



中国安徽百特新材料科技有限公司

ANHUI BETTER ADVANCED MATERIALS SCI & TECH CO, LTD, China

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SET OF DOUBLE VACUUM INSULATION PANEL

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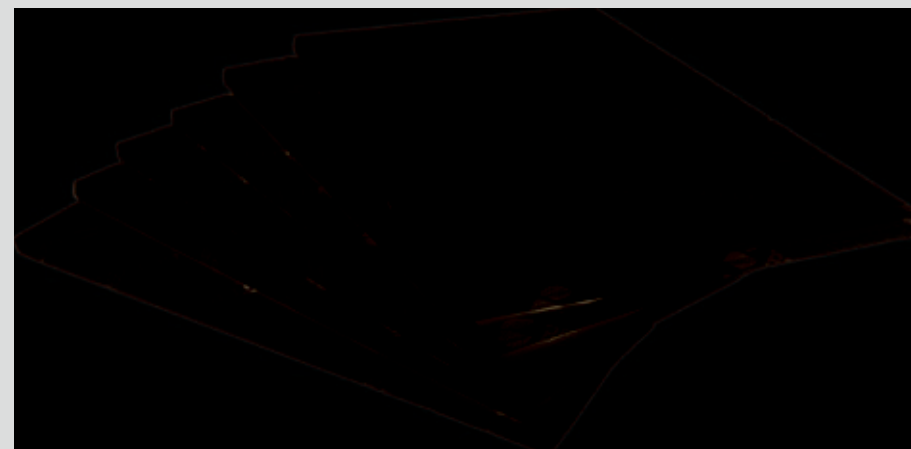
Product introduction

BETTETR's set of double vacuum thermal insulation panels (hereinafter referred to as TBB panel) is a new type of building energy saving material, with high efficiency of thermal insulation, A-class fire protection, environmentally friendly, inherently safe and reliable characteristics, can be widely applied in thin plastering system of building wall, curtain wall system, insulation and decoration integrated system and other applications of building thermal insulation. TBB panel is an upgrade product of vacuum insulation panel for construction.

TBB panels are suitable for both extremely hot and extremely cold areas. The excellent thermal insulation performance and excellent durability offer stable and comfortable temperature indoor, reduce the energy consumption of refrigeration equipment or heating equipment, and maintain long-term thermal insulation effect, regardless of the extremely hot or cold environment.

A large architectural rendering of a modern, curved skyscraper with a glass facade, set against a blue sky with light clouds. The building is surrounded by a dense urban landscape with various other buildings and greenery. A dark blue banner with white text is overlaid at the bottom left.

WELCOME TO
OUR COMPANY



Product Performance

TBB panel's compression strength, surface water absorption, post-puncture thermal conductivity and other related performance are excellent, the minimum thermal conductivity of the product can be $\leq 0.002\text{W}/(\text{m}\cdot\text{K})$. Product can customized according to the demand of customers.

The comparison of main parameters between TBB panel and national standard:

Sample Name	Set of double vacuum insulation panel							
characteristics	National Standard(China) (JGT438-2014) (GB/T 37608-2019)				BETTER' s Standard (Q/ABX05-2022)			
Type	I	II	III	IV	I	II	III	customi zed
Thermal Conductivity 【W/(m·K)】	≤ 0.0025	≤ 0.005	≤ 0.008	≤ 0.012	≤ 0.005	≤ 0.008	≤ 0.012	
Puncture Strength N	≥ 18				≥ 18			
Compressive Strength KPa	≥ 100				≥ 150			
Surface Water Absorption (g/m ²)	≤ 100				≤ 70			
Vertical and Surface Tensile Strength KPa	≥ 80				≥ 80			
The Rate of Expansion Perpendicular to the Surface of the Plate after Puncture %	≤ 10				≤ 5			
Thermal Conductivity after Superficial Puncture W/(m·K)	≤ 0.035				≤ 0.017			
Combustion Performance Classification	A (A2)				A (A2)			

Performance Characteristics

Performance Characteristics

1. Superior Performance

The thermal insulation performance of TBB panel is 5-20 times that of traditional products, which can meet the needs of various building applications in different regions and different energy conservation standards.

2. Long Service Life

TBB panel adopts "double vacuum" technology. After the outer gas blocking film of the product is damaged, the thermal conductivity of the product can still be kept below $0.017\text{W}/(\text{m}\cdot\text{K})$, which greatly improves the stability and durability of thermal resistance, and the vacuum degree can be maintained for a long time, up to 70 years or more.

