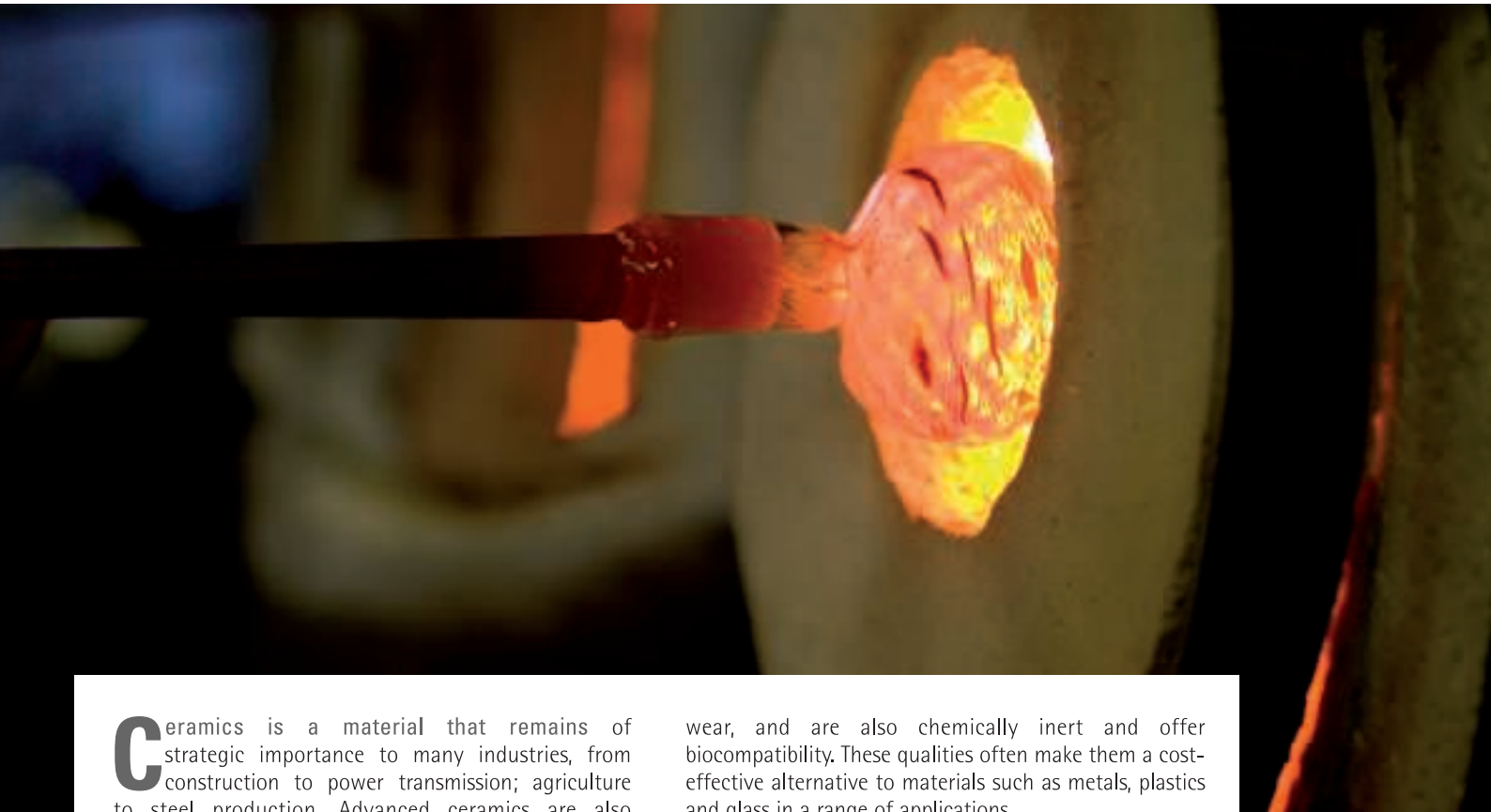


Ceramics

The UK has more than 200 years' experience in the development, manufacture and supply of ceramics



Ceramics is a material that remains of strategic importance to many industries, from construction to power transmission; agriculture to steel production. Advanced ceramics are also needed for a range of high-tech applications.

The UK ceramics sector covers the design and manufacture of ceramic-making equipment such as kilns and casting equipment; industrial ceramics such as refractories; pipes, bricks, floor and wall tiles; sanitary ware; commercial and domestic tableware; and, as already mentioned, an ever-growing range of advanced, technical ceramics.

The UK industry has remained competitive through continuing technological advance, research and development, technology transfer and capital investment and is a strong supplier to markets in Asia, the US and Europe.

WORLD LEADERS

The UK excels in the design of ceramics manufacturing machinery, as it does in the manufacture of high-tech ceramics. Advances in forming and manufacturing techniques have led to the development of new ceramic materials with properties that can solve once impossible technical and engineering challenges.

