PRODUCT DATA SHEET

SYNTHETIC DIAMONDS

SHANNON ABRASIVES

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)

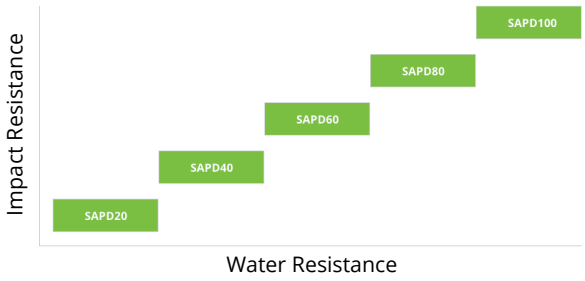
PDC (Polycrystalline Diamond Compact) cutters are the diamond solution to the extreme challenges presented by the harshest drilling conditions. Our PDC cutters are designed to deliver exceptional performance, durability, and efficiency in the most demanding industries such as oil and gas, mining and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

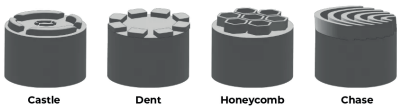
Diamond Layer Thickness

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.

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PCD (Polycrystalline Diamond Disks)

PCD disks are widely used in cutting applications in many different industries including woodworking, automotive manufacturing, aerospace, metalworking and more.

GRADES

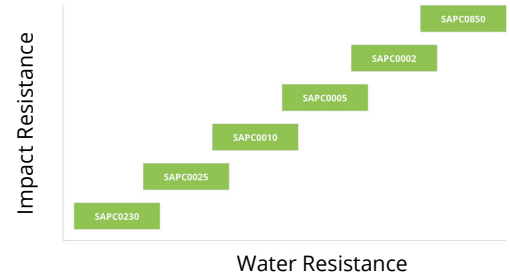
We offer PCD disks with both uni-modal and bi-modal grain sizes, allowing you to choose the most suitable option for your specific cutting requirements. Uni-modal grain sizes provide excellent cutting efficiency and surface finish, while bi-modal grain sizes offer enhanced wear resistance and extended tool life. With our diverse range of grain sizes and grades, you can find the perfect PCD disk for your cutting needs.

- **Disk Diameter:** 63mm and 75mm
  **bespoke diameters available on request*
- **PCD Grain Size:** 0.5-1um, 5um, 10um, 25um & multimodal 30um & 2um
- **PCD Overall Disc Height:** 1.6mm, 2.0mm & 3.2mm
- **PCD Diamond Layer Thickness:** 0.4 – 0.6mm

Grades	Applications
SAPC0850	• Milling of mid-high silicon (>7%) aluminium & titanium alloys • Cutting plastics & wood
SAPC0002	• High precision finishing of low content silicon aluminium alloys • Wear parts and guide rails
SAPC0005	• Thread cutting tools • Profile routers • Wear parts and guide rails
SAPC0010	• Medium and low content aluminium alloys • Stone, Graphite, Copper, Glass, Wood composites, Fireboard etc • Wear parts and guide rails
SAPC0025	• High silicon content aluminium alloys • Metal matrix composite materials • Tungsten carbide and ceramics
SAPC0230	• Metal matrix composites including high silicon aluminium alloys • High Strength cast iron & bi-metal machining • Fibreglass and other highly abrasive materials

GRADES

Shannon Abrasives PDC Grades



SPECIFICATIONS

Sizes

Our PCD disks are available in two popular diameters: 63mm and 75mm. These sizes offer versatility and compatibility with a wide range of cutting tools and machinery. Additionally, we provide three standard thicknesses for our disks: 1.6mm, 2.0mm, and 3.2mm. These thickness options allow you to select the appropriate disk for your specific cutting application, ensuring optimal performance and precision.

FEATURES

Laser or EDM Cut Segments

To further meet your specific requirements, we offer a full suite of laser or EDM cut segments for our PCD disks. These segments can be customized and supplied to your specifications, allowing for precise and efficient cutting performance. Whether you need specific shapes or sizes our team can assist you in creating tailor-made segments that fit seamlessly with your cutting tools.

Bespoke Disk Sizes and Features

At our company, we understand that certain projects call for unique disk sizes and features. Therefore, we offer the option for customers to request bespoke disk sizes and additional features. Whether you need a specific diameter, thickness, or special features such as chamfers or holes in the disk, our team is committed to delivering customized solutions that meet your exact requirements.

