

Hexoloy® SA Silicon Carbide Tile

PRODUCT INFORMATION

Hexoloy® SA Sintered Silicon Carbide Tiles are available in sizes ranging from 2"x2" to 7"x7" with thicknesses from 0.1" to 0.75". Hexagon shaped tiles are also readily available. One surface can be polished.



PROPERTIES

- Excellent thermal, mechanical and chemical stability for use as small precision components.

TYPICAL APPLICATIONS

- Industrial and research equipment
- Aerospace, semi-conductor

Standard dimensions and tolerances of Hexoloy® SA Sintered Silicon Carbide Tiles:

Dimensions	Thickness
2" x 2"	0.250"
2" x 2"	0.500"
4" x 4"	0.100"
	0.125"
	0.160"
	0.250"
	0.375"
	0.500"
4" x 2"	0.260"
6.16" x 6.16"	0.160"
	0.250"
	0.500"
	0.750"
7.1" x 7.1"	0.160"

2" x 2" Tiles

Length & Width	Thickness	Camber
3 0.015 in	3 0.010 in	0.005 in/in

4" x 4" Tiles

Length & Width	Thickness	Camber
3 0.030 in	3 0.010 in	0.005 in/in

4" x 2" Tiles

Length & Width	Thickness	Camber
3 0.030 in	3 0.010 in	0.005 in/in

6.16" x 6.16" Tiles

Length & Width	Thickness	Camber
3 0.045 in	3 0.010 in	0.005 in/in

7.1" x 7.1" Tiles

Length & Width	Thickness	Camber
3 0.050 in	3 0.010 in	0.005 in/in

Hexoloy® SA Silicon Carbide Tile

MATERIAL PROPERTIES: Hexoloy® SA

Property	Units	Typical Value
Composition*	-	SiC
Grain Size	Qm	4-10
Density	g/cm ³	3.10
Hardness (Knoop)**	kg/mm ²	2800
Flexural Strength 4 pt @ RT***	MPa	380
	x10 ³ lb/in ²	55
Flexural Strength 3 pt @ RT***	MPa	550
	x10 ³ lb/in ²	80
Compressive Strength @ RT	MPa	3900
	x10 ³ lb/in ²	560
Modulus of Elasticity @ RT	GPa	430
	x10 ⁶ lb/in ²	62
Weibull Modulus (2 parameter)		10
Poisson Ratio		0.14
Fracture Toughness @ RT Double Torsion & SENB	MPa x m ^{1/2}	4.60
	x10 ³ lb/in ² x in ^{1/2}	4.20
Coefficient of Thermal Expansion RT to 700°C	x10 ⁻⁶ mm/mmK	4.02
	x10 ⁻⁶ in/in °F	2.20
Maximum Service Temp. Air	°C	1900
	°F	3450
Mean Specific Heat @ RT	J/gmK	0.67
Thermal Conductivity @ RT @ 200 °C @ 400 °C	W/mK	125.6
	Btu/ft h °F	72.6
	W/mK	102.6
	Btu/ft h °F	59.3
	W/mK	77.5
	Btu/ft h °F	44.8
Permeability @ RT to 1000 °C	Impervious to gases over 31 MPa	
Electrical Resistivity @ RT**** @ 1000 °C	ohm-cm	10 ² -10 ⁸
	ohm-cm	0.01-0.2
Emissivity		0.9

*Composition code: Si = free silicon metal; C = free graphite; SiC = silicon carbide

**Knoop 0.1 kg load

***Test Bar Size: 3 x 4 x 45 mm (0.118" x 0.157" x 1.772")

****Dependent upon dopants in Hexoloy® SA SiC which will decrease electrical resistivity

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