

## SKAMOLEX Vermiculite boards for hot-face and back-up insulation

V-1100 (475) · V-1100 (600) · V-1100 (700)  
VIP-900 · VIP-12

### Description

The SKAMOL V-1100 and VIP-12 is a range of vermiculite based, high-temperature, energy-saving and cost effective insulating boards designed for a maximum service temperature of 1100°C (2012°F). They combine good strength with low thermal conductivity and are highly resistant to thermal shock. The boards are clean to handle and easy to install.

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

- V-1100 (475)
- V-1100 (600)
- V-1100 (700)
- VIP-900 / Skamolex HD
- VIP-12

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

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

### Standard sizes

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

Metric:		
	Length x width:	Thickness:
V-1100 (475)	1000 x 610 mm	25 – 90 mm
V-1100 (600)	1000 x 610 mm	20 – 75 mm
V-1100 (700)	1000 x 610 mm	20 – 30 mm
VIP-900	1000 x 610 mm	20 – 75 mm
VIP-12	1000 x 305 mm	25 – 60 mm
	610 x 305 mm	25 – 85 mm
US/British:		
V-1100 (475)	36" x 24"	1" through 3½"
V-1100 (600)	36" x 24"	¾" through 3"
V-1100 (700)	36" x 24"	¾" through 1-1/5"
VIP-900	36" x 24"	¾" through 3"
VIP-12	36" x 24"	1" through " 2¾"
	24" x 12"	1" through " 3¾"

### Handling and machining

The product composition allows for easy cutting and shaping of both board types on site using ordinary wood-working tools. 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")

### Application

SKAMOL V-1100 and VIP-12 vermiculite insulating boards are suitable for hot-face or back-up insulation of all refractory constructions. They will not decompose even when subjected to direct 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 boards 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 boards are used in a variety of high-temperature kilns and furnaces, combustion plants, and boilers. Highly suitable for fireplace linings and baffles. Due to good electrical resistivity and high resistance to thermal shock V-1100 is very suitable for insulation in many types of domestic heating appliances.

### VIP-900 & VIP-12

Due to the higher densities and good wear resistances VIP-900 and VIP-12 boards are often used as fireplace linings when extra surface strength is required.

# SKAMOLEX vermiculite insulating boards

Hot-face and back-up insulation up to 1150 °C (2102 °F)

Grade		V-1100(475)	V-1100(600)	V-1100(700)	VIP-900	VIP-12
<b>Maximum service temperature</b>						
	°C	1100	1100	1100	1150	1100
	°F	2012	2012	2012	2102	2012
<b>Bulk density, dry</b>						
	kg/m <sup>3</sup>	475	600	700	900	1200
	lbs/cu.ft.	30	37	44	56	75
<b>Compressive strength (EN 1094-5: 1995)</b>						
@ room temperature	MPa	2.5	4.2	4.5	6.3	9.5
	lbs/sq.in.	363	609	653	914	1378
<b>Modulus of rupture (EN 993-6: 1995)</b>						
	MPa	0.8	1.6	2.0	2.1	2.8
	lbs/sq.in.	116	232	290	305	406
<b>Total porosity</b>						
	%	81	76	74	67	56
<b>Specific heat</b>						
	kJ/(kg×K)	0.94	0.94	0.94	0.97	1.0
	BTU/(lb×°F)	0.224	0.224	0.224	0.23	0.24
<b>Coefficient of reversible thermal expansion (BS 1902: section 5.3: 1990)</b>						
@ 20°C-750°C (68°F-1382°F)	K <sup>-1</sup>	11x10 <sup>-6</sup>	11x10 <sup>-6</sup>	11x10 <sup>-6</sup>	10.5x10 <sup>-6</sup>	10x10 <sup>-6</sup>
	°F <sup>-1</sup>	6.1x10 <sup>-6</sup>	6.1x10 <sup>-6</sup>	6.1x10 <sup>-6</sup>	5.9x10 <sup>-6</sup>	5.6x10 <sup>-6</sup>
<b>Resistance to thermal shock (EN 993-11: 1998)</b>						
heating to 950°C (1742°F)	cycles	>20	>20	> 30	-	>20
<b>Linear reheat shrinkage (EN 1094-6: 1999)</b>						
12 h at 1000°C (1832°F)	%	1.0	1.0	1.0	-	1.0
12 h at 1100°C (2012°F)		-	-	-	1.2	-
<b>Thermal conductivity (ASTM C-182)</b>						
mean temp. @ 200°C	W/(m×K)	0.14	0.16	0.19	0.23	0.25
@ 400°C		0.17	0.18	0.20	0.25	0.27
@ 600°C		0.19	0.20	0.21	0.26	0.29
@ 800°C		0.20	0.22	0.22	0.28	0.30
@ 1000°C		-	-	-	0.30	-
@ 392°F	BTU/(sq.ft.×h×°F/ft)	0.97	1.11	1.32	1.59	1.73
@ 752°F		1.18	1.25	1.39	1.73	1.84
@ 1112°F		1.32	1.39	1.46	1.80	1.98
@ 1472°F		1.32	1.39	1.46	1.94	2.08
@ 1832°F		-	-	-	2.08	-
<b>Colour</b>						SAND
<b>HS Tariff number</b>						
(Harmonized Commodity Description and Coding System)						6806.90.00

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.

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