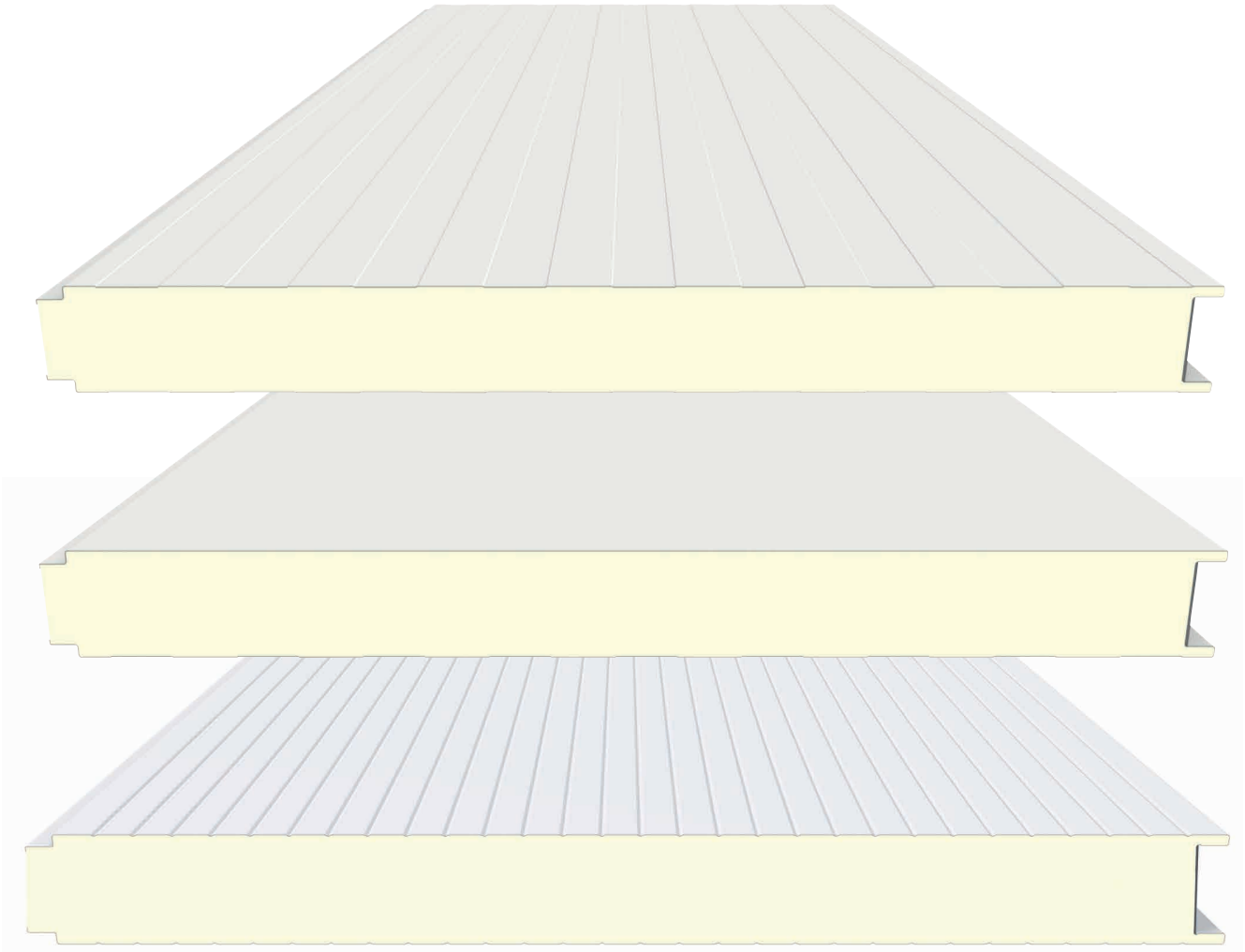
MASTER PANEL

MASTER-FRIGO

Master-Frigo cold-room panels

MASTER-FRIGO panels are continuous production line prefabricated panels, and are composed panels are Insulated Metal Panels composed of steel skins laminated to a minimum of 1.6inch polyisocyanurate foam core (min 2.3 pcf density).

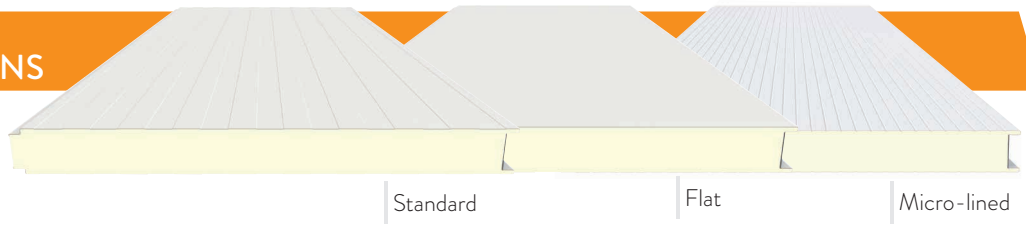
MASTER-FRIGO panels have a tongue and groove joining system are specially designed for use in all types of projects related to refrigeration industry, like the agro-food industry for refrigerated transport and storage of frozen and deep-frozen food.



