# Hexoloy Sintered SiC Tiles

High-performance ceramic tiles for composite armor systems



01 Square and	Rectangular Tiles		
	Sector States		
Tile Size (inches)	Thickness (inches)		
1.000 x 1.000	.100500		
1.181 x 1.181	.100500		
1.466 x .977	.100500		
1.968 x 1.968	.125500		
3.974 x 3.974	.150 - 1.000		
4.220 × 3.000	.150750		
4.220 x 4.220	.150750		
6.000 x 6.000	.200 - 2.000		
6.750 x 5.843	.250750		

02 Domed Cylinders				
Tile Size (inches)	Thickness (inches)			
.500 DIA	.600			
.709 DIA	.850			
.750 DIA	.850			
.827 DIA	.950			

03

Hexagonal Tiles

Tile Size (inches)	Thickness (inches)
.787	.750 MAX
.787 (1/2)	.750 MAX
1.181	.750 MAX
1.181 (1/2)	.750 MAX
2.150	.750 MAX
2.953	1.000 MAX

## **Available Options**

Custom tiles and sizes up to 14x30 inches and 4 inches thick Grit Blasting Powder lot marking on tile edge for traceability 100% dimensional inspection

**Features** (All dimensions in inches) Length and width tolerance: +/-1% Thickness tolerance: +/-.5% Flatness tolerance: .005 inch/inch As-sintered surface finish: 40µ inch maximum Cleaned tiles - free of oil and residue Hex tiles measured flat-to-flat

# Hexoloy Sintered SiC Tiles

# Physical Properties - Typical Properties

Material Features	Hexoloy <sup>®</sup> SA Industry Leading Performance	Hexoloy <sup>®</sup> CG Multi-Hit	Hexoloy <sup>®</sup> SB70 Lightweight Multi-Hit	<b>Hexoloy<sup>®</sup>SB50</b> Lightweight Multi-Hit
Composition (Phases)	Sintered SiC	Sintered SiC	Sintered SiC-B <sub>4</sub> C Composite	Sintered SiC-B <sub>4</sub> C Composite
Density, g/cc	3.15	3.15	2.89	2.75
Hardness, kg/mm² (Knoop)	2,500	2,500	2,300	2,300
Flexural Strength, MPa (4 pts be	nding) 380	410	320	300
Elastic Modulus, GPa	430	410	400	400
Fracture Toughness, MPa.m <sup>1/2</sup>	3	3.5	3.5	3.7

05

Areal Density vs. Ceramic Thickness

### Areal Density vs. Ceramic Thickness



**Thickness** SA/CG **SB70 SB50** 0.15 2.436 2.235 2.145 0.3 4.916 4.498 4.311 0.45 7.378 6.746 6.464 0.6 9.836 8.995 8.62 0.75 12.307 11.259 10.793

The above graphic is offered as a comparison of the weights of our ceramic matierals



#### Saint-Gobain Ceramic Materials

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