

Boron Nitride Solutions by Henze for the Aluminium Extrusion Industry



The Henze Boron Nitride Products portfolio is widely used in the aluminium extrusion Industry.

There are a variety of product grades available to choose from. Tailor made solutions are developed in conjunction with customers to meet their specific requirements.

The Perfect Combination – Aluminum Extrusion Applications and Boron Nitride

HeBoFill® extrusion

The HeBoFill® extrusion is a pure boron nitride powder, and has been specifically developed as a lubricant and release agent for the high demands of the Aluminium extrusion industry. It exhibits excellent lubricating and release properties, high purity and good flow characteristics and pourability. HeBoFill® extrusion effectively prevents the adhesion of Aluminium to the press dummy block as well as other critical working surfaces during extrusion. It is easy to use and offers process cleanliness through an efficient electrostatic spraying process which ensures economy, and results in a uniform, consistent coating. Both component service life and process security of the Aluminium extrusion process are increased.

Typical applications

- ▶ Lubricant and release agent between the Aluminium workpiece and press dummy block
- ▶ Lubrication of the container seal

HeBoCoat® 20E and HeBoCoat® 21E

The HeBoCoat® 20E boron nitride coating and the HeBoCoat® 21E boron nitride spray are based on ethanol. Additional organic binders provide excellent adhesion on the surface. The binders start to decompose above 200 °C, leaving a pure boron nitride coating which provides excellent lubrication and release.

Typical applications

- ▶ Coating of the die bearings for easy material flow during initial pressing of a new or corrected die



HeBoCoat® 433W

A water-based boron nitride coating incorporating inorganic binders for use in high temperature processes. It is free of organic additives. Thus there is no formation of gases by decomposition.

Typical applications

- ▶ Coating of dummy blocks, container seals and shear blades
- ▶ Lubricant and release agent in hot forming processes. Can be applied directly to hot metallic surfaces up to 500 °C.



HeBoCoat® 433WF

A ready-to-use water based boron nitride coating incorporating inorganic binders. The phosphate binders ensure particularly effective adhesion to steel, even at high temperatures.

Typical applications

- ▶ Coating of the press block, container seal and shears
- ▶ Release agent in the hot forming of aluminum



HeBoCoat® Wax Stick

HeBoCoat® Wax Sticks are lubricant sticks where highly crystalline boron nitride particles are incorporated in a wax basis. The stick is applied directly onto a hot metal surface. The wax melts immediately and the resulting boron nitride coating gives good lubrication and release action.

Typical applications

- ▶ Lubrication of the press shears and dummy block
- ▶ Coating of the press dummy block circumference, shear blades, tools and the container seals.



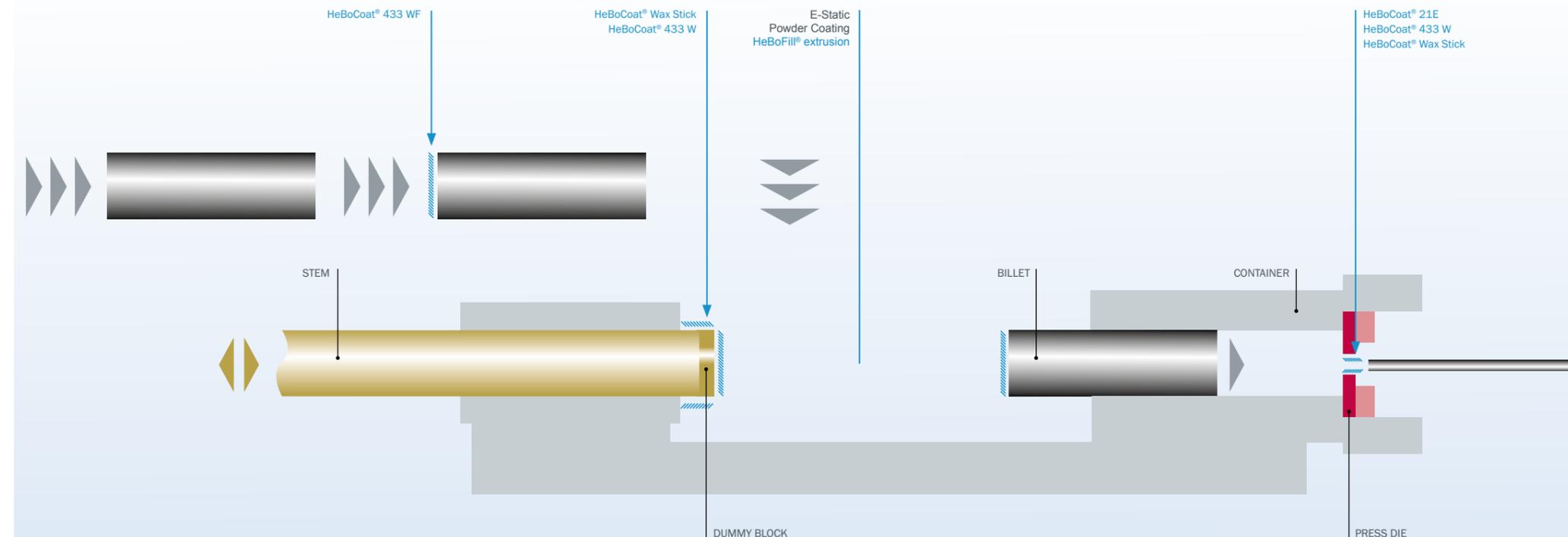
During the extrusion process aluminium billets are formed through a die into profiles using high pressure and temperatures around 450 °C.

At these temperatures the aluminium "softens" and exhibits the tendency to stick to metal surfaces, such as the dummy block, container sealing and shear blade.

