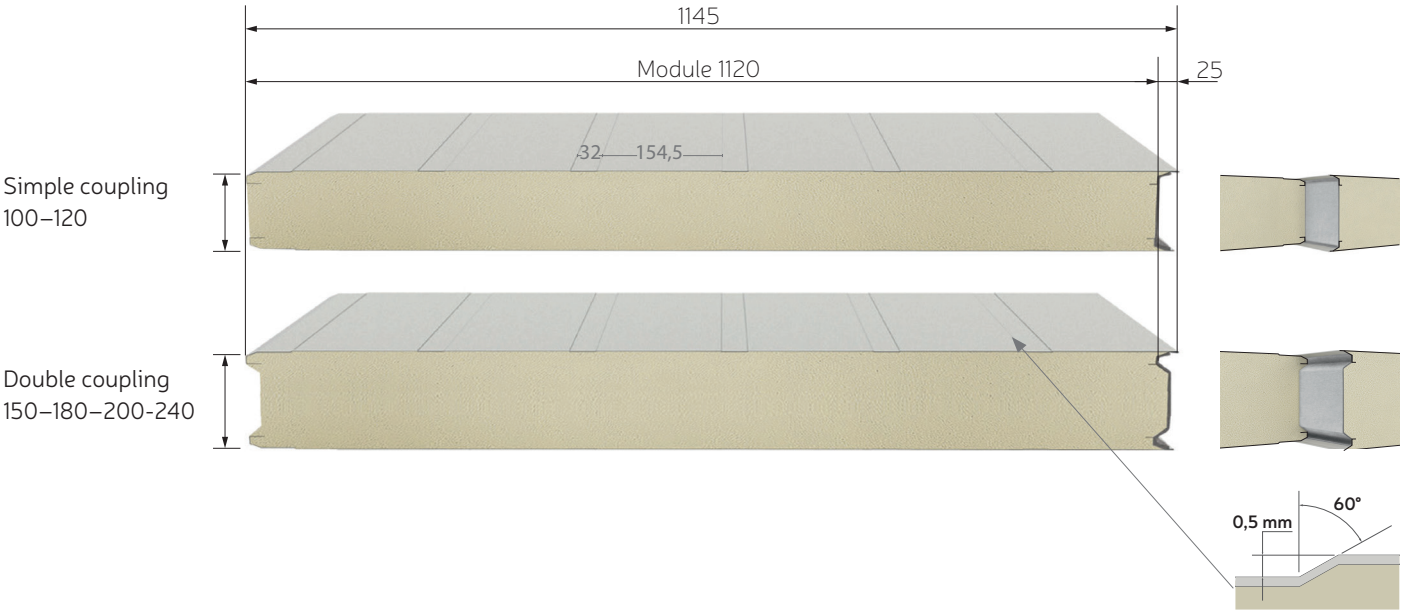
Application: Bigisopanels

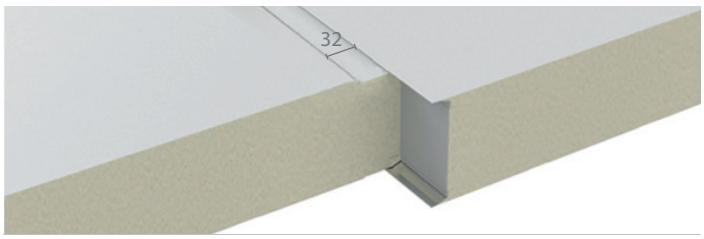
Sandwich panels with tongue and groove joint and polyurethane sealing gasket, produced in compliance with European regulation EN 14509, appropriate for the realization of cold rooms at both positive and negative temperatures. The panels are created to provide high thermal isolation performance, as well as mechanical strength, a pleasing appearance, hygiene and easy assembly.

The GS PERFORMANCE panel is characterised by unique insulation in its category, with a certified λ= 0.018 W/m K that allows energy savings of over 26% compared to normal insulated panels.

