
Element Six PCD

Competitive advantage in wood machining

Precision machining & finishing

elementsix™

DE BEERS GROUP

Our PCD portfolio delivers unique solutions for all wood machining applications. Together with our quality assurance, technical support and worldwide service, our range offers toolmakers cost-competitiveness and the ability to stand out, whatever the challenge, wherever the market.



The wood machining industry is evolving

Reliable performance
Cost savings
Lasting competitive advantage

A reduction in the cost of diamond in tools

Tool costs have fallen in recent decades, and there has been a significant reduction in the cost of diamond as a proportion of tool cost. Cost-competitiveness comes from looking at every step in the manufacturing process, and ensuring every aspect of your tool design allows you to achieve the highest level of productivity.

Element Six offers unique polycrystalline diamond (PCD) solutions that support this effort and that deliver improved competitiveness for both toolmakers and end-users.

Meeting the challenge of difficult-to-machine materials

Element Six has always focused on delivering extended tool life and improved tool productivity. Today, this is more important than ever as workpiece materials have become increasingly difficult to machine. For example, fibre boards causing tool micro-chipping, laminates becoming more abrasive

and new materials such as carbon fibre reinforced plastics (CFRP) and other composites more commonly being used.

Our PCD range offers extended tool life in these hard to machine applications, which reduces downtime for replacement and sharpening and allows end-users to get more value out of the tools.

