

BRD(Henan) New Materials Co.,Ltd

Add: South of Weiwu Road, Chang'ge Industrial Zone,

Chang'ge, Henan, China

Tel: 0086-374-7028-577

Fax: 0086-374-7027-177

Web: www.bundesteel.com

www.brand-steel.en.alibaba.com

www.baowenban.com

Email: brd@bundesteel.com

# **BRD Product Manual**

## **Insulation Sandwich Panel Series**



BRD Group



**BRD** Brand

**New Industrial Building** Insulation Sandwich Panel Series

Aluminum Sheet of the Sandwich Panel is Coming!

Well decoration and High insulation together, perfect trending of industrial building wall and fence materials.

Traditional steel sheet panel with poor stainless will be rapidly destroyed by the harsh environment; the destroyed panel will not only affect the appearance of the building, but also reduce the use lifetime.

Henan BRD new materials Co., Ltd , with professional team, Italy processing technology line, 18-years developing, is one of the 10 top company in the insulation sandwich panel.

Moreover, BRD Aluminum coating insulation sandwich panel, with Corrosion resistant, Anti-aging, elegant surface, light weight, is well met the modern building strict require, improve the current industrial insulation sandwich panel.



## Company profile

Henan BRD New Materials Co., Ltd was established in 1995, with the total assets of 500 million RMB, and more than 500 existing staffs in the company. The annual output includes 1.2 million meters of polyurethane sandwich panel, and 10 million tons of steel structure. Our company have more than 30 million square meter production area, our product's distribution covers more than 21 provinces and cities in China, and also was exported to foreign countries, such as Russia ,Brazil, Peru, Trinidad and Tobago, Australia, Sweden, and some other countries in Southeast Asia ,South Africa and other places.

Company headquarter is located in Zhengzhou, China. With the growth of more than 18 years, the company has now developed into one of the large iron and steel enterprises in the province; it took the lead in obtaining the ISO9001 quality certification, ISO14001 environmental management system certification and OHSAS18001 occupational health system certification.

- 1. We are the lead in production and sales domestically, with 18 years' concentration on industry.
- 2. Our factory's area is 100,000 square meters, with fully ownership to ensure 100% entity factory.
- 3. We have 20 professional designer and technical staff to ensure 100% of the timeliness and effectiveness.
- 4. Our monthly production includes 120,000 square meters of plate and 10,000 tons of all kinds of steel, with 3,000 tons of raw materials in stock, to guarantee 100% on time delivery.
- 5. We are preparing to be the listed company. 7 of top 10 industries were using our brand products. In past 12 months, our total sales reached 17,000,000 USD.

#### Why BRD only do the best?

BRD only do the best, do not do low-grade, low-cost, low-value products and services, and not just for the long-term foothold in the industry; but our hearts, bones of the low-grade, low-cost, poor exterior products and the service is extremely offensive, rejection, disgust. Our company never facilitates cooperation projects to lower prices, lower quality. In order to win the project, to give up on quality requirements, it is not treasure of BRD!









01 | 宝润达系列新型工业围护保温夹芯板









## **Advanced Technology**

Imported a 165 meter length Italy. Scientific, systematic management and automated production processes

BRD strictly require every product's detail to be excellence, to automatic production line from improve work efficiency as most as possible, reduce the error caused by hand, thus enhance product quality and reduce the production labor costing. Meanwhile, BRD learn perfect modern management system from foreign constantly, to greatly improve our productivity, and ensure the product quality long-term stability.



