

# Isowall Group

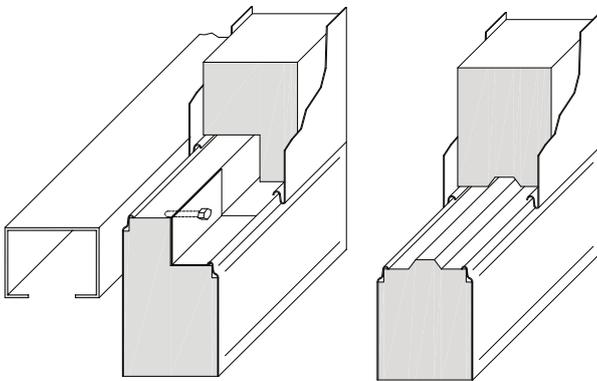
Providing sustainable value since 1973

## Joint Detail, Face Profiles and Technical Considerations

### The Inta-Lock Joint

Isowall's Inta-Lock 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 are uniform throughout the wall construction.



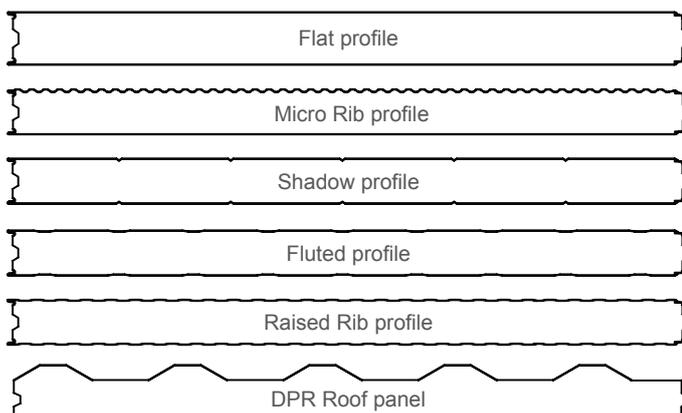
Concealed fix Inta Lock

Standard Inta Lock

### Face Profiles

The Isowall panel is supplied with a range of face profile options as shown. Typically the Micro Rib finish is specified on panel utilised in external cladding. Any combination of profiles can be selected, however, the Micro Rib finish can only be done to one facing of a panel, with the other facing being any of the other 5 profiles. The DPR roof panel is used for external roofing.

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



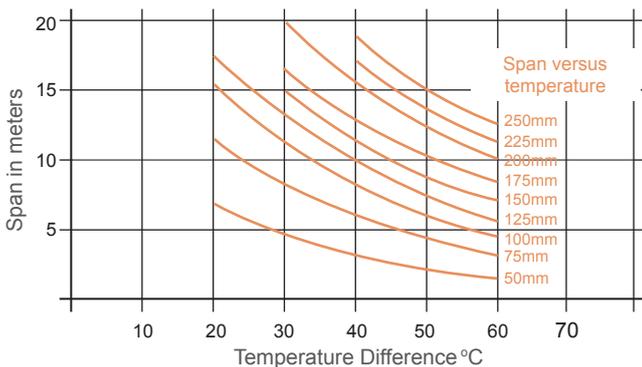
# Technical considerations

## 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”. Refrigeration guidelines show that the optimum flow rate would be between 8 and 10 watts/m<sup>2</sup>.

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/m<sup>2</sup>))

## 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 freezer store design. As a guide pressure difference should never be greater than 300N/m<sup>2</sup>. 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 panels, especially in fire rated panel systems.

All data conforms to current best practice and is for guidance only. For specific conditions of use please refer to our Technical Department. Isowall Southern Africa reserves the right to alter specifications without prior notice.

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