3. Thin Thickness

The application of TBB panel can greatly reduce the thickness of the insulation layer, which can increase the building Possession rate by 1.5-8%, and the additional profit of selling houses is 2-6 times the cost of insulation materials.



Comparison with Common Insulation Materials

TBB panel has low thermal conductivity, excellent thermal insulation performance, 5-20 times that of traditional materials, and has great advantages in fire prevention, waterproof, anti-bulge and anti-falloff performance.

No.	Thermal Insulation Material	Thermal Conductivity W/(m·K)	Fire Resistance	Water Resistance	Actual Use Evaluation
1	TBB Panel	0.002/0.005/0.008/0.012	A	Great	Excellent thermal insulation performance, light and thin products, convenient construction, saving time and labor
2	Rock Wool Board	0.044	A	Poor	It is easy to absorb moisture, and the thermal insulation performance is obviously decreased after absorbing moisture, and the corrosion of other components is serious on site
3	Perlite Plate	0.068	A	Poor	The insulation performance is poor, fragile, construction loss is large, and there are security risks
4	Polystyrene Board	0.039	B	Great	Good thermal insulation performance, poor fire performance
5	Inorganic Insulation Mortar	0.070	A	Poor	Easy to fall off, has been eliminated by the market
6	Foamed Glass	0.062	A	Poor	Poor insulation performance, low strength, fragile, security risks
7	Homogenized Plate	0.065/0.085	A	Great	No industry standards, only refer to local standards, insulation performance is poor

Compared with rock wool board, an A-class fire insulation material, the thermal insulation performance of 20mm in thickness and of 0.005W/ (m*k) type TBB panel is more than 150mm-thick rock wool board's,. And, water absorption performance and anti-falloff performance are far better than rock wool board, with higher safety, and more convenient. The construction efficiency is more than 2 times of rock wool board.

TBB Panel Q&A

1. TBB panel is not cut-able?

It can be solved by using different sizes of panels together.

2. Whether the product is easy to be damaged, and the construction of the insulation system is difficult?

The TBB panel can be made without fear of surface damage.

And, ordinary workers can master skills for standardized construction after simple training.

3. Leakage of panels, and vacuum retention is not guaranteed, insulation performance will be affected.

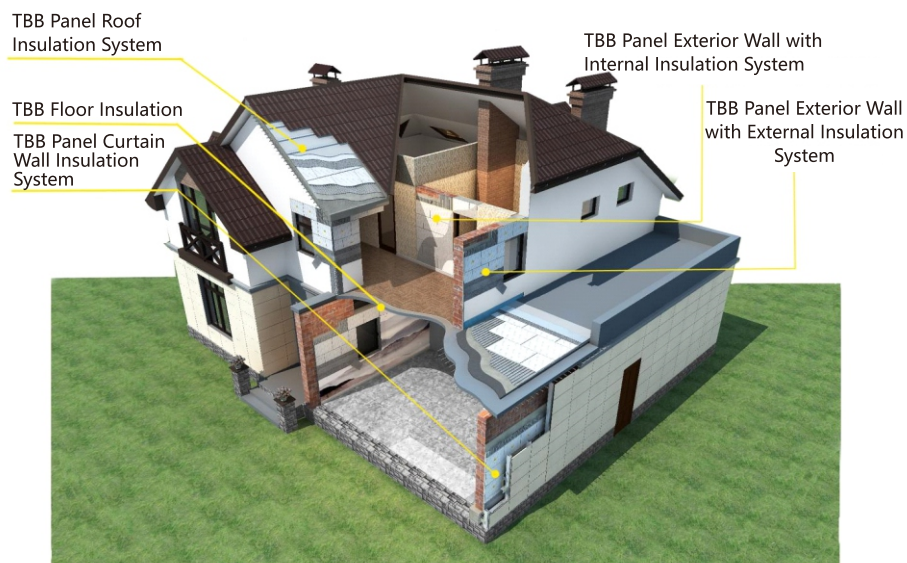
TBB board can achieve more than 70 years of service life.

Please Note: Not all vacuum insulation panels are impervious to surface punctures!

Product Family Application

—The Application of TBB Panel in the Thin Plaster Insulation System

TBB panel can be directly used for building roof insulation, floor insulation, external wall insulation, external wall insulation and curtain wall insulation and other insulation systems.



Please Note --

Not all vacuum insulation panels are suitable for the full orientations of building applications, to create a highly insulated and comfortable indoor environment!

Product Family Application

— Color crystal glass–decorated insulation integrated panel

BETTER's TBB color crystal glass veneer insulation integrated panel (hereinafter referred to as TBB glass veneer) is a new type of building exterior wall decoration material, with high efficiency of thermal insulation, Highly decorative, aging resistance, long life, easy to clean and other characteristics.

