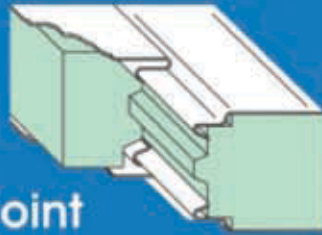




SPECIALIST PANELS UK LTD

Data sheet 2

Joint Detail



The Inta-Lock Joint

Isowall's Inta-Lock panel to panel joint is the most efficient connecting system available.

It combines the strength of a metal to metal join with the insulation properties of a snug core to core fit. This ensures that the thermal properties of the panel is uniform throughout the wall construction.

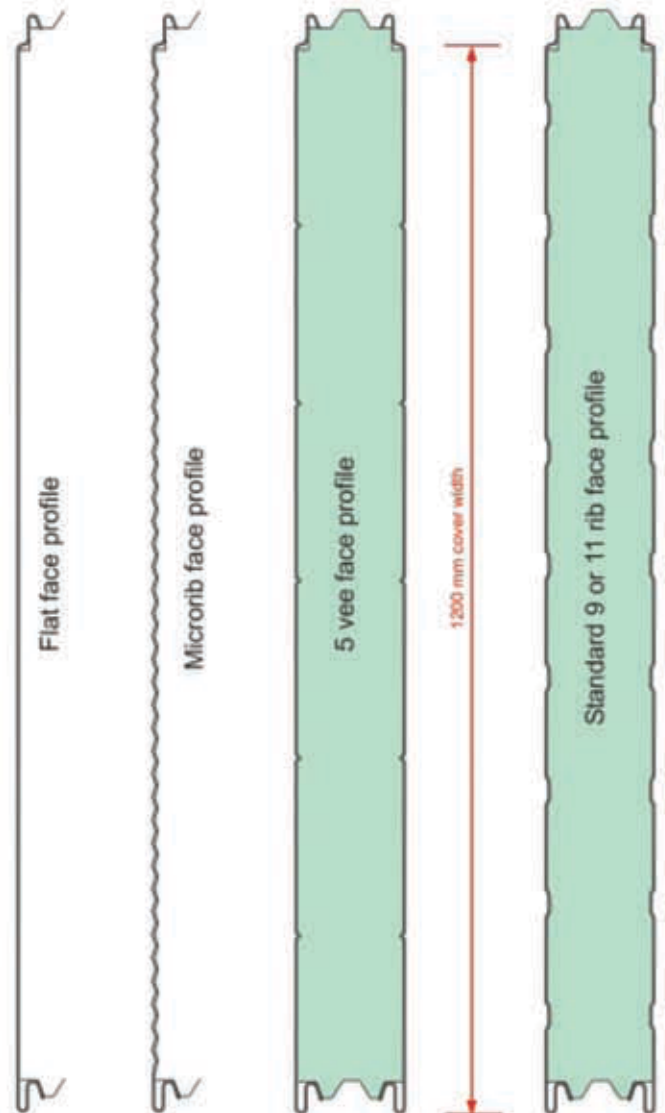
Advantages of the Isowall Panel

The basic component of the Isowall system is the stressed metal skin panel, which combined with a completely engineered system, offers:

1. A near perfect intumescent / vapour seal
2. Efficient, inert insulation
3. Total flexibility
4. Extremely low cost build
5. Factory precision control of components
6. Ease of installation
7. Fire rated panels / joint systems

The whole Isowall structure is easily extended or modified when required.

Isowall™ 



The Isowall panel is supplied with a range of face profile options as shown above. Typically the Microrib finish is specified on panels utilised in external cladding.

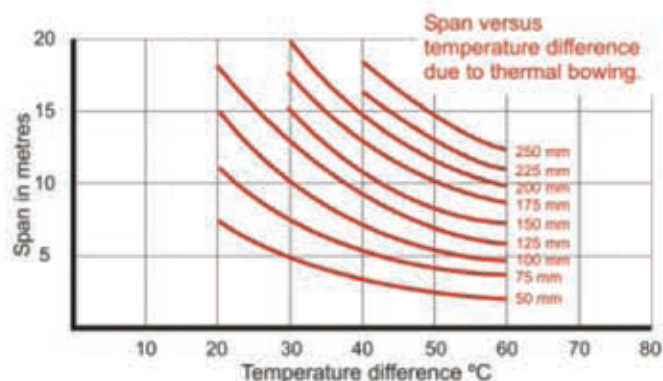
An integrated tongue is included for panels 100mm thick and above to add to the ease of installation and enhance the core to core connection.

TECHNICAL CONSIDERATIONS

Thermal Bowing

Thermal bowing should be a design consideration especially where panels are used in external applications. Various criteria need to be taken into account eg. temperature difference, length, thickness, external colour and aspect.

This graph is based on steel faced panels and a control of bowing equivalent to span/240. Care should be exercised. Thermal bowing and structural bowing can be additional.



Thickness calculation

The thickness of insulation required in any particular situation depends on the value assigned to what may be called a 'reasonable allowable heat flow'. I.O.R. guidelines show that the optimum flow rate would be between 8 and 10 Watts/m². The calculation is thus:

$$D = (I \times Dt) / Q$$

Where: D = thickness of insulation (m)
I = thermal conductivity of insulation (W/m°C)
Dt = difference between internal and external face temperatures (°C)
Q = heat flow (normally taken between 8 to 10 (W/m²))

For Industrial and commercial buildings a minimum 'U' value of 0.25 W/m² °C for roofs and 0.35 W/m² °C for walls is required. (Refer to Approved Document 'L' of the Building Regulations for full details). 'U' values can be improved however, to gain a more efficient building environment,

Cold Store Pressure Relief

Additional stress can be applied to panels when utilised in temperature controlled environments due to the imbalance between internal and external temperatures. Therefore Pressure relief valves should be built into any cold store design. As a guide pressure difference should never be greater than 300 N/m². Pressure difference is greatest during times of pull down and therefore additional safety measures can be implemented such as propping open a door.

Ceiling Apertures

Ceiling apertures can cause differences to load span calculations and should always be considered separately. Further information can be sought from our technical department.

Long Term Loads

Require extra consideration because of the effect of creep, exhibited by all plastic foams. For design loads the compressive strength should therefore be kept below 1% compression. A way of achieving this is normally through increasing the bearing area of the imposed load.

Apertures

It is important that care should be taken when services pass through the panels, especially in fire rated panel systems.

All apertures should have self sealing proprietary intumescent collars or fire dampers, depending on the type of services running through the panels. In the case of "walk-on" ceilings it is better if there are no apertures, which would obviously affect the structural strength of the panels. Similarly, doors and windows etc should have an equal rating to the panels, or consideration should be given to fire rated roller shutters. For further advice, please contact the technical department.



SPECIALIST PANELS UK LTD

Specialist Panels UK Ltd
Bolam Business Park
Bassington Industrial Estate
Cramlington
Northumberland
NE23 8AD

Tel: 01670 739 116

Fax: 01670 732 955

Email: info@isowall.org.uk

www.isowall.org.uk