

LET'S PLAY

3D PRINTING

Advanced Ceramic Solutions
in New Dimension

**ROCAR[®] 3D: Additive
manufacturing with
SiSiC**

Additive manufacturing without compromise – ROCAR® 3D Silicon Carbide

ROCAR® 3D SiSiC – outstanding material properties

- + Temperature resistance up to 1,350 °C
- + High hardness, stiffness and flexural strength
- + Lower density than metal
- + Very abrasion-resistant
- + Thermal expansion near zero
- + High thermal conductivity
- + Resistant to oxidation
- + Erodible



ROCAR® 3D SiSiC Printing Process

System Specifications		Part Quality	
Build area (w/h/d)	1 job box, 500 x 400 x 300 mm / 19.7 x 15.7 x 11.8 in	Accuracy	± 0,4% (min. ± 0.3 mm)
Layer thickness	150 microns	Minimum feature size	2 mm
Building speed	Approx. 10 mm height per hour	Surface roughness	N11 / Ra25
Material	SiC		

ROCAR® 3D SiSiC Material properties

Properties	Unit	Test specification	ROCAR® 3D light	ROCAR® 3D
Density	g/cm ³	DIN EN 623-2	2,88	2,94
Si content	m%	calculated	~31	~ 24
4-point bending strength	MPa	DIN EN 843-1	150	180
Young's modulus	GPa	DIN EN 843-2 (dynamic)	>280	>300
Thermal conductivity	W/(m x K)	DIN EN 821-2	150	160
Linear thermal expansion coefficient	30 - 400 °C	DIN EN 821-1	3,9	3,9
	30 - 600 °C		4,2	4,3
	30 - 1000 °C		4,6	4,7

