BESPOKE INDUSTRIAL DIAMOND SOLUTIONS

Shannon Abrasives partners with each of our customers to develop industrial diamond solutions for their specific requirements. Producing bespoke products for a variety of technical applications and industries, our customers range from large multinationals and SME’s to artisan tool manufacturer’s worldwide. As a full-line supermaterials supplier we offer both synthetic and natural diamond solutions.

MATERIALS SCIENCE & APPLICATIONS EXPERTISE

Diamond is the hardest and most resilient known material and offers a much greater rate of productivity and higher life in applications than conventional abrasive products. Shannon Abrasives’ materials expertise and applications knowledge supports our partners with the optimum diamond product solutions.

GLOBAL PARTNERS

Downstream partnership development is vital to us as we continually strive to build mutually-beneficial relationships. We supply bespoke industrial diamond solutions to our global partners in a wide range of industries and technical applications.

HIGH QUALITY PRODUCTS

In industries where product quality and consistency are non-negotiable, our customer-driven solutions together with our in-house quality and testing systems guarantee product stability and reliability.

GLOBAL PARTNERS

With the support and positioning of our trusted global partners, Shannon Abrasives offers world-class solutions in industrial diamonds.

INNOVATION

As industrial diamond manufacturers, we are committed to research and innovation. This commitment to R&D enables the development of new products and processes tailored to our customers individual needs.

www.shannonabrasives.com
NATURAL DIAMOND

PREMIUM
The best shapes and the lightest colours are selected from original mined diamond to be the starting material for our Premium product. Mechanically and chemically processed to improve the initial shape and remove weak stones, the resultant product exhibits the characteristics of strength and uniformity. The regular shape of P quality guarantees an even wear pattern on the stones and thus ensures uniform penetration and maximum life.

Sizes Available: P quality is available in sizes 1 – 100spc

REGULAR
Dark colours and round shapes are selected from original mined diamond as the starting material for our Regular quality. Subjected to a mechanical process designed to enhance the shape and remove weak stones, the resultant material is thus free of seriously flawed particles.

Sizes Available: R quality is available in sizes 1 – 100spc

GUAGE STONES
Blocky angular Boart provides the base for this gauge material. This material is mechanically treated in-house to remove brittle stones and thus increase the overall strength. This product was designed for use as a gauge keeper in a variety of bit types and sizes. In maintaining the gauge size the inherent characteristics of shape and toughness are utilised to greatest advantage.

Sizes Available: Gauge quality is available in sizes 1 – 100spc
GRIT

Our Natural Grit is made by selecting the best qualities and shapes from our in-house crushing of Natural Boart. We supply Grit with sharp irregular cutting edges for those applications that require high-speed cutting. We also offer a Processed Grit that has been mechanically processed to enhance strength and uniformity.

Sizes Available:
Sizes range from 16/18 US Mesh to 400/500 US Mesh

ROTARY

The best-quality natural diamonds are shape-selected, mechanically rounded and chemically polished using our in-house propriety processes to produce a Rotary material with a controlled radius and uniform shape. They are suitable for electroplated and infiltrated bond systems that utilise hand-set diamonds.

Sizes Available:
Sizes range in stones per carat from 100spc to 250spc.

LONGS

Suitable long shapes are selected from mined Boart as the base material for processed longs. Stressed both mechanically and chemically, the resultant product exhibits the characteristics of strength and uniformity of shape.

Note - We can provide Natural Unprocessed longs upon request.

Sizes Available:
Sizes range in stones per carat from 5spc to 60spc.

NATURAL DRILLS

The best-quality natural Brown Drill diamonds are carefully selected to eliminate significantly flawed stones. The characteristics of dodecahedral and full round shape combine to form a high-quality material designed for drilling the most demanding formations.

Sizes Available:
Sizes range in stones per carat from 10spc to 40spc.
TOOL STONES

We have developed a range of products to cover a broad spectrum of uses to match the varied demands of today’s Toolstone business. From single point Toolstones for diamond dressers to more complex designs we have qualities to match all settings. Individually selected on the basis of quality, internal geometry and shape, our classifications encompass a variety of specialised types. 

Sizes Available:
Sizes range in stones per carat from 1spc to 10spc.

CARBONADOS

The best quality Natural Carbonados (also known as black diamond) are selected and then laser cut to ensure a uniform blocky shape. It is their high toughness which leads to their use in demanding applications such as oilfield drilling.

Sizes Available:
Sizes range from 10 C.P.S. to 15 S.P.C.

MACLES

Triangular shaped macle diamond for use in chisel type tools is available in a range of sizes. Please get in touch and let us know your requirements.

Sizes Available:
Sizes range from 1 per carat to 25 per carat

MICRON

Natural Micron powder is processed into sizes through specialised crushing and milling techniques that produce sharp-edge, fast-cutting particles. All micron diamond sizes are tightly controlled and a P.S.D chart displaying the size distribution accompanies all material.

Sizes Available:
Sizes range from 0 – ¼ microns to 50-70 microns.
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.

- **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.

**Sizes Available:**
Available in sieve sizes and stones per carat.
Both T and TiC coatings available as standard.

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<th>US Mesh Size</th>
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**Titanium Metal Coating**

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A GLOBAL SUPPLIER OF BESPOKE DIAMOND SOLUTIONS
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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.

- **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.

_**Sizes Available:**_
_**All grades available in sizes 25/35 to 70/80 US mesh.**_
_**Single sizes also available on request. Both T and TiC coatings available as standard.**_
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. These solutions can be used in a wide range of material processing applications in sintered and electroplated tools from glass grinding to surface calibration of stone, precision grinding of ceramics and cutting and lapping of silicon wafers.

- **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.

**Sizes Available:**

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

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.
POLYCRYSTALLINE DIAMOND

PDC
Polycrystalline diamond compacts (PDC) for oil and gas drilling, mining and construction applications are available in sizes 0803, 0808, 1308, 1613 and 1913. Typical micron grain sizes are 3-6um and 8-12um. Bespoke grain sizes and interface designs are available on request.

PCD
As a global PCD company, Shannon Abrasives supplies polycrystalline diamond discs (PCD) and diamond inserts in 5um grain size and multi-modal grain sizes of 2um and 30um for wood and metal working applications. Both the 5um grain size discs and the multimodal products are offered in a 45mm diameter format. PCD can also be provided as EDM-cut segments in a variety of shapes and sizes to meet individual requirements.

TSP
Thermally stable product (TSP) for gauge and cutting applications is available in standard density (SATS40) and high-density (SATS80) grades. Both standard and high-density TSP materials are available in a range of sizes and shapes such as triangles, cubes, lozenges, rectangles, buttons and squares to meet customer specifications. Metal coatings that aid the brazing process are also available on request.

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