

Cold storage solutions



Cold storages: application

The cold rooms and rooms for conservation and storage of foods can be so called positive and negative. Generally the first ones with temperatures till -1°C and the second ones till -25°C .



Rooms for the conservation of foods where a major temperature change does not require an adequate airtightness.



Rooms where foods are processed, where a medium temperature change does require an adequate airtightness.



Rooms where finished products are stored. These rooms must be well insulated and a greater airtightness is required, thanks to an adequate joint.



Rooms where frozen products are stored and rooms that impose constraining requirements in terms of minimisation of thermal bridges and air permeability.

NOTE

These indications are just a suggestion for use. The designer has to choose the joint, the panel thickness and the other parameters of the Isopan commercial offer, depending on the performances required by the cold room.

Isofrigo Isofrozen

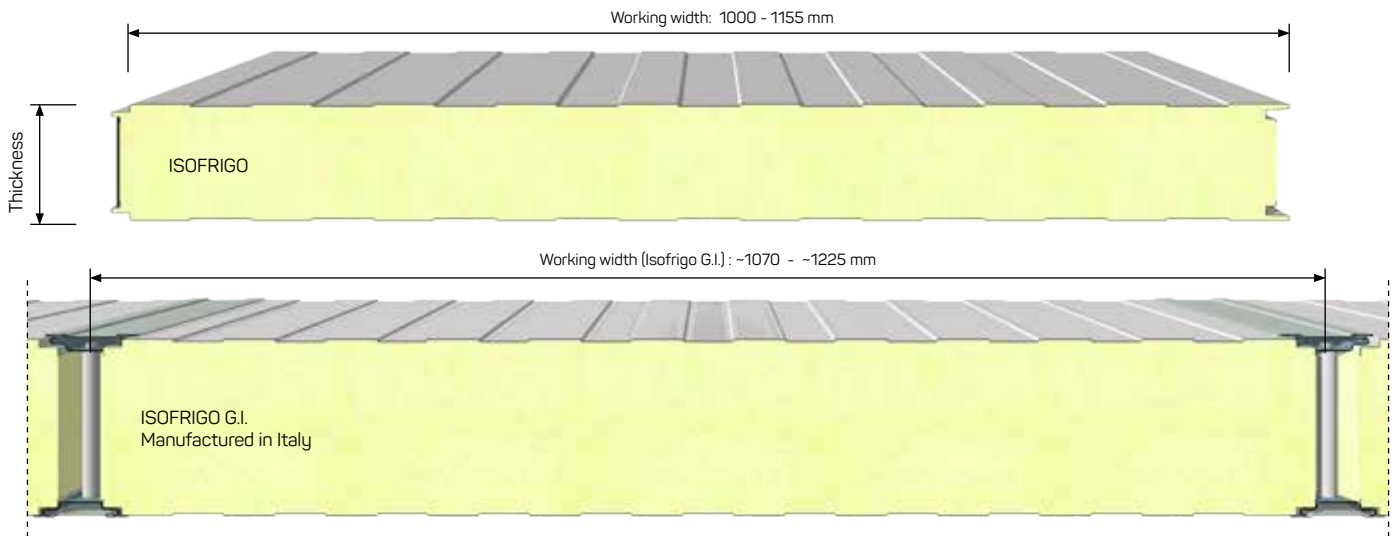
Manufactured in: Italy*, Germany, Spain, Romania
*Only Isofrigo G.I. Version is manufactured in Italy