UK companies work with a range of advanced ceramics including alumina, zirconia, silicon nitride, silicon, carbide to name a few. New materials are being developed all the time in response to the challenges posed by innovative applications. Advanced ceramics made in the UK are used in applications ranging from computing, aerospace, lasers, thermal imaging and artificial joints.

ADVANCED CERAMICS

The range of advanced ceramics produced in the UK offers superior physical, mechanical, thermal and electrical properties. Advanced ceramics are highly resistant to melting, bending, stretching, corrosion or

wear, and are also chemically inert and offer biocompatibility. These qualities often make them a cost-effective alternative to materials such as metals, plastics and glass in a range of applications.

UK companies have established a global reputation for innovation and design in advanced ceramics, and supply the aerospace, chemical, medical and power engineering sectors.

Morgan Advanced Ceramics, to take one example, is at the leading edge of research and development in innovative, engineered solutions based on advanced ceramics and ceramic to metal assemblies.

Others such as Advanced Ceramics Limited make a variety of glass ceramic products and pressed glass components. Glass materials are made and shaped by casting, centrifugal casting, pressing, drawing and blowing. The amorphous material is then heat treated which transforms the glass into glass ceramic, imparting properties of high-strength and chemical durability. Waste encapsulation glasses, dental glasses, fluxes and pastes for electronics are produced by companies such as Cera Dynamics, which specialises in the manufacture of high-purity frits and glasses.

UK companies work with a wide range of advanced ceramic materials. Dynamic Ceramic Ltd specialises in producing advanced ceramic solutions for wear, corrosion and thermal applications to customers worldwide. The company offers bespoke solutions in alumina, zirconia, silicon nitride, boron carbide and other materials. Production capabilities include the latest pressing and compaction technologies, state-of-the-art CNC machining, sintering and precision diamond grinding techniques.

The UK also boasts experts in the manufacture of porous industrial ceramics. Fairey Industrial Ceramics Limited, for example, produces a large range of porous ceramic products, specifically for use in areas such as gas and liquid filtration, crossflow microfiltration, aeration ➡



and diffusion, fluidisation, soil science and other industrial applications.

Others, such as International Syalons Newcastle Ltd, have experience in the production and development of ceramics for use in hostile engineering environments.

REFRACTORIES

The UK ceramics industry includes specialists known throughout the world for the design, manufacture and supply of refractories. They offer bespoke packages in a wide range of materials to customers in the metallurgical and thermal process industries.

Firms such as Capital Refractories and York Linings International have many years of experience in making and installing high-quality refractory products, with a range that covers rammed, shaped and cast refractory linings and ancillary products for metal melting, treating and handling. Their strength lies in the ability to offer complete refractory packages involving design, engineering, material procurement, installation, commissioning and maintenance.

Companies such as Vulcan Refractories offer rapid production of bespoke refractory shapes in a range of materials, including silicon carbide, alumina, aluminosilicate, zircon and zirconia. Industries served include aluminium, cement, iron and steel, incineration, petrochemical, power generation, mineral processing and glass manufacture.

EQUIPMENT AND KILNS

The UK ceramics sector makes and supplies kilns, casting equipment, process dryers and ancillary products to ceramics manufacturers around the world. It is known particularly for its experience in equipment design. Ceramic Drying Systems, for example, supplies equipment for international projects either as turnkey, or as key

components, with fabricated parts being sourced locally against detailed engineering drawings. Its products and services include tunnel and chamber dryers, environmental control systems for casting shops, process and airless dryers and spray glazing lines for sanitaryware.

Casting system specialists include Porvair Ceramics Ltd. The company works closely with the world's leading sanitaryware and tableware manufacturers and has successfully installed casting systems all over the globe. It is increasingly applying mould materials technologies to other applications such as the production of technical ceramics.

Others have developed an expertise in designing and building machines to automate ceramic production. The UK industry has developed many innovative production techniques and offers bespoke process machines.

Meanwhile, Drayton Beaumont Kilns International, one of the UK's largest kiln building firms, is renowned for the supply of high-quality, cost-effective kilns and ancillary equipment. Its products and expertise cover tunnel kilns, shuttle kilns, lifting hoods, belt kilns, driers, curing ovens, heat-treatment furnaces and thermal oxidisers.

The UK is also home to suppliers of kiln furniture, such as Dyson Ceramic Systems. Products include a new lightweight cordierite material that gives faster kiln firing, and a revolutionary new material that eliminates the need for recoating of profile following continuous firing.

COLOURS AND GLAZES

The UK specialises in the manufacture of high-quality colours and glazes. Companies have many years of experience and make products such as vitreous enamel colouring oxides for the domestic appliance industry; glazes and coatings for carbon-based refractories; glass colours; transparent and opaque frits; and fluxes and pastes for electronic applications.

BRICKS AND TILES

The UK has a reputation for high-quality brick and tile manufacture and supplies products and design services to clients across the world. The industry produces a wide range of tiles and bricks, including facing bricks and special-shaped bricks. Non-standard special bricks are also made to order. ■

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