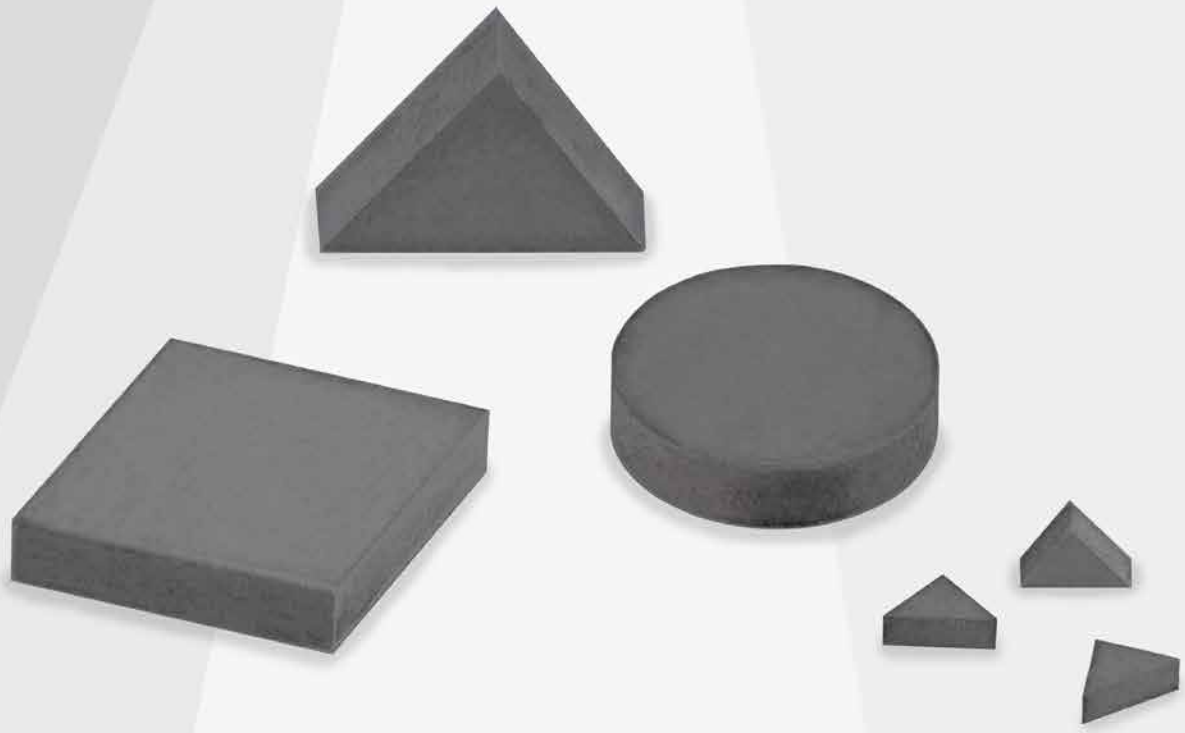


PURECUT™ THE NEXT GENERATION OF PCBN PERFORMANCE

——— Transforming PCBN productivity with higher speeds more predictable wear rates and up to 50% longer tool life in hardened steel machining.

elementsix™

a De Beers Group Company

DESIGNED FOR REAL COMPETITIVE ADVANTAGE

PureCut™ technology from Element Six is a genuinely new approach to PCBN design. The next generation of PCBN that provides tool makers with a step-change in productivity for the machining of hardened steel.

Designed for use in hard turning and finish hard milling at both conventional and elevated machining speeds, PureCut™ is the PCBN material of choice to deliver new levels of productivity with no need to compromise between toughness and crater wear.

The strength and reliability of PureCut™ enables a wider application space window, with or without coatings.

OVER 35 YEARS OF PCBN EXCELLENCE

Element Six has pioneered the use of PCBN to drive productivity in the automotive industry.

AMB90 transformed the machining of cast iron components. DBS900 redesigned PCBN to deliver unrivalled toughness in the most demanding machining applications.

PureCut™ is the next wave of PCBN innovation, delivering a step-change in productivity for the machining of hardened steel.