Manufactured in: Italy

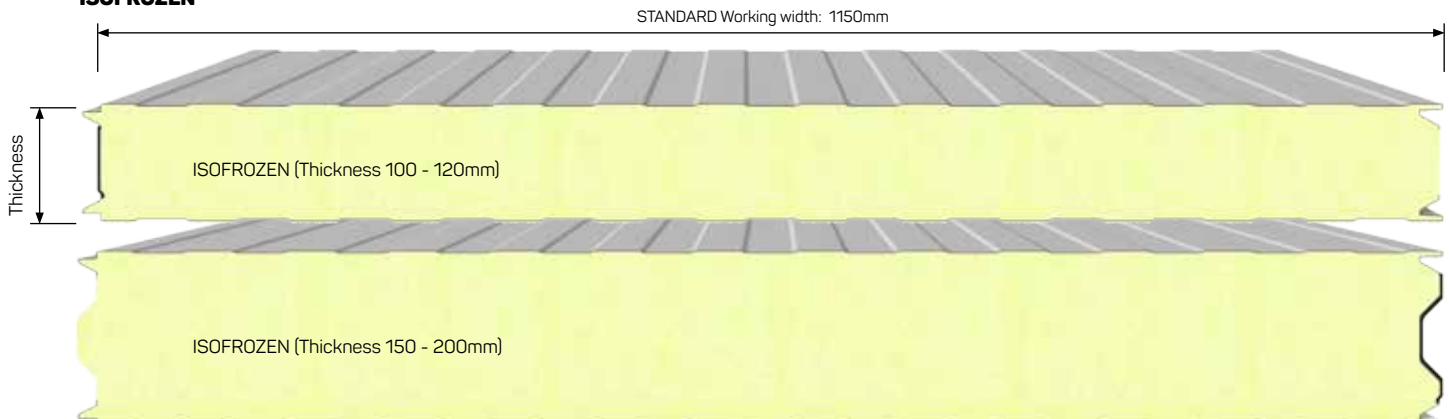


Self-supporting metal faced panels insulated with polyurethane with a tongue-and-groove joint. The very high performances of thermal insulation and the excellent quality of the jointing system make it particularly appropriate for constructions that require a controlled temperature.

ISOFRIGO & ISOFRIGO G.I.



ISOFROZEN





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OVERLOAD SPANS

STEEL SHEETS 0,5 / 0,5 mm - Support 120 mm								
UNIFORMLY DISTRIBUTED LOAD kg/m ²	PANEL NOMINAL THICKNESS mm				PANEL NOMINAL THICKNESS mm			
	100	120	150	200	100	120	150	200
	MAX SPANS cm				MAX SPANS cm			
50	630	700	850	920	740	840	900	960
60	580	660	750	900	650	770	870	920
80	500	580	680	840	580	670	790	850
100	450	510	610	760	510	640	680	730
120	410	470	560	690	460	590	590	630
140	340	430	510	640	410	530	530	560
160	320	400	480	600	380	470	480	500
180	320	370	440	560	350	430	435	445
200	300	350	420	520	320	400	400	410

STEEL SHEETS 0,6 / 0,6 mm - Support 120 mm								
UNIFORMLY DISTRIBUTED LOAD kg/m ²	PANEL NOMINAL THICKNESS mm				PANEL NOMINAL THICKNESS mm			
	100	120	150	200	100	120	150	200
	MAX SPANS cm				MAX SPANS cm			
50	650	760	850	980	760	850	920	970
60	610	700	820	950	660	790	880	925
80	530	610	720	890	600	660	810	860
100	470	540	640	800	530	610	710	740
120	420	490	580	730	470	540	620	660
140	390	450	530	660	430	500	550	560
160	360	410	500	620	390	450	490	500
180	330	380	460	580	350	420	440	450
200	310	360	430	550	330	390	400	400

Calculation for static sizing according to the Annex E of the EN 14509 standard. Deflection limit 1/200 l. Values in load tables don't consider thermal load.

PANELS WEIGHT

THICKNESS SHEETS mm		PANEL NOMINAL THICKNESS mm			
		100	120	150	200
0,5 / 0,5	kg/m ²	12,2	13,0	14,2	16,2
0,6 / 0,6	kg/m ²	13,9	14,7	15,9	17,9



FIRE CHARACTERISTICS

Regarding the specifications related to the fire characteristics, please consult the synthesis available in the catalogue or on the website.



INSTRUCTIONS OF USE

For the use of the panels and the related limits, please consult the Technical Manual, General Sales Terms and Annexes.

