

# SYNTHETIC DIAMONDS



## Engineered To Meet Your Needs.

While retaining the durability and strength of natural diamonds, synthetic diamonds offer superior consistency and a cost-effective alternative to natural diamonds for industrial tool manufacturers. From PCD and TSP, through to single crystal diamond products, we can offer you a synthetic diamond solution engineered to meet your specific needs. By taking the time to understand your precise operational needs, we work with you to supply a tailored solution, offering fast turn-around times and a team dedicated to building long-term working relationships.

## PDC (Polycrystalline Diamond Compact)

PDC (Polycrystalline Diamond Compact) cutters are the diamond solution to the extreme challenges presented by the harshest drilling conditions. Our PDC cutters are designed to deliver exceptional performance, durability, and efficiency in the most demanding industries such as oil and gas, mining and geothermal.

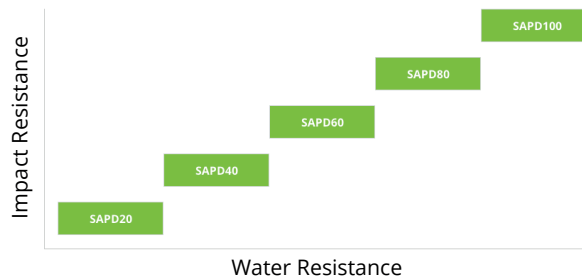


**GRADES**

We offer a wide range of PDC cutter grades to suit different application requirements. Our selection includes mining grades specifically tailored for rugged mining environments, as well as premium oil and gas grades for high-performance drilling operations. No matter the challenge you face, we have the right grade to meet your needs.

Grades	
SAPD20	Mining Grade PDC
SAPD40	Gauge position – Soft & medium formations – Good Wear resistance
SAPD60	Gauge position – Soft & medium formations – Good impact resistance
SAPD80	General purpose cutter – Medium formations – Good impact and wear resistance
SAPD100	Premium cutter – Hard formations – Excellent impact and wear resistance

Shannon Abrasives PDC Grades



**SPECIFICATIONS**

**Sizes**

Our PDC cutters come in a range of standard sizes to accommodate various drilling and cutting tools. The available standard sizes include 0808, 1108, 1308, 1313, 1613, and 1913mm. If your project demands a specific size not listed, we also provide bespoke sizes upon request. We understand that every project is unique and we are committed to meeting your precise specifications.

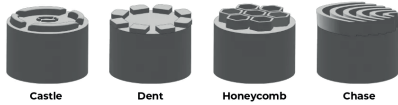
**Diamond Layer Thickness**

The standard diamond layer thickness of our PDC cutters ranges from 1.6 to 2.2mm, ensuring excellent wear resistance and long-lasting performance. This diamond layer is carefully engineered to provide optimal strength and durability, allowing you to tackle even the toughest drilling and cutting tasks with ease. If you require a diamond layer thickness outside of this range please get in touch with your requirements.

## FEATURES

### Non-Planer Interfaces

Our PDC cutters are equipped with non-planer interfaces as a standard feature. This design enhances the cutter's stability and reduces the risk of delamination during operation, ensuring consistent performance and prolonged tool life. With our PDC cutters, you can rely on their robust construction to deliver reliable results in demanding conditions.



### Polished Diamond Layer Surface

For applications that require an exceptionally smooth cutting surface, we offer PDC cutters with a polished diamond layer surface. This optional feature minimizes friction and heat buildup during operation, enabling precise and efficient cutting.

If your project demands the highest level of precision, don't hesitate to request the polished diamond layer surface option.

## APPLICATIONS

Our PDC cutters find applications across a wide range of industries. They are particularly well-suited for oil and gas drilling and reaming, geological sample coring, marble chainsaws, concrete floor leveling, and polishing. With their superior performance and versatility, our PDC cutters are trusted by professionals worldwide to deliver outstanding results in their respective fields.

## QUALITY ASSURANCE

At Shannon Abrasives, we take quality assurance seriously to ensure that our PDC cutters meet the highest standards of performance and reliability. We subject our PDC cutters to a series of rigorous tests to validate their quality and durability. Here is an overview of the types of quality assurance tests that are performed on our PDC cutters:

**Dimensional Accuracy:** We verify the dimensional accuracy of each PDC cutter, ensuring that it meets the specified size and shape requirements. This test ensures that the cutters will fit seamlessly into drilling and cutting tools, enabling smooth and efficient operations.

**Hardness Testing:** We conduct hardness tests to measure the hardness of the diamond layer on our PDC cutters. This helps us ensure that the cutters possess the necessary hardness to withstand the demanding conditions of drilling and cutting applications.

**Impact Resistance:** Our PDC cutters undergo impact resistance tests to evaluate their ability to withstand sudden shocks and impacts during operation. This test assesses the durability and structural integrity of the cutters, ensuring their long-lasting performance.

**Wear Resistance:** We perform wear resistance tests to simulate the abrasive conditions that PDC cutters are exposed to during drilling and cutting operations. These tests measure the cutter's ability to resist wear, providing valuable insights into their lifespan and performance under challenging conditions.

**Thermal Stability:** PDC cutters are subjected to thermal stability tests to assess their performance at high temperatures. This test ensures that the cutters can withstand the heat generated during drilling or cutting processes without compromising their structural integrity.

**Bond Strength:** We evaluate the bond strength between the diamond layer and the substrate material of the PDC cutter. This test ensures that the bond is strong and secure, preventing delamination and ensuring reliable performance throughout the cutter's lifespan.

**Fracture Toughness:** Fracture toughness tests are conducted to measure the cutter's resistance to crack propagation. This test helps us assess the cutter's ability to withstand high-stress conditions and prevent catastrophic failure during operation.

**Cutting Performance:** We also perform cutting performance tests to evaluate the effectiveness and efficiency of our PDC cutters in various drilling and cutting applications. These tests provide valuable data on the cutter's cutting speed, accuracy, and overall performance.

By subjecting our PDC cutters to a comprehensive range of quality assurance tests, we ensure that they meet the highest standards of performance, durability, and reliability. Our commitment to quality enables us to deliver PDC cutters that can withstand the most demanding drilling and cutting applications, providing our customers with exceptional value and peace of mind.

Choose our PDC cutters for their exceptional quality, durability, and performance. Whether you are tackling a challenging drilling project or need precise cutting solutions, our PDC cutters are engineered to meet and exceed your expectations. Contact us today to discuss your requirements and find the perfect PDC cutters for your application.

Talk To Our Experts About Your Industrial Diamond Needs



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