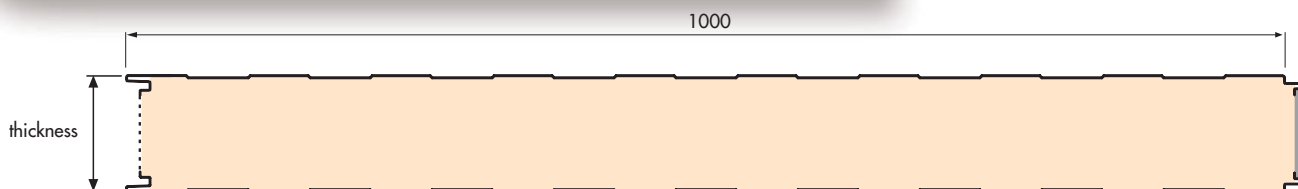




ISOFRIGO 1000

A self-supporting insulated metal panel, very versatile and easy to fit. Its extremely high performance as thermal insulation, and the excellent quality of its jointing and fixing system, make it particularly suitable for the construction of walls, ceilings, cladding and infill in refrigerated cells, conservation chambers and controlled-atmosphere rooms.



NOTES FOR CONSULTATION OF THE DATA CARD (reference should be made to norm AIPPEG 1 for anything not mentioned herein)

METAL SUPPORTS

- Rolled steel sections galvanised by the Sendzimir process (UNI-EN 10147)
- Rolled steel sections galvanised and pre-painted by the Coil Coating process
- Rolled sections in aluminium alloy, with natural finish, embossed and pre-painted (UNI 9003)
- Pre-painting carried out by continuous process, with thickness, on the visible side, of 5 microns of primer and 20 microns of paint, in the following series: PS-PX-PVDF (special products can be supplied on request, with extremely high anti-corrosion properties).
- Pre-painted PS and PVC coatings (standard colours), complying with current regulations on contact with foodstuffs.
- Rolled sections in copper (DIN 1787/17670/1791).

INSULATING CORE

Rigid foam with high insulating power, with a base of Self-extinguishing* polyurethane resins (PUR), meeting the following qualitative standards:

- reference thermal conductivity at 10°C: $\lambda_m = 0.020 \text{ W/mK}$
- total density: $40 \text{ kg/m}^3 \pm 10\%$
- adhesion to supporting surfaces: 0.10 N/mm^2
- compression pressure required to produce 10% deformation: 0.11 N/mm^2 .

THERMAL INSULATION

The coefficients of heat transmission K stated in the sheet should be taken as usable for design purposes, at 10°C; the calculation takes account of the two

laminar resistances, external and internal, and of the thermal conductivity usable for calculation purposes at 10°C (obtained by applying the increment $m = 10\%$ to λ_m): $\lambda = 0.022 \text{ W/mK}$.

LOADING

- Deformation: a maximum curvature of $1/200 \text{ L}$ is permissible
- Deflection: it is assumed that the bending moment is completely absorbed by the supporting sheets
- Shear: it is assumed that the shear force is partly absorbed by the supporting sheets and partly by the resin.

The data given in the tables are to be considered indicative only. It is left up to the designer to check them in relation to specific applications.

INSTRUCTIONS FOR FIXING

The designer should evaluate the conditions of use in relation to the local climate situation. Special precautions must be taken over fixing panels with supports in aluminium or copper.

For further information, please consult the "RECOMMENDATIONS FOR FITTING RIBBED SHEETS AND INSULATED METAL PANELS" issued by AIPPEG.

* On request, Isopan can supply polyurethane resins capable of passing the most severe tests for reaction to fire, in order to obtain panels of Class 0-1 in terms of the Ministerial Decree of 26/06/1984, class M1 in terms of the French standard P 92-501, and B1 or B2 in terms of the German standard DIN 4102.

1- **AIPPEG** (Associazione Italiana Produttori Pannelli ed Elementi Grecati): Italian Association of Panels and Ribbed Items Manufacture.

EXAMPLES OF APPLICATIONS



Refrigerated cells constructed with Isofrigo panels.



IMPORTANCE OF SEALING THE JOINT (vapour barrier)

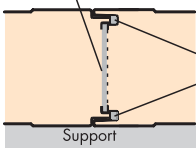
When the refrigerated cell comes into operation and the temperature falls, the internal depression produced by the low temperature favours the passage of air from the outside to the inside of the cell.

