

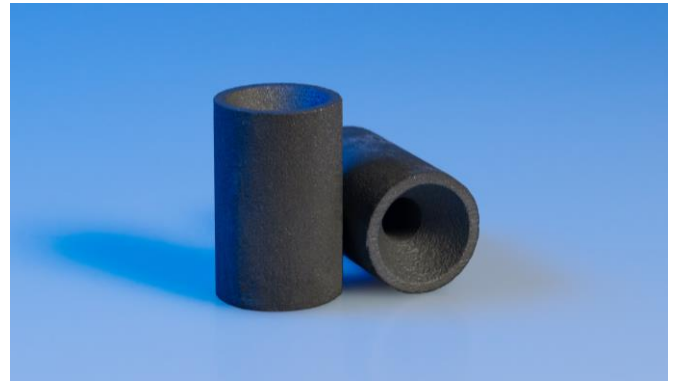
Extremely wear-resistant materials for sandblasting nozzles

Material

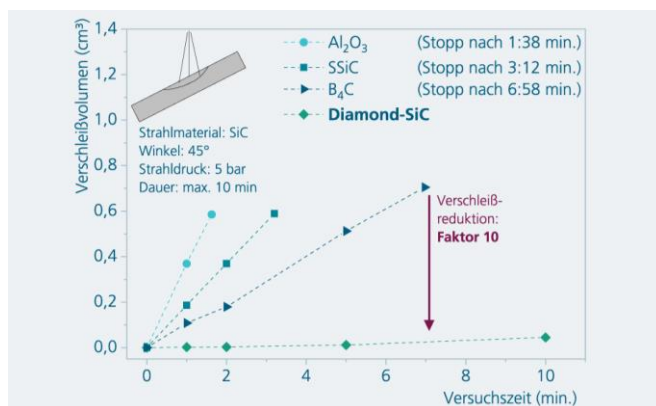
Silicon carbide-bonded diamond materials can be produced in a wide variety of geometries and dimensions without high-pressure processes. The diamond particles (up to 60 % by volume) are chemically bonded into the silicon carbide matrix by means of a reaction bond. This results in excellent wear resistance.

Wear

The wear behavior was tested under various conditions (rubber wheel test ASTM G65), sliding wear, sandblasting test). The SiC-bonded diamond material showed significantly improved wear resistance in all tests.

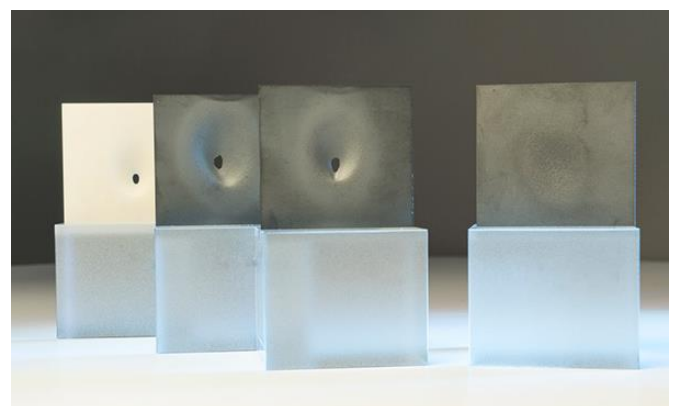


Sandblasting nozzles made of SiC-bonded diamond with extremely high wear resistance.



Comparison of wear volumes in the sandblasting test of SiC-bonded diamond to commercial ceramics.

In sandblasting tests, the material exhibited approximately ten times less wear than commercial boron carbide.



Condition of sandblasted plates: alumina, silicon carbide, boron carbide and SiC-bonded diamond material (from left to right).

Manufacturing costs

The manufacturing costs for simple nozzle geometries are in the range of commercial boron carbide components.

