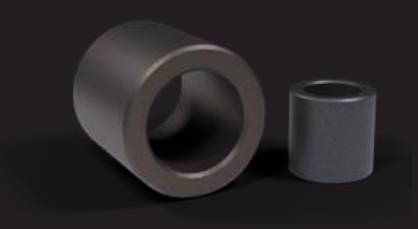
OLMEC
ADVANCED MATERIALS

Carbon and Graphite for Mechanical Applications



Olmec Advanced Materials are one of the largest independent graphite and carbon machining facilities in Europe. The company has been supplying graphite and carbon materials and machined parts across a myriad of industries for over 4 decades.

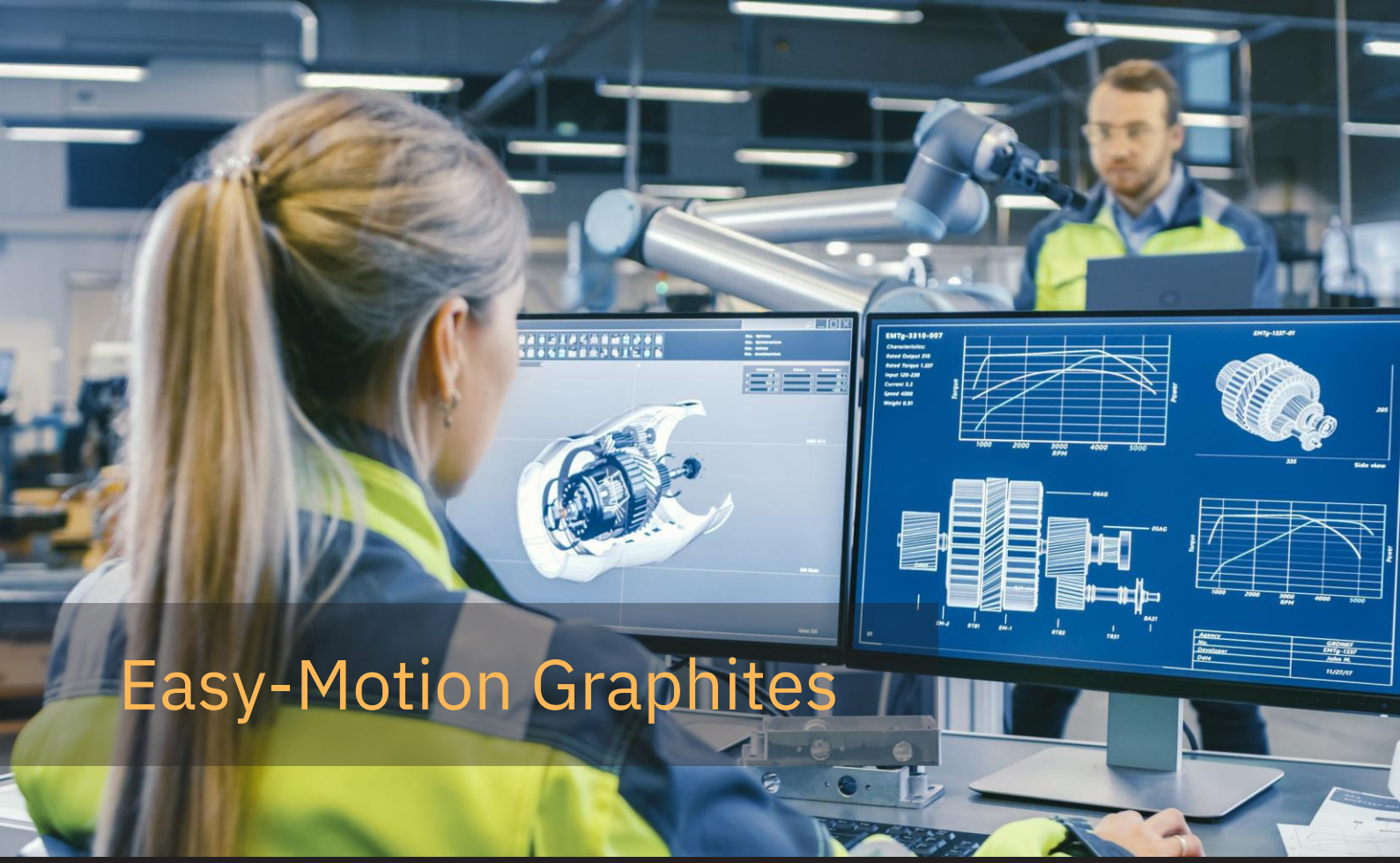
CONTACT

info@olmec.co.uk

Tel. (0114) 2322

322

(0114) 2361 606



Easy-Motion Graphites

Olmec Graphites

Olmec Advanced Materials Limited provide high quality graphite materials which give clients a range of opportunities.

