



 **SHANNON**
ABRASIVES

INDUSTRIAL DIAMOND SPECIALISTS

Trusted Supply Partner to the Oil & Gas Industry

Introducing Shannon Abrasives

Optimizing The Industrial Diamond Global Supply Chain

At Shannon Abrasives, we provide tailored diamond solutions to customers across a wide range of industry sectors. Offering a combination of commercial and production expertise, high-quality supermaterials, and a dedicated commitment to service, you can depend on us to meet your operational needs.

Tailored Solutions

With a solid reputation in offering proven expertise to diamond tool manufacturers. All our solutions are customized and designed to meet the operational and application needs of our customers.

Trusted Supplier

As industry veterans with more than 35 years commercial experience, you can be confident that you are working with a reliable partner, focused on delivering a consistent-quality product for your specific industry sector.

True Innovation

We are focused on continuous innovation and product development. While we have a wide range of products to meet current needs, we are continuously listening to the market and have developed an insightful ability to manufacture and supply products to meet the changing demands of our customers.

Total Customer Focus

By having solid supply chains in place, combined with our committed technical and support teams, we have a genuine customer-first mentality. We also understand the importance of value-for-money and can help you achieve cost efficiencies while maintaining quality in your equipment manufacturing.

Global Supplier

As a trusted global supplier of high-quality diamond products, we take pride in delivering our products worldwide, ensuring our customers can access the finest diamond solutions no matter where they are located. Shipping your orders promptly and securely is our top priority, that's why we have partnered with all the major courier companies, including FedEx, DHL and UPS, to ensure reliable and efficient global delivery.



Greg Carey

CEO



Oil & Gas



Industrial Diamond Suppliers of Choice

Supplying diamond solutions that deliver unsurpassed quality, durability and performance. Engineered to meet the specific needs of tool manufacturers in the oil and gas industry.



Exceptional Products For Extreme Conditions

Products deployed in the oil and gas sector are subjected to some of the highest loads and harshest operating conditions. To meet these testing applications, we can supply a range of PDC and TSP to meet your drilling and wear protection requirements.



Reduce Your Oil And Gas Operation's Downtime

We offer a wide range of products for use in the oil and gas sector, enabling you to keep your production lines and workshops running to maximum efficiency. With a focus on quality, compliance and sustainability, we tailor our products to suit your needs.



PDC (Polycrystalline Diamond Compact)

PDC (Polycrystalline Diamond Compact) cutters are the cutting-edge solution for various drilling and cutting applications.

[LEARN MORE](#)



TSP (Thermally Stable Product)

TSP (Thermally Stable Product), a cutting-edge high-pressure, high-temperature sintered diamond/silicon composite material.

[LEARN MORE](#)

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.

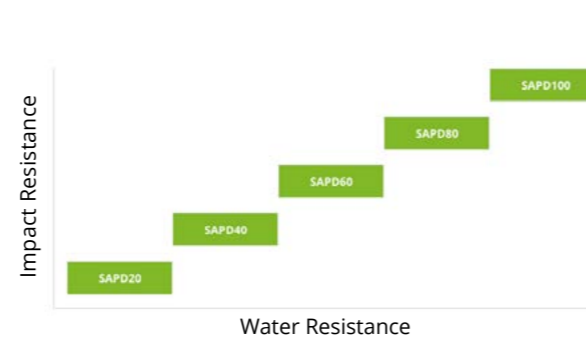


GRADES

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.

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.