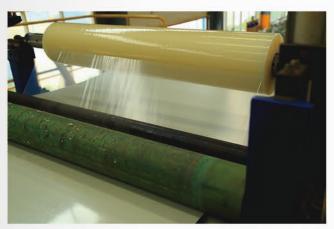






- Double-track machine ensure the roller and panel contact on the surface when continuous process, the insulated sandwich fully cured and operated between the upper and lower tracks as the same time. This process line not only ensures the panel flatness, but also ensures the core sandwich and sheet bonded stability.
- Rock wool/glass wool core material is disposed vertically and staggered butt, and Also they are not cold bridges and not condensation, 50mm PU sealing in the panel edge, all advantages enhance the stiffness and tear resistance.
- The import fireproof adhesive is sprayed on the panel uniformly, dosage reach 600g / m2, to ensure the coating thickness and the bond rate nearly 100%, enhance the core material strength and use lifetime greatly

■ A full range of quality control, strict inspection of incoming raw materials, production process in accordance with the ISO9001 international quality management system for management and control, to ensure provide high-quality products and services to customers.



BRD Brand -- New Industrial Building Insulation Sandwich Panel Series 104

### **Professional Solution Team**

BRD own a series of technological support to meet customer demand. Professional solution team, accompany with you from the beginning of the project plan to project design and management, to provide accurate engineering analysis and prefect design as customer demand, site operational layout and technical support, confirm the best solution to you.

#### Science Communication

Analysis of the customer's personalized design, provide system technology, technical suggestion and other services, provide colors design, product mix and other product configurations according to the customer's design requirements.

#### Solution Optimization

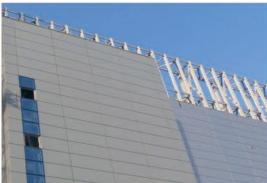
Based on the scientific method, through communication with customers, BRD work out a reasonable program of technical installations together.

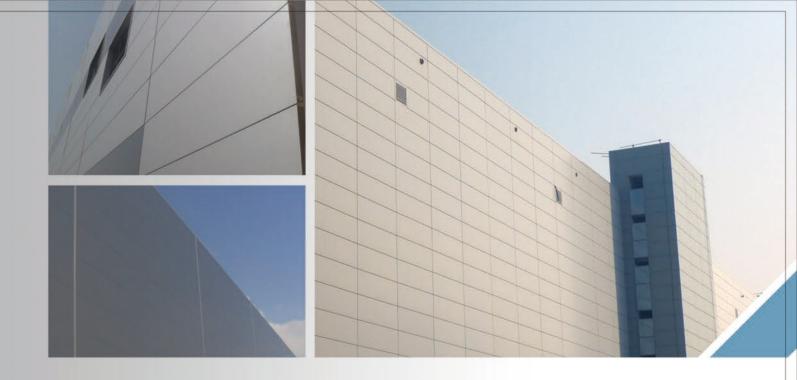
#### Technical support

Professional and technical personnel design individualized programs, calculate the load, handle details, guide the installation and other services after evaluate the project construction.



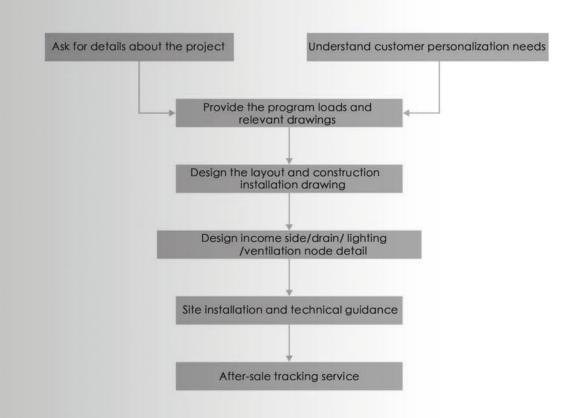






#### Solution Process:

BRD will learn more about the demands of customers usually, and strive to provide maximum value to customers, and provide the prefect solutions about the industrial building envelope insulation system.







### **Attentive Customer Service**

high quality, caring and efficient services, collect customer feedback and advice, to ensure the quality of products and services.

BRD always provide professional, Providing pre-sales analysis, technical consulting, and installation guide when sale, and other after-sale service, one to one professional and efficient service and 24-hour online consultation. Customers can understand all kinds of information products any time. Full intimate services help customers to maximize the integrated economic, value quality, aesthetics and environmental, win the customer's trust and support.