Our materials can be used in industries from aerospace and automotive engineering to building, paper, food, and beverage production.

Why Carbon and Graphite?

Carbon based products are often chosen for use in applications where elevated temperatures, corrosion resistance and/ or dry-running properties are required.

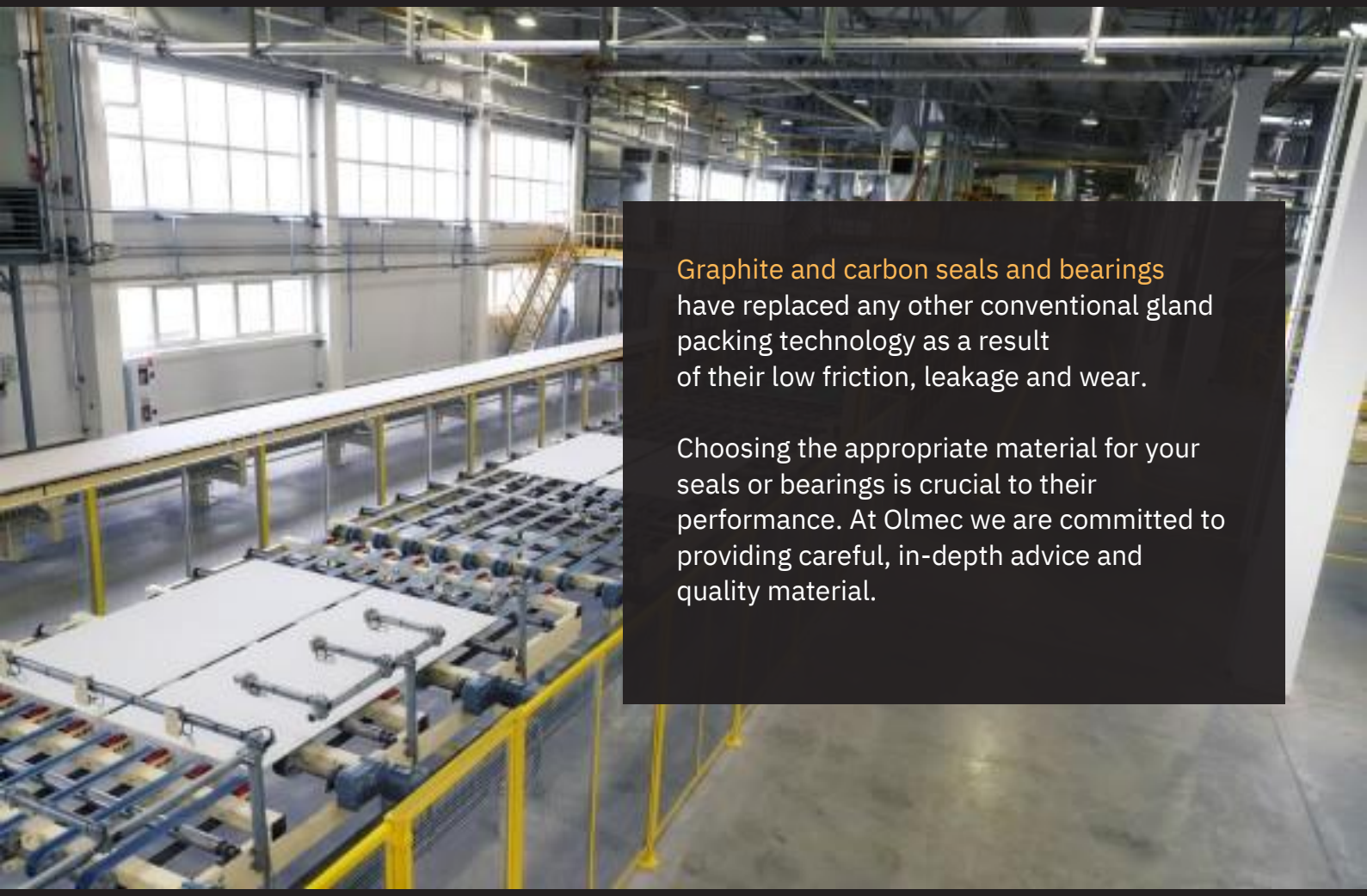
Choosing the correct carbon or graphite material will provide your processes with improved operation and longer periods between required maintenance.

