



Skamol A/S
 Østergade 58-60
 DK-7900 Nykøbing Mors
 Denmark
 Tel: +45 9772 1533
 Fax: +45 9772 4975

Sales offices:

Skamol Europe GmbH
 Dusseldorfer Str. 88
 D-40667 Meerbusch
 Germany
 Tel: +49 (0) 2132 13694 0
 Fax: +49 (0) 2132 13694 64

Skamol Americas, Inc.
 10100 Park Cedar Drive
 Suite 124
 Charlotte, NC 28210
 USA
 Tel: +1 (704) 544-1015
 Fax: +1 (704) 544-1239

www.skamol.com

Vermiculite insulating slabs

for hot-face and back-up insulation – up to 1150°C (2102°F)

V-1100 (375) · V-1100 (475) · V-1100 (600)
VIP-12

Description

SKAMOL V-1100 and VIP-12 is a range of vermiculite based, high-temperature, energy-saving and cost effective insulating slabs designed for a maximum service temperature of 1100°C (2012°F) and 1150°C (2102°F) respectively. They combine good strength with low thermal conductivity and are highly resistant to thermal shock. The slabs are clean to handle and easy to install. Jointing mortar recommended: SKAMOL FL-06, see separate data sheet "SKAMOL insulating mortars".

The SKAMOL V-1100 vermiculite slabs cover several grades in various combinations of bulk density, insulation properties and compressive strength. Standard grades include:

- V-1100 (375)
- V-1100 (475)
- V-1100 (600)

V-1100 satisfies the criteria of IMO Resolution A.472 (XII) for classification as non-combustible and does not emit smoke.

SKAMOL VIP-12 is a high-density slab characterized by good insulation value and very high mechanical strength.

Standard sizes

SKAMOL V-1100 and VIP-12 slabs are available in the following standard sizes:

Standard sizes		
Metric:		
V-1100 (375)	Length × width: 1000 × 610 mm	Thickness: 25 through 100 mm
V-1100 (475)	1000 × 305 mm	
V-1100 (600)	1000 × 610 mm 1000 × 305 mm	25 through 75 mm
VIP-12	1000 × 305 mm 610 × 305 mm	30-40-50 mm 25-30-40-50- 60-75 mm
US/British:		
V-1100 (375)	Length × width: 36" × 24"	Thickness: 1" through 4"
V-1100 (475)	36" × 12"	
V-1100 (600)	36" × 24" 36" × 12"	1" through 3"
VIP-12	36" × 12" 24" × 12"	1 1/4" - 1 1/2" - 2" 1" - 1 1/4" - 1 1/2" - 2" - 2 1/2" - 3"

The product composition allows for easy cutting and shaping of both slab types on site using ordinary wood-working tools. Derivatives cut from standards and special shapes to meet specific design requirements are made to order. Extensive know-how on special shapes and designs is offered. See separate data sheet "SKAMOLEX customized shapes".

The compression moulding system used in the manufacture of vermiculite slabs allows for supply of slabs to alternative densities up to 600 kg/m³ (37 lbs/cu.ft.).

Dimensional tolerances

Length and width ±2.5 mm (0.10")
 Thickness ±1.0 mm (0.04")

Application

The range of SKAMOL V-1100 and VIP-12 vermiculite insulating slabs is equally suitable for hot-face applications or back-up insulation of all refractory constructions. They will not decompose even when subjected directly to flame. The maximum operating temperature, however, should be taken into consideration. Due to their resistance to carbon monoxide and hydrocarbons the V-1100 and VIP-12 slabs can be used in furnaces with reducing atmospheres. They are practically free from sulphur and hence an ideal choice for furnaces in which nickel alloys are present. Due to its higher density VIP-12 is more wear-resistant as hot-face application than the V-1100 grades.

V-1100

The V-1100 grades have a variety of uses in high-temperature kilns and furnaces, combustion plants, and boilers. They are not attacked by molten aluminium and are highly resistant to cryolite penetration and fluorides. Exhibiting good electrical resistivity and high resistance to thermal shock V-1100 is also very suitable for insulation in several types of domestic heating appliances.

VIP-12

VIP-12 is specially developed as a cryolite resistant refractory insulating slab for intermediate insulation in reduction cell cathodes between the carbon and the more vulnerable bottom insulation. VIP-12 will cause penetrating bath substances to stop and solidify due to chemical reactions that transform the low-melting mixture of sodium fluoride and aluminium fluoride into a solid mixture of magnesium fluorides and silicates of sodium and aluminium (nepheline).



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Vermiculite insulating boards

- for back-up insulation in the aluminium industry

V-1100 (375) · V-1100 (410) · V-1100 (475)
 VIP-12 ALU

Description

The SKAMOL V-1100 and VIP-12 ALU is a range of vermiculite based insulating boards recommended for the aluminium industry and especially aluminium electrolysis cells. They are highly resistant to cryolite penetrations and fluorides, and not wetted by molten aluminium. Especially VIP-12 ALU has been designed to function as a semi-barrier layer in aluminium electrolysis cells. The application of V-1100 and VIP-12 ALU is energy saving and thus cost effective.

V-1100 and VIP-12 ALU combine high strength with low thermal conductivity and are designed for a maximum service temperature of 1100°C.

