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Vacuum Insulation Panel (VIP)

Technical Data Sheet



Product Profile

Vacuum insulation panel (VIP) is a new type of super insulation material emerging based on vacuum insulation technology. They combine the advantages of both vacuum insulation and micro-porous insulation methods, achieving ultimate thermal insulation performance.

Zerothermo's vacuum insulation panels are made of nano-scale composite core materials with excellent thermal insulation properties, encapsulated in high-barrier films under vacuum conditions. They minimize heat conduction, convection and radiation, block heat transfer, and possess high-efficiency thermal insulation capabilities.

These panels are widely used in pharmaceutical cold chain, construction, refrigerators and other fields.

Product Features

- Excellent Thermal Insulation: Thermal insulation performance is 6-10 times better than that of traditional thermal insulation materials.



- High-Efficiency Fire Resistance: Made mainly of inorganic core materials, achieving Class A fire protection.
- Ultra-Thin Insulation Layer: The high-efficiency thermal insulation performance can effectively reduce the thickness of the insulation layer and increase usable space.
- Long Service Life: Unique core material structure without the need for getters, with a service life of up to 50 years.
- Green and Pollution-Free: Certified by both ROHS and REACH.

Technical Data

Thermal Conductivity	$\leq 0.0045\text{W}/(\text{m}\cdot\text{K})$
Initial Value (25°C)	
Thermal Conductivity	$\leq 0.020\text{W}/(\text{m}\cdot\text{K})$
Ventilated (25°C)	
Initial Heat Transfer Coefficient (25°C)	$0.23\text{W}/(\text{m}^2\cdot\text{K})$ (Thickness=20mm)
Internal Air Pressure (20°C)	$\leq 5\text{mbar}$
Density	$180\text{Kg}/\text{m}^3$ - $220\text{Kg}/\text{m}^3$
Area Density	$3.6\text{Kg}/\text{m}^2$ - $4.4\text{Kg}/\text{m}^2$ (Thickness=20mm)
Applicable Temperature	-80°C ~ 80°C
Compressive Strength	$\geq 100\text{kPa}$
Tensile Strength	$\geq 80\text{kPa}$
Expansion Rate Perpendicular to the Panel	$\leq 10\%$
Surface After Puncture	
Fire Rating	Class A
Service Life	50 Years

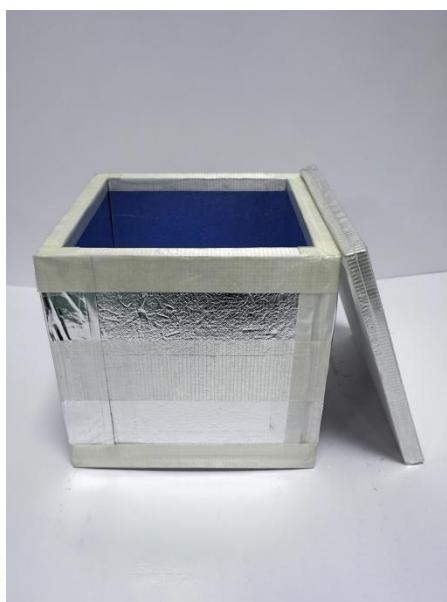
Remark

- In accordance with ASTM C518-10, the product's dimensional data is measured at a density of 180 kg/m³ and a temperature of 25°C.
- Custom sizes are available upon customer request. For special requirements, please contact us.

Dimensions and Tolerances

Length	≤1200mm
Width	≤800mm
Thickness	5~50mm
Length and Width Tolerances	-3mm~+2mm
Thickness Tolerance	±1mm
Film Material and Folding Method	Metalized Barrier Film Back Sealing Three-Side Sealing
Package & Delivery	Carton + Pallet

Application Fields



Pharmaceutical Cold Chain



Cold Chain Logistics



Refrigerators