ThermaVIP+ Technical Overview

Product Description:

ThermaVIP+ is an insulation panel for use in thermally-controlled packaging, comprising two main components: a fiberglass core VIP made with a metallized film envelope, and a PU encapsulation layer for protection.

General Specification:

Criteria	ThermaVIP+	Test Methods	Comment
Color	Silver / white edges	External appearance	
Geometry Available			Standard = Rectangular. Special shapes such as round, trapeze, donut, etc, available as per customer requirements.
Maximum Dimensions Available	1000 * 1000 [mm] 39.37" * 39.37"		For 30mm (1.18") thickness
Maximum Dimensions Available	1800 * 3800 [mm] 71.87" * 149.6"		For ≤60mm (2.36") thickness
ThermaVIP+ Panel Density	190±15 [kg/m3] 1.585±0.125 [lb/gal]	Density=Weight of ThermaVIP panel / (Length*Width*Thickness of ThermaVIP+ panel)	
Core Material	Fiberglass		
ThermaVIP+ Panel Thickness	30 mm +/-10 % 1.18" +/-10 %		Total panel thickness (different thickness from 20 mm to 65 mm available on request)
Thermal Conductivity	≤0.0042 for PU-VIP Panel [W/mK] ≤0.002426715 [Btu (IT) foot/hour/square foot/°F]	ASTM C518-10, Average Temperature: 22.5°C	At manufacture, for the standard rectangular product.
Initial R Value	≥8 [m2K/W] ≥45 [ft2°F h/BTU]		
ThermaVIP+ Panel Dimension Tolerance	Length : ±2 [mm] (0.08") Width: ±2 [mm] (0.08") Thickness: ±2 [mm] (0.08")		
Temperature Range During Application	-80 °C to +100 °C (-112 °F to 212 °F)		

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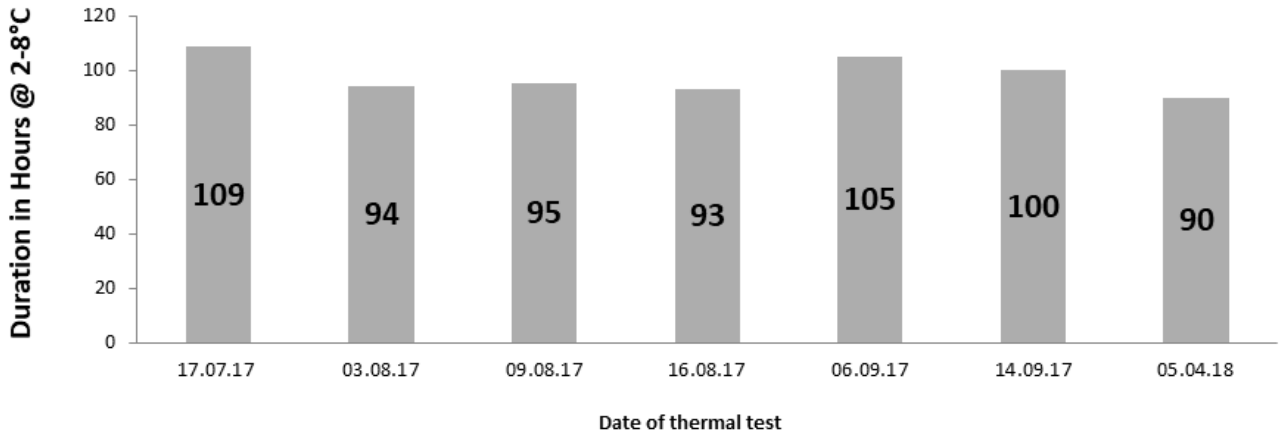
Panel performance over time

Thermal performance of the same cooling box repeatedly tested over eight months



External volume of box: 40.7 L *Internal volume of box: 22.6 L* *Payload volume: 14.8 L*
PCM amount: 6 pcs x 1 L *Temperature profile: 30^0 C constant* *Panel thickness: 30mm*

From the data above, we can see that the thermal performance of the cooling box remained consistently effective over the eight months of testing.

Storage:

ThermaVIP+ panels should be stored in the original packaging, in a cool, dry place with no exposure to sunshine, acid, alkali, or moisture. Avoid contact with flames or excessive heat. Recommended long-term storage temperature should not exceed 40°C (104°F), @ relative humidity 0%<RH <60%.

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