#### Efficient services

With our rapidly response to one customer service team, and experienced technical team, abundant inventory of raw materials and economic and efficient logistics and distribution channels to provide customers with convenient and thoughtful service, with the greatest efforts to respond quickly to customer needs.

#### Reliable service

More than half of our technical staff has many years of experience in the company, its high degree of professionalism to bring reliable sense of security. In addition, our unique all-inclusive service can be offered to customers based on the actual situation of installation and construction, maintenance and other maintenance rationalization proposals, so that long-term insulation sandwich panel system beautiful as new.

#### Convenient services

when a customer calls the customer service center, you can get one from BRD group to support resources immediately. Use of our technology to provide customers with the design, manufacture, sale and full-stop services to help customers solve problems.

#### Care services

We help our clients more intuitive understanding of routine maintenance, the environmental impact insulation sandwich panel system and warranty service records, to help customers enhance the daily maintenance and management capability to maximize value.



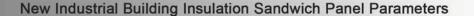
### **BRD** brand

## New Industrial Building Insulation Sandwich Panel Series

Insulation
Fireproof
Decoration.
High Strength
Energy Saving

The surface metal of this sandwich panel is high-quality fluorocarbon aluminum, painted steel, or other precision profiled metal plate.

After rolling molding, inject the foam fireproof polyurethane with high pressure, or cut the rock wool/ glass wool to stripe and then turn 90-degree (make the fiber perpendicular to the metal surface), bond with the metal plate strongly. High-density rigid foam is unique tongue and groove filling process, the long precision double track control the molding compound, to form a nice, smooth, tough building color plates.



	Metal sheet	0.4-1.0mm Aluminum,	0.4-0.8mm Color coating steel
	Panel pattern	Mi	rror, Small corrugated, Concave
Substrate	Insulation layer	Polyurethane(P	U), Rockwool, Glass Wool, EPS
composition	Coating		PVDF, PE
	Color		Gray, Red, White, Silver, ect.
	Effect Width		1000mm
Size	Length		<11.8m
	Thickness	50mm,	75mm, 100mm, 150mm, 200mm
Connection		Hidden nai	connection (seamless and slit)
ireproof rate		Well fireprod	of, the rock wool can be A grade

NOTE: Non-standard sizes and color can be customized

### Main Advantage

- Insulation and Energy Saving: Low thermal diffusivity, good insulation properties;
   excellent node designed, to ensure a good seal and insulation effect.
- Environmental performance: The latest CFC-free blowing agents with high-pressure foaming process, the products meet the international Convention for the Protection of the Ozone Layer, and the environmental effect is in line with Europe and other developed countries.
- Fireproof: According to the national fire rating standards, divided into different uses, to fully meet the building code requirements.
- Strong and durable: Light weight, high elongation, can withstand a high degree of bending without breaking, constitute the entire wall plate fixed on the keel, so that greatly reduce the building wall, seismic capacity strengthened.
- Airtightness: Unique cohesion between plates prevents water intrusion. the connections of the plate edge is closed when process, which maintain good Airtightness.
- Beautiful appearance: Screw hidden node design, plate surface flatness, colorful paint coating, color enduring.





### High-strength Aluminum Alloy Sheet

BRD new industrial building insulation sandwich panel, select Aluminum Corporation of China or RUIMIN Aluminum co., Ita high-quality sheet metal, the tensile strength, yield strength ect physical properties are superior to other domestic brands.

