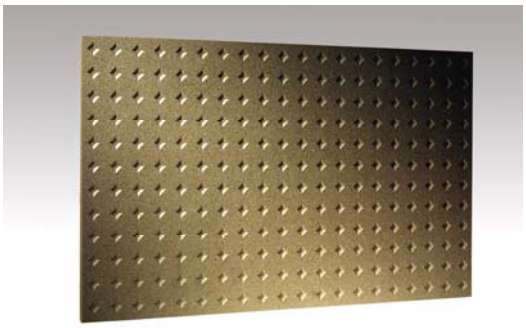

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SKAMOLEX Panel Designs

Customized lining solutions for gasfires, fireplaces and stoves – up to 1100°C (2012°F)

Description

SKAMOLEX panel designs is a new concept for lining gasfires, fireplaces and stoves. SKAMOLEX panels include a range of highly insulating refractory panels made of vermiculite containing no ceramic fibres. SKAMOLEX vermiculite panels are ideally suited for lining gasfires, fireplaces and stoves or as heat protection shielding.

SKAMOLEX Panel Designs

The range of SKAMOLEX panel designs include six standard patterns ranging from traditional masonry look to three completely new designs matching current trends of today's fires and stoves.

SKAMOLEX Panel Designs include:

- Brickwall
- Briquette
- Cleaved Sandstone
- Herringbone
- Rib
- Diamond

Brickwall

Briquette

Cleaved sandstone

Herringbone

Rib

Diamond

The panels come in natural, beige colour and black (surface coating) and are customized to match specific construction requirements of the firebox.

The SKAMOLEX products are non-irritant, odourless and clean to handle. Non-dusting surfaces, clean edges and close dimensional tolerances provide easy installation and clean working conditions.

Standard sizes

The SKAMOLEX panel designs have a density of 700 kg/m^3 (43.8 lbs/cu.ft) and are available in the following sizes:

Standard sizes		
Grade V-1100 (700)	Metric	US/British
Length x width	1000 x 610 mm	39" x 24"
Thickness	16 mm, 25 mm	0.6", 1 "

Other densities can be made on request.

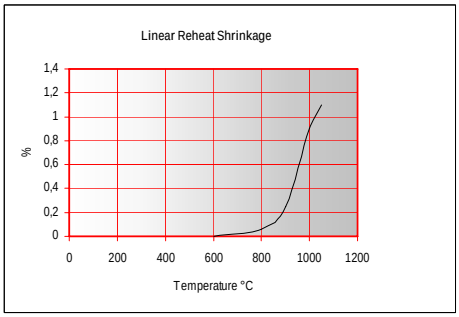
Choice of lining solution

A typical lining thickness for gasfires would be 16 mm (0.6").
In wood-burning stoves a thickness of 25 mm (1") is recommended. However, the choice of density and thickness will depend on the specific geometry and the requirements of strength.

In each case Skamol will guide you with choice of panel design and assist with proposed construction of the firebox lining, optimizing of material requirements and heat calculations.

The SKAMOLEX panels are machined according to your drawings and delivered as a complete panel kit consisting of e.g. bottom panel, side panel, back panel and turn cap, all parts packed in logical order for easy installation.

Should you wish to have a special solution, the applied precision-moulding technique makes it possible to produce complex designs and special shapes to fit specific constructions. Please see separate literature on "SKAMOLEX customized lining solutions".



What is vermiculite?

The SKAMOLEX panels are made from exfoliated vermiculite having excellent insulating properties. Vermiculite is the geological name given to a group of hydrated laminar minerals, which are aluminium-iron magnesium silicates. When subjected to sudden, intense heat vermiculite has the unique property of exfoliating.

Photo: Fireplace Products International, Inc. Canada. Regency Panorama P33 Gas Fireplace featuring optional gold louvers lined with SKAMOLEX Panel Design, "Cleaved sandstone".

Benefits

The versatility in design and shape gives you a multitude of high quality, customized lining solutions to choose from. Combined with the high temperature resistance this make the range of SKAMOLEX panel designs the obvious choice when you require an efficient and environmentally friendly solution for firebox lining.

High insulation capacity: Better combustion, cleaner waste gas

- Compared to for instance refractory bricks SKAMOLEX panels weigh less and have much better insulation capacity.
- Improved insulation has the effect of increasing the burning temperature in the firebox. With correct ventilation the higher burning temperature secures a complete combustion of the firewood resulting in cleaner waste gas. In view of the existing waste gas requirements this aspect contributes favourably to the approval of the stoves according to DIN 18891 and DS 887-1. High temperature in the firebox secures optimum utilisation of the firewood and maximum effect to the surroundings.

