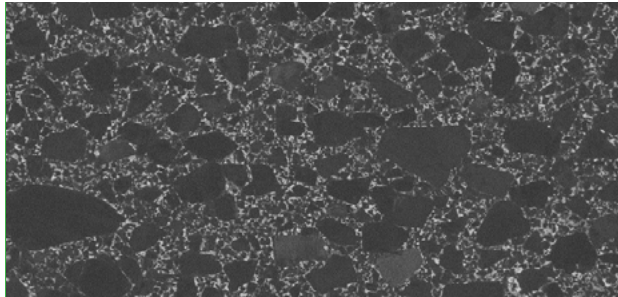


PCBN

Grade: ZAA

Key material characteristics

- Class: high content
- 90% vol cBN
- 20 µm avg. grain size
- AlN binder



Typical microstructure of ZAA

A value-orientated grade for turning of grey cast iron, including components such as brake discs and pump bodies.

Sizes and format available

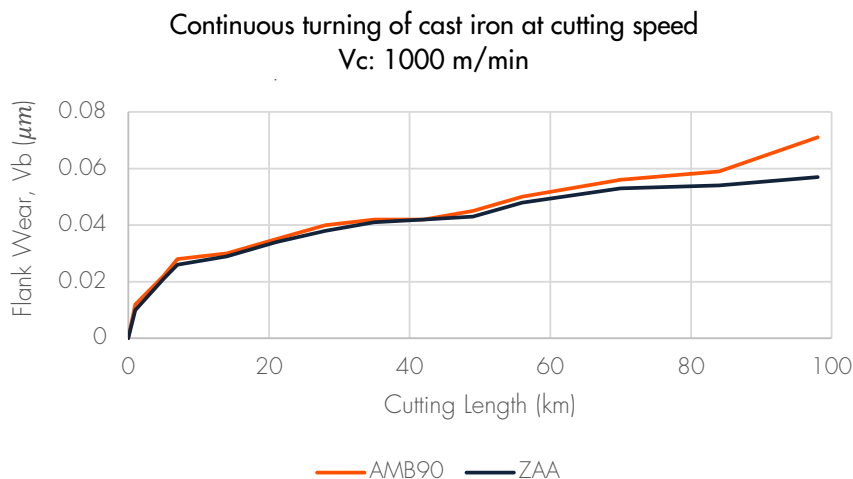
ZAA						
Conductive/non-conductive				non-conductive		
Outside disc diameter (mm)				99		
PCBN usable area (mm)				97		
PCBN layer				solid		
Overall thickness (+/- 0.05 mm)						
1.00	1.60	2.38	3.18	4.76	6.35	7.94
			x	x		
Other sizes and formats available on request						

Application space

K01-K30 Cast irons

Performance data

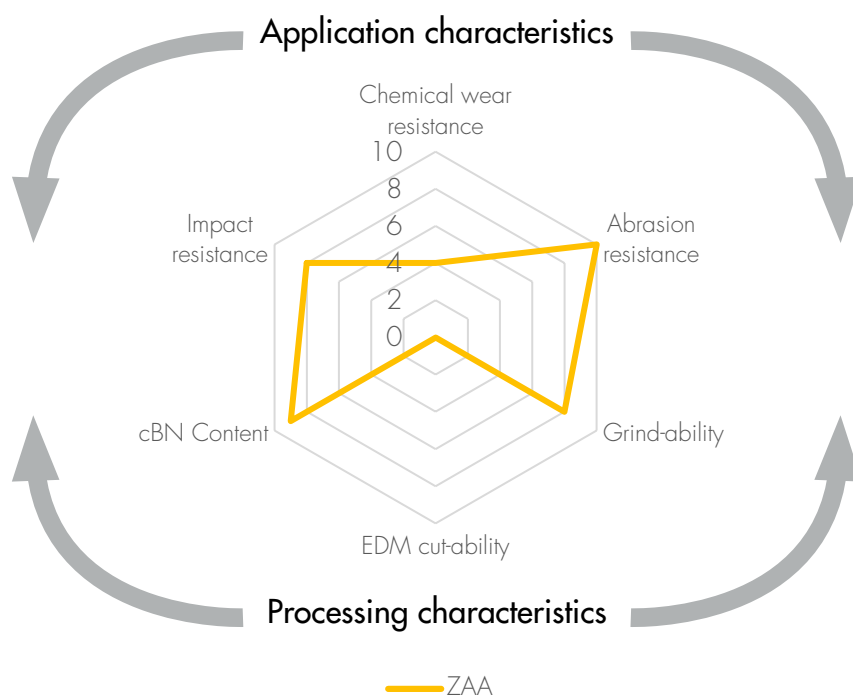
In turning applications, ZAA performs on par with AMB90. For high impact intensive applications, AMB90 is likely to outperform ZAA.



PCBN application guide

Workpiece material	Grade recommendations	Cutting conditions						Edge geometry guide			
		Cutting speed, Vc (m/min)		Feed, f (mm)		Depth of cut, ap (mm)		Chamfer angle, Yb	Chamfer width, by (mm)	Edge radius (µm)	Nose radius (mm)
		Min	Max	Min	Max	Min	Max	Recommended ranges			
Grey cast iron	K10 - K30	600	2500	0.1	2.0	0.1	5.0	15 - 25	0.2 - 1.0	0 - 20	0 - 3.2

Characteristics



Mechanical properties

Property	Grade: ZAA	Description
cBN content, vol %	90	Amount of cBN within the product
cBN size, μm	20	Average grain sizes of cBN
Binder chemistry	AlN	Type of binder used
Density, g/cm^3	3.39	The substance's mass per unit of volume
Young's Modulus, E, GPa	-	How easily the material stretches or deforms under applied stress
Hardness HV1, GPa	42.7 ± 5.5	The resistance to localised plastic deformation
Transverse Rupture Strength, TRS 3-point bend, MPa	765 ± 19	The stress the material can withstand before it yields
Thermal diffusivity, mm^2/S	60.6	Measures the ability of the material to conduct thermal energy relative to its ability to store thermal energy
Specific heat capacity, $\text{J}/(\text{g} \cdot \text{K})$	0.658	The quantity of heat (J) absorbed per unit mass (kg) of the material when its temperature increased by 1 K (or 1 °C)
Thermal conductivity at 25 °C, $\text{W}/(\text{m} \cdot \text{K})$	133.80	The measure of the material's ability to conduct heat

All property measurements are carried out, where possible, in accordance with relevant international standards. The data quoted is for comparative purposes only and should not be viewed as a product specification. Element Six is constantly striving to improve its products and, therefore, reserves the right to alter product properties without prior notice.

Items available

Full round disc

Item code	Item description	Overall thickness, mm (solid product)
	ZAA R97.0-360-3.18	3.18
370-200-0082-01	ZAA R97.0-360-4.78	4.78

ISO segment shapes

370-300-0485-01	SNMN1203 G05
370-300-0306-01	SNMN0903 G05
370-300-0468-01	RNMN1203 G05
370-300-0307-01	RNMN0903 G05
370-300-0492-01	CNMN0903 G05
370-300-0490-01	TNMN1103 G05
370-300-0301-01	SNMN1204 G05
370-300-0344-01	SNMN0904 G05
370-300-0316-01	RNMN1204 G05

Additional sizes and shapes available upon request.

Contact: salesorders@e6.com
e6.com

