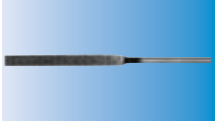


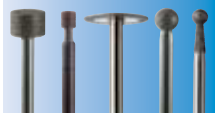


Diamond files



catalogue 205
page 8 - 11

Diamond and CBN-grinding points



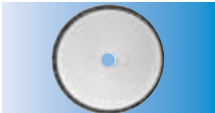
catalogue 205
page 14 - 17

Diamond and CBN grinding tools resinoid bond



catalogue 205
page 18 - 25

Diamond and CBN cut-off wheels

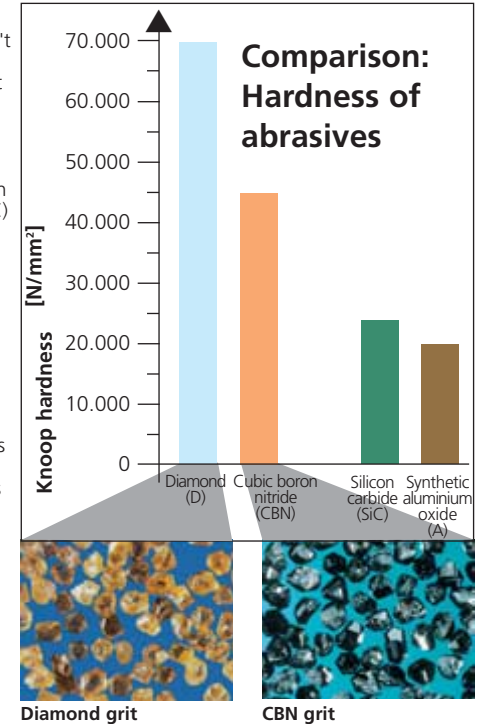


catalogue 205
page 12 - 13

The grinding materials diamond and CBN don't compete with each other they complement one another. Diamond can not be used to machine steel as the chemical reaction between the iron (Fe) in steel and the carbon (C) in diamond causes a very fast wear and tear on the diamond tool.

That is why steel machining with diamond is normally uneconomical.

CBN balances out this deficit, as it is almost as hard as diamond. The advantage is that it has no reaction with iron (Fe) in steel.



Diamond tools are suitable for machining:


- carbides (sintered)
- carbides (green compacts)
- glass, ceramics*
- porcelain
- ferrite, silicon
- graphite, synthetic carbon
- duroplastics
- glass-fibre reinforced plastics
- natural and synthetic stone
- refractory materials
- wear-resisting layers

CBN tools are suitable for machining:

- high-speed steels
- tool steels
- case-hardened steels
- ball-bearing steels
- chromium steels

* (including engineering ceramics)

Comparitive grit sizes: FEPA standard/US mesh

Grit sizes	Grit size FEPA grades		Equivalent US mesh sizes (no. of meshes per inch)
	Diamond	CBN	
 <p>very fine</p> <p>smaller</p> <p>grit size</p> <p>larger</p> <p>very coarse</p>	D 46	B 46	325/400
	D 54	B 54	270/325
	D 64	B 64	230/270
	D 76	B 76	200/230
	D 91	B 91	170/200
	D 107	B 107	140/170
	D 126	B 126	120/140
	D 151	B 151	100/120
	D 181	B 181	80/100
	D 213	B 213	70/ 80
	D 251	-	60/ 70
	-	B 252	60/ 80
	D 301	B 301	50/ 60
	D 357	B 357	45/ 50
	D 427	B 427	40/ 50
	D 502	B 502	35/ 45
	D 602	B 602	30/ 40
D 852	B 852	20/ 30	

The electroplated metal bonding process permits a cost-efficient deposition of diamond or CBN abrasives on individual tools and small tool batches. This gives us maximum flexibility in responding to

your needs. Due to this objects of virtually any shape and material composition (e.g. steel, high-grade steel, brass, etc.) can be coated with diamond or CBN abrasives.



Recommended Technical Parameters for the use of Electroplated Tools

The wide range of tasks and applications makes it very difficult to define generally applicable technical parameters for electroplated tools. The rates below should be considered as a guideline only. **When in doubt, please contact our applications engineer.**

Recommended cutting speeds:

Diamond tools

Dry grinding 8 to 18 m/s
Wet grinding 15 to 30 m/s

CBN tools

Dry grinding 15 to 30 m/s
Wet grinding 20 to 45 m/s

CBN abrasives with electroplated bond are finding an increasing use in high-speed applications. In some processes, cutting rates of 120 to 130 m/s have been achieved, assuming optimum cooling conditions, a high machine rigidity and the use of high-precision tools.