APPLICATIONS

Polycrystalline Diamond (PCD) disks are a revolutionary cutting tool designed to cater to a wide range of industries and tasks. With their exceptional hardness, abrasion resistance, and thermal conductivity, PCD diamond disks excel in cutting and machining applications where traditional tools fall short.

Whether it's precision machining of non-ferrous metals like aluminum, copper, and brass, or cutting abrasive materials like wood, composites, and plastics, PCD diamond disks deliver unparalleled performance and extended tool life. These disks are also widely employed in the construction and mining sectors for concrete cutting, drilling, and grinding operations.

By harnessing the outstanding durability and efficiency of PCD diamond disks, businesses can achieve superior productivity and cost-effectiveness, making them an indispensable asset for various cutting-edge industries.

QUALITY

Each of our PCD disks is accompanied by a quality assurance report verifying that it has passed our stringent quality assurance tests. These tests include a size & appearance check and a vickers hardness test. We also measure the thickness of the diamond layer across the disk using SEM as well as checking the micro sintering morphology to ensure it is uniform with no impurities or particle aggregations.

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TSP (Thermally Stable Product)

TSP (Thermally Stable Product) is a high-pressure high-temperature sintered diamond & silicon composite material offering exceptional wear protection, thermal stability and durability.

GRADES

We offer two grades of TSP to cater to standard and more challenging application requirements;

Standard Grade – SATS40

Our standard grade features a bi-modal diamond content, providing a balanced combination of strength and wear resistance. This grade is suitable for a wide range of general applications.

Premium Grade – SATS80

For more demanding operations, we offer our Premium grade, which boasts a tri-modal diamond content with reduced free silicon. The Premium grade exhibits enhanced strength, durability, and improved resistance to wear, making it the preferred choice for wear protection on high-performance drilling applications.

SPECIFICATIONS

We understand that each application has unique requirements.

We offer TSP in a wide range of shapes and sizes including;

- Rounds/Cylinders
- Triangles
- Cubes
- Lozenges
- Hexagons

We can also produce TSPs to customer specifications. Whether you need cylindrical forms, inserts, or specialized shapes, we can accommodate your needs. Our flexibility in providing tailored solutions ensures that you receive the precise TSP product to meet your requirements.

FEATURES

Metal Coatings

To enhance its properties and facilitate incorporation into metal matrix bits, TSP is available with optional metal coatings. We provide metal coatings such as Titanium and Nickel, which offer several advantages. These coatings aid in the bonding of TSP with the metal matrix, ensuring excellent adhesion and overall bit integrity. Additionally, the metal coatings provide surface protection, increasing the longevity of TSP and maintaining its performance under demanding drilling conditions.

APPLICATIONS

TSP finds extensive use in the oil and gas and mining industries. It is commonly incorporated into the surface body of oil and gas bits and mining bits to protect the body of the drill bit. By utilizing TSP in the surface body, the bits can withstand the extreme temperatures and pressures encountered during drilling, ensuring extended tool life and reliable performance in challenging downhole conditions.

In addition, TSP is employed in stabilizers and paddles used in downhole directional drilling apparatus. These components play a crucial role in maintaining drilling accuracy and stability while navigating through various geological formations. TSP's exceptional thermal stability and wear resistance make it an excellent choice for these critical applications, ensuring precise and reliable drilling operations.

QUALITY

Our commitment to excellence is exemplified through a series of meticulous tests that ensure the outstanding performance and reliability of our TSP offering. We begin with dimensional accuracy assessments, where we precisely measure the size and thickness of the TSP to meet the required specifications. Next, we subject the TSP to rigorous hardness tests to evaluate their resistance to wear. Our experts also conduct a comprehensive inspection of the TSP structure, utilizing advanced imaging techniques such as microscopy and scanning electron microscopy (SEM) to examine the diamond's surface and internal composition.

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PCBN (Polycrystalline Cubic Boron Nitride)

PCBN (Polycrystalline Cubic Boron Nitride) is the cutting-edge solution for machining high hardness and hard processed ferrous materials. PCBN finds extensive use in a range of industries, including the metallurgical industry, automotive sector, aerospace field, bearing and gear manufacturing, die and mould production, mining, and construction machinery. Its versatility and superior performance make it a preferred choice across diverse applications.

GRADES

Our PCBN blanks are available in several grades, including SABN95S, SABN95J, SABN90, SABN85, and SABN60, offering a wide range of options to suit your specific machining needs.