The product subverts the glass-decorated curtain wall industry (non-transparent), replacing the traditional curtain wall system with a simpler installation process and with its build-in thermal insulation function. While the comprehensive cost is reduced, the safety performance is greatly improved, and the construction efficiency is greatly improved. It can be widely used in the external wall insulation decoration of existing building renovation, expansion and new building.



Performance Characteristics

1. Good looking

TBB glass-decorated panel adopts glass as the finishing layer, which is not only rich in color and highly decorative, but also durable and not fading, easy to clean, with decorative effect comparable to curtain wall system.

2. Excellent performance

TBB glass-decorated panel uses TBB panels as thermal insulation materials, its thermal insulation performance can reach 5-20 times that of traditional materials, and with A-class fire prevention, environmentally friendly, but also resistant to aging.

3. Low comprehensive cost

TBB glass-decorated panel has waterproof, thermal insulation, sound insulation, decoration and other functions, with long service life, strong pollution resistance (normal rain wash can keep it clean), and simple construction process, highly construction efficiency. Its application can reduce labor costs, good cost-effective. Overall, its performance is better than the curtain wall system, the cost is much lower than the curtain wall system.

4. Safe and reliable

TBB glass-decorated panel has good waterproof performance, high compressive strength, acid and alkali resistance, corrosion resistance, non-toxic and harmless, but also super thin and light, reducing the overall weight of the decoration-integrated insulation system, firmly fixed on the building external protection wall, and highly safe.



Product Family Application

— Thin ceramics-integrated insulation panel

BETTER' s TBB thin ceramics-decorated insulation panel (hereinafter referred to as TBB ceramics-integrated panel), is an ideal high-quality building decoration new material for external wall, with green and low-carbon, energy saving and environmentally friendly characteristics. It is a standardized product that the integration of insulation layer and the decorative surface layer is completed in one-go within the factory, integrates thermal preservation, fire prevention, decoration and other functions within the panel, which avoids the tedious operation for traditional external wall

decoration after the construction of normal external wall insulation system, shortens the construction period, reduces the cost. It not only can be widely applied in the external wall insulation and decoration of existing building renovation, expansion and new building, but also can effectively replace the dry hanging stone curtain wall, cost-effective.



Performance Characteristics

1. Great decorativeness

The decorative performance can be comparable to the traditional curtain wall, the surface is clean, rich in color, corrosion-resistant, and durable.

2. Excellent performance

The thermal insulation performance of TBB ceramics-integrated panel with the same thickness can reach 5-20 times that of traditional thermal insulation materials, green, A-class fire prevention and environmentally friendly.

3. Lighter weight

With natural stone appearance, lighter and thinner, reduces the non-supporting load of building, more safe and increase the available space of the building.

4. Low comprehensive cost

TBB ceramics-integrated panel is a new material using natural resources and solid waste recycling technology, energy saving and emission reduction. At the same time, the construction is easy to carry out, the construction speed is fast, and the labor cost can be reduced, and cost-effective.



Product Standard

The product technology is mature, with relevant national standards, industry standards, local standards, etc., with the conditions for promotion and application.

《Vacuum Insulating Panels (VIP)》GB/T 37608-2019

《Vacuum Insulating Panels for Buildings》JG/T 438-2014

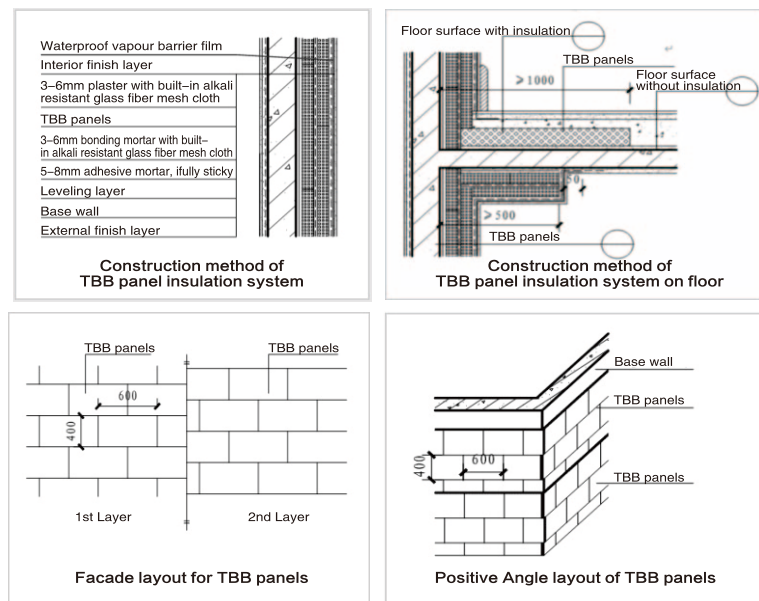
《Set of Double Vacuum Insulation Panels》Q/ABX 07-2022

《Technical Specification for Application of Vacuum Insulation Panels for Buildings》JGJ/T 416-2017



TBB panels are applied in passive ultra-low energy buildings, and there have been more than 230 successful cases so far. The following shows the construction of insulation systems using double TBB panels in passive ultra-low energy buildings.

