Date/ Rev.: 06.07.2017 / 1 Reference: BIGSYSTEM

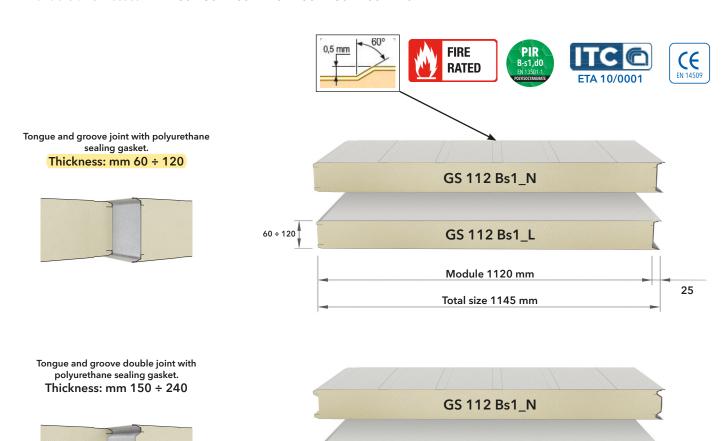
General Features: Isothermal Panel GS 112 Bs1 tongue and groove joint



Sandwich panels with tongue and groove joint produced on a continuous line shaper, in compliance with European regulation EN 14509, appropriate for the realization of cold rooms at both positive and negative temperatures. Labelled C in compliance with European technical approval ETA 10/0001. The Bigsystem panels from the GS 112 Bs1 line are created to provide high thermal isolation performance, as well as mechanical resistance, a pleasing appearance, hygiene and easy assembly. Available in 2 versions:

- 1. GS 112 Bs1_N with 0.5 micro-ribbed surface finishing on 2 sides
- 2. GS 112 Bs1_L with smooth surface finishing on 2 sides

Available thicknesses: mm 60 - 80 - 100 - 120 - 150 - 180 - 200 - 240.



Panel dimensions and features:									
Module	Useful width = mm 1120.								
Dimensions	ngth: minimum 2000 mm, maximum 14000 mm.								
A	GS112 Bs1_N: Micro-ribbing on two sides.								
Appearance	GS112 Bs1_L: Smooth on two sides.								
Compliance	Labelling (€ in compliance with EN regulation 14509								

GS 112 Bs1_L

Module 1120 mm

Total size 1145 mm

150 ÷ 240

25

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General Features:

Isothermal Panel GS 112 Bs1 tongue and groove joint



Insulation	Standard rigid polyisocyanurate foam (PIR), density 40 Kg/m 3 ± 10%. Initial thermal conductivity λ = 0.023 W/m K, CFC and HCFC-free. The panels are produced with constant insulation and density characteristics, which is guaranteed even at the junction location, since 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 (see image).
Certification Fire resistance	Euroclass B s1 d0 in compliance with EN 13501-1, obtained through polyisocyanurate (PIR) foam insulation, thanks to that described in the point above, fire resistance performance is constant throughout the exposed surface, including the junctions. This means the certification also applies to the completed product (finished cold room). Its special feature is the low emission of fumes.
Certification Fire resistance	Thicknesses ≥ 100 mm: El 30, E 60 in compliance with EN 13501-2; nominal plate thickness ≥ 0.5 mm Thicknesses ≥ 200 mm: El 60, E 90 in compliance with EN 13501-2; nominal plate thickness ≥ 0.55 mm Applications: performance of partition walls for which a combination of the following characteristics is necessary: E = maintenance of the tightness characteristic (integrity of the manufactured product) I = maintenance of the insulation characteristic El = maintenance of the tightness and insulation characteristics Limitations: max. height of 12 m in compliance with EN 15254-5:2010. Installation method: According to the specific instructions provided together with the order.
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. Up to a thickness of 120 mm, the joint is a simple junction, and from 150 to 240 mm is a double (labyrinth) junction (see image).
Structural Guarantee	The panel is specifically designed for the creation of cold rooms. The design took into account the specific stresses to which it is subjected during operation, including thermal dilation, the temperature gradient in the case of operation at positive or negative temperatures. Due to its special design, it guarantees stability for the cold room without the need for anchoring to any particular structures, thanks to the panels own weight-bearing capacity.
Panel Reuse	Due to its special design, the panels are easy and quick to assemble - and removal is the same. 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 destruction potential ODP = 0
Sound Insulation:	Rw = 25 dB
Standard 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.
Tolerances	Panel thickness and flatness according to UNI - EN 10143. Difference in coating colour $\Delta E < 1$ Insulation density \pm 10% - Panel thickness \pm 2% - PUR/metal non-adhesion max 0.5%. Panel corrugation and panel planarity 0.6 \div 1.5 mm. Panel length: $L \le 3000 \pm 5$ mm; $L \ge 3000 \pm 10$ 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											
Thickness mm	Pressure differential Pa	Air flow without use of seals $m^3/h \ m^2$									
60 ÷ 240	50	< 0,2									