SABN95S

• 90~95% vol cBN • 2μm avg. grain size • Al binder • Precision machining of gray cast iron and high temperature alloy, such as aero engine	• Light machining of nodular cast iron and powder metal alloys • Continuous cuts • High smooth finish • High chip resistance

SABN95J

• 90~95% vol cBN • -35μm avg. grain size • Al binder • Rough machining of wearable alloy cast steel, such as brake disc and brake drum	• Continuous to light interrupted cuts • High speed • Long tool life

SABN90

• 90% vol cBN • 10μm avg. grain size • Al binder • High toughness	• A good general purpose grade • Machining general gray cast iron at high speed • Engine cylinder and engine cover • Continuous to heavy interrupted cuts

SABN85

• 85% vol cBN • 25μm avg. grain size • Al binder • High toughness • Rough machining of alloy cast iron and alloy cast steel	• Gray cast iron, chilled cast iron and cast iron with high Chromium content • Slurry pump, roller and mine machines • Medium to heavy interrupted cuts with demanding environment • Long tool life

GRADES

SABN60

• 60% vol cBN • 3µm avg. grain size • TiN binder	• Fine machining of hardened steels, such as bearing steel and die steel • Medium interrupted cuts • Medium to high speed

SPECIFICATIONS

Our PCBN blanks are available in various standard shapes to accommodate different machining needs. Choose from hexagonal, diamond, triangle, round, and square shapes, ensuring versatility and compatibility with your specific machining operations. We also offer full disks of solid and carbide backed PCBN.

In addition to our standard offerings, we are proud to offer bespoke shapes and sizes of PCBN blanks to meet specific customer requirements. Whether you need custom shapes, dimensions, or hole patterns, our experienced team can work closely with you to create tailored solutions that perfectly align with your machining needs.

FEATURES

Our PCBN blanks possess a host of exceptional characteristics that ensure superior performance and reliability in demanding machining applications:

- High hardness and fracture resistance enable effective machining of hardened steels and high hardness metallic materials.
- High wear resistance and thermal stability ensure long tool life and consistent performance, even in high-speed machining.
- Good chemical stability makes PCBN inert to iron family elements, reducing the risk of chemical reactions during machining.
- Good weldability allows for easy tool reconditioning and extended tool life.
- Excellent dimensional control and consistent surface finish deliver precision and accuracy in machining operations.
- Higher material removal rate and increased efficiency result in improved productivity and reduced machining time.

APPLICATIONS

PCBN is widely used in various industries for machining high hardness and hard processed ferrous materials. PCBN is suitable for machining various workpieces, including brake discs, brake drums, engine blocks, engine cylinder liners, engine covers, flywheels, gears, and mould and die parts. No matter the complexity or hardness of the workpiece, PCBN tools provide precise cutting solutions, ensuring optimal results. Some of the key applications include:

- Machining of hardened steels and high hardness metallic materials, providing excellent cutting performance and precision.
- High-speed machining of grey and hard cast iron, high-strength cast iron, cold and hot-work tool steels for efficient and productive operations.
- Machining of powder metal alloys, such as heat-resistant sintered alloy and Iron-based materials, ensuring superior results in challenging machining scenarios.
- Machining of nickel and cobalt-based super alloys commonly used in aerospace and other high-performance applications, delivering exceptional performance and tool life.

QUALITY

Our commitment to excellence is evident in every stage of our production process. Before our PCBN inserts are approved for use, they undergo a series of stringent tests to ensure their performance and durability. Our dedicated quality control team meticulously inspects each insert, conducting tests such as hardness assessment, dimensional accuracy verification, edge integrity analysis, and surface finish evaluation. These tests enable us to maintain the highest standards and guarantee that our PCBN inserts meet the demanding requirements of precision machining. With our unwavering focus on quality, you can trust that our PCBN inserts will consistently deliver exceptional results, maximizing your productivity and minimizing downtime.

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PRODUCT DATA SHEET

SINGLE CRYSTAL DIAMOND

SHANNON ABRASIVES

Engineered To Meet Your Needs.

Single Crystal Diamond for Precision Machining is a cutting-edge solution for achieving unparalleled precision and efficiency in your machining operations.

CVD Diamond

Mechanical grade single crystal CVD diamond is a cutting-edge material renowned for its exceptional mechanical properties and versatility. Shannon Abrasives specialize in supplying high-quality single crystal CVD diamond plates with precise crystallographic orientations, allowing for a wide range of applications in precision machining.

