



Schunk Carbon Technology
SiC Armour Materials
for Ballistic Protection
from the Ceramics Experts

SIZE MEDIUM
STRIKE FACE
HANDLE WITH CARE
VERSION 5

SiC Armour Materials for Ballistic Protection

Schunk Carbon Technology has been developing and producing advanced technical ceramics for more than 25 years.

The company is one of the world's leading suppliers of technical SiC materials and offers ballistic SiC grades to armour system designers.

Solutions for ballistic protection have been developed and tested in close co-operation with our customers and have demonstrated proven protection performance at the highest threat levels.

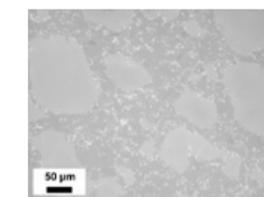
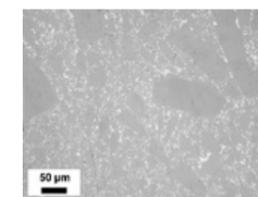
Product Advantages:

- High Strength and Hardness to withstand Advanced Threats
- Low Weight and Areal Density
- Large Variety of Shapes and Sizes
- High Volume and Cost-Effective Manufacturing Techniques
- Net Shape Capabilities Holding Tight Dimensional Tolerances
- Controlled, Homogenous and Uniform Microstructure
- Consistently High Quality Standards
- Compliance to Individual Customer Specification



Soldier with Protective Clothing including Ballistic Protection (Courtesy of Mehler Vario Systems)

Optical Micrograph

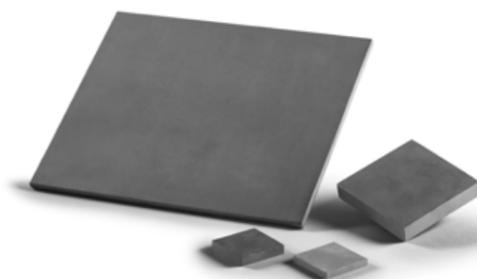


CarSIK-GD

RB SiC (reaction-bonded silicon carbide)
 Advantage: Reduced content of metallic silicon, cost-efficient product

CarSIK-B4C

RB B4C (reaction-bonded boron carbide)
 Advantage: Increased hardness through embedded B4C, superior protective performance



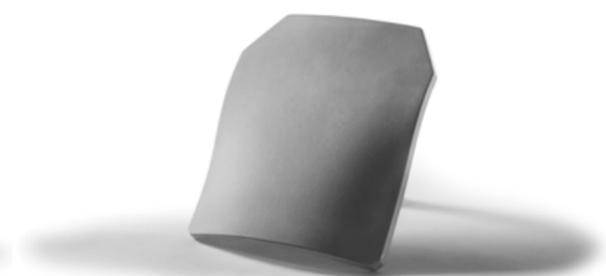
Flat Monolithic Plates and Polygonal Tiles (mainly for Vehicle Protection)



Specially designed, Ergonomic Vest Plate (Body Armour)



Finished Hard Armour Vest Insert*



Frequently used Standard Torso Plate - readily available shape (Body Armour)

Composition		SiSiC	SiSiC / B ₄ C
Density	g/cm ³	3,10	2,85
Flexural Strength (4 Point bending)	MPa	280	220
Young's Modulus	GPa	360	350
Compressive Strength	MPa	2600	2900
Hardness HV _{0,1}	MPa	24000	25000
Weibull Modulus		~10	~10
SiC Content (nominal)	wt.%	77	57
Free Si Content (nominal)	wt.%	12	12
B ₄ C Content (nominal)	wt.%	0	~30

The chart illustrates typical material properties. Above stated values have been measured using test specimens. They cannot be applied to all shapes and may vary with method of production and part size.

*Ceramic Plate integrated with Technical Fibre Backing: Schunk manufactures the Ceramic Component only

Schunk Carbon Technology: Always at your side.

Schunk Carbon Technology focuses on development, manufacture and application of carbon and ceramic solutions. It combines innovative spirit and technological expertise with exceptional customer service to provide a range of products and services unique to the market.

In Schunk Carbon Technology, you have a partner who can offer all the technological possibilities of an international company and implement ideas custom-tailored to your needs, both for high-volume industrial markets and for highly specialized niche markets.

A Schunk Group division

Enabling, idea-driven, cooperative - If you want to apply technology to develop better products and capture new markets, we can help.

The Schunk Group has been supporting customers with innovative technologies since 1913. As an idea-driven technology company, innovation is fundamental to our culture. We forge long-lasting, cooperative working relationships with our clients.

You will find our custom-tailored, high-tech products and systems in markets such as; carbon technology and ceramics, environment simulation and air-conditioning technology, sintered metal and ultrasonic welding. The Schunk Group is active in many key industries, including: automotive, rail, aviation, marine, solar, wind energy, chemical and machine production. Our 8,100 employees in 29 countries are ready to serve you.

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