WATER	R PERMEABILITY AT JUNCTION	S, IN COMPLIANCE WITH EN REGULATION 12685
Thickness mm	Pressure differential Pa	Class based on EN 14509
60 ÷ 120	600	B = Normal uses, impermeable up to 1200 Pa
150 ÷ 240	1200	A = Use with high rain and wind, impermeable up to 1200 Pa



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THERMAL TRANSMISSION RATIO												
Thickness	Initial	value	Aged value (25 years)									
mm	EN ISO 6946 U _{init} = W/m ² K	EN 13165 - EN 14509 U _{init} = W/m ² K	EN ISO 6946 U _{age.} = W/m² K	EN 13165 - EN 14509 U _{age.} = W/m ² K								
60	0,390	0,3927	0,508	0,5027								
80	0,291	0,2903	0,380	0,3733								
100	0,232	0,231	0,303	0,2982								
120	0,193	0,192	0,252	0,2486								
150	0,154	0,1539	0,201	0,1992								
180	0,128	0,1279	0,168	0,1657								
200	0,116	0,1149	0,151	0,1490								
240	0,0960	0,096	0,1245	0,126								

LOAI	LOADS ALLOWED IN COMPLIANCE WITH EN REGULATION 14509:2007 FOR STEEL PANELS, THICKNESS: 0.45 + 0.45																					
Thickness	Weight	*H	**∆T Temperature gradient	Admissible loads Kg/m² net of own weight of panels					▲ L →							F ≤ 1/200 L						
mm	Kg/m²	m	°C		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	
60	9,3	5		145	100	75	55															
80	10,1	6	Ext.T= 30 °C Int. T= 0 °C	210	155	115	85	65	50													
100	10,9	7	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				260	210	175	145	120	100	85	70	60	50							
180	14,1	10	Ext. T= 30 °C Int. T = -20 °C				255	210	175	150	125	105	90	75	65	55	50					
200	14,9	11	Gradient 50 °C				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 h	eight in inte	rnal envir	ronments, without att	aching t	to cross	beams																
** With ∆T 30 °	°C (cold roon	n TN) con	sider a residual vacuu	m overl	load of	10 Kg/n	n². With	ΔT 50 °	C (cold	room B	T) cons	ider a re	esidual [,]	vacuum	overlo	ad of 30	Kg/m².					

LOA	LOADS ALLOWED IN COMPLIANCE WITH EN REGULATION 14509:2007 FOR STEEL PANELS, THICKNESS: 0.5 + 0.5																					
Thickness	Weight	*H	**∆T Temperature gradient	Admissible loads Kg/m² net of own weight of panels						▲ L →						F ≤ 1/200 L						
mm	Kg/m²	m	°C		L= Distance between supports in me									netres								
				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	
60	10,5	5,5		160	115	85	60															
80	11,3	6,6	Ext.T= 30 °C	230	170	125	95	75	60													
100	12,1	7,5	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				275	225	190	155	130	110	95	80	70	60	50						
180	15,3	10,5	Ext. T= 30 °C				260	225	190	160	140	120	100	85	75	65	55	50				
200	16,1	11,5	Gradient 50 °C				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	
180 200 240	15,3 16,1 17,7	10,5 11,5 12	Int. T = -20 °C	oching t			260 270 280	225 245	190 210	160 180	140 155	120 135	100 115	85 100	75 85	65 75	65	55		5.5	5	

 $^{\ ^{\}star}$ Admissible height in internal environments, without attaching to cross beams.

^{**} With Δ T 30 °C (cold room TN) consider a residual vacuum overload of 10 Kg/m². With Δ T 50 °C (cold room BT) consider a residual vacuum overload of 30 Kg/m².





EN 14509