Aluminum Models	Tensile	Yield Strength	Elongation Percent	The Inside Bend radius (1mm thickness)
5052H32	230-280	≥160	≥8	R=1mm×2.5
3003H32	210-265	≥160	≥8	R=1mm×2
1100H32	110-150	≥80	≥5	R=1mm×1

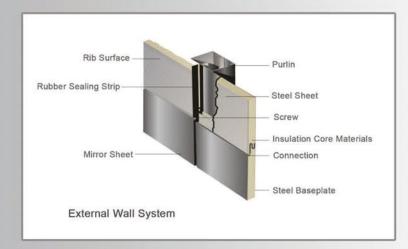
### **Excellent Insulation Core Material**

Using insulation sandwich panels, thermal conductivity can be less than 0.023w / m.k, five times energy-saving than the traditional building envelope. The excellent insulation properties reduce winter heating and summer cooling energy use effectively, energy conservation and affordable.



### **BRD Brand**

## New Building Materials Insulation Sandwich Panel System

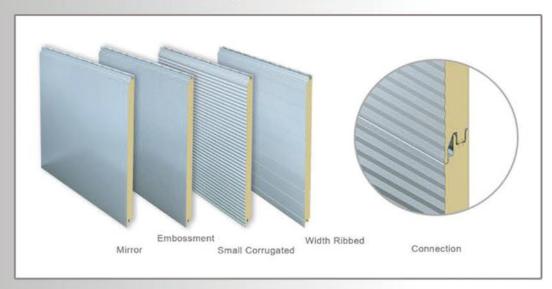


BRD new industrial building insulation sandwich panel, is self-supporting plate with screws hidden connection, can be horizontal or vertical installation, high light-weight, can meet different needs as the rich surface.

### **Panel Pattern and Connection**

### Advantage

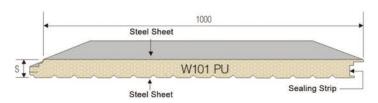
- The appearance is smooth, with a strong metallic touch
- Screws hidden connection, the surface is without screw, graceful building wall
- High flexural capacity, , Excellent mechanical properties , to reduce dependence on the secondary steel
- Panel stable uniformly, Insulation properties and waterproof are excellent
- A variety color to choose, the panel is appearance and decorative



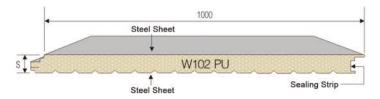
## PU (polyurethane) Insulation Sandwich Wall Panel

In line with the requirements of the International Conventhe Protection of the Ozone Layer, and the European environmental standards. Panel chemical stability, good mechanical properties, in line with the requirements of permanent buildings.

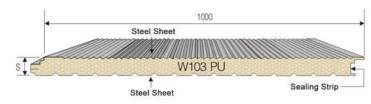
#### W101 PU Mirror



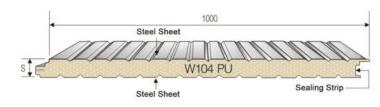
#### W102 PU Embossment



#### W103 PU Small Corrugated



#### W104 PU Width Ribbed



S: 50mm/75mm/100mm

#### ■Effect width: 1000mm

- ■Thickness:50mm, 75mm, 100mm
- ■Length: less than 11.8m,
- Metal sheet(thickness): Aluminum(0.7mm-1.2mm)

  PPGI(0.4mm-0.8mm)
- ■Coating: PVDF, PE ect.
- Insulation core material: PU (polyurethane)
- Density: 35-45 kg/m3
- ■Enclose rate: <95%
- ■Fireproof rate:B
- ■Water absorption percent: <1.0%
- ■Thermal Conductivity: <0.023w/m•k
- ■Temperature range: -185° C ~+120° C
- ■Bond strength: ≥0.09mpa
- ■Compressive strength: >0.22mpa
- Panel breaking cold bridge interface, air tightness, meet the requirements of low-carbon energy

