



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

Sales offices:

Skamol Europe GmbH
Düsseldorfer Str. 88
D-40667 Meerbusch
Germany
Tel: +49 (0) 2132 13694 0
Fax: +49 (0) 2132 13 69464

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

SKAMOBAR-69

Barrier bricks for aluminium reduction cells

Dimensional classes available as per separate data sheets:

1. Standard bricks
2. Splits, thin plates, small squares and small bricks
3. Other bricks, plates and blocks

Description

SKAMOBAR-69 is a high quality low-alumina fireclay barrier brick available in several shapes and sizes. SKAMOBAR-69 is characterized by its content of alumina, 26 %, and its content of Silica, 68 %.

Product profile

- Excellent cryolite resistance
- Low thermal conductivity
- Low porosity
- Low gas permeability
- Superior resistance to molten aluminium

Application

SKAMOBAR-69 is an ideal and highly effective barrier brick for use in combination with Skamol insulating products to form a protective and heat reducing lining above the insulating materials in aluminium reduction cells.

Use of a refractory mortar is recommended when installing SKAMOBAR-69 in aluminium reduction cells. Refractory mortars are available on request.

Increased efficiency

SKAMOBAR-69 has an excellent cryolite resistance, which contributes to the increased cell life. The relatively low thermal conductivity reduces heat transfer through the bottom of the cells and thus contributes to reducing electrical energy consumption per unit metal produced.

Standard packing

SKAMOBAR-69 bricks are packed on wooden pallets (1200 x 800 mm) with 3x2 plastic straps and shrink film wrapped. For sea or container transport, bricks are packed on container pallets (1100 x 900 mm) with 3 x 2 steel straps and with shrink film wrapping. Cardboard corners for extra protection are available on request.

SKAMOBAR-69 Barrier brick for aluminium reduction cells

Standard bricks

Grade		SKAMOBAR-69	
		Guaranteed average	Typical average
Maximum service temperature			
	°C		1100
	°F		2012
Bulk density (EN 993-1 1995)			
	kg/m ³		2180
	lbs/cu.ft.		136
Apparent porosity (EN 993-1 1995)			
	%	≤ 17	15.5
Cold crushing strength (EN 993-5 1998)			
	MPa	≥ 40	45
	lbs./sq.in.		6525
Thermal expansion (CSN 725030)			
900°C (1652°F)	%		0.4
Cryolite resistance (SINTEF)			
	Dissolved cm ²		4.5
	Dissolved sq.in.		0.7
Thermal conductivity (EN 993-15 1998)			
mean temp. @ 200°C	W/(m×K)		1.4
@ 600°C			1.5
@ 900°C			1.6
@ 392°F	BTU/(sq.ft.×h×°F/in)		9.7
@ 1112°F			10.4
@ 1652°F			11.1
Chemical analysis, typical (XRF or CSN 720100)			
	%		
Silica	SiO ₂		< 68
Alumina	Al ₂ O ₃	> 20	26
Potassium + sodium oxide	K ₂ O + Na ₂ O		4.5
Ferric oxide	Fe ₂ O ₃	< 2.5	2.0
Specifications			
Standard bricks are defined as squares with:			
Volume > 1.2 dm ³ and ≤ 2.4 dm ³			
Length ≥ 220 mm and ≤ 250 mm			
Width ≥ 110 mm and ≤ 124 mm			
Thickness ≥ 50 mm and ≤ 80 mm			
Dimensional tolerances:			
Length	≤ 250 mm	mm (inches)	± 2.0 (0.08)
Width	≤ 124 mm	mm (inches)	± 1.5 (0.06)
Thickness		mm (inches)	± 1.0 (0.04)
Warpage		mm (inches)	≤ 1.0 (0.04)
Squareness	≤ 250 mm	mm (inches)	< 1.5 (0.06)
Colour			Reddish brown

The manufacturer, P-D Refractories CZ a.s., Czech Republic, is certified according to ISO 9001:2001 and approved supplier by Skamol A/S. All data are supplied in good faith and are subject to change without notice. No warranty or guarantee is implied. Misprint and errors excepted.