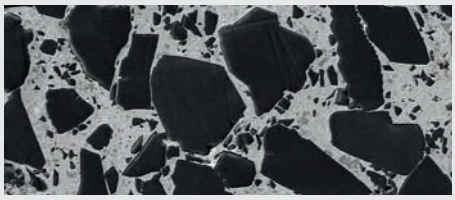
THREE KEY DIFFERENCES

1

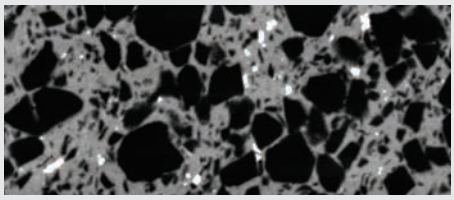
AN ULTRA-PURE BINDER – FREE FROM IMPURITIES

IMPROVED CHEMICAL WEAR RESISTANCE

Wears slower and more predictably during continuous cutting.



DHA650 PureCut™.



Competitor benchmark grade.

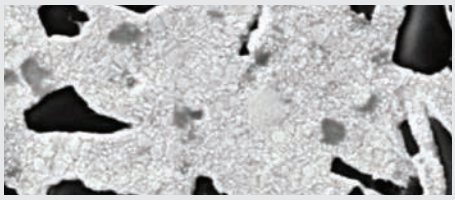
Competitor grade exhibits white spots - these are impurities dispersed throughout the binder.

2

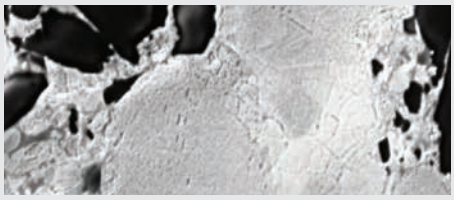
A NANO PARTICLE SIZE BINDER STRUCTURE

ENHANCED TOUGHNESS

Absorbs more impacts and delivers better mechanical properties at higher temperatures.



DHA650 PureCut™.



Competitor benchmark grade.

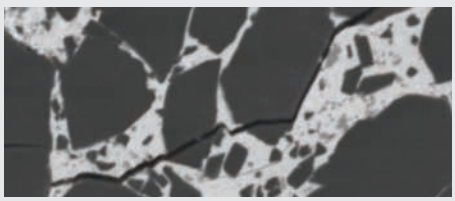
Competitor grade exhibits larger grain sizes and less homogeneous binder structure than PureCut™.

3

AN OPTIMISED CBN GRAIN SIZE DISTRIBUTION

INCREASED IMPACT RESISTANCE

Absorbs up to 80% more impacts.



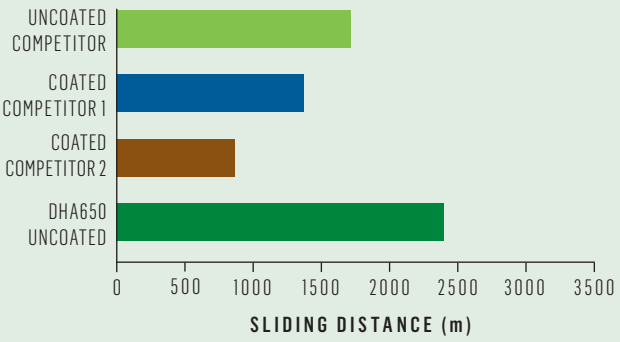
The optimised CBN grain sizes in PureCut™ deflect crack propagation, prolonging tool life.

STEP-CHANGE PRODUCTIVITY AND IMPROVED TOOL ECONOMICS

UP TO 50% LONGER LASTING TOOLS

Uncoated PureCut™ exhibits up to 50% longer tool life than competitor grades – for more reliable machining and reduced cost. Coating PureCut™ can extend tool life even further.

AVERAGE TOOL LIFE

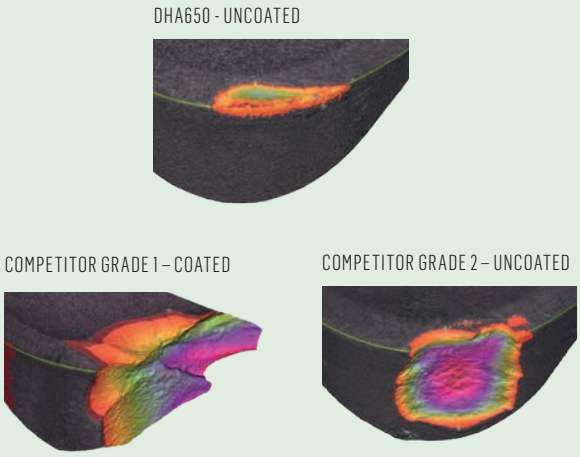


Tool life in highly interrupted machining at normal speed. DHA650 vs. coated and uncoated competitor benchmark grades.

