

Boron Nitride Coatings



General

Boron Nitride coatings are entirely inorganic, composed of Boron Nitride powder and a high-temperature bond phase. Supplied in a liquid form suitable for brushing, they can be diluted with water to spraying and dipping consistencies and applied to a variety of porous and non-porous materials including graphite, metals and ceramics.

Unaffected or non-wet by most molten metals, slag and drosses, Boron Nitride Coatings can be used up to 1372°C in a reducing atmosphere and up to 850°C in an oxidizing atmosphere, and retain many of its properties such as high temperature lubricity and corrosion resistance.

Various grades are differentiated by the type of inorganic binder used, which allows for a range of physical properties such as hardness, adherence, useful temperature range, and ease of use for a variety of applications.

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Advantages Boron Nitride Coatings:

- Ready to use, water based, completely inorganic coatings for easy application
- Excellent parting plane and lubricity provide outstanding release properties even at high temperatures

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- **Type Sf** – A general-purpose thick concentrate coating comprised of 23% BN usually requires dilution with water to the desired consistency. Combat Sf can also be as is depending upon the application.
- **Type 10Sf** – 10% BN content provides thinner consistency coating, ready-to-use formulation with no additional dilution required.
- **Type A** – A high-viscosity paste with a unique aluminum phosphate binder has higher solids content than other binder coatings and must be diluted. Combat A offers a very strong bond with many different refractories.
- **Type V** – A thick composition that dries to a harder surface used in applications where a strong binder is needed such as coating moving parts in molten metal. Excellent for coating graphite.

Key applications

- Hot pressing, forging, extrusion.
- Coating of launders, troughs, spoons, sieves, cups.
- Super-plastic and quick-plastic forging.

Advantages Boron Nitride Coatings:

- Non-wet by most molten metals, salts, fluxes enables extreme resistant to molten metal corrosion and light metal drosses
- Increases corrosion resistance and lifetime of graphite and non-oxide refractory components and tools