

# KNAUF INSULATION ULTRASPACE™ HP

July 2023

Supreme-performance vacuum insulation panel with smooth surface and rectangular edges



## DESCRIPTION

**Knauf Insulation Ultraspace™ HP** is built from newly developed hot-press high-density core, giving unique possibilities to reach exceptionally low thermal conductivity ( $< 1.5 \text{ mW/mK}$ ) and dimensionally stable VIP even after puncture of the vacuum barrier (thickness increase  $< 10\%$ ).

It's designed to provide energy efficiency and boost the space efficiency of refrigerated transportation systems, temperature-controlled packaging, highest energy classes home appliances and any other products or applications that require extremely low energy loss from heat transfer. Very thin and long horizontally oriented glass mineral wool fibres have been specially developed and are used in a patented hot-press process where rigid and stable high-density cores are produced. A unique non-woven bonding process gives us VIP with very smooth surface and a sharp rectangle edge. The combination of carefully selected films will meet requirements of each application whether opting for long life, critical temperature conditions or resilience to vibrations in transport.

## PERFORMANCE

### VIP specification

Extremely low thermal conductivity  $\lambda \leq 1.5 \text{ mW/mK}$   
Low thickness 10 - 35 mm  
Density approx. 230 - 270 kg/m³

### Certified quality

Complies with RoHS Directive  
Complies with REACH Regulation  
RAL  
EUCEB

## BENEFITS

- ✓ Dimensionally stable VIP, even after puncture (Thickness increase  $< 10\%$ )
- ✓ Smooth surface and clean rectangle edge
- ✓ Resilient to vibrations in transport
- ✓ Extremely low thermal conductivity ( $\lambda < 1.5 \text{ mW/mK}$ ) ensure supreme energy efficiency and energy consumption
- ✓ Low insulation thickness (10–35 mm) to increase volume capacity of applications where lack of insulation space is critical
- ✓ Short-term temperature exposure without pressure increase ( $140^\circ\text{C}$ , 30 min)
- ✓ Stable, long-term thermal performance
- ✓ Environmentally friendly insulation solution (recyclable, non-hazardous)

## APPLICATION

Due to extremely low thermal conductivity and minimal thickness, vacuum insulated panels are especially well suited to applications where critical temperature conditions, extremely efficient use of energy and space are required:

- Refrigerated trucks / transportation systems
- Temperature-controlled packaging (for medical and pharmaceutical industry)
- Insulation of refrigerators and freezers where highest energy standards is required
- Vending machines / cold storage units

## STANDARD

Knauf Insulation Ultraspace™ HP is manufactured in accordance with ISO 9001 Quality Management Systems, ISO 14001 Environmental Management Systems, ISO 50001 Energy Management Systems and ISO 45001 Occupational Health and Safety Management Systems as certified by TÜV Nord.

## CERTIFICATES



challenge.  
create.  
care.

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## TECHNICAL PROPERTIES:

Characteristics	Symbol	Value	Unit
Density	$\rho$	230 - 270	kg/m <sup>3</sup>
Thermal conductivity	$\lambda$	$\leq 1.5$	mW/mK
Operating temperature	-	- 80 to +80	°C
Short term temperature exposure	-	up to 140 °C, 30 min	-
Specific heat capacity	$C_p$	0.84	kJ/kgK
Recovery after puncture	-	< 10	%
Core material		Glass mineral fibre	
Film		Multi-layers metallized	

## STANDARD DIMENSIONS

**Thickness:** 10 – 35 mm

**Panel sizes:** 300 × 300 mm to 600 × 1,800 mm

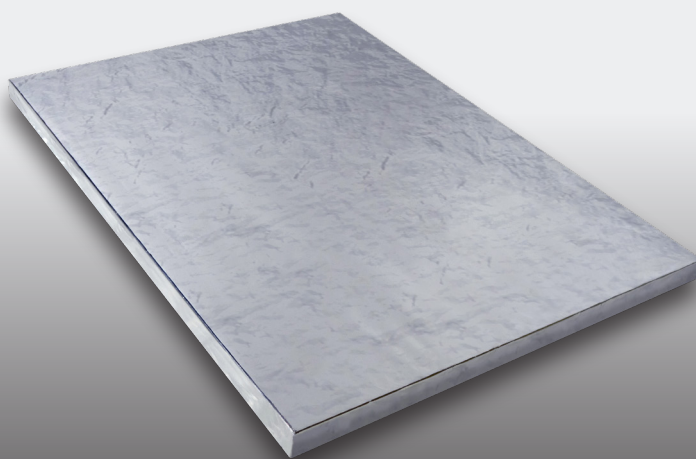
**Tolerances:**

- Thickness +2/-1 mm
- Width/Length: +/-3mm

## HANDLING & STORAGE

Knauf Insulation Ultraspace™ HP is packed on a wooden or plastic pallet. Products are covered with PE foil or wrapped twice with stretch foil, which is designed for short-term protection only. It is recommended to store the product either indoors, or under a cover and off the ground, for a maximum of up to 12 months.

The performance of Knauf Insulation Ultraspace™ HP depends on the customer's manufacturing process. Individual customers must optimize and control their manufacturing process to ensure the material meets the requirements of their manufacturing process and their final product.


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