GRADES

Mechanical grade supplied as standard, optical and electronic grades are available on request.

SPECIFICATIONS

Crystallographic Orientations:

We offer single crystal CVD diamond plates in 2Pt (110) and 4Pt (100) crystallographic orientations. These orientations provide different surface configurations and allow for tailored performance in specific applications. Whether you require the enhanced durability and wear resistance of the 2Pt orientation or the optimized thermal conductivity and electrical properties of the 4Pt orientation, our CVD diamond plates can meet your exact needs.

Standard Sizes:

We supply single crystal CVD diamond plates in all standard sizes to accommodate different application requirements. Our available standard sizes include 4 x 3 x 1.2mm and 3 x 3 x 1.2mm. These sizes are commonly used in a variety of applications and provide a balance between versatility and practicality.

Bespoke Sizes:

We understand that some projects demand unique dimensions. That's why we offer the option for customers to request bespoke sizes for their single crystal CVD diamond plates. Our team is committed to meeting your specific requirements, and we can produce custom sizes tailored to your application needs. Simply provide us with your specifications, and we will work closely with you to deliver the perfect solution.

APPLICATIONS

Mechanical grade single crystal CVD diamond finds applications in a wide range of industries and fields. Its exceptional mechanical properties, such as high hardness, stiffness and wear resistance, make it ideal for demanding applications. It is used in cutting tools, high-performance optics, and more. The versatility and reliability of our CVD diamond plates make them a preferred choice for professionals across various industries.

Choose our HPHT single crystal diamonds for their superior quality, reliability, and versatility. Contact us today to discuss your requirements and explore how our HPHT diamonds can elevate your cutting, grinding, and manufacturing processes. Our team is dedicated to providing tailored solutions and assisting you in finding the perfect diamond shape and size for your specific application needs.

Contact us today to discuss your requirements and explore how our mechanical grade single crystal CVD diamond plates can enhance your projects. Our dedicated team is ready to assist you in selecting the ideal diamond plate size and orientation for your needs, delivering exceptional performance and value.

QUALITY

We understand the importance of delivering exceptional quality and performance to our customers. As part of our comprehensive quality assurance process, we begin with a thorough dimensional check of each CVD diamond plate. This ensures that the size and thickness of the plates align with the specified requirements.

Additionally, we employ state-of-the-art technology, such as the Leica polarizing microscope, to conduct a stress analysis on the diamond plates. This advanced microscope allows us to examine the internal stress distribution within the plates, ensuring their structural integrity and minimizing the risk of any potential defects.

By utilizing these cutting-edge techniques, we can confidently provide Mechanical grade CVD diamond plates that not only meet but exceed the highest industry standards. Our commitment to quality assurance guarantees our customers receive reliable and high-performance diamond plates for their diverse mechanical applications.

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Single Crystal Diamond for Precision Machining is a cutting-edge solution for achieving unparalleled precision and efficiency in your machining operations.

HPHT

HPHT (High-Pressure High-Temperature) single crystal diamond is a superior material renowned for its exceptional characteristics and versatility. Shannon Abrasives specialize in providing high-quality HPHT single crystal diamonds in various shapes and sizes, offering a wide range of applications in different industries.

SPECIFICATIONS

We offer HPHT single crystal diamonds in a variety of shapes to suit your specific needs. Available shapes include square, rectangle, round, and triangle, providing versatility for a range of applications. In addition, we also offer plates suitable for wire drawing dies, ensuring we can meet the diverse requirements of our customers.

Our HPHT single crystal diamonds are available in a range of standard sizes, starting from 1mm up to 7mm. These sizes cater to various applications and offer versatility in their usage. However, we understand that unique projects may require specific dimensions. Therefore, we also offer the option for customers to request bespoke sizes, ensuring we can meet your precise requirements.

FEATURES

High Purity and Impact Toughness:

Our HPHT single crystal diamonds are known for their high purity and excellent impact toughness. The high-purity composition ensures optimal performance in precision applications, providing clean and accurate cuts. The exceptional impact toughness ensures durability and resistance to mechanical stresses, extending the lifespan of the diamond and maintaining its performance even in demanding environments.

Good Thermal and Chemical Stability:

HPHT single crystal diamonds exhibit excellent thermal and chemical stability. They can withstand high temperatures and harsh chemical environments without compromising their structural integrity. This stability ensures consistent performance and durability in extreme conditions, making them an ideal choice for demanding applications.