### Polyurethane Insulation Sandwich Wall Panel Core Materials Index

Performance Index	Test Standards	Standards Index	Test Result
Density (TEMP)	GB/T6343-95	≥30	≥42.9
Thermal Conductivity	GB/10294-88	≤0.027W/m.k	≤0.020W/m.k
Coefficient	GB/T17146		≤3.34
Water Absorption	GB/Z228; GB8810-88	≤4	≤0.5
Percentage of Close Area	GB10799	≥90	≥97
Resistance to Bending Degrees	GB/T8813	≥150	≥220
Bearing Capacity	GB/T8812	≥1750	≥2450
Continuous use TEMP			
Oxygen Index	GB2406	≥26	≥28
Flame Class	GB8624		В
Maximum Rate of	ASTM E84	>25	>15
Flame Spread	GB8333	≤30	≤7.96
ertical Burning Method	450000	≤250	≤15
Dimensional Stability	ASTM		≤1%

Standard regulations of the state, the average temperature is not higher than 350°C when the coefficient of thermal conductivity is not great than 0.12 W/(m.k) material known as insulation materials, thermal conductivity in 0.05 W/m.k the material is called the efficient thermal insulation material

Thickness S(mm)	Heat-transfer Coefficient (K/m²⋅h⋅°C)	Weight ( kg/m² ) 1/1mm	Load wir	th	P L A	p L &	p L A		P L	
	(run sir o )	17 111111	P=Kg/m²	50	100	150	50	50	100	150
40	0.36	9.24	L=	5.06	3.90	3.20	3.20	4.55	3.90	2.85
50	0.31	9.59	L=	5.36	4.10	3.35	3.35	4.80	4.10	3.00
75	0.21	10.99	L=	6.26	4.80	3.95	3.55	5.00	3.80	3.10
100	0.15	11.69	L=	6.86	5.25	4.35	3.70	5.90	4.00	3.40





## PU Sealing Insulation Sandwich Rockwool Wall Panel

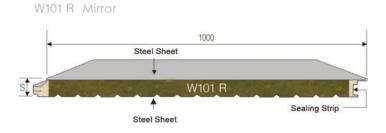
BRD select high-quality aluminum or metal materials as the panel metal sheet. After the roll forming, cut the rock wool to stripe and then turn 90-degree (make the fiber perpendicular to the metal surface), then bond with the metal plate together by the high-strength, high bond strength, high fireproof binder. At the last, seal the high-density rigid polyurethane foam in the two edges, and the nice smooth tough panel is complete.

In line with the requirements of the International Convention on the Protection of the Ozone Layer, and the European environmental standards.

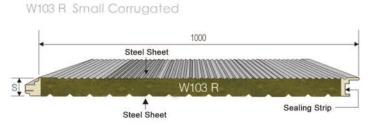
- Effect width: 1000mm
- Thickness:50mm, 75mm, 100mm, 150mm
- Length: less than 11.8m
- Metal sheet(thickness): Aluminum(0.7mm-1.2mm),

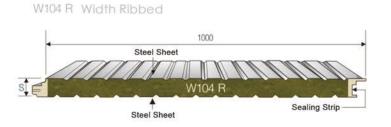
PPGI(0.4mm-0.8mm)

- Coating: PVDF, PE ect.
- Insulation core material: Fireproof PU (polyurethane)
- Density: 120kg/m3
- Fireproof rate: A
- Water absorption percent: <1.0%
- Thermal Conductivity: <0.043w/m•k</p>
- Melted temperature: ≥1000° C
- Bond strength: ≥0.09mpa
- Compressive strength: >0.11mpa
- Panel chemical stability, good mechanical properties, in line with the requirements of permanent buildings.
- Panel breaking cold bridge interface, air tightness, meet the requirements of low-carbon energy











#### PU Sealing Insulation Sandwich Rockwool Wall Panel Core Materials Index

(Rockwool design is 120 kg/m3)

