD Installation in Concealed Soffit Applications (Continued):**

- Firstly, ensure that the climate conditions are suitable for the tape being used as well as the product the tape is being applied too.
- The surface of the IBOARD insulation boards must be sufficiently cleaned to ensure that it is dry and free from dust, oil or grease to ensure long-term tape adhesion.
- The release liner on the tape should be removed 300 - 600 mm at a time and the adhesive face pressed firmly onto the insulation facing. Care should be taken not to stretch the tape tightly as this will create buckles and voids in the contact area.
- Care must also be taken to apply the tape over the centre of the join so that there is adequate area on both sides of the joint for the tape to bond. Uneven width distribution also puts additional shear stress on the smaller side of the butt joint.
- When taping a stiff plastic scraper or blade must be used to apply appropriate pressure to the tape. The tape should be wiped firmly from the centre out (like wallpaper) and the more pressure that is applied, the more surface contact will be reached, therefore, the greater the bond will be.
- The tape should then be cut and fitted with a knife and scissors. The same wiping instructions should then be used as above. In the absence of other protection, it is best practice to cover exposed board edges by a suitable foil tape with a minimum 48 mm wide overlap onto the board face.
- The insulation boards shall be installed in accordance with the latest version of the Australian NCC/BCA as well as any other government regulations or requirements at any given time and for any project.

**Important Information:**
The instructions in this brochure are for illustration purposes only and are not meant to replace a licensed professional. Any construction or use of the product must be in accordance with all local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction or use of this product. The consumer or contractor should take all necessary steps to ensure the safety of everyone involved in the project, including, but not limited to, wearing the appropriate safety equipment. Except as contained in a written warranty, the supplier does not provide any other warranty, either express or implied, and shall not be liable for any damages, including consequential damages. **IBOARD Must not be left as an exposed lining.**

**4.3 IBOARD Installation in Frame Wall Lining Applications:**

- Install suitable furring channel clips at required spacings for chosen lining.
- Fit the IBOARD insulation boards over furring channel clips by pushing over the clips to touch the wall, and so that the wings of the clips penetrate the internal side of the insulation board. Care should be taken to avoid the foil facing of the IBOARD insulation boards separating from the insulation core by neatly trimming the foil face where the furring channel clip will penetrate the insulation.
- Butt join the IBOARD insulation boards to provide a continuous insulation layer tight against the internal side of the wall.
- It is considered best practice to tape around the channel clips and along all the IBOARD insulation board joints with INSULTAPE Reinforced Foil Tape.
- When taping a stiff plastic scraper or blade must be used to apply appropriate pressure to the tape. Surfaces must be sufficiently cleaned to ensure they are dry and free from dust, oil or grease to ensure long-term tape adhesion.
- Install furring channels by clipping into channel clips. Furring channels should be tight against the internal face of the IBOARD insulation boards.
- Install the chosen lining to the furring channels as per manufacturer's instructions.
- The insulation boards shall be installed in accordance with the latest version of the Australian NCC/BCA as well as any other government regulations or requirements at any given time and for any project.

**Important Information:**
The instructions in this brochure are for illustration purposes only and are not meant to replace a licensed professional. Any construction or use of the product must be in accordance with all local zoning and/or building codes. The consumer assumes all risks and liability associated with the construction or use of this product. The consumer or contractor should take all necessary steps to ensure the safety of everyone involved in the project, including, but not limited to, wearing the appropriate safety equipment. Except as contained in a written warranty, the supplier does not provide any other warranty, either express or implied, and shall not be liable for any damages, including consequential damages.