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Technical Data Sheet
va-Q-vip F

Product Description

va-Q-vip F is a microporous insulation material based on fumed silica. 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 F 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 F can be used in buildings according to the application areas DAD, DAA, DZ, DI, DEO, WAB, WH and WI according to DIN 4108-10, table 1 (floors, flat roofs, ceilings, top floor ceilings, exterior insulation behind panelling, walls, insulation in wood frame construction). Hereby our application-specific, laminated versions va-Q-vip F EPS, va-Q-vip F XPS and va-Q-vip F GGM are obtainable.

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 according to Z-23.11-1658 and ETA-17/0926
- Long lifetime due to optimized panel design
- 100 % quality control with the patented gas pressure measurement system (va-Q-check)
- Sustainable product (recyclable core material)

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Properties

Thermal conductivity - initial value @ 10 °C	**≤ 0.0043 W/(m·K) (thickness ≥ 20 mm, at delivery) according to DIN EN 12667**
Thermal conductivity - design value incl. aging and edge effects	**0.007 W/(m·K) (thickness ≥ 20 mm) 0.008 W/(m·K) (thickness < 20 mm)**
Thermal conductivity ventilated - design value incl. aging and edge effects	**0.020 W/(m·K)**
U-Value - initial value @ 10 °C	**0.22 W/(m²·K) (thickness = 20 mm*)**
U-Value - design value incl. aging and edge effects	**0.80 W/(m²·K) (thickness = 10 mm) 0.14 W/(m²·K) (thickness = 50 mm)**
Internal gas pressure @ 20 °C	**≤ 5 mbar (at delivery)**
Density	**180 – 210 kg/m³ (thickness ≥ 20 mm) according to DIN EN 1602 180 – 250 kg/m³ (thickness < 20 mm) according to DIN EN 1602**
Area density	**3.5 – 5 kg/m² (thickness = 20 mm)**
Temperature resistance	**-75 – 80 °C (temporary up to 120 °C)**
Moisture resistance	**0 – 70 % rel. humidity (until 50 °C)**
Specific heat capacity	**0.8 – 1.0 kJ/(kg·K) (at room temperature)**
Compressive strength at 10 % compression	**≥ 150 kPa according to DIN EN 826 ≥ 100 kPa according to DIN EN 826 (version EPS, GGM)**
Tensile strength perpendicular to faces	**≥ 30 kPa according to DIN EN 1607**
Lifetime	**Depending on usage, up to 60 years**
Fire class	**B2 according to DIN 4102 E according to EN 13501-1****
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.**

****only for va-Q-vip F without additional cover layer**

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Testing standards

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

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

Measures and tolerances (VIP)

length l / width w in [mm]	thickness t in [mm]	tolerances: l/w/t in [mm]		
≤ 500	≥ 10 - 50	+2/-4	+2/-4	+5 %/-5 %
> 500 - 1000	≥ 10 - 50	+2/-5	+2/-5	+5 %/-5 %

Remark: Please ask for preferred sizes and tolerances.

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Application-specific versions

For the different application areas in construction sector additional application-specific versions of the va-Q-vip F are obtainable:

version	lamination	application area
va-Q-vip F EPS	10 mm EPS (one-sided or both-sided)	interior (walls, floors, ceilings, etc.)
va-Q-vip F XPS	3 mm XPS (one-sided or both-sided)	interior (walls, floors, ceilings, etc.)
va-Q-vip F GGM	3 mm rubber granules (one-sided or both-sided)	mainly floors

Remark: Any desired combinations of the versions are available on request. The listed versions are approved for general construction purposes in accordance with approval number Z-23.11-1658 of the "Deutsches Institut für Bautechnik".

va-Q-vip F EPS

va-Q-vip F XPS

va-Q-vip F GGM

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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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Proposals for usage and applications do not constitute a guarantee, warranty or representation of suitability for the specific purpose. However the user bears the responsibility if the product is suitable and compatible for his own purposes. The user shall perform his own tests and experiments for his individual purposes and applications regarding the suitability and processing of the product described herein.

We reserve the right to change the product values and features. The respective current valid version of this technical data sheet applies and is published on our homepage.

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