

Microporous insulation boards

SILCAPOR

Ultra 950, Shape 950, High 1050, FP 1050

SILCAPOR is a lightweight microporous insulation material for back-up insulation with extremely good thermal insulation properties. **SILCAPOR** are inorganic boards on the basis of highly dispersed amorphous silica with special infrared opacifiers. **SILCAPOR** is non-flammable and available with different laminations of aluminium foil or glass fibre fleece.

SILCAPOR Shape 950 is a microporous insulation material with an extremely low coefficient of thermal conductivity, i. e. with very good insulation properties.

SILCAPOR Ultra 950 and **SILCAPOR High 1050** are rigid boards. For the protection of the microporous structure these are available with different coatings (PE foil, aluminium foil, glass fibre fleece). Besides the dust-free handling depending on the variant there is an additional protection against humidity.

SILCAPOR-FP 1050 is a thin, flexible board. The coating with bio-soluble felt (thickness of approx. 0,5 mm) on both sides as well as the standard cover with PE foil ensure an easy and dust-free handling.

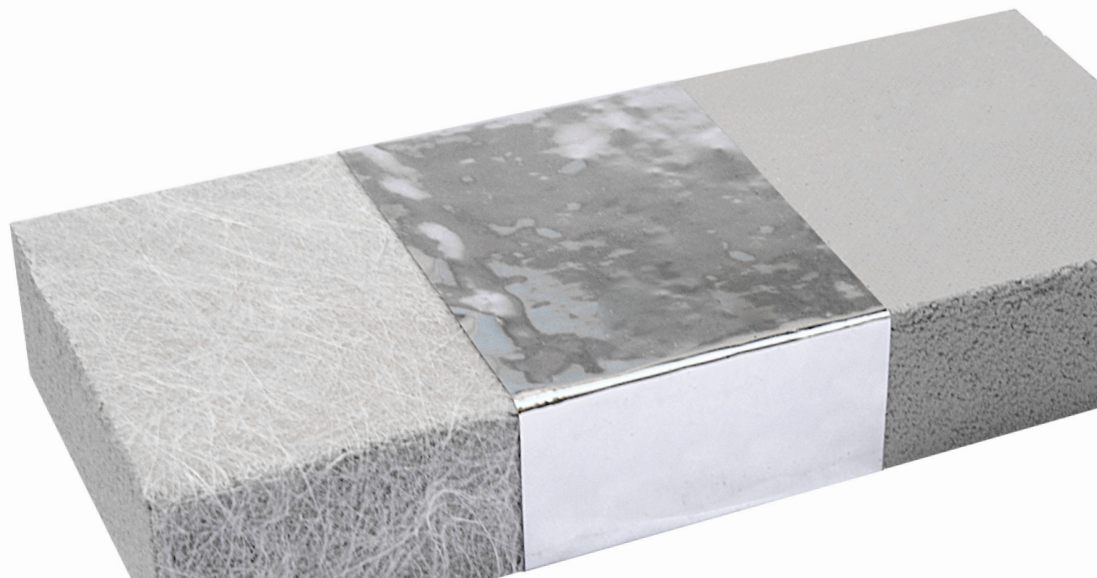
The fibres used for mechanical strengthening are not respirable according to the definition of the WHO. **SILCAPOR** is not a hazardous material according to Regulation (EC) No. 1907/2006, it does not release any hazardous decomposition products and does not represent a health risk for human beings according to current knowledge.

Wetting with liquids e.g. water, oil, petrol etc. irreversibly destroys the microporous structure of the material and has a negative impact on the thermal conductivity. Suitable surface treatment or lamination with aluminium foil prevents or clearly reduces the penetration of liquids. However, vapour diffusions do not produce any negative impacts since the insulation material is diffusion-stable.

SILCAPOR is to be stored and processed in dry surroundings and has an unlimited shelf life.

SPECIAL FEATURES

- microporous
- extremely good thermal insulation properties
- light
- low thermal shrinkage
- availability of different surface laminations
- dimensionally stable
- flexible (SILCAPOR-FP 1050)
- easy to process
- resistant against thermal and cold shocks



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Processing

The boards can be processed with standard woodworking tools, preferably with cutters with smooth polish. We recommend an adequate dust extraction system.

On modern, computer-operated machines we manufacture tailor-made parts according to your specifications.

SILCAPOR		Method	Unit	Ultra 950	Shape 950	High 1050	FP 1050
Upper temperature limit of application			°C	950	950	1,000	1,000
Colour				Grey	White	White	White
Bulk density			kg/m ³	200-250	300-350	250-310	280-350
Flammability properties		DIN EN 13501-1		A1			
Cold compression strength		ASTM C165	MPa	0.417	0.342	0.939	-
Hot compression strength		ASTM C165	MPa	0.71 (600 °C)	0.56 (600 °C)	1.3 (600 °C)	-
Linear shrinkage after 12 h (unilateral temperature loading)			%	0.6 (1,000 °C)	0.4 (1,000 °C)	0.6 (1,000 °C)	0.6 (1,000 °C)
Linear shrinkage after 24 h (temperature loading from all sides)			%	1.1 (900 °C) 1.4 (950 °C)	1.1 (950 °C) 2.0 (1,000 °C)	1.6 (950 °C) 3.5 (1,000 °C)	1.7 (950 °C) 3.6 (1,000 °C)
Thermal conductivity λ at t_m	23 °C	ASTM C177	W/(m K)	< 0.022	< 0.022	< 0.022	0.022
	100 °C			-	0.022	-	-
	200 °C			0.022	0.025	0.022	0.023
	400 °C			0.027	0.031	0.030	0.027
	600 °C			0.034	0.037	0.043	0.034
	800 °C			0.044	0.042	0.060	0.046
Typical chemical analysis	SiO ₂		%	80	50	65	50
	SiC			15	-	-	-
	ZrSiO ₄			-	45	30	45
	other			5	5	5	5
Dimensions							
Standard sizes	Length x width	mm	1,000x650			1,000x600	500x600 1,000x600
	Thickness	mm	10/15/20/25/30/35/40/45/50				5/10
Other dimensions are available on request.							

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.