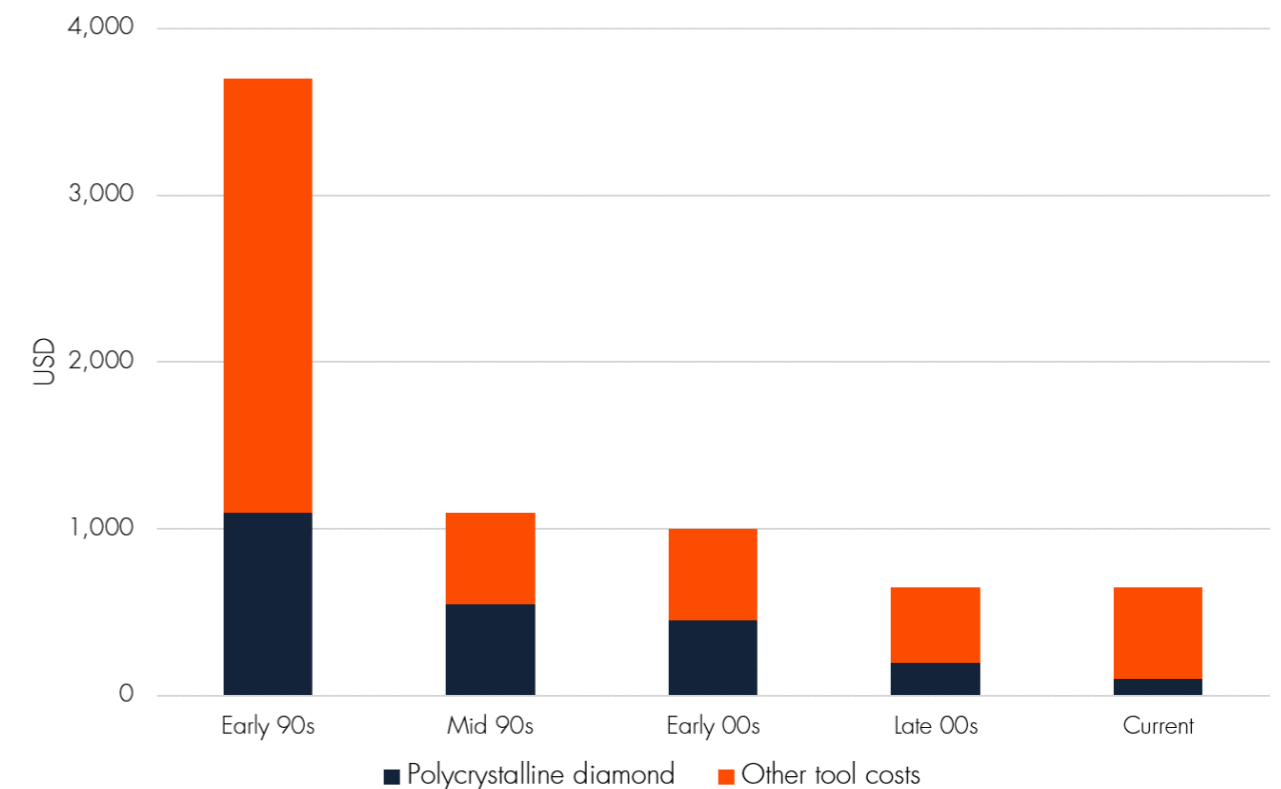
Supporting tool export opportunities

Wood machining is becoming an increasingly global industry. That's why tool manufacturers must be able to compete in export markets. Export markets call for high quality products, competitive prices and global service capabilities.

Stand out from the crowd

Increasingly, tool makers and their customers must seek to differentiate themselves from competitors. Through innovative solutions for every application in wood machining Element Six can help achieve that differentiation in both PCD and carbide applications.

Polycrystalline diamond tool price reduction over time



Source: market interviews
Assumptions: 60 tooth saw blade

Our PCD portfolio

Providing toolmakers with cost-competitiveness and the ability to stand out

	Premium			Assured	
	CTC002 / CTB004	CTB010	CTH025 / CTM302	ATB010	ATH025
Target applications & workpiece material	Any type of application requiring high impact and chip resistance	All types of applications in all type of workpiece material	Any type of application in abrasive intensive workpiece materials (e.g. laminates) Avoid chipping / impact intensive workpiece materials	All types of applications in all types of workpiece material except for where polished surface is required (e.g. resinous materials and certain laminates)	Any type of application in abrasive intensive workpiece materials except for where polished surface is required Avoid chipping / impact intensive workpiece materials
Product purpose	Effective in high impact applications Ideal for hardwood laminates & chipboard	The industry benchmark product recognised globally by tool makers and end-users Leading quality and general purpose performance Available in wide range of variations Best option for customers new to PCD	Effective in abrasive intensive applications Ideal for tough laminates and cement board	Reliable performance Assured quality for value focused applications	



Product	Disc size		Surface finish		Total thickness (+/- 0.1mm)			PCD thickness (+/- 0.15mm)	
	Ave PCD grain size (μ)	Usable area	Polished	Lapped	1.6mm	2.0mm	3.2mm	0.3mm	0.5mm
CTC002	2	74	✓	✓	✓	✓	✓		✓
CTB004	4	74	✓	✓	✓	✓			✓
CTB010	10	74	✓	✓	✓	✓	✓	✓	✓
CTH025	25	74	✓	✓	✓	✓	✓		✓
CTM302	30 & 2	74	✓	✓	✓	✓	✓		✓

Product	Disc size		Surface finish		Total thickness (+/- 0.15mm)			PCD thickness (+/- 0.2mm)	
	Ave PCD grain size (μ)	Usable area	Polished	Lapped	1.6mm	2.0mm	3.2mm	0.3mm	0.5mm
ATB010	10	74		✓	✓	✓			✓
ATH025	25	74		✓	✓	✓			✓

Our unique scalable segmentation service

Our fast, high quality and cost-effective segmentation service is supported by the largest laser cutting and electrical discharge machinery (EDM) capacity of all abrasive manufacturers. We provide both standard and complex bespoke geometries.



Element Six

Element Six is a global leader in the design, development and production of synthetic diamond and tungsten carbide supermaterials. Part of the De Beers Group, we employ over 1,900 people. Our primary manufacturing sites are located in the UK, Ireland, Germany, South Africa, and the US. We are an ISO9001 Registered Company.

Quality assurance

Our PCD is manufactured to precise specifications using controlled production processes, to provide our customers with consistent quality. Our in-house quality team verify the consistency of our solutions using sophisticated equipment and destructive testing procedures.

Local support

Our local teams provide expert technical advice to ensure the right solutions and products are selected for your woodworking tools and applications.

Global innovation and production

Since 1959, our focus has been on developing the diamond synthesis process to enable innovative, cutting-edge solutions that offer competitive advantage to our customers. By choosing Element Six, you get:

- Advice and expertise directly supported by Element Six's Global Innovation Centre – a world-leading research and development facility
- Production flexibility and scalability to match and grow with your business

For more information contact us:

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