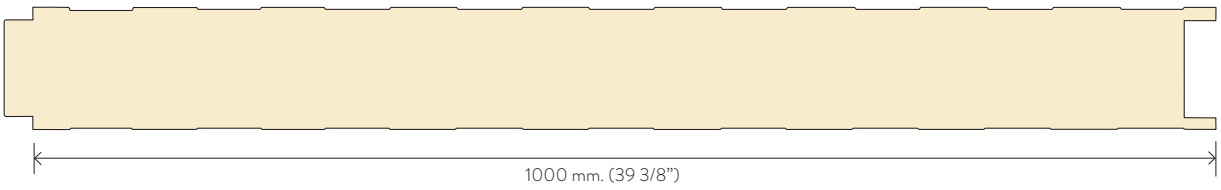
MASTER-FRIGO panels are available in seven different thicknesses. They come in three different exterior finishes (standard, flat and micro-lined) and three different interior finishes (standard, flat and micro-lined), as well as a wide range of available colours.

Master-Frigo cold-room panels

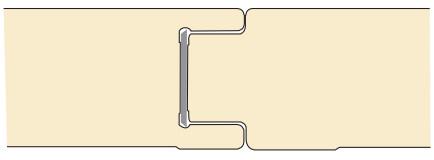
TECHNICAL SPECIFICATIONS

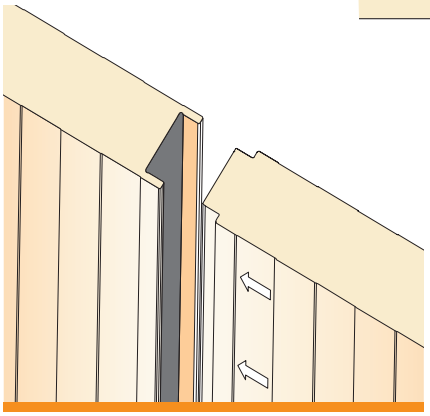


	Values
Panel thickness	40, 50, 60, 80, 100, 120, 150 mm. 1 9/16, 1 31/32, 2 3/8, 3 5/32, 3 15/16, 4 23/32, 6, inch.
Cover Width	1000 mm. (39 3/8")
Length	Up to 11.900 mm. (39 ft.)
Field of application	Cold room
Outer face thickness	mm 0.5 / 0.6 / 0.7
Inner face thickness	GAUGE 26 / 24 / 22
Exterior face	G90 galvanized or AZ50 aluminium-zinc, coated steel in 26 GA and above
Interior face:	G90 galvanized or AZ50 aluminium-zinc, coated steel in 26 GA and above
Coatings (see section on Finishes)	Polyester 25 um (1 mil)
	PVDF 25um / 35um (1 mil / 1.38 mils)
	PU 55um (Granite® HDX/SDP 50) (2.16 mils)
	Wood imitation (inner face)
	PVC 120um (4,8mil) (foodsafe)
Outer ribbing	Standard / Flat / Micro-lined
Inner ribbing	Standard / Flat / Micro-lined
Core type	Polyisocyanurate (PIR)
Core Density	40 kg/m³ (+/- 10%) (2.3 PCF)



Joint detail.





Panel Thickness		Panel weight	U-Value	R-Value
mm	inch	PSF	BTU/Hr ft² °F	Hr ft² °F/BTU
40	1 9/16	2.06	0.100	9.96
50	1 31/32	2.14	0.079	12.72
60	2 3/8	2.22	0.064	15.66
80	3 5/32	2.38	0.047	21.26
100	3 15/16	2.55	0.037	26.73
120	4 23/32	2.71	0.031	32.15
150	6	2.96	0.025	40.21

FUNCTIONS AND BENEFITS OF **MASTER-FRIGO** PANELS

- Aesthetically appealing
- Efficient thermal insulation capacity
- High mechanical strength
- Exceptional dimensional stability
- Watertight against water vapor
- Resistant to aggressive environments
- A versatile material that allows any configuration
- Quick to install and easy to maintain (easy to clean)
- Easily removable and can be reused
- Made-to-measure, avoids waste
- Made with recyclable materials

REACTION TO FIRE

intertek

ASTM E84 (MASTER-PIR) Class A
Flame Spread Index: **20**
Smoke developed index: **300**

FLORIDA APPROVED

AFITI LICOF

C-s3 d0
Nº 3406T18

B-s1 d0
Nº 3066T16

TÜVNORD
TÜV NORD CERT GmbH
ISO 9001
tuev-nord.de

CE

Testing and approvals:

Master panel cold-room panels the most demanding requirements. We have large experience in producing insulated metal panels in our continuous production line.