Performance Index	Test Standars			Test Result
Compressive Strength(Kpa)	EN 826			105
Shear Strength(Kpa)	EN 12090			80
Tensile Strength(Kpa)	EN 1607			220
Shot Content(%)	ASTM C1335	<5(	Size	>0.25um); <30(Wispier Size>63um)
Coefficient(W/m.k)	EN 12667			0.043
Fire Resistance Index	EN ISO 1182; GB/T5464-1999			Nonflammable
	EN 1350-1; GB/T8624-2006			A
Fire Resistance Rating	Depending on the structure and t	hickness of th	e sand	wich panel,FRL 30 to 240 minutes
Hygroscopicity(%)	ASTM C1104; GB/T 5480.7			<1
Hydrophobicity(%)	GB 10299			≥98
Expansion Rate(%)	prEN 14509	≤5 (In the	TEMP of , the thic	65°C and relative humidit under the condition of greater tha kness of the rate of change after 24 hours)
Fusion TEMP(°C)				>1000
Fiber Diameter (um)				7

Standard regulations of the state, the average temperature is not higher than 350°C when the coefficient of thermal conductivity is not great than 0.12 W/(m.k) material known as

insulation materials, thermal conductivity in 0.05 W/m.k the material is called the efficient thermal insulation material

#### Rockwool Insulation Sandwich Panel Parameter

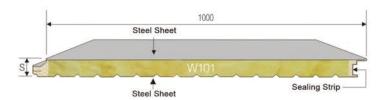
Thickness S(mm)	Heat-transfer Coefficient (K/m²⋅h⋅°C)	Weight ( kg/m² )	Load wi	th	p L	p ▲ L	A L					p 	ш
	3,400,40,50	7,000	P=Kg/m²	60	80	100	120	150	60	80	100	120	150
50	0.75	14.65	L=	4.71	4.09	3.64	3.29	2.89	4.20	3.65	3.25	2.94	2.58
75	0.53	17.65	L=	6.28	5.48	4.89	4.44	3.92	3.50	3.96	4.37	3.96	3.50
100	0.41	20.65	L=	7.66	6.69	5.99	5.44	4.81	6.84	5.97	5.34	4.86	4.29

## PU Sealing Insulation Sandwich Glass Wool Wall Panel

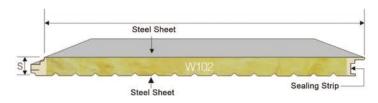
BRD select high-quality aluminum or metal materials as the panel metal sheet. After the roll forming, cut the glass wool to stripe and then turn 90-degree (make the fiber perpendicular to the metal surface), then bond with the metal plate together by the high-strength, high bond strength, high fireproof binder. At the last, seal the high-density rigid polyurethane foam in the two edges, and the nice smooth tough panel is complete.

In line with the requirements of the International Convention on the Protection of the Ozone Layer, and the European environmental standards. Panel chemical stability, good mechanical properties, in line with the requirements of permanent buildings.

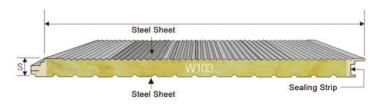
W101 G Mirror



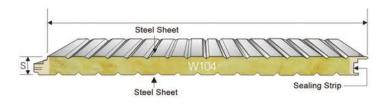
W102 G Embossment



W103 G Small Corrugated

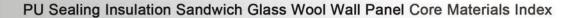


W104 G Width Ribbed



- Effect width: 1000mm
- Thickness:50mm, 75mm, 100mm, 150mm
- Length: less than 11.8m
- Metal sheet(thickness): Aluminum(0.7mm-1.2mm),
  - PPGI(0.4mm-0.8mm)
- Coating: PVDF, PE ect.
- Insulation core material: Fireproof PU (polyurethane)
- Density: ≥60kg/m3
- Fireproof rate: A
- Water absorption percent: <1.0%
- Thermal Conductivity: <0.036w/m•k
- Bond strength: ≥0.09mpa
- Panel breaking cold bridge interface, air tightness, meet the requirements of low-carbon energy





Performance Index	Test Standars	Test Result			
Fiber Number (um)	GB/T 5480.4	5.0-7.0			
Shot Content(%)	GB/T 5480.4	0			
Fire Resistance Index	GB5464; BS476	A (Nonflammable)			
Moisture Content(%)	GB/T 3007	0.4			
Coefficient(W/m.k)	GB/T10295-1998	0.031-0.036			
Noise Reduction  Coefficient(NRC)	JC/T469-1992	24 32 50 64 0.75 0.80 0.80 0.70			
ound Reduction Index(Rw)	GBJ75-84	≤34			