Low heat accumulation in lining materials

- Low specific heat and low weight of the SKAMOLEX panels minimize the quantity of heat needed for heating of the lining in the firebox. This means that once turned on the gasfire, fireplace or stove heats up quickly.
- In addition the SKAMOLEX panel is an excellent reflector.

Good thermal shock resistance

- SKAMOLEX panels are characterized by a good thermal shock resistance and withstand sudden cooling without cracking.
- The panels withstand repeated cooling without laminating.

Workability

- SKAMOLEX panels are easy to cut with ordinary woodworking tools, such as saws, drills and cutters.
- SKAMOLEX panels have good strength. Correctly installed they will stand up to the mechanical wear of solid fuel.
- In case of renewal the SKAMOLEX panels can easily be cut into customized panels or special shapes and installed in the firebox according to instructions.

Many possibilities - minimum installation time

- SKAMOLEX panels are made in large, easy to handle sizes, which reduces the installation time.

Experience and know-how

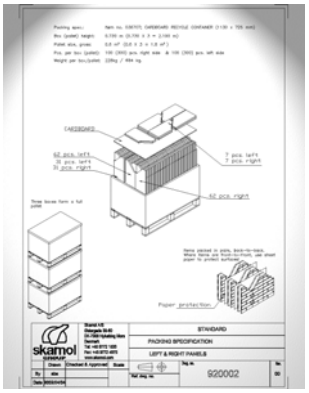
- Skamol has own laboratory for customized product development, adjustment to specific applications and development of production processes, new materials and material compositions.
- We manufacture approx. 4 million customized shapes per year for use in hearth and heating appliances.
- Our production facilities are fully automated and geared for production of specialized items.

Packing

SKAMOLEX panels and shapes are securely packed on a pallet or in special boxes to protect the items during transportation. For easy installation the SKAMOLEX panels and shapes are offered packed as kits in logical order.

Quality assurance

Maintaining a high quality in every business process is important to us. All phases of production are constantly supervised, and we are continuously dedicated to improving our quality standards. Skamol A/S is certified according to DS/EN ISO 9001.



Example: Packing specification for SKAMOLEX Panel Designs.

Product data

Please refer to individual product data sheet on V-1100 (700).

SKAMOLEX Panel Designs

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Grade			V-1100 (700)
Maximum service temperature			
		°C	1100
		°F	2012
Bulk density, dry			
		kg/m^3	700
		lbs/cu.ft.	43.8
Compressive strength (EN 1094-5: 1995)			
@ room temperature		MPa	4.5
		lbs/sq.in.	653
Modulus of rupture (EN 993-6: 1995)			
		MPa	2.0
		lbs/sq.in.	290
Total porosity			
		%	74
Specific heat			
		kJ/(kg×K)	0.94
		BTU/(lb×°F)	0.224
Coefficient of reversible thermal expansion (BS 1902: section 5.3: 1990)			
@ 20°C-750°C (68°F-1382°F)		K^{-1}	$11x10^{-6}$
		$°F^{-1}$	$6.1x10^{-6}$
Resistance to thermal shock (EN 993-11: 1998)			
heating to 950°C (1742°F)		cycles	> 10
Linear reheat shrinkage (EN 1094-6: 1999)			
12 h at 1000°C (1832°F)		%	1.1
Pyrometric cone equivalent (ASTM C24-89 ORTON cones)			
		°C	1300
		°F	2372
Thermal conductivity (ASTM C-182)			
mean temp.	@ 200°C	W/(m×K)	0.19
	@ 400°C		0.20
	@ 600°C		0.21
	@ 392°F	BTU/(sq.ft.×h×°F/in)	1.28
	@ 752°F		1.35
	@ 1112°F		1.42
Chemical analysis, typical		%	
Silica		SiO_2	46
Titanium dioxide		TiO_2	0.7
Ferric oxide		Fe_2O_3	5.5
Alumina		Al_2O_3	7.0
Magnesium oxide		MgO	19
Calcium oxide		CaO	3.5
Sodium oxide		Na_2O	0.2
Potassium oxide		K_2O	10
Loss on ignition 1025°C (1877°F)		LOI	7.0
Dimensional tolerances, machined panels			
0 < dim. 120 mm : ± 1.0 mm		120 < dim. =<400 mm : ± 1.5 mm	400 < dim. =<600 mm : ± 2.0 mm
0 < dim. =< 4.7": ± 0.04"		4.7" < dim. =< 15.7" : ± 0.06"	15.7" < dim. =< 23.6" : ± 0.08"
Colour			SAND

Data are average results of tests conducted under standard procedures and are subject to variation. Data contained in this data sheet are supplied in good faith as a technical service and are subject to change without notice. Misprint and errors excepted.

February 2009