Outstanding Thermal Conductivity:

One of the standout characteristics of HPHT single crystal diamonds is their outstanding thermal conductivity. They possess exceptional heat dissipation properties, enabling efficient cooling during cutting or grinding processes. This high thermal conductivity helps prevent overheating and prolongs the tool's lifespan, ensuring optimal performance even in high-temperature environments.

APPLICATIONS

HPHT single crystal diamonds find applications across a broad range of industries. Some notable applications include precision cutting tools for non-ferrous and non-metallic materials, dressing tools for grinding wheels, wear parts for high-wear applications, wire drawing dies for the manufacturing of wires, and much more. The exceptional properties of our HPHT single crystal diamonds ensure outstanding performance, precision, and longevity in these applications.

Choose our HPHT single crystal diamonds for their superior quality, reliability, and versatility. Contact us today to discuss your requirements and explore how our HPHT diamonds can elevate your cutting, grinding, and manufacturing processes. Our team is dedicated to providing tailored solutions and assisting you in finding the perfect diamond shape and size for your specific application needs.

QUALITY

We recognize the critical role that quality plays in delivering exceptional diamonds for various applications. Our rigorous quality assurance process includes a comprehensive set of tests to ensure the highest standards are met. Each single crystal HPHT diamond undergoes a dimensional check, where precise measurements are taken to verify its size and thickness against specified requirements. We also conduct thorough examinations using advanced techniques such as microscopy and spectroscopy to assess the diamond's clarity, color, and purity. Additionally, a comprehensive analysis of the diamond's optical and thermal properties is carried out to ensure its performance and reliability. Through these stringent quality assurance tests, we guarantee that our single crystal HPHT diamonds surpass industry standards and provide our customers with exceptional quality and value for their diverse applications.

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SYNTHETIC DIAMOND GRIT

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Shannon Abrasives synthetic grit solutions include a Drilling series, a Sawing series and a Grinding series as well as Lapping and Polishing powders.

Drilling Grit Series

The Drill Grit Series consists of three product grades in coarse sizes designed to survive high sintering temperatures and long sintering cycles and provide high penetration rates in the hardest formations.

GRADES

SADG 95 – Ultra high-strength, high-thermal stability. Designed for extreme sintering conditions and the hardest rock formations

SADG 90 – High-strength, high-thermal stability. Designed for high-temperature sintering condition and medium to hard rock formations

SADG 80 – Mid-strength, high-thermal stability. Designed for high-temperature sintering conditions and friable abrasive rock formations

US Mesh Size	Stones per Carat	Concentration					Mean size um
		20	40	60	80	100	
18/20	90	79	158	238	317	396	1001
20/25	150	132	264	396	528	660	851
20/30	220	194	387	581	774	968	782
25-35	380	334	669	1003	1338	1672	712
30/40	660	581	1162	1742	2323	2904	602
35/45	1080	950	1901	2851	3802	4752	502

SPECIFICATIONS

Available in sieve sizes and stones per carat.

FEATURES

Both T and TiC coatings available as standard.

QUALITY

Ensuring the highest quality of synthetic diamond grit is paramount in meeting the rigorous demands of various industries, and our comprehensive quality testing procedures leave no room for compromise. One of the critical tests we conduct is the Ti TTi strength test, which assesses the grit's ability to withstand extreme pressures and abrasion. Additionally, a meticulous physical inspection is carried out to check for any imperfections or irregularities. To guarantee uniformity and consistency, we employ automated shape sorting, which meticulously categorizes the diamond grit based on predefined criteria. Furthermore, the diamond grit is precisely sized into US mesh sizes, ensuring it aligns perfectly with your specific requirements. Our commitment to rigorous quality testing ensures that our synthetic diamond grit is of the highest standard, enabling you to achieve exceptional results in your applications, every time.

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Sawing Grit Series

The Shannon Abrasives Sawing Grit Series consists of eight product grades in sizes 25/35 US mesh to 60/80 US mesh, providing a full suite of solutions for a complete range of sawing and coring applications in Stone and Construction. The many uses include cutting and coring of steel reinforced concrete, slabbing of marble and granite blocks to the surface planing and preparation of concrete and stone materials.

GRADES

SASG 95 – Ultra high-strength, high-thermal stability for the most demanding applications and aggressive sintering regimes in complex bond systems.

