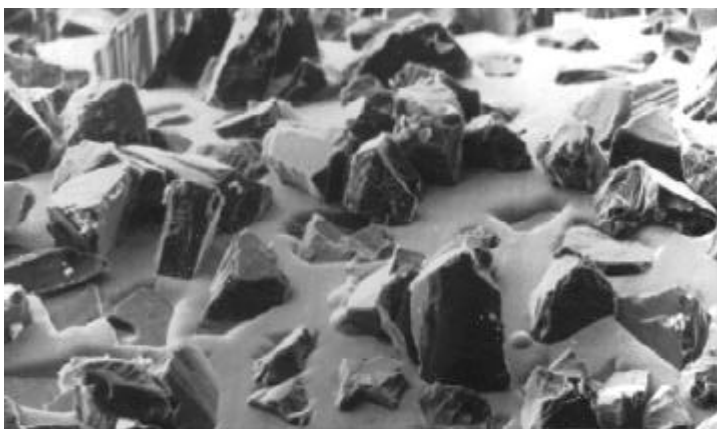
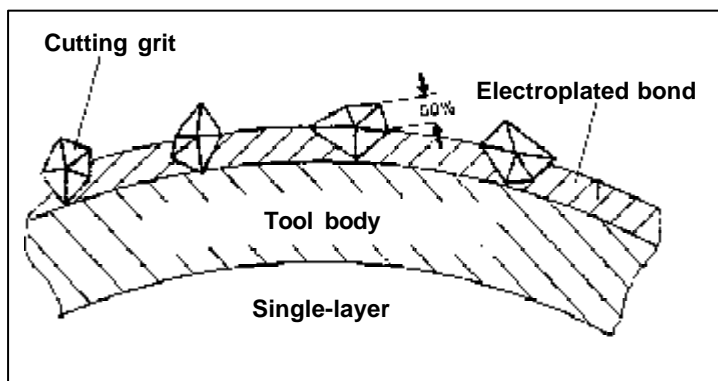


Introduction

WINTER's know-how in the manufacture of electroplated diamond tools has been gathered in decades of experience, producing consistently high product quality. The manufacturing process is carefully controlled for optimum matching of tool to application, with specific selection of electroplated bond, diamond type, grit size and surface geometry.

WINTER electroplated diamond tools with the identification "S" have a single diamond layer in which the diamond grits are bonded by an electroplated deposit. The bond is built up starting from the body of the tool, leaving the points of the diamonds about 50% exposed; thus the diamonds protrude to differing extents from the bond, within the scope of the grit size distribution and their random position on the tool body. This means that they are free-cutting and highly resistant to wear right from the start, requiring only relatively low grinding or contact pressure – higher pressure simply increases tool wear without improving stock removal.



Grinding layer of an electroplated single-layer diamond tool in new condition.

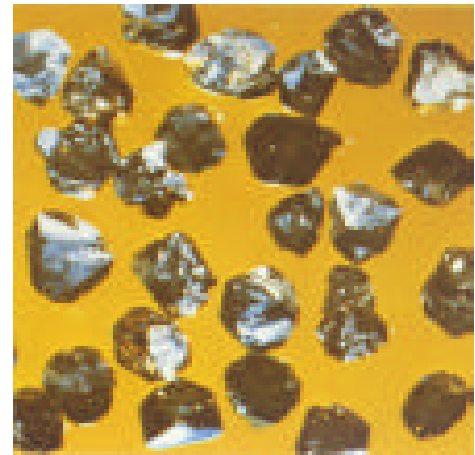



Fig. 1: Cubic Boron Nitride (CBN)

Introduction

The superabrasive grits used in the tools are classified to the FEPA standard from B46/D46 upwards. Tools can also be manufactured to customer requirements, outside of the production programmes described here. Please contact us for special requirements.

We also provide a plating service for tool bodies sent to us by customers. For determination of the size of the finished tool, the undersize of the tool body must be calculated depending on the grit size to be used.

International Standardization of Grit Sizes for Diamond and Cubic Boron Nitride

Sieve Grit Designations						Micron Powder Size			
Diamond FEPA Standard WINTER designation		CBN FEPA Standard WINTER designation		Diamond + CBN US Standard ASTM-E-11-70		Nominal mesh size to ISO 6106 DIN 848 Part 1, 1980 µm	Diamond WINTER designation	CBN WINTER designation	For comparison grit size µm
narrow	wide	narrow	wide	narrow	wide				
D1181	D 1181	B1181	B 1181	16/ 18	16/20	1180/1000	D 25	B 30	32-52
D1001		B1001		18/ 20		1000/ 850	D 20 B		30-40
D 851	D 852	B 851	B 852	20/ 25	20/30	850/ 710	D 20 A		25-30
D 711		B 711		25/ 30		710/ 600	D 15	10-25	
D 601	D 602	B 601	B 602	30/ 35	30/40	600/ 500	D 15 C	B 15	20-25
D 501		B 501		35/ 40		500/ 425	D 15 B		15-20
D 426	D 427	B 426	B 427	40/ 45	40/50	425/ 355	D 15 A	B 9	10-15
D 356		B 356		45/ 50		355/ 300	D 7		B 6
D 301		B 301		50/ 60		300/ 250	D 3	B 3	2- 5
D 251	D 252	B 251	B 252	60/ 70	70/ 80	250/ 212	D 1	B 1	1- 2
D 213		B 213		70/ 80		212/ 180	D0.7		0.5- 1
D 181		B 181		80/100		180/ 150	D0.25		< 0.5
D 151		B 151		100/120		150/ 125	 = Grits recommended by WINTER FEPA = Fédération Européenne des Fabricants de Produits Abrasifs.		
D 126		B 126		120/140		125/ 106			
D 107		B 107		140/170		106/ 90			
D 91		B 91		170/200		90/ 75			
D 76		B 76		200/230		75/ 63			
D 64		B 64		230/270		63/ 53			
D 54		B 54		270/325		53/ 45			
D 46		B 46		325/400		45/ 38			

The grit sizes in which diamond files can be supplied are shown in the relevant tables. For other requirements please contact us.

NOTE:

CBN grits are **not used** on files, because the specific benefit of higher temperature resistance of CBN is not applicable in filing, but CBN is inferior to diamond in terms of hardness and wear resistance.