Standard regulations of the state, the average temperature is not higher than 350°C when the coefficient of thermal conductivity is not great than 0.12 W/(m.k) material known as

insulation materials, thermal conductivity in 0.05 W/m.k the material is called the efficient thermal insulation material

#### PU Sealing Insulation Sandwich Glass Wool Wall Panel Parameter

Thickness S(mm)	Heat-transfer Coefficient (K/m²⋅h⋅℃)	Weight (kg/m²)	Load wit	h	P IIIIIII L	p ▲ L	A 1						mm
	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7,11111	P=Kg/m²	60	80	100	120	150	60	80	100	120	150
50	0.75	14.65	L=	4.85	4.19	3.75	3.40	3.00	4.29	3.74	3.34	3.04	2.68
75	0.53	17.65	L=	6.39	5.60	4.49	5.60	4.06	5.71	5.00	4.49	4.09	3.62
100	0.41	20.65	L=	7.79	6.83	6.14	5.60	4.97	6.95	6.10	5.48	5.00	4.44

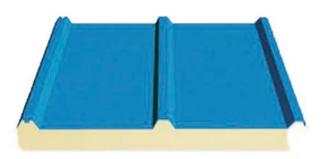




## **BRD Brand**

## **Insulation Sandwich Roof Panel Series**

BRD connection using dark nail, with screws hidden connection, screw is hit on the peak, which increase the roof closed and leak-proof, Offset stress caused by expansion and contraction, thereby reduce the damage to the roof, excellent waterproof performance and waveform appearance, economical and reasonable cost.



Effect width:	1000mm
Thickness:	50mm, 75mm, 100mm, 150mm
Length:	less than 11.8m
Metal sheet(thickness):	Aluminum(0.7mm-1.2mm)
	PPGI(0.4mm-0.8mm)
Coating:	PVDF, PE ect
Insulation core material:	Fireproof PU (polyurethane), Rockwool, Glass wool
Fireproof rate:	Excellent fireproof rate, can be A grade

### Connection



Insulation roof panel is attached to purlins by self-tapping hidden screws, plate lap link (take the next upper)

#### Advantage

- Hidden screw connection, the panel lap tightly
- Unique waterproof tank design, effectively prevent rainwater infiltration, and avoid cold bridge phenomenon 40mm wave height, improve the bearing capacity of the roof greatly
- It reduce the construction costs effectively, under ensuring building insulation at the same time, the minimum roof slope can be up to 3%

#### PU Insulation Sandwich Wall Panel Parameter

Thickness S(mm)	Heat-transfer Coefficient (K/m²⋅h⋅℃)	Weight kg/m²)	Load wit	h A	P L Å	P L A	P L A		P	
	, v ,	7.000	P=Kg/m²	50	100	150	50	50	100	150
50	0.31	9.59	L=	5.36	4.10	3.35	3.35	4.80	4.10	3.00
75	0.21	10.99	L=	6.26	4.80	3.95	3.55	5.00	3.80	3.10
100	0.15	11.69	L=	6.86	5.25	4.35	3.70	5.90	4.00	3.40

#### Pu Insulation Sandwich Roof Panel the Maximum Allowable Span

ckness mm Load KN/M³	50mm	75mm	100mm
0.5	1.71	2.87	3.61
1.0	1.36	2.31	2.85
1.5	1.20	2.00	2.49