DIMENSION TOLERANCE (EN 14509)

	DEVIATION mm	
Length	L ≤ 3 m	± 5 mm
	L > 3 m	± 10 mm 0
Working length	± 2 mm	
Thickness	D ≤ 100 mm	± 2 mm
	D > 100 mm	± 2 %
Deviation from perpendicularity	6 mm	
Misalignment of the internal metal faces	± 3 mm	
Sheets coupling	F = 0 + 3 mm	

L = working length, D = panels thickness, F = sheets coupling

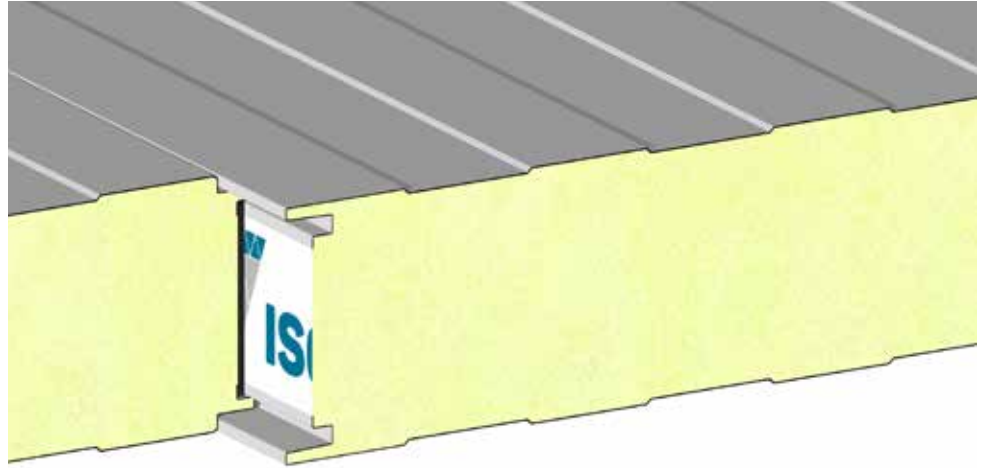
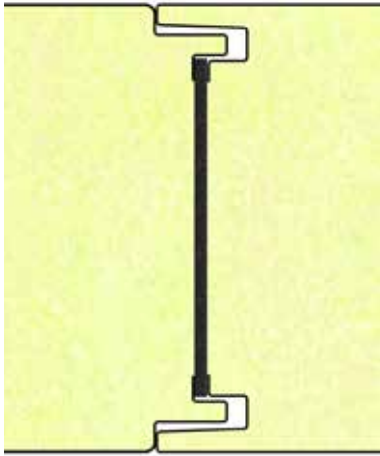
THERMAL INSULATION (In accordance with EN 14509 Annex 10)

U	PANEL NOMINAL THICKNESS mm			
	100	120	150	200
W/m ² K	0,22	0,18	0,15	0,11
kcal/m ² h °C	0,19	0,16	0,13	0,09

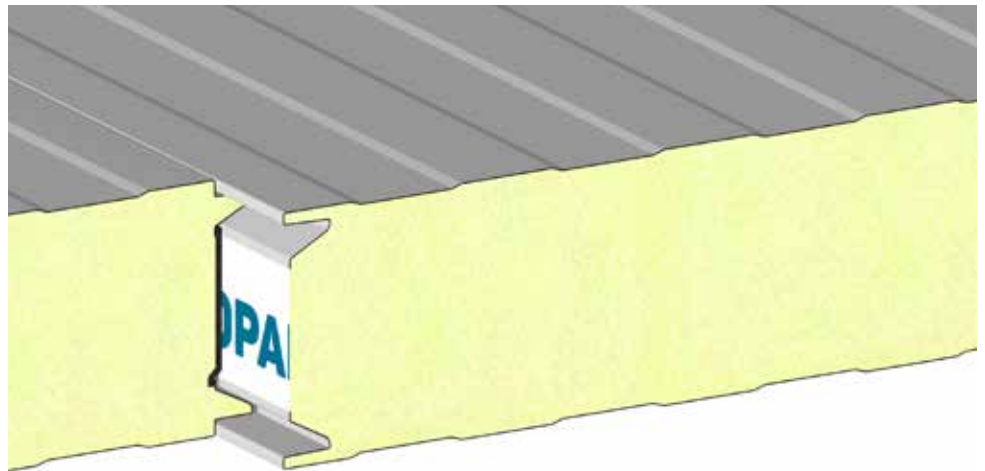
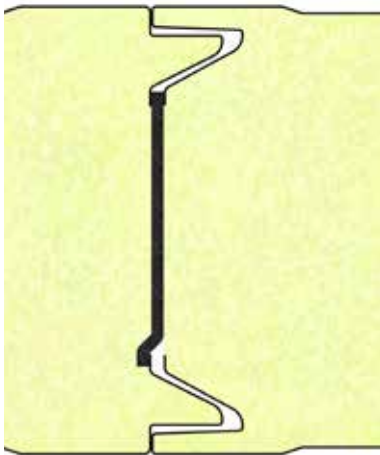
Dry joint

Standard solution. The dry joint is designed for use at positive temperature, with low thermal gradient.