TEST	TEST METHOD	RESULTS
Fire	ASTM E 84	Flame spread index 20 Smoke developed index 300
Strength	ASTM E 8	> 32 ksi steel

ASSEMBLY AND ERECTION OF COLD ROOMS

Basic assembly instructions:

- The ground on which the insulated metal panels are to be set up should be completely flat, clean and smooth.
- Once the panels are installed, the verticality (walls) and horizontality (ceilings and roofs) should be checked, and any deviations corrected.
- The system of vertical jointing between panels is effected by pressure on the tongue and groove joint, with the panels being brought flush to each other.
- The wall–ceiling junction should be carried out strictly following the instructions provided (see technical details on page 76), with special attention being paid to cuts that are made, when these may be necessary, to create the junction.
- When the joint between panels does not by itself have sufficient capacity to prevent the formation of condensation or ice, a sealant is applied in that area; this could be silicone (for air and water tightness), butyl (for water vapour tightness) or foam injected on site (to reduce the thermal bridge between the panels).
- The fixing of roof panels attached to building structures should be performed using connector rods or guy wires. The building structure must be designed to withstand both its usual loads and those due to the weight of the panels themselves.
- Refrigerating equipment and accessories must not be directly hung from the panels, but require a separate support system.
- Avoid the use of cutting discs, as these may produce metal shavings which can stick to the panel surfaces and cause oxidation problems. If cutting discs must be used, ensure the complete removal of all metal shavings.
- Check that appropriate screws for the required structure are used.
- Remove the protective plastic film from the panels.
- Ensure that any possible scratches that may occur on the outer face are correctly repaired.
- Check that individual points are properly sealed.

Table of minimum recommended thicknesses for insulation

Type of cold room	Range of temperature °C	Interior cold room			Exterior cold room		
		Floor	Wall	Ceiling	Floor	Wall	Ceiling
Cold store	+15 to +4 °C (+59 to +39 °F)	NO	60 mm (2 3/8")	60 mm (2 3/8")	NO	60 mm (2 3/8")	60 mm (2 3/8")
	+4 to -4 °C (+39 to +24 °F)	50 mm (1 31/32")	60 mm (2 3/8")	60 mm (2 3/8")	60 mm (2 3/8")	80 mm (3 5/32")	80 mm (3 5/32")
Freezer	-4 to -10 °C (+24 to +14 °F)	60 mm (2 3/8")	80 mm (3 5/32")	80 mm (3 5/32")	60 mm (2 3/8")	80 mm (3 5/32")	100 mm (3 15/16")
	-10 to -18 °C (+14 to 0 °F)	80 mm (3 5/32")	100 mm (3 15/16")	100 mm (3 15/16")	80 mm (3 5/32")	100 mm (3 15/16")	100 mm (3 15/16")
	-18 to -26 °C (0 to -15 °F)	100 mm (3 15/16")	100 mm (3 15/16")	100 mm (3 15/16")	100 mm (3 15/16")	120 mm (4 23/32")	120 mm (4 23/32")
	-26 to -40 °C (-15 to -40 °F)	100 mm (3 15/16")	120 mm (4 23/32")	120 mm (4 23/32")	120 mm (4 23/32")	150 mm (6")	150 mm (6")
Blast freezer	-40 to -46 °C (-40 to -50 °F)	120 mm (4 23/32")	150 mm (6")	150 mm (6")	120 mm (4 23/32")	150 mm (6")	150 mm (6")

MAINTENANCE GUIDELINES FOR COLD ROOM

- The condition and tension of the ceiling fastenings tensors must be checked as well as cleaned every six months.
- The panel surfaces can be washed with a mixture of tap water and a neutral agent, then rinsed with running water and dried.
- Check the water collection channels once a year, ensuring that they are clean and in good condition.
- Check the condition of the sealing elements once a year.

Master-Frigo cold-room panels


45
46
70
71
22
23

Polígono Industrial La Cárdena
Camino de Toledo, s/n • 45221 Esquivias / Toledo / Spain
Tfno.: +34 925 519 926
www.magon.es
masterpanel@magon.es

MASTER PANEL

Polígono Industrial La Cárdena
Camino de Toledo, s/n • 45221 Esquivias / Toledo / Spain
Tfno.: +34 925 519 926
www.magon.es

MPCIUSA.25.1

MAGON
EMPRESAS