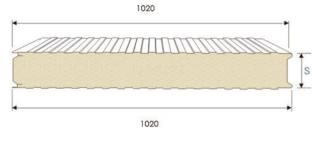


### **BRD Brand**

S: 50/75/100/150/200mm

## PU Insulation Cold Room Panel System

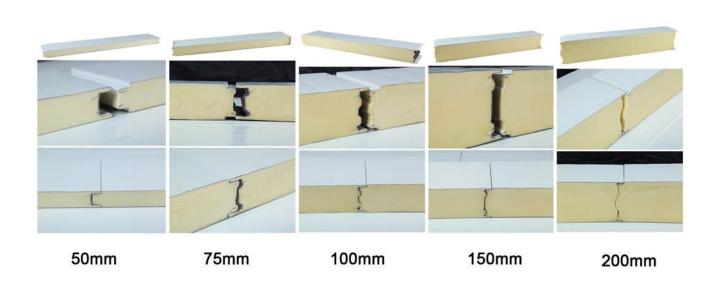
BRD insulation sandwich panel for cold room series is designed for refrigerator, freezer system, the cold room core material is the light-weight polyurethane, and use the latest connection technology of Convex and concave seal, which can be prevent the temperature spread since the inside and outside temperatures difference, thereby improve the efficiency of cold storage.



#### Advantage

- Convex and concave seal connection, improve the air-tightness;
   it is designed for cold room and warehouse.
- Panel has mechanical properties, thermal insulation properties and waterproof is excellent
- Reducing the wall thickness, increase the indoor effective area
- Light-weight, simple structure, Beautiful appearance, solute the industrial refrigeration temperature difference effective.

#### **Different Thickness Panel Different Connection**



#### PU Insulation Cold Room Panel Parameters

	Undercoat	5 micron	
Steel Sheet	PU Coating	20 micron	
	Back Paint	5 micron	
	Salt Spray Test	≥500h (ECCA T8)	
	Humid Test	≥ 1000h ( ASTM D2247 )	

Core Material	Average Density	35~45kg/m <sup>3</sup>
	Coefficient	≤0.023w/m•k
	TEMP Control Range	-40°C~ +150°C
	Compressive Strength	≥0.2MPa
	Non-freon	

#### PU Insulation Cold Room Panel Index

Thickness (mm)	Inside and Outsite TEMP Different(°C)	Wall High ( Max )	Roof High ( Max )	Apply Cold Storage Temperature (°C) 25 20 15 10 5 0 -5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55
75	40	4.5	3.8	
100	50	5.0	4.5	
120	58	5.6	5.12	
150	70	6.0	6.5	
200	90	8.0	7.6	

### **Application Scope**

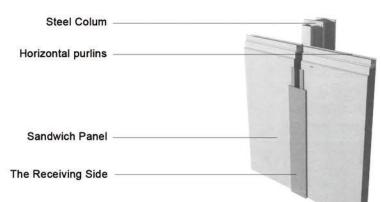
Fresh vegetable room, Meat freezer cold room, Food refrigerator compartment, Dairy products Plant, Combination refrigerator ect.



## **Accessories Series**

Structure System Name Aluminum Alloy Outer Corner Edge Steel Colum Vertical steel beams Horizontal purlins Insulation Materials External corner edge Aluminum Alloy on the Receiving Side





## Aluminium Edges





Sandwich Panel	
Vertical steel beams	
Steel Colum —	
Horizontal purlins	
Edges —	
Dado	10000

## **Accessories Series**

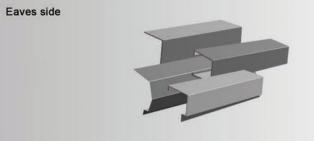
Structure System

Name	Structure System
Shutters	.10

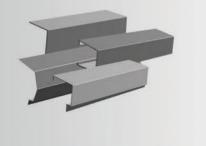
Roof Cover Sheet

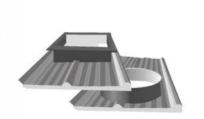
Roof Opening

Mining light

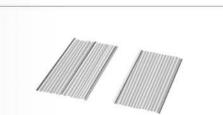


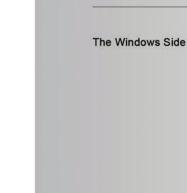














# **Our Projects**













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