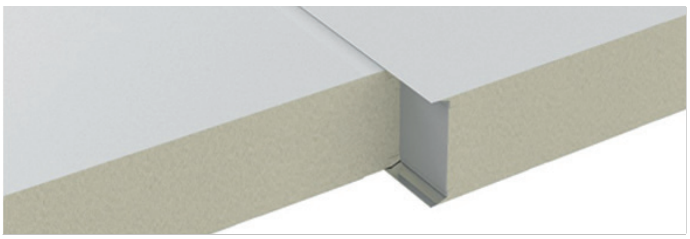
Thicknesses, dimensions and coupling joints



Alternative surfaces on request



Semi-smooth



Smooth (not available in stainless steel)

Panel dimensions and features

Module	Useful width = mm 1120.
Dimensions	Length: minimum mm 2000, maximum mm 16000.
Models	GS 112 B1P_N: Micro-ribbing on two sides.
	GS 112 B1P_C: Semi-smooth (with coplanar joint)
	GS 112 B1P_L: Smooth on two sides.
Compliance	Labelling CE in compliance with EN regulation 14509
Coating	**PR:** Sendzimir hot-dip galvanised S 250 GD steel plate, pre-painted with 25 µ polyester paint, Ral 9010 white.
Optional Coating	**IX:** Stainless steel panel, EN 1.4301-2B (AISI 304).
	VX: Stainless steel panel EN 1.4301-2B (AISI 304) pre-painted with 25 µ polyester paint, Ral 9010 white.

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Insulation	Rigid polyisocyanurate foam (PIR), density 40 Kg/m^3 ± 10%. Initial thermal conductivity λ = 0.018 W/m K, CFC and HCFC-free, range of application -40°C ÷ 60°C. Constant density and insulation characteristics, also by the joint. During assembly the insulation on each panel comes into contact with the polyurethane seal integrated on the groove of the consecutive panel, impeding any air penetration and ensure perfect thermal insulation.
Reaction to fire Certification	Euroclass **B s1 d0** according to EN 13501-1, obtained through polyisocyanurate (PIR) foam insulation. Reaction to fire performance is constant throughout the exposed surface, including the junctions, the certification is therefore valid for the finished product (finished cold room). Its special feature is the low emission of smokes.
Junctions and hygiene guarantee	The shape of the junction sees the lip of the groove overlapping that of the tongue, which eliminates any cracks and creates a proper sanitary finish, avoiding the use of silicone which over time can give rise to mould.
Structural Guarantee	The panel is specifically designed for the creation of cold rooms, resistant to the specific stresses that it is subject to during operation (thermal expansions, temperature gradient both for positive and negative temperature environments) and guarantees the room stability without the need for securing to any structures, thanks to the self-supporting capacity as per the table on page 3.
Panel Reuse	The panels are easy and quick to assemble and disassemble, this makes it easy to adjust warehouse cold rooms to changes in layout requirements or if a move to another location is required.
Environmental Compatibility	**Global warming potential index GWP ⩽ 11** **Ozone depletion potential ODP = 0**
Sound Insulation	Rw = 25 dB
Tolerances	Panel thickness and flatness according to UNI - EN 10143. Difference in coating colour ΔE < 1 Insulation density ± 10% - Panel thickness ± 2 % - PIR/metal non-adhesion max 0.5%. Panel corrugation and panel planarity 0.6 ÷ 1.5 mm. Panel length: L ⩽ 3000 ±5 mm; L ⩾ 3000 ±10 mm. Panel width: ±2 mm. Curve along panel length: 2 mm/m, max 10 mm.
Air permeability at junctions	In compliance with EN regulation 12114 On panels with a thickness of: 100÷240 Pressure differential [Pa]: 50 Air flow without use of seals [m^3/h m^2]: <0,2
Water permeability at junctions	In compliance with EN regulation 12685 On panels with a thickness of 100÷120: Pressure differential [Pa]: 600, Class based on EN 14509: B = Normal uses, impermeable up to 1200 Pa On panels with a thickness of 150÷240: Pressure differential [Pa]: 1200, Class based on EN 14509: A = Use with high rain and wind, impermeable up to 1200 Pa

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Thermal transmission ratio

Thickness [mm]	Initial value				Aged value (25 years)			
	EN ISO 6946 U_{init} = W/m²K	EN ISO 6946 R_{init} = 1/U_{init}	EN 13165 - EN 14509 U_{init} = W/m²K	EN 13165 - EN 14509 R_{init} = 1/U_{init}	EN ISO 6946 $U_{age.}$ = W/m²K	EN ISO 6946 $R_{age.}$ = 1/$U_{age.}$	EN 13165 - EN 14509 $U_{age.}$ = W/m²K	EN 13165 - EN 14509 $R_{age.}$ = 1/$U_{age.}$
100	0.175	5.714	0.175	5.739	0.205	4.878	0.204	4.899
120	0.146	6.857	0.145	6.893	0.171	5.854	0.170	5.884
150	0.117	8.571	0.117	8.577	0.137	7.317	0.137	7.322
180	0.097	10.286	0.097	10.294	0.114	8.780	0.114	8.787
200	0.088	11.429	0.087	11.538	0.103	9.756	0.102	9.849
240	0.073	13.714	0.073	13.714	0.085	11.707	0.085	11.707

