

Signature Coating BorAC

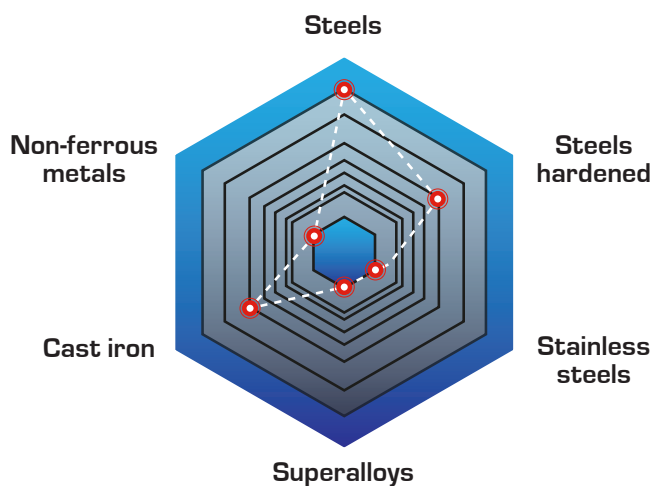
Specialist for highly demanding machining

BorAC consists of a boron-doped AlCrN protective coating, which is especially suitable for crack inhibition and thus for high-speed applications such as transmission and gear cutting tools. BorAC delivers top performance under high loads, especially in gear hobbing and roughing (dry and wet). The coating can be deposited with PLATIT Pi411 PLUS ECO or Pi411 PLUS LACS® - with simultaneous ARC and SPUTTER processes.

Highlights:

- Low coating residual stress
- Crack-resistant
- Minimizes crater wear
- Increases hardness and toughness

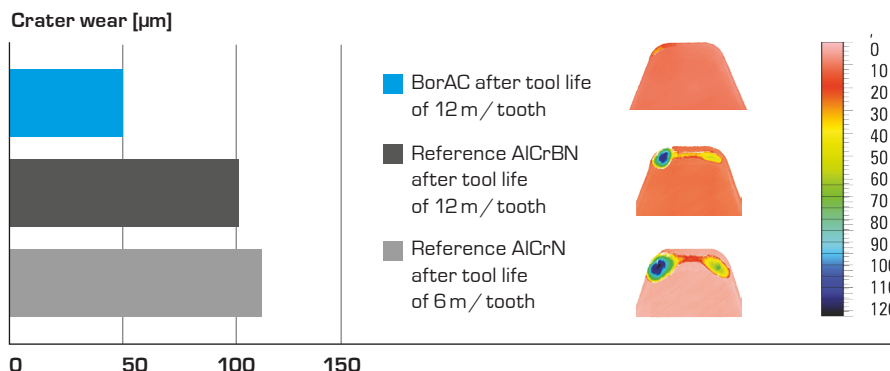
Characteristics in cutting:



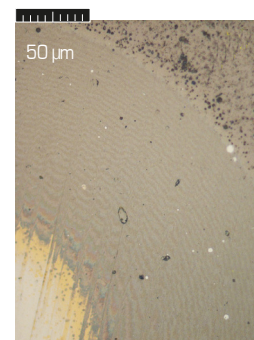
Specifications

Color	grey
Nano-hardness [GPa]	38–40
Coefficient of friction [μ] PoD (at RT, 50% humidity)	0.5
Coating thickness [μm]	1–5
Max. service temperature [°C]	900
Coating temperature [°C]	400–500
411 PLUS ECO	(Al, AlCrB20-10, Cr)
411 PLUS ECO	(AlCr35, AlCrB20-10, AlCr35)
1011 G4	(-, AlCr36, AlCrB20-10, AlCr36)

Effect of boron doping on crater wear in hobs:



Tool: HSS hob; D100
 Workpiece material: 20 MnCr 5
 Cooling air; mn = 4 mm; vc = 220 m/min; fa = -6.4 mm/rot
 Max. chip thickness hcu = 0.24 mm
 Source: IFQ Magdeburg



Calo 3 layers

CrN adhesion layer →
 AlCrN →
 AlCrBN