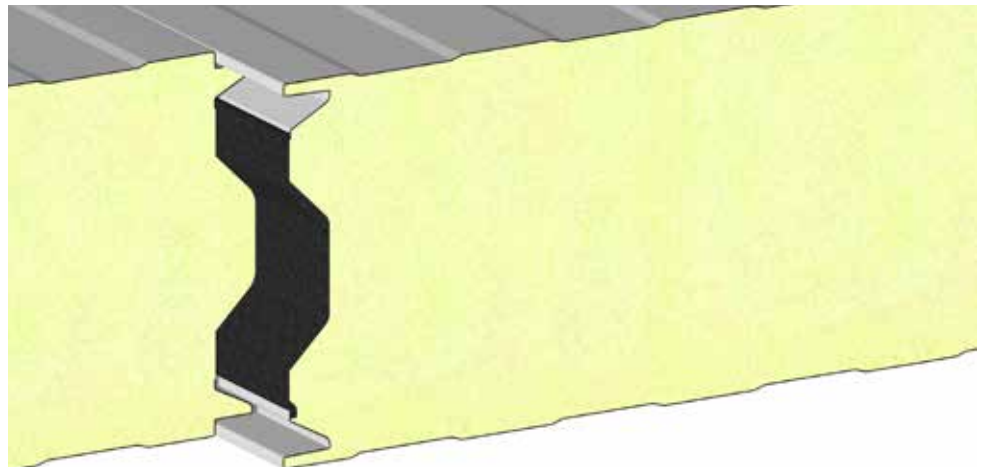
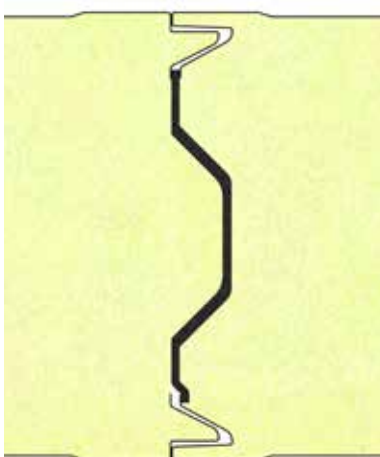
ISOFRIGO



ISOFRIZEN (Thickness 100 -120 mm)



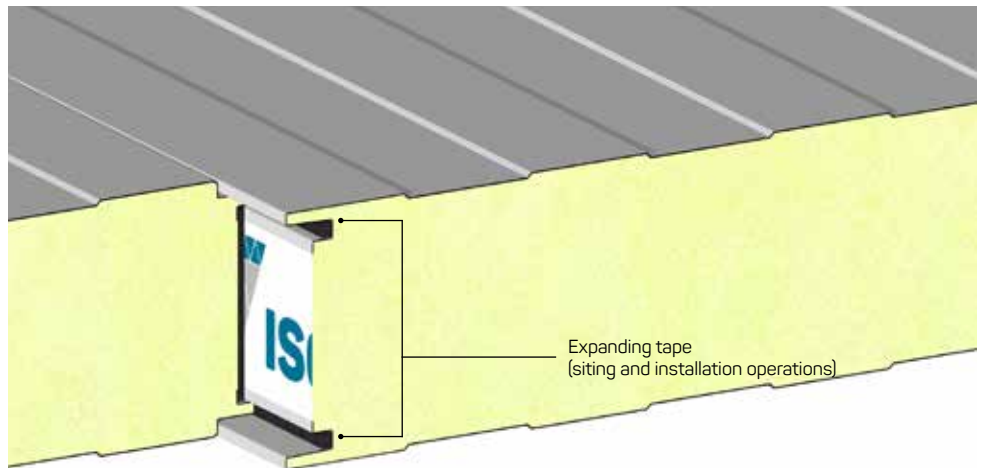
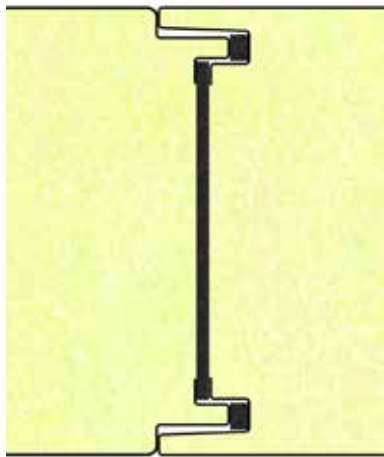
ISOFRIZEN (Thickness 150 -200 mm)