Loads allowed in compliance with EN regulation 14509:2013 for steel panels, thickness: 0.45 + 0.45

Thickness [mm]	Weight [Kg/m²]	H* [m]	ΔT** Temperature gradient [°C]	Admissible loads Kg/m² net of own weight of panels	L	F ⩽ 1/200 L
				L= Distance between supports in metres		

				3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8	8,5	9	9,5	10	10,5	11	11,5	12
100	10,9	7	Ext.T= 30 °C Int. T= 0 °C Gradient 30 °C	265	200	150	115	90	70	55												
120	11,7	8			235	185	145	115	90	75	60	50										
150	12,9	9	Ext. T= 30 °C Int. T = -20 °C Gradient 50 °C			260	210	175	145	120	100	85	70	60	50							
180	14,1	10					255	210	175	150	125	105	90	75	65	55	50					
200	14,9	11					260	230	195	165	140	120	105	90	75	65	55	50				
240	16,5	12					270	240	215	190	165	145	125	110	95	85	75	65	55	50		

* Admissible height in internal environments, without attaching to cross beams.
** With ΔT 30 °C (cold room TN) consider a residual vacuum overload of 10 Kg/m². With ΔT 50 °C (cold room BT) consider a residual vacuum overload of 30 Kg/m².

Loads allowed in compliance with EN regulation 14509:2013 for steel panels, thickness: 0.5 + 0.5

Thickness [mm]	Weight [Kg/m²]	H* [m]	ΔT** Temperature gradient [°C]	Admissible loads Kg/m² net of own weight of panels	L	F ⩽ 1/200 L
				L= Distance between supports in metres		

				3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8	8,5	9	9,5	10	10,5	11	11,5	12
100	12,1	7,5	Ext.T= 30 °C Int. T= 0 °C Gradient 30 °C	285	215	165	130	105	80	65	50											
120	12,9	8,5			250	200	160	125	105	85	70	55										
150	14,1	9,5	Ext. T= 30 °C Int. T = -20 °C Gradient 50 °C			275	225	190	155	130	110	95	80	70	60	50						
180	15,3	10,5					260	225	190	160	140	120	100	85	75	65	55	50				
200	16,1	11,5					270	245	210	180	155	135	115	100	85	75	65	55	50			
240	17,7	12					280	250	225	205	180	155	135	120	105	95	80	70	65	55	50	

* Admissible height in internal environments, without attaching to cross beams.
** With ΔT 30 °C (cold room TN) consider a residual vacuum overload of 10 Kg/m². With ΔT 50 °C (cold room BT) consider a residual vacuum overload of 30 Kg/m².

Loads allowed in compliance with EN regulation 14509:2013 for steel panels, thickness: 0.6 + 0.6

Thickness [mm]	Weight [Kg/m²]	H* [m]	ΔT** Temperature gradient [°C]	Admissible loads Kg/m² net of own weight of panels	L	F ⩽ 1/200 L
				L= Distance between supports in metres		

				3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8	8,5	9	9,5	10	10,5	11	11,5	12
100	14,3	7,5	Ext.T= 30 °C Int. T= 0 °C Gradient 30 °C	325	255	205	165	135	110	95	80	65	55	50								
120	15,1	8,5		405	320	260	210	175	145	120	105	85	75	65	55	50						
150	16,3	9,5	Ext. T= 30 °C Int. T = -20 °C Gradient 50 °C			370	310	260	220	185	160	140	120	105	95	80	75	65	60	50		
180	17,5	10,5					345	310	275	235	205	180	155	135	120	105	95	85	75	70	60	55
200	18,3	11,5					345	310	280	255	235	205	180	155	140	125	110	100	90	80	70	65
240	19,9	12					345	310	280	255	235	220	205	190	180	160	145	130	115	105	95	85

* Admissible height in internal environments, without attaching to cross beams.
** With ΔT 30 °C (cold room TN) consider a residual vacuum overload of 10 Kg/m². With ΔT 50 °C (cold room BT) consider a residual vacuum overload of 30 Kg/m².

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