If the seal is less than perfect, the moist air could succeed in crossing the joint and reach the area of the inner face of the panel, favouring the appearance of condensation. When the condensation encounters negative temperatures, it could cause the formation of ice.

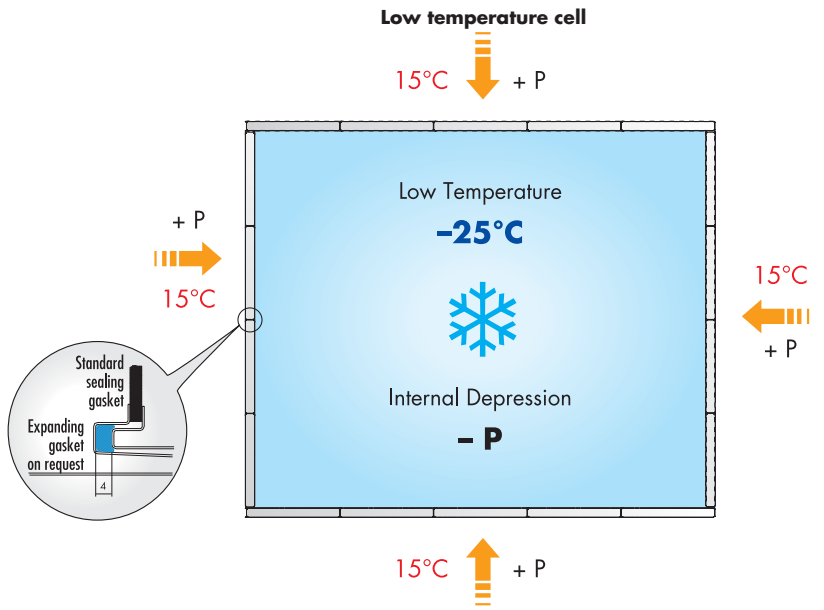
The ice damages the structure of the joint, causing a further loss of efficiency in the cell, and in the most serious cases, compromises the adhesion between the sheets and the insulating core.

We at Isopan have analysed this phenomenon carefully, and this has prompted us to offer profiles and gaskets which are ideal for making a perfect seal at the joint.

standard sealing gasket



Extra expanding gasket available on request (supplied in rolls, to be applied in the course of installation)



PERMISSIBLE LOADS

EVENLY DISTRIBUTED LOAD kg/m ²	FACINGS IN STEEL, THICKNESS 0.5 mm											
	PANEL THICKNESS mm						PANEL THICKNESS mm					
	80	100	120	150	180	200	80	100	120	150	180	200
	MAX. SPAN cm						MAX. SPAN cm					
60	545	635	715	790	845	870	620	725	805	905	975	1035
80	490	570	640	700	740	765	565	655	735	805	865	920
100	450	525	590	640	670	690	520	605	680	740	800	855
120	420	490	550	590	610	625	485	565	635	685	735	775
140	395	460	520	545	555	560	460	535	600	640	675	700
160	375	435	490	515	525	530	435	510	575	605	630	650

THERMAL INSULATION

K	NOMINAL THICKNESS OF PANEL mm					
	80	100	120	150	180	200
W/m ² K	0,26	0,21	0,18	0,14	0,12	0,11
kcal/m ² h °C	0,23	0,18	0,15	0,12	0,10	0,09

WEIGHTS OF PANELS

STEEL THICKNESS mm	WEIGHT kg/m ²	NOMINAL THICKNESS OF PANEL mm					
		80	100	120	150	180	200
0,5	kg/m ²	11,3	12,1	12,9	13,7	14,5	15,3

DIMENSIONAL TOLERANCES

DEVIATIONS mm	
Length	± 5
Effective width	± 1
Thickness	± 3
Orthometry and rectangularity	± 3

DRAFT OF SPECIFICATIONS

Nominal thickness: mm _____

Effective width: mm 1000

External support: micro-corrugated in galvanised steel/aluminium thickness mm _____ prepainting on visible side series _____ with 5 microns of primer and 20 microns of paint _____ colour _____

Internal support: micro-corrugated in galvanised steel/aluminium thickness mm _____ prepainting on visible side series _____ with 5 microns of primer and 20 microns of paint _____ colour _____

Insulation: rigid foam with high insulating power, on a base of polyurethane resins, total density kg/m³ 40 ±10%

Coeff. of thermal transmission: K = _____ W/m² K = _____ kcal/m² h °C

Fixing: type of fixing _____ ; type & dia. of screws _____ ; quantity _____

Expanding gasket: rolls _____ ; quantity (m) _____