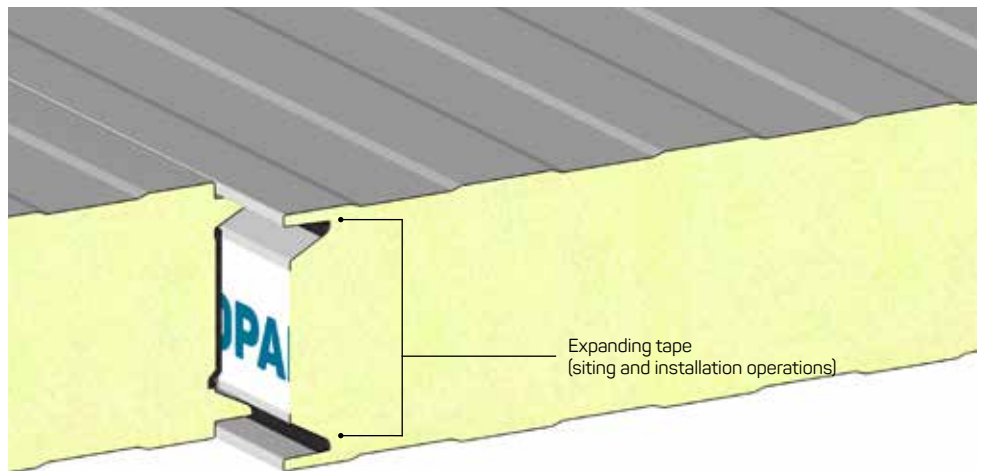
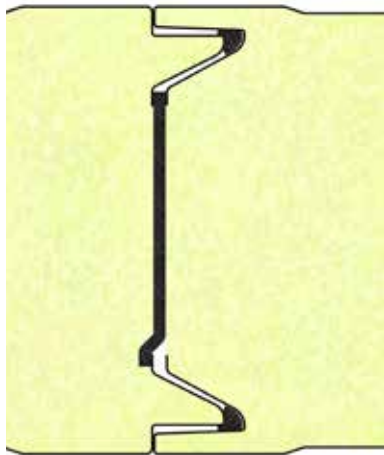
Expanding tape

The joint with bituminous expanding tape offers a good airtightness. Thanks to the two thermo-expanding tapes, the capacity to prevent air flow between the inner and outer wall is increased.

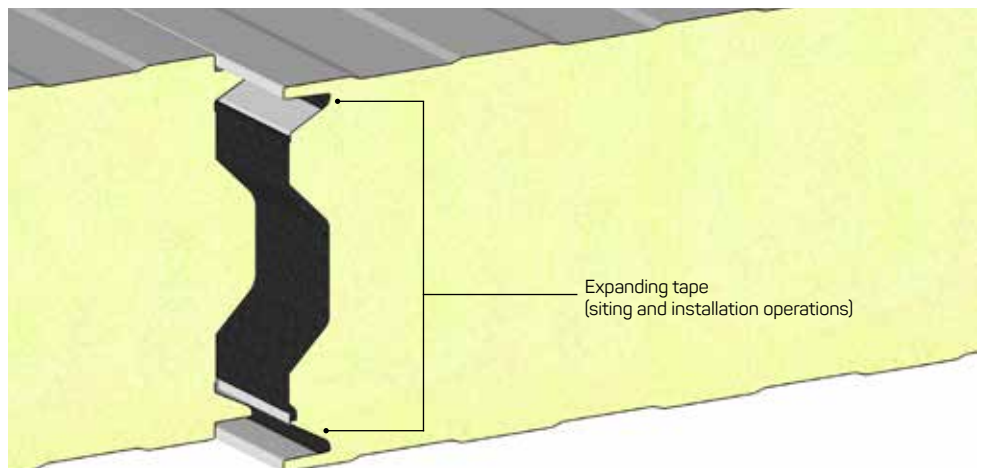
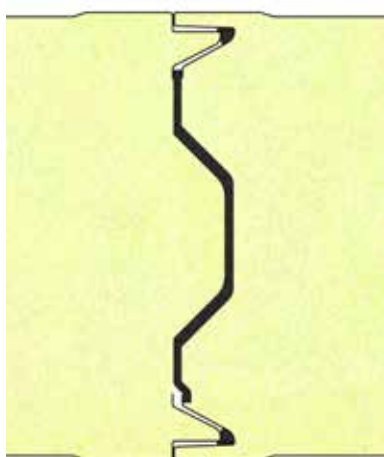
ISOFRIGO