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SKAMOBAR-69 Barrier brick for aluminium reduction cells

Splits, thin plates, small squares and small bricks

Grade		SKAMOBAR-69	
		Guaranteed average	Typical average
Maximum service temperature			
	°C		1100
	°F		2012
Bulk density (EN 993-1 1995)			
	kg/m ³		2100
	lbs/cu.ft.		131
Apparent porosity (EN 993-1 1995)			
	%	≤ 23	19
Cold crushing strength (EN 993-5 1998) *			
	MPa	≥ 30	45
	lbs./sq.in.		6525
Thermal expansion (CSN 725030)			
900°C (1652°F)	%		0.4
Cryolite resistance (SINTEF)			
	Dissolved cm ²		6.0
	Dissolved sq.in.		0.9
Thermal conductivity (EN 993-15 1998)			
mean temp. @ 200°C	W/(m×K)		1.4
@ 600°C			1.5
@ 900°C			1.6
@ 392°F	BTU/(sq.ft.×h×°F/in)		9.7
@ 1112°F			10.4
@ 1652°F			11.1
Chemical analysis, typical (XRF or CSN 720100)			
	%		
Silica	SiO ₂		< 68
Alumina	Al ₂ O ₃	> 20	26
Potassium + sodium oxide	K ₂ O + Na ₂ O		4.5
Ferric oxide	Fe ₂ O ₃	< 2.5	2.0
Specifications			
Splits, thin plates, small squares and small bricks			
are defined as squares with:			
Thickness ≥ 15 mm and < 50 mm, or			
Volume ≤ 1.8 dm ³ and thickness ≥ 50 mm and ≤ 80 mm			
Dimensional tolerances			
Length	≤ 270 mm	mm (inches)	± 2.0 (0.08)
	> 270 mm	%	± 0.75
Width	≤ 125 mm	mm (inches)	± 1.5 (0.06)
	> 125 mm and ≤ 270 mm	mm (inches)	± 2.0 (0.08)
	> 270 mm	%	± 0.75
Squareness	≤ 250 mm	mm (inches)	± 1.0 (0.04)
	> 20 mm	mm (inches)	≤ 1.0 (0.04)
Squareness	≤ 300 mm	mm (inches)	≤ 1.5 (0.06)
	> 300 mm	%	≤ 0.5 (0.02)
Colour			Reddish brown

*) Cold crushing strength is not tested for bricks with thickness < 50 mm.

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SKAMOBAR-69 Barrier brick for aluminium reduction cells

Other bricks, plates and blocks

Grade		SKAMOBAR-69	
		Guaranteed average	Typical average
Maximum service temperature			
	°C		1100
	°F		2012
Bulk density (EN 993-1 1995)			
	kg/m ³		2150
	lbs/cu.ft.		134
Apparent porosity (EN 993-1 1995)			
	%	≤ 20	16.5
Cold crushing strength (EN 993-5 1998)			
	MPa	≥ 30	45
	lbs./sq.in.		6525
Thermal expansion (CSN 725030)			
900°C (1652°F)	%		0.4
Cryolite resistance (SINTEF)			
	Dissolved cm ²		6
	Dissolved sq.in.		0.9
Thermal conductivity (EN 993-15 1998)			
mean temp. @ 200°C	W/(m×K)		1.4
@ 600°C			1.5
@ 900°C			1.6
@ 392°F	BTU/(sq.ft.×h×°F/in)		9.7
@ 1112°F			10.4
@ 1652°F			11.1
Chemical analysis, typical (XRF or CSN 720100)			
	%		
Silica	SiO ₂		< 68
Alumina	Al ₂ O ₃	> 20	27
Potassium + sodium oxide	K ₂ O + Na ₂ O		4.5
Ferric oxide	Fe ₂ O ₃	< 2.5	2.0
Specifications			
Other bricks, plates and blocks are defined as squares with:			
Volume > 1.8 dm ³ (except standard bricks) and			
Thickness ≥ 50 mm and ≤ 80 mm, or			
Thickness > 80 mm and ≤ 250 mm			
Dimensional tolerances:			
Length	≤ 270 mm	mm (inches)	± 2.0 (0.08)
	> 270 mm	%	± 0.75
Width	≤ 125 mm	mm (inches)	± 1.5 (0.06)
	> 125 mm and ≤ 270 mm	mm (inches)	± 2.0 (0.08)
Squareness	≤ 250 mm	%	± 0.75
Warpage		mm (inches)	≤ 1.0 (0.04)
Squareness	≤ 300 mm	mm (inches)	≤ 1.5 (0.06)
	> 300 mm	%	≤ 0.5 (0.02)
Colour			Reddish brown

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