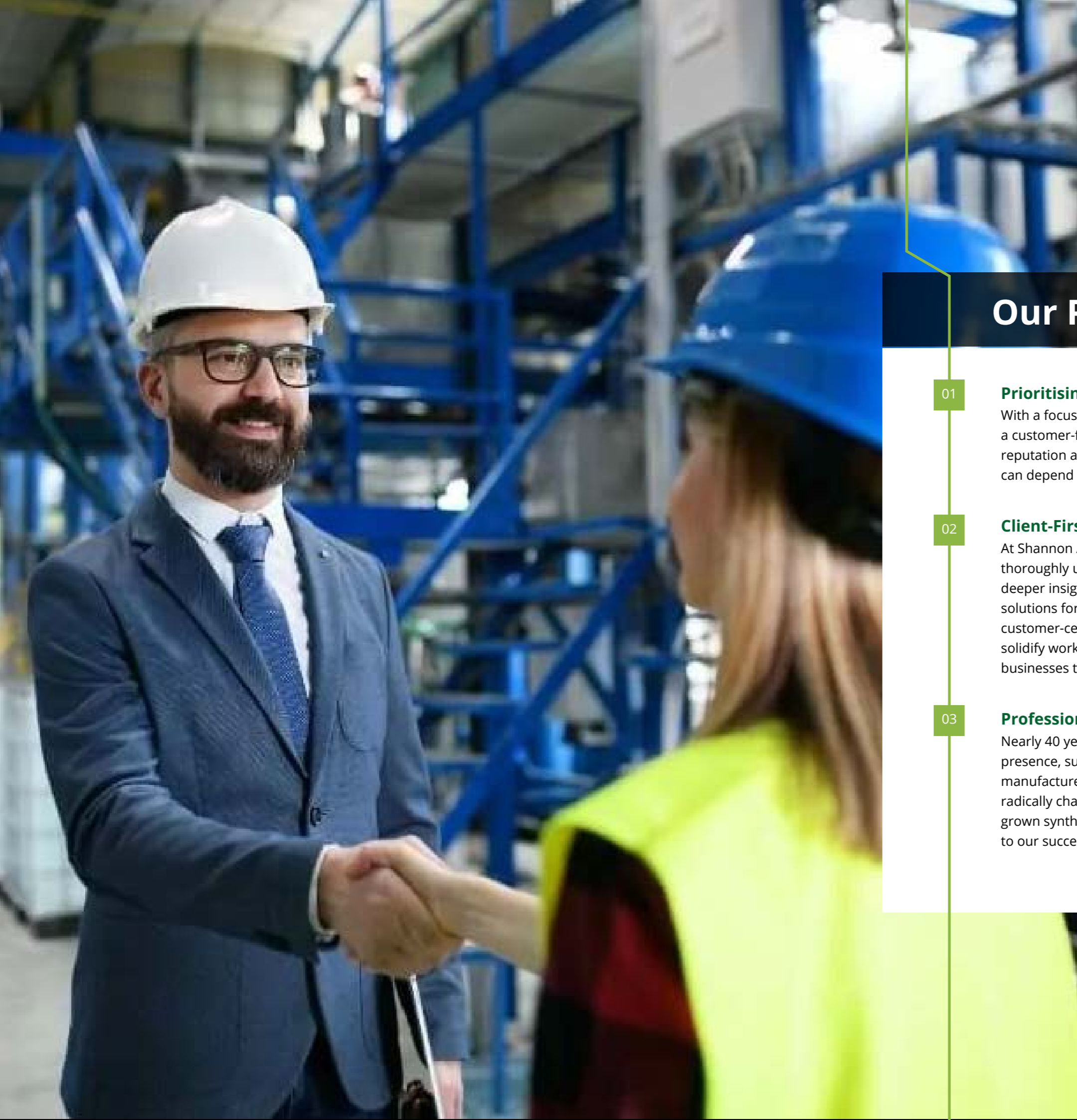
APPLICATIONS

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.



Our Promise

01

Prioritising Partnership

With a focus on tailored solutions and serving client needs through a customer-first philosophy, Shannon Abrasives has carved out a reputation as an industrial diamond supplier that tool manufacturers can depend on.

02

Client-First Model

At Shannon Abrasives we recognise that investing our efforts in thoroughly understanding our clients' requirements and gaining deeper insights into their product usage helps us to craft tailored solutions for their precise operational needs. Since 1987, our customer-centric approach has helped us foster greater trust and solidify working relationships with all our clients, from smaller businesses to larger enterprises.

03

Professionalism, Honesty And Reliability

Nearly 40 years on and Shannon Abrasives has established a global presence, supplying industrial diamond products to industrial tool manufacturers worldwide. While the industrial diamond world has radically changed with the arrival of digitization and the rise of lab-grown synthetic diamonds, the same core qualities remain important to our success – professionalism, honesty, and reliability.



Our Quality Control Commitment

Quality testing procedures for Synthetic and Natural industrial diamonds are vital to ensure their reliability and performance in industrial applications. These procedures focus on assessing the physical and chemical properties of the diamonds to meet specific application requirements. At Shannon Abrasives all orders are checked by a qualified quality control engineer prior to shipping and an appropriate certificate of quality will accompany each shipment.

Adhering to **FEPA standard** sizing, the diamonds are scrutinized for size, shape, and surface integrity, as these factors directly impact their effectiveness in cutting, grinding, or drilling applications. Advanced techniques like SEM and Ultrasonic Detection are employed to ensure the morphology of sintered products such as PCD is uniform with no particle aggregation or impurities. Ultrasonic detection is also employed to measure the diamond layer thickness across the full scope of the disk or segment and ensure that it is within required tolerances.

Additionally, thermal conductivity measurements, abrasion resistance and Vickers hardness tests are conducted to evaluate the diamonds' suitability for use in high-heat and abrasive environments. Eye tests are employed by quality assurance under 10x microscope to look for defects or contaminants.

Through these **rigorous quality testing procedures**, we deliver industrial diamond products that deliver consistent and superior performance, meeting the demands of a wide range of industrial processes.

Global Suppliers

Shannon Abrasives are global full-line suppliers of supermaterials. We partner with each of our customers to develop industrial diamonds solutions for their specific requirements. Producing tailored product solutions for a variety of technical applications and industries, our customers range from large multinationals and SME's, to artisan tool manufacturers.



SHANNON

ABRASIVES



Visit us

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Shannon, Co. Clare,
Rep. of Ireland.



Call us

Discuss your specific
requirements with our
expert team.

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Message us

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