ISOFROZEN (Thickness 100 -120 mm)



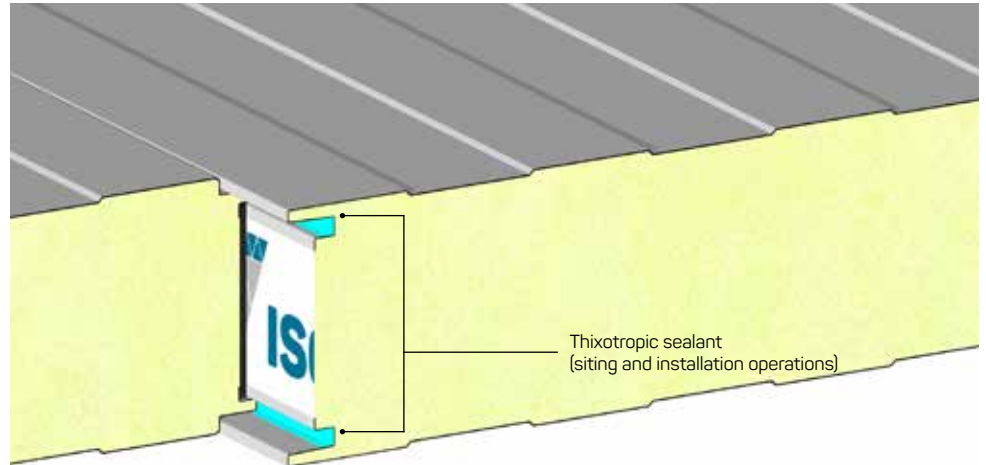
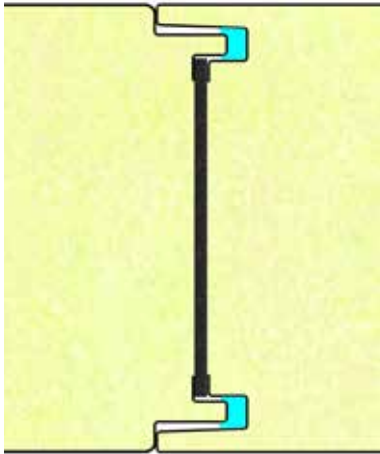
ISOFROZEN (Thickness 150 -200 mm)



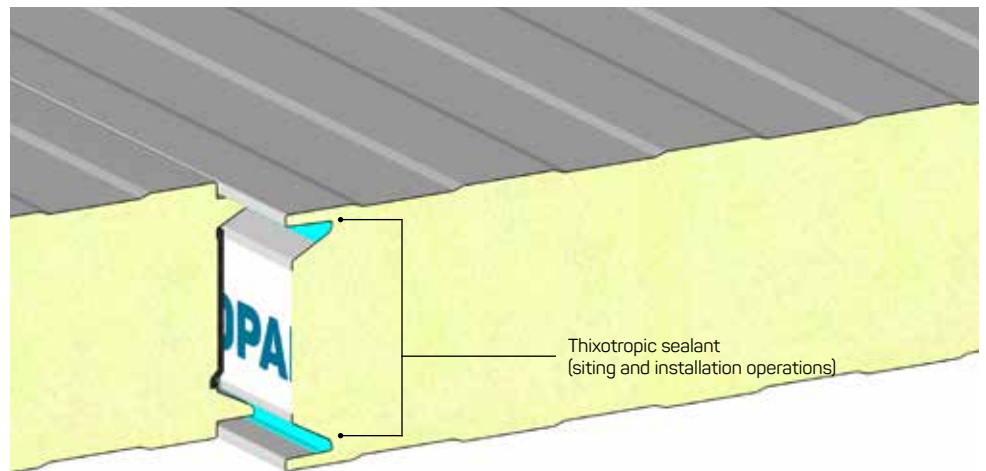
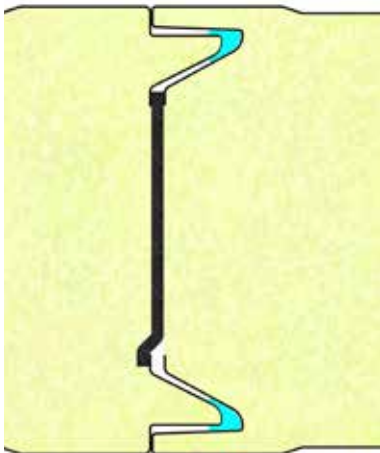
Thixotropic sealant