MORE PREDICTABLE TOOL PERFORMANCE

PureCut™ exhibits more predictable and reduced wear rates – for increased confidence in tool consistency and planned tool changes.

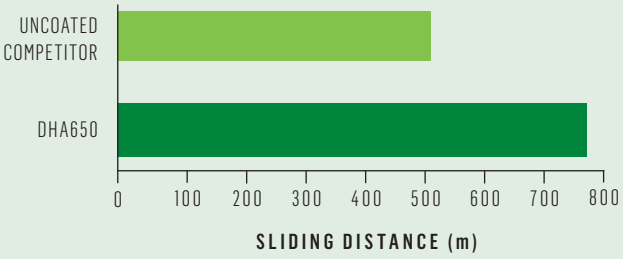
PCBN WEAR AFTER 2000M OF MACHINING



MORE FINISHED COMPONENTS

Accelerate productivity on the shop floor through higher machining speeds.

TOOL LIFE HIGH SPEED



PureCut™ offers reliable higher speed machining performance. For example, stepping up speeds from 150 to 220m/min, PureCut™ delivers up to 30% more finished pinions per hour compared to industry benchmark competitor grade.

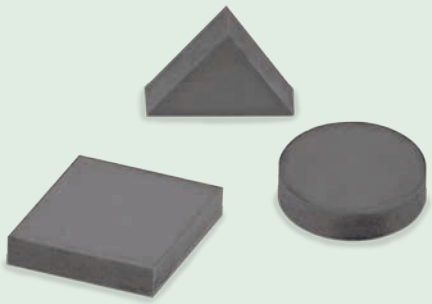
LOWER COST AND COMPLEXITY

PureCut™ grades are available as standard segments for brazing and in our solid PCBN insert formats.

Element Six's solid inserts offer significant competitive advantages over conventional brazed tip inserts:

– Lower cost per cutting edge, up to two cutting edges for free per insert relative to brazed tip inserts

– Less complexity as fewer formats are required and production process can be simplified



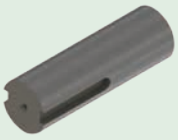
AVAILABLE PURECUT™ GRADES

As the start of a wider product range, Element Six is now introducing two PureCut™ grades designed for use in hard turning and finish hard milling at both conventional and elevated machining speeds.

DHA650 – for moderately to highly interrupted machining

DIA500 – for lightly to moderately interrupted machining

TEST RESULTS BASED ON PURECUT™ GRADE DHA650



SPEED: 150 m/m or 220 m/m

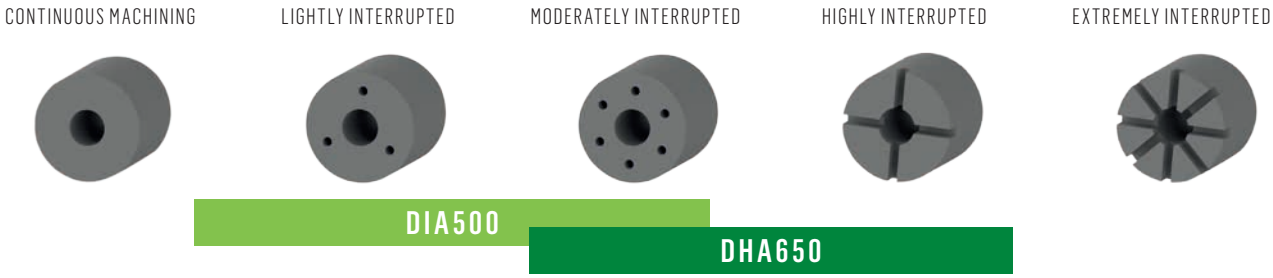
FEED: 0.11 mm/rev

DEPTH OF CUT: 0.15mm

EDGE PREP: DHA650 SNMN090408S01525 hone 17.5um

SAE 8620 (62-64 HRC)

A WIDER APPLICATION SPACE WINDOW



A PARTNER FOR IMPROVED PERFORMANCE

Part of the De Beers Group of Companies, and backed by 35 years of PCBN expertise, Element Six offers high level technical support on the optimization of machining conditions, edge preparation and benchmarking along with a comprehensive wire EDM and laser cutting segmentation service.

With a global technical team and dedicated innovation centre, Element Six is focused on developing in-depth industry understanding to meet the latest machining challenges and help deliver the quality and performance gains our customers need to succeed.

If you would like to know more about Element Six please visit our website at www.e6.com, or contact us at either of the addresses below.

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