

# Hexoloy® SA SiC Sintered Silicon Carbide Tiles



## Available Standard Sizes with Tolerances

Tile Size Length x Width	Thickness Range	Length & Width Tolerance	Thickness Tolerance
1" x 1"	0.100" to 0.375"	±0.010"	±0.010"
1.968" x 1.968"	0.125" to 0.500"	±0.015"	±0.010"
1.987" x 3.974"	0.150" to 1.000"	±0.015"W, ±0.030"L	±0.010"
3.974" x 3.974"	0.150" to 1.000"	±0.030"	±0.010"
4.220" x 4.220"	0.150" to 0.750"	±0.030"	±0.010"
6.160" x 1.60"	0.200" to 0.750"	±0.060"	±0.010"

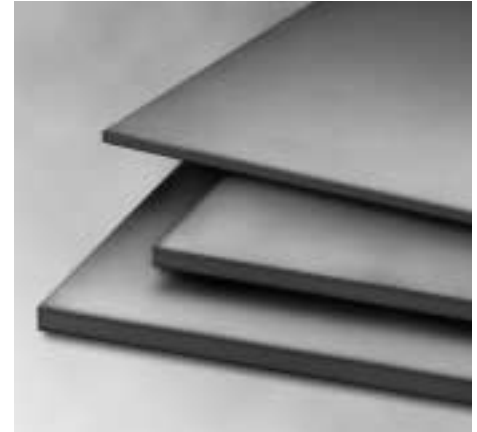
## Die-Pressed, On Low Volume Press (Up to 2500 plates per month)

Tile Size Length x Width	Thickness Range	Length and Width Tolerance	Thickness Tolerance
13.5" x 13.5"	0.200" to 0.75"	TBD	TBD

## Custom Sizes Available Using Isopress

Tile Size Length x Width	Thickness Range	Length and Width Tolerance	Thickness Tolerance
Up to 14" x 30"	Up to 4" thick	N/A	N/A

- Warpage/Flatness is 0.005 inch per inch
- As-fired surface finish to be 40 microinch maximum, unless otherwise specified
- Tiles are cleaned to be free of oil and residue
- Each tile can be grit blasted upon request
- A powder lot traceability marking on edge of tile is available upon request
- 100% dimensional inspection is available for an extra charge



### Typical Properties of Hexoloy SA Armor

Physical Properties	Units	Hexoloy
Composition (Phrases)		SiC
Grain Size	μm	4-10
Density	g/cm <sup>3</sup>	3.13
Hardness (Knoop 100 gram load)	kg/mm <sup>2</sup>	2800
Flexural Strength 4pt. @ RT Test bar size 3 x 4 x 45mm (0.118" x 0.157" x 1.772")	MPa x 10 <sup>6</sup> lb/in <sup>2</sup>	380 55
Compressive Strength @ RT	MPa x 10 <sup>6</sup> lb/in <sup>2</sup>	3900 560
Modulus of Elasticity @RT	GPa x 10 <sup>6</sup> lb/in <sup>2</sup>	410 59
Weibull Modulus (2 parameters)		10
Poisson Ratio		0.14
Fracture Toughness @RT Double Torsion & SENB	MPa x m <sup>1/2</sup> x10 <sup>3</sup> lb / in <sup>2</sup> /in <sup>1/2</sup>	4.60 4.20
Coefficient of Thermal Expansion RT to 700°C	x 10 <sup>-6</sup> mm/mmK x 10 <sup>-6</sup> in/in°F	4.02 2.20
Max. Service Temp (air)	°C °F	1900 3450
Mean Specific Heat @ RT	J/gmK	0.67
Thermal Conductivity @RT		125.6 72.6
@200°C	W/mK Btu/ft h°F	102.6 59.3
@400°C		77.5 44.8
Electrical Resistivity @RT* @1000°C	ohm-cm	10 <sup>2</sup> -10 <sup>8</sup> 0.01-0.2
Emissivity		0.9

\*Dependent upon dopants in Hexoloy SA SiC that will decrease electrical resistivity to a desired range.

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