The airtightness is excellent, thanks to the lack of cracks guaranteed by the sealant, whose thixotropic characteristic offers an excellent airtightness without impacting on the assembly easiness.

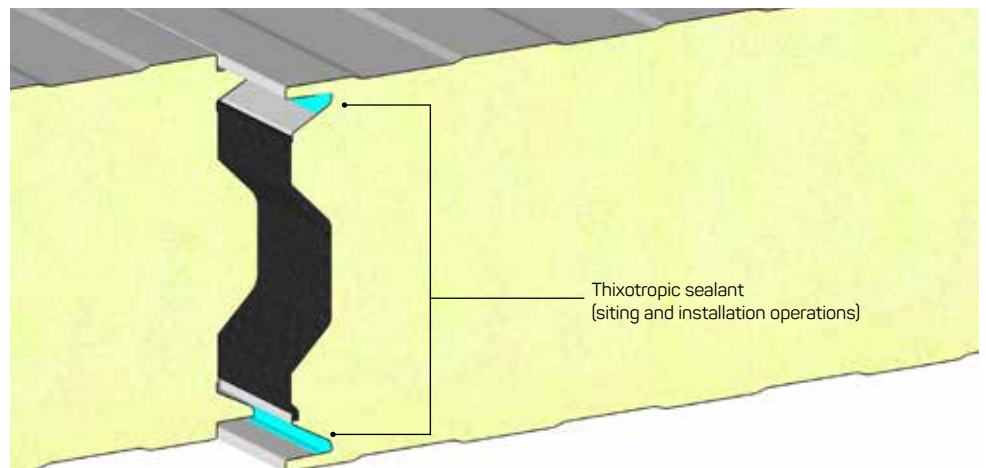
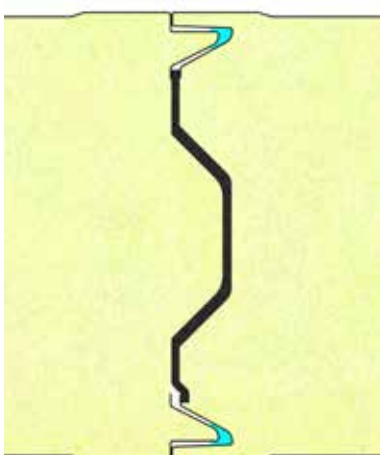
ISOFRIGO



ISOFRIZEN (Thickness 100 -120 mm)