Unlike traditionally used release agents and lubricants, boron nitride based products offer both releasing and lubricating properties at temperatures well above 450 °C and are thus more efficient and economic.

Maintenance and downtime are reduced and process stability and product quality are increased, resulting in an overall safer process.

EXTRUSION PROCESS



Additional applications

HeBoCoat® products can also be used in the extrusion of seamless profiles, such as mandrel coatings in the manufacture of seamless tubes and single chamber profiles.

Boron Nitride Advantages

- ▶ high productivity achieved through reduced equipment downtime
- ▶ reduced wear on the workpiece
- ▶ reduced scrap
- ▶ ease of use
- ▶ economic in use
- ▶ improved cleanliness in comparison to alternative lubricants and release agents.

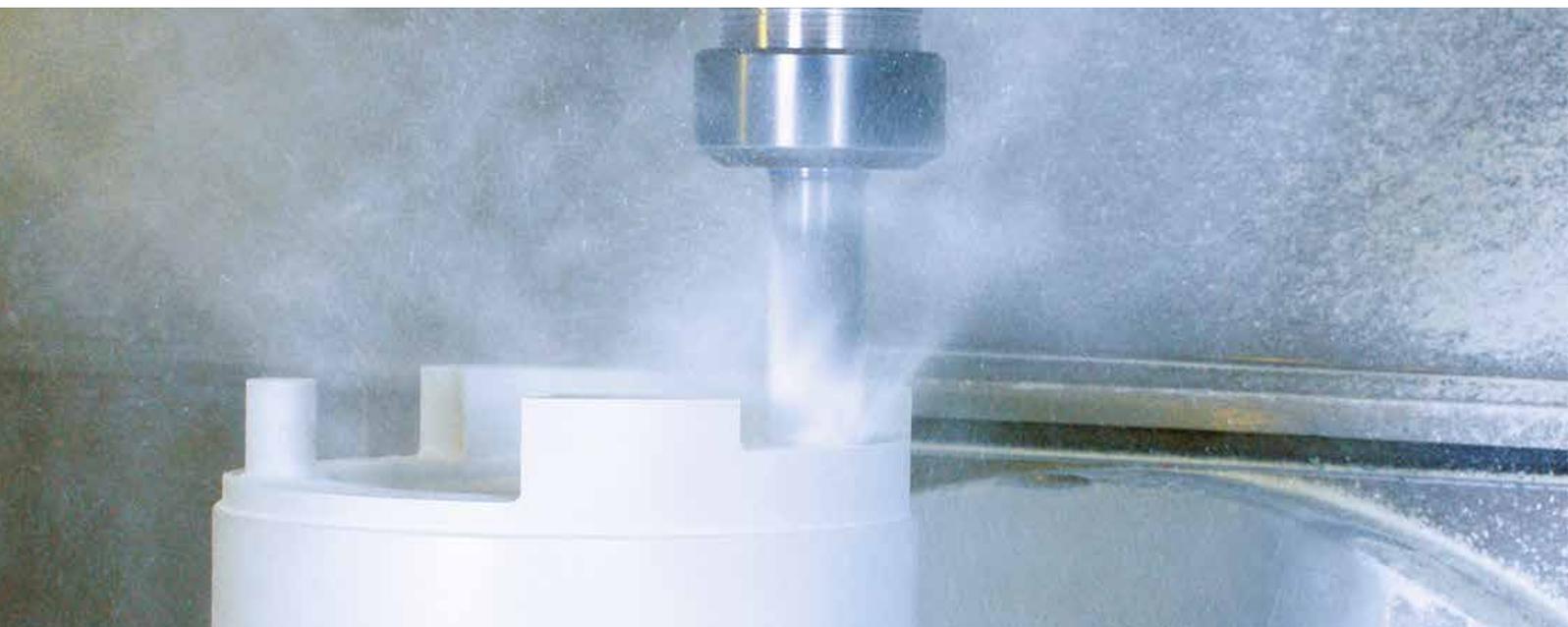
Boron Nitride Properties

- ▶ excellent lubricating and release action, also at high temperatures
- ▶ high resistance to oxidation
- ▶ resistance to temperatures up to 900 °C in an oxidising atmosphere and in inert conditions
- ▶ non-toxic and harmless to the environment.

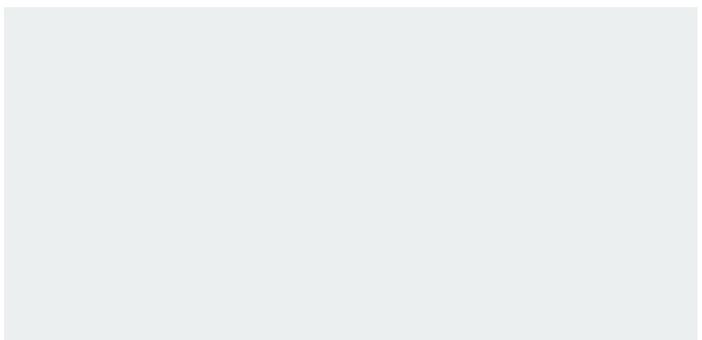


Henze – the Specialist for Boron Nitride Solutions

Henze BNP AG is headquartered in Lauben, near Kempten, in the foothills of the Alps in southern Germany. Based on the extensive combined know-how of its 37-strong workforce our family run business has developed over the last 23 years into one of the leading specialists in hexagonal boron nitride: these include precision machined components, coatings, sprays and a wide variety of powder grades. The unique properties of boron nitride, which include ease of machining, high temperature resistance, excellent lubricity and release action as well as its dielectric performance ensure that a wide variety of industrial applications can be successfully and efficiently serviced.



Our in-house specialists and international partners are at your disposal to discuss your particular applications for this unique range of products and answer any questions you may have.



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