

Introduction

Unicorn TT coolvac is a high-performance Vacuum Insulation Panel based on a fumed silica microporous core material – TT core. The core is sealed in a high-barrier multilayer foil, which contributes to extremely low conductivity (0.004 W/m K) and a long service life of up to 50 years. TT coolvac offers straight edges and best-in-class stability, ensuring quick and easy installation while minimizing damage-related loss.

In comparison to other core materials VIPs, TT coolvac demonstrates a very low volume increase due to its minimal expansion characteristics. It also maintains a very low initial lambda under normal pressure, enabling cool box manufacturers to achieve very stable and long-lasting service performance during transportation.



Features and Benefits

In using microporous core material, the Vacuum Insulation Panel offers considerable benefits of thermal insulation performance, long service life, energy efficiency and reduction of carbon footprint.

- Extremely low thermal conductivity, high thermal resistance.
- Excellent thermal insulation properties even if vacuum is lost, superior to most other materials.
- Longer storage time and safer transportation in cold-chain transport.
- Light in weight, compact design for equipment.
- Lowest expansion when vacuum loss.
- Excellent resistance to compression.
- Wide range of sizes are available to order.

Technical Data

| | |
|---|------------------------------------|
| core material | fumed silica |
| thermal conductivity (initial value@ 10 °C) | ≤4.0 mW/(m.K) |
| core material thermal conductivity@20 °C | ≤ 20 mW/(m.K) |
| density | 170-240 kg/m ³ |
| compressive strength | 120 kpa under 10% deformation |
| internal gas pressure | ≤5 mbar |
| application temperature range | -70°C – +90°C |
| lifetime | up to 50 years, depending on usage |
| geometry | rectangles and customised shapes |
| surface color | silver or white |

Available Sizes

| | |
|------------|---|
| dimensions | 1000 x 600 mm, 500 x 300 mm, 300 x 300, max: 950 x 1100 mm, more sizes on request |
| thickness | 5-50 mm, more sizes on request |
| tolerances | length & width: ≤600 mm, ± 3 mm; >600 mm, ± 5mm; thickness: ± 1.5 mm; other tolerance can be provided |

Technical Limitation

The foil of the vacuum insulation panels must not be damaged by drilling, cutting, milling, nailing or similar, since the interior pressure of the panel will rise and the special properties of the panel, in particular its excellent insulation characteristics, will be lost. Wrapping enhancement solutions are available upon request.

Declaration of Non-hazardousness

According to the regulation of the European union 2006/1907/EC this material is classified as non-hazardous. The used fibers are not respirable as defined by WHO.



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