

Technical Data Sheet

va-Q-vip B



Product Description

va-Q-vip B is a microporous insulation material based on fumed silica, with an additional coverage of a black glass fibre textile for higher mechanical protection. The vacuum insulation panel is approved for general construction purposes in accordance with approval number Z-23.11-1658 and ETA-17/0926 of the "Deutsches Institut für Bautechnik (DIBT)". va-Q-vip B elements are unique because of their rectangular edges and corners (va-Q-seam) whereas individual elements can be joined together almost seamlessly. In general rectangular panels are produced but various shapes (trapeze, triangle, corner section) are possible on request. The va-Q-vip B can be used in buildings according to the application areas DAD, DAA, DZ, DI, DEO, WAB, WH and WI after DIN 4108-10, table 1 (floors, flat roofs, ceilings, top floor ceilings, exterior insulation behind panelling, walls, insulation in wood frame construction).

Features

- **Enhanced usable room area due to thinner insulation material**
- **Smooth edges and no foil overlaps due to patented va-Q-seam technology**
- **Various standard sizes on stock**
- Approved for general construction purposes after Z-23.11-1658 1658 and ETA-17/0926
- Long durability due to optimized panel design
- 100 % quality control with the patented gas pressure measurement system (va-Q-check)
- Sustainable product (recyclable core material)

Properties

Thermal conductivity $\lambda(10\text{ °C})^*$ (at delivery)	$\leq 0,0043\text{ W}/(\text{m}\cdot\text{K})$ after DIN EN 12667
Thermal conductivity - design value incl. aging and edge effects	$0,007\text{ W}/(\text{m}\cdot\text{K})$ $\geq 20\text{ mm}$ thickness $0,008\text{ W}/(\text{m}\cdot\text{K})$ $< 20\text{ mm}$ thickness
Thermal conductivity ventilated $\lambda(10\text{ °C})^*$ - design value incl. aging and edge effects	$0,020\text{ W}/(\text{m}\cdot\text{K})$
U-Value $t = 20\text{ mm}^*$ @ 10 °C	$0,22\text{ W}/(\text{m}^2\cdot\text{K})$
U-Value - design value incl. aging and edge effects @ 10 °C	$0,8\text{ W}/(\text{m}^2\cdot\text{K})$ @ $t = 10\text{ mm}$ $0,14\text{ W}/(\text{m}^2\cdot\text{K})$ @ $t = 50\text{ mm}$
Internal gas pressure @ 20 °C (at delivery)	$\leq 5\text{ mbar}$
Density	$180 - 210\text{ kg}/\text{m}^3$ (thickness $> 20\text{ mm}$) after DIN EN 1602 $180 - 250\text{ kg}/\text{m}^3$ (thickness $\leq 20\text{ mm}$) after DIN EN 1602
Area density @ $t = 20\text{ mm}$	$3,5 - 5\text{ kg}/\text{m}^2$
Temperature resistance	$-75 - 80\text{ °C}$ (temporary up to 120 °C)
Moisture resistance	$0 - 70\%$ rel. humidity (until 50 °C)
Specific heat capacity	$0,8 - 1,0\text{ kJ}/(\text{kg}\cdot\text{K})$ (at room temperature)
Compressive strength at 10 % compression	$\geq 150\text{ kPa}$ after DIN EN 826
Tensile strength perpendicular to plane	$\geq 30\text{ kPa}$ after DIN EN 1607:2013
Lifetime	Depending on usage, up to 60 years
Fire class	B2 following DIN 4102
Standard sizes (l x w)	1000 mm x 600 mm 1000 mm x 400 mm 1000 mm x 300 mm 600 mm x 600 mm 600 mm x 400 mm 400 mm x 300 mm 300 mm x 300 mm
Available thickness	10 – 50 mm, in 5 mm steps

*Please note terms of service § 6 “Deviation range of the insulation value” in “Special Terms and Conditions of Sale and Delivery, Product: Vacuum Insulation Panels (VIPs)” corresponding to the valid version respectively.

Testing standards

Our va-Q-vip B panels are subjected to the following internal test methods to confirm their exceptional properties:

- Accelerated aging tests at 50 °C, 70 % relative humidity and 80 °C (dry)
- Thermal conductivity measurements $\lambda(T)$, $\lambda(p)$ following DIN EN 12667
- Long-time monitoring at room conditions ($p(t)$, $\lambda(t)$)
- Fire protection test after DIN 4102-1 / EN 11925-2
- Measurement of the length- and point-related heat transition coefficient (thermal bridge effect, Ψ -value)

Measures and tolerances

Length l / Width w in [mm]	Thickness t in [mm]	Tolerances: l/w/t in [mm]		
≤ 500	≤ 10	+2/-4	+2/-4	+0,5/-0,5
	> 10 - 50	+2/-4	+2/-4	+5 %/-5 %
> 500 - 1000	≤ 10	+2/-5	+2/-5	+0,5/-0,5
	> 10 - 50	+2/-5	+2/-5	+5 %/-5 %

Remark: Please ask for preferred sizes and tolerances.

Legal Notes/Disclaimer

The data presented in this technical data sheet are in accordance with the present state of our knowledge.

All numbers and features proposed in this data sheet (e.g. lifetime) were determined under test conditions in the laboratory and therefore represent a nonbinding and purely scientific value. There are no guarantees associated with. Only the respectively agreed warranty period and warranty rights apply.

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