VitroSilK®Flex

Needle mat of amorphous high-silica glass fiber (continuous filament), not fused quartz and not quartz

Interim version. It replaces data sheet VSF01/02FEB2026 and states the nominal values of the specification. The absence of alkali and alkaline earth oxides (Na_2O, K_2O, CaO, MgO, BaO) is confirmed for every delivery by an exclusion certificate "basic oxides".

Description

VitroSilK®Flex needle mats consist of continuous filaments of amorphous silicate glass with a high SiO_2 content and a nominal fiber diameter of 6 to 9 µm. The glass is amorphous; it is neither fused quartz nor quartz, and it contains no crystalline SiO_2 as delivered. The mats contain no binder and no alkali or alkaline earth oxides. They have low thermal conductivity and resist most chemical reagents, organic and inorganic acids except hydrofluoric and phosphoric acid, weak alkalis, water and high-pressure steam.

Used in industrial applications with requirements for temperature resistance, for example in vehicle construction, shipbuilding and aviation.

The temperature resistance of the fiber is approximately 1000 °C. For continuous service we recommend an application temperature of up to 750 °C. This is intended to prevent the formation of cristobalite, which has so far been neither demonstrated nor investigated for VitroSilK®, but which cannot be ruled out under prolonged exposure to higher temperatures.

Technical data

Property	Metric	US	Test method
Fiber and composition			
Fiber type	amorphous continuous silicate glass fiber not fused quartz, not quartz		
Fiber diameter, nominal	6 – 9 µm	236 – 354 µin	nominal value
SiO_2	95.0 ± 1.0 %		manufacturer's in-house method
Al_2O_3	3.5 ± 0.5 %		manufacturer's in-house method
Alkali and alkaline earth oxides Na_2O, K_2O, CaO, MgO, BaO	not contained		exclusion certificate "basic oxides" for every delivery
Remainder	sizing and production residues		
Binder	none		
Physical properties			
Bulk density, nominal	130 kg/m³	8.1 lb/ft³	
Mass per unit area [1)]	see product range, tolerance ± 12 %		ISO 3374

Thickness [2]	see product range		manufacturer's in-house method
Temperature resistance	approx. 1000 °C	approx. 1832 °F	
Recommended application temperature, continuous service	up to 750 °C	up to 1382 °F	
Combustibility	non-combustible		DIN 4102
Dimensions and packaging			
Width [3]	100 ± 1 cm	39.4 ± 0.4 in	EN 1773
Roll length [3]	see product range		
Packaging	Mats wound on a core with 76 mm | 3 in inside diameter, each roll wrapped in film. Rolls fastened on wooden pallets, pallets wrapped in film.		
Transport	Covered means of transport.		
Storage	Clean and dry, in the manufacturer's original packaging.		

Product range

Thickness	Mass per unit area, nominal	Roll length	Width
5 mm | 0.20 in	650 g/m² | 19.2 oz/yd²	30 m | 32.8 yd	1000 mm | 39.4 in
10 mm | 0.39 in	1300 g/m² | 38.3 oz/yd²	25 m | 27.3 yd	1000 mm | 39.4 in
12.7 mm | 0.50 in	1650 g/m² | 48.7 oz/yd²	20 m | 21.9 yd	1000 mm | 39.4 in
20 mm | 0.79 in	2600 g/m² | 76.7 oz/yd²	10 m | 10.9 yd	1000 mm | 39.4 in
25 mm | 0.98 in	3250 g/m² | 95.9 oz/yd²	10 m | 10.9 yd	1000 mm | 39.4 in

Mass per unit area calculated from bulk density and thickness.

Notes

1. Tolerance based on test specimens (316 × 316) mm | (12.4 × 12.4) in.
2. Measuring device with 25 cm² | 3.9 in² measuring area, contact pressure 10 g/cm² | 2.3 oz/in².
3. Widths up to 200 cm | 78.7 in and other roll lengths on request.
4. VitroSilK®Flex is also available as loose blowing wool (VitroSilK®Loft) and as a composite felt with E-glass needle mat (VitroSilK®Protekto M and G, separate data sheet).

The needle mats are produced in compliance with Directive 2011/65/EU (RoHS).

Revision history

Version	Date	Change
1.0	November 2026	Interim version, replaces VSF01/02FEB2026. Fiber type (amorphous continuous fiber, not fused quartz and not quartz) and nominal fiber diameter added; absence of alkali and alkaline earth oxides with certificate for every delivery added; temperature resistance (approx. 1000 °C) and recommended application temperature for continuous service (up to 750 °C) stated separately; product range with thicknesses of 5, 10, 12.7, 20 and 25 mm and roll lengths added; width in inches corrected; RoHS reference corrected.