

# va-Q-plus

## Product Data Sheet

### Characteristics

va-Q-plus is our advanced vacuum insulation panel and is produced with a new powder technique, which enable to make various shapes such as cylinder form tailored to the needs of customers.

With our special powder technique and a semi-automatization process va-Q-plus has a very low thermal conductivity combined with a long service life and it has excellent price-performance ratio. Due to their production technique, va-Q-plus has a flange, which can be used for a guidance for positioning. The flanges are can be refolded with a special treatment on request.

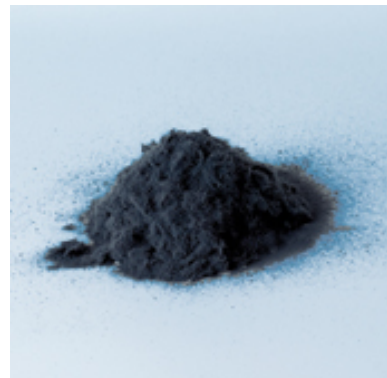
The core of va-Q-plus comprises inorganic oxides, up to 80 % being fumed silica and the rest IR opacifiers and a small amount of organic fibres. This core material can be reuse and recycle. For va-Q-plus application a series production is required.



### Applications

Because of the excellent insulation value and long service life the va-Q-plus can be used in all applications, where not much space is available but a high thermal resistance is necessary.

- Packaging/Transport (thermal multiuse boxes and containers, etc.)
- Automotive (Truck bodies, tank containers, cold storage cells, electric cars, etc.)
- Home appliance (Refrigerator, freezer, water boiler, etc.)
- Building application (facade cladding sandwiches, etc.)
- Technical device (Scientific devices, etc.)



### Advantage

- An advanced vacuum insulation panel with a new powder technique
- Various and flexible shapes available
- Very long stable service life

### Product data

Surface color	Silver
Geometry	Rectangular shape with flange
Density	170 – 200 kg/m <sup>3</sup>
Thermal conductivity	< 0.0035 W/(mK)
Temperature stability	-70 °C to +60 °C

Thermal shock resistance	Not sensitive to heat & cold shock in the given temperature range
Humidity stability	0 % to 60 %
Internal gas pressure	< 5 mbar (at delivery)
Increase of gas pressure	approx. 1 mbar/year (at 20 mm thickness)
Dimension (L x W)	
• Maximum	1750 mm x 1000 mm
• Minimum	400 mm x 250 mm
Thickness	3 mm to 35 mm (1)
Size tolerance	
• 0 to 500 mm	+2 / -4 (2) mm
• 501 to 1000 mm	+2 / -7 mm (2)
• 1001 to 1750 mm	+3 / -10 mm (2)
Thickness tolerance	± 1 mm (2)
Specific heat capacity	0.8 kJ/(kg K) (at room temperature)
U-value	0.18 W/(m <sup>2</sup> K) (at 20 mm thickness)
Mass per area	4 kg/m <sup>2</sup> (at 20 mm thickness)
Compressive strength	approx. 120 kPa (at 10 % compression)
Service life	extrapolated, depending on application up to 60 years

(1) The maximal thickness of a panel depends on the size of the panel. For very small panels the maximum thickness is 7 mm, a thickness of 35 mm is only possible for a panel size of over 1 m<sup>2</sup>. Please contact us for your desired panel dimensions.

(2) Due to their special manufacturing process va-Q-plus panels are not ideally rectangular. The thickness at the edge is somewhat less than at the center. All dimensions, tolerances and insulation values refer to the insulating area from corner to corner.

Please note: There are between 10 mm and 20 mm seams at all sides of the panel. All figures are intended as a guide and should not be used for preparing specifications.