Double-layer TBB panel insulation system practice demonstration



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The construction site of interior surface insulation system for exterior wall with double TBB panels

Please Note --
Not all vacuum insulation panels can effectively solve the safety problem of bulge and fall-off.

Project Case

TBB board has been successfully applied to a number of ultra-low energy buildings and passive housing projects, and has been highly recognized by the market.



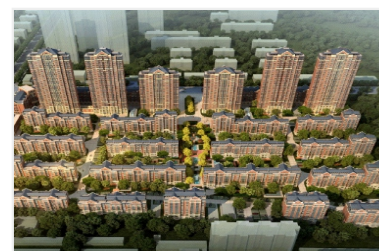
External wall insulation system
Experimental building
Shanghai East China Normal University



External wall insulation system
Vocational Education Center
Shanghai Jiao Tong University



Chengyue Jiayuan passive ultra-low
energy consumption building project



Zhongnan Junyue House passive ultra-low
energy building project



Anhui Bengbu Tianyang International
building super high-rise building project



Zhuozheng · Yihe Garden passive ultra-low energy building project



Tianjin Jinwan Square external wall insulation system project



External wall insulation system project
Party School of the CPC Committee,
Anhui province, Hefei



External wall insulation system project
Xuzhou. Manhattan Plaza



Passive ultra-low energy building project
Party conduct and clean government propaganda and education base

Company Profile

BETTER is a high-tech enterprise that produces and sells AB vacuum insulation panel products and insulation system materials. BETTER is a building insulation system engineering solution provider, committed to providing customers with efficient and energy-saving safety insulation system and creating a comfortable indoor environment with constant temperature, constant humidity and constant oxygen.

BETTER series building vacuum insulation panel is a well-known brand product in the industry. With the mission of "focusing on energy conservation and emission reduction, sharing clear water and blue sky", BETTER continues to carry out product technology innovation, promote industry transformation and upgrading, and make due contributions to the cause of energy conservation and emission reduction.



◆Large scale, low cost, high quality

The company's production plant covers an area of 200,000 square meters, with more than 70,000 square meters of modern plants, with an annual output of 5 million square meters of TBB vacuum panels production

◆Lean manufacturing, stable quality, consistent performance line, strong testing capacity.

BRTTER has cooperated with University of Science and Technology of China, Fudan University, Tongji University and other institutions to form more than 100 patents and proprietary technologies such as BETTER vacuum insulation panels fastening patents, anti-swelling bag treatment, vacuum packaging equipment, etc. BETTER has passed national and provincial scientific and technological achievements evaluation, and product technology has reached the national leading level. Among them, the key core technologies have reached the international leading level.



In order to ensure the quality of the project, together with Tongji University, China, BETTER introduced German insulation system construction technology, continued to carry out construction engineering technology research, and lead the industry to introduce a refined, standardized and streamlined construction technology system to ensure the quality of the project.



Products obtained the national Ministry of Housing scientific and technological achievements appraisal

Honor And Qualification

Since its establishment, BETTER has drafted and participated in the formulation of a number of national standards, industry standards and local standards related to vacuum insulation panels; It undertakes and completes the national "Made in China 2025" national industrial transformation and upgrading strong base project, and is a national strategic emerging enterprise classified product enterprise. The company has won honorary awards such as "Top Ten Innovative Technology Enterprises" and "Top 100 Brands of National Green building Materials" issued by the Ministry of Housing and Urban-Rural Development.



Top 10 Innovative Technology
"Building Energy Saving and Insulation
Industrialization Technology"



High-tech industry certificate



Main Business Scope

BETTER has been focusing on vacuum insulation panels for 12 years, committed to the continuous innovation of products, and provides customers with complete sets of efficient thermal insulation solutions according to different needs of customers.

Technical consultation / Provide complete energy-saving solutions for ultra-low energy consumption buildings and zero energy consumption buildings

Material sales / AB vacuum insulation panel series products and insulation system materials sales



Customer service number / 400-0552-968

Company website / www.better88.com