SASG 90 – High-strength, high-thermal stability for demanding applications and cobalt or iron-based bond systems.

SASG 85 – High-strength, moderate-thermal stability for class 3 and 4 granites and non-reinforced concrete products for cobalt and bronze-based bond systems.

SASG 80 – Moderate-strength, moderate-thermal stability for class 4 granite and non-reinforced concrete products for cobalt and bronze-based bond systems.

SASG 70 – Moderate-strength, moderate-thermal stability for marble class 5 granites and non-reinforced concrete materials.

SASG 60 – Medium-strength, medium-thermal stability suitable for low-temperature bond systems and processing of marble and aggregate concrete materials.

SASG 50 – Medium-strength, low-thermal stability for low-temperature bond systems including electroplating for the processing of a range of materials from marble to sandstone and low-aggregate concretes.

SASG 40 – Low-strength, low-thermal stability suitable for low-temperature bonds including electroplating and the processing of a range of friable stone and concrete materials with low-power tools.

GRADES

US Mesh Size	Stones per Carat	Concentration					Mean size um
		10	20	30	40	50	
25/35	380	167	334	502	669	836	712
30/40	660	290	581	871	1162	1452	602
35/45	1080	475	950	1426	1901	2376	502
40/50	1880	827	1654	2482	3309	4136	427
40/60	2950	1298	2596	3894	5192	6490	357
50/60	3600	1584	3168	4752	6336	7920	301
50/70	4750	2090	4180	6270	8360	10450	276
60/70	5860	2578	5157	7735	10314	12892	251
60/70	7600	3344	6688	10032	13376	16720	232
70/80	9375	4125	8250	12375	16500	20625	213

SPECIFICATIONS

All grades available in sizes 25/35 to 70/80 US mesh.

Single sizes also available on request.

FEATURES

Both T and TiC coatings available as standard.

QUALITY

Ensuring the highest quality of synthetic diamond grit is paramount in meeting the rigorous demands of various industries, and our comprehensive quality testing procedures leave no room for compromise. One of the critical tests we conduct is the Ti TTi strength test, which assesses the grit's ability to withstand extreme pressures and abrasion. Additionally, a meticulous physical inspection is carried out to check for any imperfections or irregularities. To guarantee uniformity and consistency, we employ automated shape sorting, which meticulously categorizes the diamond grit based on predefined criteria. Furthermore, the diamond grit is precisely sized into US mesh sizes, ensuring it aligns perfectly with your specific requirements. Our commitment to rigorous quality testing ensures that our synthetic diamond grit is of the highest standard, enabling you to achieve exceptional results in your applications, every time.

Talk To Our Experts About Your Industrial Diamond Needs

+353 61 475066 enquiries@shannonabrasives.com

PRODUCT DATA SHEET

SYNTHETIC DIAMOND GRIT

SHANNON ABRASIVES

Engineered To Meet Your Needs.

Shannon Abrasives synthetic grit solutions include a Drilling series, a Sawing series and a Grinding series as well as Lapping and Polishing powders.

Grinding Grit Series

Our Grinding Series consists of three metal bond product grades in sizes 60/70 US mesh to 325/400 US mesh. These three grades provide a choice of strength from high-strength, high-thermally stable material suitable for the most demanding applications to low-strength friable material for stone and concrete polishing. grinding to surface calibration of stone, precision grinding of ceramics and cutting and lapping of silicon wafers.

GRADES

SAGG 95 – Ultra high-strength, high-thermal stability for the most demanding applications and aggressive sintering regimes in complex metal bond systems.

SAGG 80 – Medium-strength, high-thermal stability for demanding applications and high-productivity tools.

SAGG 50 – Low-strength, moderate-thermal stability for surfacing and polishing applications.

US Mesh Size	Mean Size um	US Mesh Size	Mean Size um
60/70	251	200/230	76
70/80	213	230/270	64
80/100	181	270/325	54
100/120	151	325/400	46
120/140	126	4000/500	35
140/170	107	500/600	30
170/200	91		

SPECIFICATIONS

All grades available in sizes 60/70 to 325/400 US mesh.

QUALITY

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Lapping And Polishing

Synthetic micron diamond grit is available in a full range of sizes from 0-0.05 microns to 30-40 microns. This product is suitable for the surface engineering of the toughest materials in the lapping and polishing of a wide range of materials including ceramics, stone, metals, natural diamond, polycrystalline diamond and composite materials.

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