



## Boron Nitride Grade ZSBN

Boron Nitride is an advanced synthetic ceramic material available in powder, solid, liquid and aerosol spray forms. Its unique properties - from high heat capacity and outstanding thermal conductivity to easy machinability and superior dielectric strength - make boron nitride a truly outstanding material.

Developed for demanding applications requiring the combination of thermal conductivity, high wear resistance and boron nitrides corrosion resistance, Grade ZSBN boron nitride is a composite material combining the best thermal performance and machinability characteristics of hot-pressed boron nitride with the strength and non-reactivity of silicon carbide and zirconia.

Grade ZSBN is a uniquely high-performing solid that is especially suited for molten metal applications such as continuous casting break rings where wear resistance and thermal conductivity are essential.

### Key Properties

- Unparalleled resistance to molten metal wetting due to boron nitride content.
- Excellent high temperature operation and thermal shock resistance.
- Excellent wear resistance and increased strength from zirconia and a small amount of silicon carbide. This feature, unique to ZSBN, results in remarkable corrosion resistance over a wide range of temperatures.
- Easily machined, even to complex shapes and forms, quickly and inexpensively. Machining tolerances of 0.002" or better are achievable.

### Applications & Product Data

- Break rings
- Components
- Continuous casting
- Crucibles
- Deck plates
- Heat treatment fixtures
- High temperature bearings
- High temperature mechanical components
- High temperature valves
- Jigs
- Moulds
- Metal metals and glass casting
- Muffles
- Nozzles for transfer or atomization
- Side dams
- Spacers

Product Data		
Thermal Conductivity (W/M°C)	Perpendicular	Parallel
25 <sup>0</sup> C	40.21	22.62
316 <sup>0</sup> C	29.39	15.46
437 <sup>0</sup> C	27.16	13.98
557 <sup>0</sup> C	24.96	13.32
711 <sup>0</sup> C	23.11	12.78
918 <sup>0</sup> C	21.88	11.65

*Like pure boron nitride, the ZSBN crystal structure orients itself during hot pressing. Therefore, many physical properties of Combat<sup>®</sup> ZSBN are anisotropic and are reported as a function of the orientation of the piece relative to hot pressing (perpendicular or parallel).*

*The values presented are mean and typical of those resulted from test samples. They are provided as an indication only to serve as guidance in the design of ceramic components and are not guaranteed in any way. The actual values can vary according to the shape and size of the envisaged component.*



### PRECISION CERAMICS