

SICAL-78

Silicon nitride-bonded silicon carbide brick
for sidewall lining and aluminium reduction cells

Grade		SICAL-78			
Maximum service temperature	°C	1580			
	°F	2876			
Bulk density, dry	kg/m ³	2650			
	lbs/cu.ft.	165			
Cold crushing strength (EN 993-5:1998) @ room temperature	MPa	160			
	lbs/sq.in.	23200			
Modulus of rupture (EN 993-6:1995)	MPa	44			
	lbs/sq.in.	6380			
Apparent porosity (EN 993-1:1995)	%	17			
Permeability to gas (EN 993-4:1995)	nPm	<0.05			
Linear thermal expansion @ 20°C-1000°C (68°F-1832°F)	x10 ⁻⁶ K ⁻¹	4.3			
	x10 ⁻⁶ °F ⁻¹	2.4			
Corrosion resistance (SINTEF)		3			
Thermal conductivity (ASTM E1461-13) Measured perpendicular to large faces	mean temp. @	@ 200°C	W/(m×K)	29	
		@ 500°C		25	
		@ 700°C		23	
		@ 1000°C		21	
	@	@ 392°F	BTU/(sq.ft.xh×°F/in.)	201	
		@ 752°F		173	
		@ 1112°F		160	
		@ 1832°F		146	
		Chemical analysis, typical	%		
		Silicon carbide	SiC		78
Silicon nitride	Si ₃ N ₄		18		
Silicon	Si		0.5		
Silica + Silicon oxynitride	SiO ₂ + Si ₂ ON ₂		0.5		
Other oxides	Al ₂ O ₃ + Fe ₂ O ₃ + CaO		0.5		
HS Tariff number (Harmonized Commodity Description and Coding System)				6806.90.00	
Colour				GREY	

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.