SKAMOL vermiculite boards cover several grades in various combinations of bulk density, insulation properties and compressive strength. Standard grades include:

- V-1100 (375)
- V-1100 (410)
- V-1100 (475)
- VIP-12 ALU

Application

The V-1100 and VIP-12 ALU vermiculite insulating boards are clean to handle and easy to install. The product composition allows for easy cutting and shaping of both board types on site using ordinary wood-working tools. Jointing mortar recommended is SKAMOL FL-06, see separate data sheet "SKAMOL insulating mortars".

V-1100

V-1100 boards are not attacked by molten aluminium and are highly resistant to cryolite penetration and fluorides. Therefore V-1100 is ideal as back-up insulation in aluminium electrolysis cells, where it can be applied alone or as combi-boards (V-1100 glued on calcium silicate boards) for easy installation. V-1100 can also be used as hot-face insulation for covering electrolysis cells during start-up. Additionally, V-1100 can be applied in the secondary aluminium industry, for example as back-up insulation of the walls in holding furnaces, and in launders as back-up insulation and as top lid.

VIP-12 ALU

VIP-12 ALU is specially developed as a highly cryolite resistant and aluminium non-wetted insulating board for application in aluminium electrolysis cells. VIP-12 ALU will protect more vulnerable cathode bottom insulation beneath, as it promotes the formation of a protective glass layer in a similar way as the barrier bricks situated above VIP-12 ALU.

Standard sizes

SKAMOL V-1100 and VIP-12 ALU boards are available in the following standard sizes:

Metric:		
	Length x width:	Thickness:
V-1100 (375)	1000 x 610 mm	25 – 100 mm
V-1100 (410)	1000 x 305 mm	25 – 130 mm
V-1100 (475)	1000 x 610 mm	25 – 90 mm
	1000 x 305 mm	
VIP-12 ALU	1000 x 305 mm	25 – 60 mm
	610 x 305 mm	25 – 85 mm
US/British:		
V-1100 (375)	36" x 24"	1" through 4"
V-1100 (410)	36" x 12"	1" through 5"
V-1100 (475)	36" x 24"	1" through 3½"
	36" x 12"	
VIP-12 ALU	36" x 24"	1" through " 2¼"
	24" x 12"	1" through " 3¼"

Derivatives cut from standard boards, and special shapes to meet specific design requirements are made on request. Extensive know-how on special shapes and designs is available.

Dimensional tolerances

Length and width ± 2.5 mm (0.10")
 Thickness ± 1.0 mm (0.04")



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Vermiculite insulating boards

hot-face and back-up insulation for Iron & Steel Industries

Skamol V-1100 (600) · V-1100 (700) - VIP-12 HS

Description

The Skamol V-1100 (600), Skamol V-1100 (700) and Skamol VIP-12 HS is a range of vermiculite based insulating boards recommended for the high-temperature industries. They have good thermal properties, are highly thermal shock resistant and show a reasonable wear resistance. Especially the VIP-12 HS has been designed to obtain a high strength and good wear resistance. The low thermal conductivity of the vermiculite boards secures application of V-1100 (600), V-1100 (700) and VIP-12 HS to be energy saving and thus cost effective.

Skamol vermiculite boards cover several grades in various combinations of bulk density, thermal conductivity properties and compressive strength. Standard grades include:

- V-1100 (600)
- V-1100 (700)
- VIP-12 HS

Application

V-1100 and VIP-12 vermiculite insulating boards are clean to handle and easy to install. The product composition allows for easy cutting, machining and shaping of all board types on site using ordinary wood-working tools. Jointing mortar recommended is Skamol FL-06, see separate data sheet "Skamol insulating mortars".

Skamol V-1100 (600) and V-1100 (700)

V-1100 boards combine high strength with low thermal conductivity and are designed for a maximum service temperature of 1100°C (2012°F). The whole range of boards is ideal for back-up insulation, and the V-1100 (600) and V-1100 (700), can be used as hot-face application in furnaces with very mild flue gas containing no wear particles. V-1100 boards are not attacked by molten aluminium; therefore they can be applied in the secondary aluminium industry, for example in holding furnaces, filter boxes and in launders as back-up insulation and as top lid. The high physical strength of V-1100 (700) combined with good thermal resistance makes the board ideal as back-up insulation in continuous caster tundishes.

Skamol VIP-12 HS

The VIP-12 HS has a maximum service temperature of 1150°C (2102°F). It has very good thermal conductivity characteristics. This combined with the good thermal shock and wear resistance makes the boards very applicable in steel ladles as back-up insulation and as hot-face application in furnaces of mild condition, i.e. flue gases containing only few particles of low wear-resisting characteristics. The extremely high physical strength of VIP-12 HS combined with good thermal resistance makes the board ideal as back-up insulation in continuous caster tundishes.

Standard sizes

Skamol V-1100 (600), V-1100 (700) and VIP-12 HS boards are available in the following standard sizes:

Metric:		
	Length x width:	Thickness:
V-1100 (600)	1000 x 610 mm 1000 x 305 mm	20 – 75 mm
V-1100 (700)	997 x 610 mm	16 – 50 mm
VIP-12 HS	610 x 305 mm	12.7 – 40 mm
US/British:		
V-1100 (600)	36" x 24" 36" x 12"	¾" through 2¾"
V-1100 (700)	36" x 24"	½" through 1¾"
VIP-12 HS	24" x 12"	½" through 1½"

Derivatives cut from standard boards and special shapes to meet specific design requirements are made on request. Extensive know-how on special shapes and designs is available.

Dimensional tolerances

Length and width ± 2.5 mm (0.10")
 Thickness ± 1.0 mm (0.04")