Lightweight construction system of aluminium silicate and polycrystaline wool, lightweight construction system of alkaline earth silicate wool

SILCAPACK, SILCABLOCK, SILCAWOOL-PACK/BLOCK, SILCAFRAX-PACK/BLOCK

SILCAPACK and **SILCABLOCK** are lightweight construction systems of fibre blanket strips based on aluminium silicate and polycrystalline wool, which are laid at right angles to the steel jacket. This produces a brushlike arrangement of the fibres and high resistance to abrasion.

With **SILCAPACK** it is a matter of strips of fibre blankets, in which the fibres are arranged incoherently. The strips are precut to the insulating layer thickness of the refractory lining. At installation the **SILCAPACK** strips are pressed together to the desired bulk density and are glued to expanded metal as lamella strips with **SILCADUR-B90** adhesive.

SILCABLOCK modules are prefabricated fibre modules which are precompressed to bulk densities of 130 to 180 kg/m³ from fibre strips and are enclosed with tapes or cords or with a gauze material.

Thanks to their flexibility the systems can be matched very simply to every geometrical shape of the steel structure, e.g. pipe elbows, flue gas connections, dished boiler heads etc.

In systems with high flow speeds, e.g. with flue gas lines or burning chambers, the lining surface can be protected against erosive removal of the fibres with **SILCADUR** coating. In the case of chemical loading, we recommend that you contact our Technical Department.

The fibre module systems **SILCAWOOL-PACK/BLOCK** and **SILCFRAX-PACK/BLOCK** are manufactured from different fibre qualities which are not classified as hazardous materials by reason of their reduced bio-persistency.

Note:
Our EC safety data sheet will inform you about the protective measures to be taken when handling and using aluminium silicate wool as well as the health risks.

Mounting on sheet metal
For retention and reinforcement of the adhesive, an expanded metal grid is welded to the sheet metal. The installation of the **SILCAPACK** strips or **SILCABLOCK** modules is then carried out with **SILCADUR B90** adhesive.

Gluing to refractory concrete or brickwork
When gluing to refractory concrete or brickwork, care must be taken that the substrate is load-bearing. Refractory concrete must be first fired. Gluing to these substrates is carried out with **SILCADUR B165S** adhesive.

SPECIAL FEATURES

- low accumulation of heat
- high resistance to heat shock
- very variable in terms of shape
- rapid and economic installation
- low thermal shrinkage
- high resistance to abrasion
- low bulk density

SILCAPACK, SILCABLOCK, SILCAWOOL-PACK/BLOCK, SILCAFRAX-PACK/BLOCK

SILCAPACK/SILCABLOCK		Unit	126	143	160
Classification temperature		°C	1,250	1,400	1,600
SILCAPACK	Bulk density (± 10 %)	kg/m³	128	128	100
SILCABLOCK			150 - 180	150 - 180	120 - 160
SILCAWOOL-PACK/BLOCK			**120**	**120P**	**130**
Classification temperature		°C	1,200	1,200	1,300
SILCAWOOL-PACK	Bulk density (± 10 %)	kg/m³	128	128	128
SILCAWOOL-BLOCK			150 – 180	150 – 180	150 – 180
SILCAFRAX-PACK/BLOCK			**140**		
Classification temperature		°C	1,400		
SILCAFRAX-PACK	Bulk density (± 10 %)	kg/m³	128		
SILCAFRAX-BLOCK			150 - 180		
Composition					
Chemical reference analysis		%	Please see product data sheets 40.8 and 51.8 for the chemical reference analysis data of the base material.		
Dimensions**					
SILCABLOCK	Length x width*	mm	300 x 300* or 600 x 150* (standard sizes)		
SILCAWOOL-BLOCK SILCAFRAX-BLOCK	Thickness	mm	Insulating thickness variable from 75 up to 400		
SILCAPACK	Length x width*	mm	Strips 610 x 25* or 610 x 51* (standard sizes)		
SILCAWOOL-PACK SILCAFRAX-PACK	Thickness	mm	Insulating thickness variable from 50 up to 400		
* The „width“ dimension is equal to the stacking and compression direction of the fibre blanket strips.					
** Please note the order of dimensions when ordering: length x width* x insulation thickness					

The properties mentioned are typical values obtained according to the listed methods. Product variations have to be taken into account. The data do not represent guaranteed properties and cannot be used for any warranty claim. Data are subject to technical modifications.

Thermal conductivity (empirical values)		Unit	SILCAPACK, SILCABLOCK, SILCASTACK, SILCAFIX SILCAWOOL-PACK/BLOCK, SILCAWOOL-STACK/FIX SILCAFRAX-PACK/BLOCK, SILCAFRAX-STACK/FIX							
Material basis			SILCAFLEX (126, 143, 1400) SILCAWOOL (120, 120P, 130) SILCAFRAX 140						SILCAFLEX 160	
Classification temperature		°C	1,200 bis 1,430						1,600	
Bulk density		kg/m³	160	170	180	190	200	210	142	160
Thermal conductivity λ at t_m	200 °C	W/(m K)	0.08	0.08	0.07	0.07	0.07	0.07	0.08	0.08
	400 °C		0.10	0.10	0.10	0.10	0.09	0.08	0.09	0.09
	600 °C		0.16	0.15	0.14	0.13	0.12	0.11	0.13	0.13
	800 °C		0.23	0.21	0.19	0.18	0.17	0.16	0.19	0.18
	1,000 °C		0.32	0.29	0.26	0.24	0.22	0.20	0.28	0.26
	1,200 °C		0.42	0.38	0.33	0.31	0.29	0.27	0.41	0.37
	1,400 °C		-	-	-	-	-	-	0.61	0.52

silca refractory solutions

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