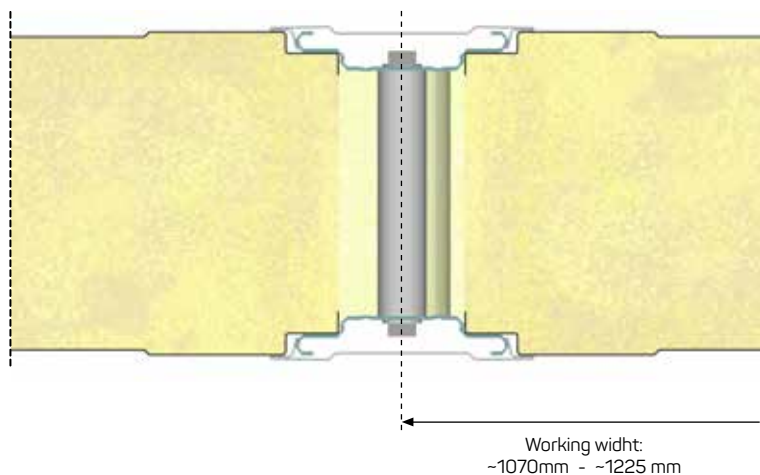
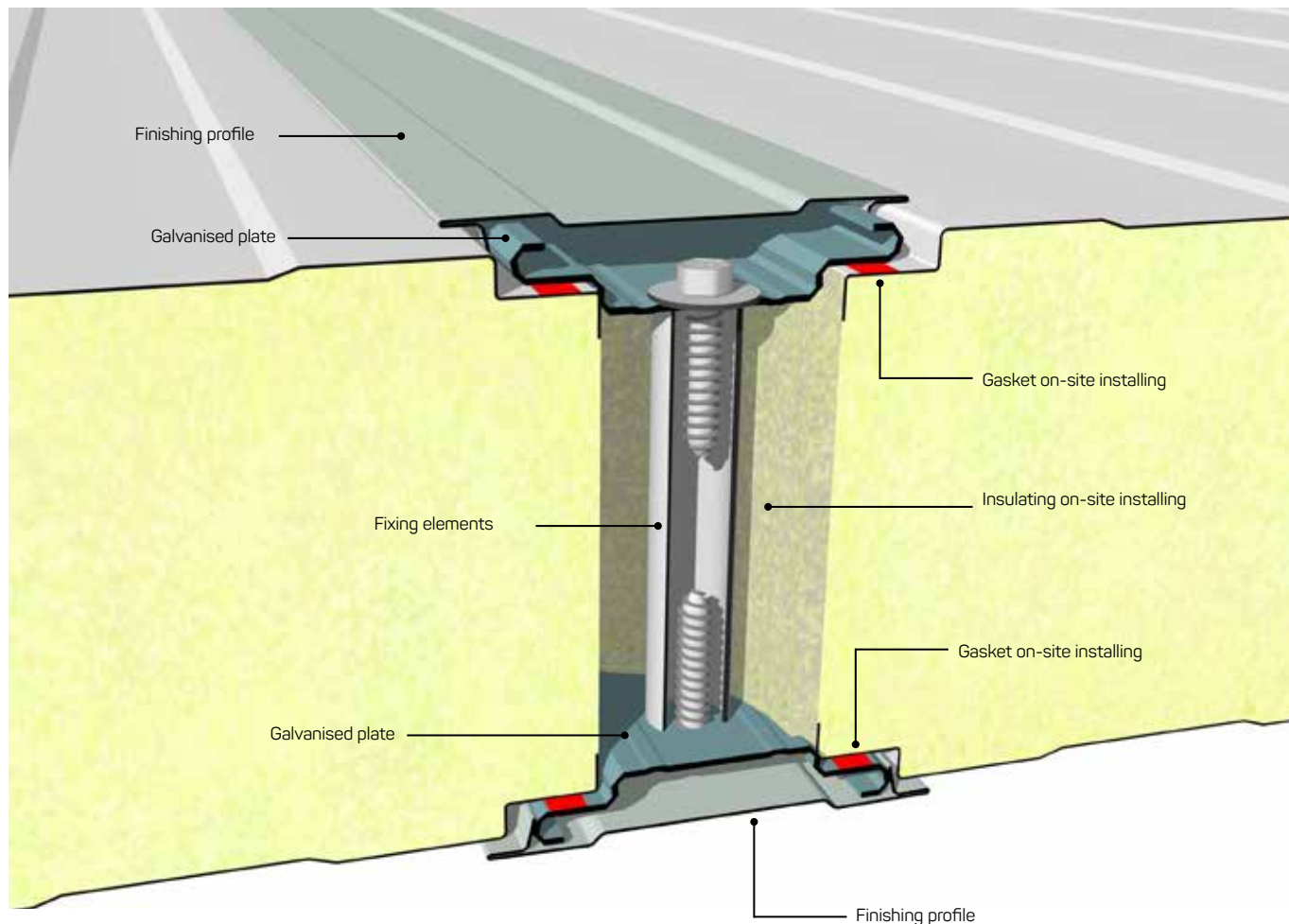


ISOFRIZEN (Thickness 150 -200 mm)



ISOFRIGO G.I. (Foamed joint)

Thanks to the lack of cracks and the use of PVC gaskets under the plates, an optimal airtightness is obtained and consequently all thermal bridges caused by the joints are eliminated.



HEAT LOSS IN THE JOINT:
 $U_f = 0,119 \text{ W/m}^2 \text{ K}$