Mechanical Engineering
Applications

Our consistent, self-lubricating products make Olmec's materials the ideal choice for milling, rotating and other functions within industries like aerospace, automotive engineering, and production of building materials.
Our grades are used for:

- Cylindrical bearings
- Bushings
- Slip rings/ Sliding rings
- Seal rings
- Vanes
- Lubrication blocks

And many other products which facilitate the smooth and efficient operation of mechanical processes.



Graphite and carbon seals and bearings have replaced any other conventional gland packing technology as a result of their low friction, leakage and wear.

Choosing the appropriate material for your seals or bearings is crucial to their performance. At Olmec we are committed to providing careful, in-depth advice and quality material.

Aerospace Engineering & the Nuclear Sector

It goes almost without saying that the aerospace industry requires materials that can withstand extreme environmental conditions.

Graphite is one of the most stable, safe and reliable materials for these applications.

Machined to the appropriate shape and size graphite and carbon can withstand extremely demanding high temperatures and environments where other products would fail. This is particularly crucial in the Nuclear Fusion research sector, wherein scientists are currently attempting to recreate the kind of environment on the surface of the sun.

Olmec are proud to have supplied graphite to major companies in Aerospace and Defence for several decades. This experience places us in a unique position to help and advise wherever necessary when selecting materials for use in these industries.

These applications include:

- Throat liner material for SRMs
- Graphite nozzles & nose cones
- Sintering plates, charging systems
- Graphite heating tubes & heating elements
- Hot gas duct components for nuclear applications
- Linings
- Insulators (Graphite foil, Carbon felts)

Maintaining Continuous Gypsum Dryers

Plasterboard is everywhere.

Carbon bearings are used in many industrial rotary systems because carbon and graphite are so well suited to being used for lubrication.

Olmec bearings have fantastic low wear properties, so that although they facilitate the continuous rotation of drying systems, the parts do not need to be changed more often than necessary.

This is a balance we have developed over decades in the industry. If you require more information on our bearings for gypsum dryers, please request our plasterboard/ gypsum dryer bearing.

The construction industry uses this dry-wallboard materials as much as possible because of its resilience, adaptability, and cost.

Given the quantity of wallboards used, manufacturing of this material needs to be a robust process that can produce boards rapidly. Carbon plays an important role in ensuring that this happens.

Carbon bearings support the rollers on which the board travels during the drying process in large continuous board dryers.

Typically, these ovens have hundreds of rollers, so well-engineered bearings are essential to provide long life with low maintenance. Olmec's bush bearings are made with this in mind, usually using fine grained isostatic graphites. These offer maximum wear resistance and long operating life.

Manufacturing of Architectural Aluminium Systems

The extrusion and molding of aluminium requires the use of:

- Casting rings
- Rotors and Shafts
- Fluxing tubes
- Nozzles
- Cooling plates & Extrusion guides

An aluminium extrusion press has a front and back plate made of layers of graphite sandwiched together with an epoxy resin. When the extruded aluminium comes out of the press, it is guided into the run-out table.
Extruded aluminium is used to make window frames and shutters, cables, electrodes, plastic injection molding parts and so on.

Industrial Linings & Construction

Olmec's CBAX™ carbon bricks are used in chemical-resistant construction in exposures which cannot readily be handled by other kinds of brick.

In chemical processes, the pipework apparatus and reaction vessels must be protected against the acidic and caustic materials used. Chemical facility linings made from ceramic or synthetic plastic-type materials are often unsuitable, as they will be attacked by the chemicals and are unable to withstand high temperatures or sudden temperature changes.

Alkaline such as NaOH solutions and acids such as Sulphuric, Nitric and Hydrofluoric acid are of great importance in chemical technology, but they rapidly destroy equipment linings not made of carbon- containing materials.

Our carbon and graphite products which have been developed for the chemical and acid protection industries have characteristics designed for these harsh environments in baths, reaction vessels and corrosion resistant floor linings. Our CBAX™ bricks have a high mechanical strength, good heat resistance and excellent stability during temperature changes. Universal chemical resistance is of special importance. In the food processing industries, tasteless and odourless carbon materials are particularly valuable.

Olmec Carbon & Graphite Linings & CBAX™ Bricks

- Shaped under high pressure and bonded by high quality bonding material, providing high mechanical strength.
- Able to withstand contact with HF and strong alkalis. This is due to carbon brick's relatively high porosity.
- Inherently non wetting.
- Highly resistant to many acids, alkali, salts, and solvents and combinations of these chemicals at varying temperatures and concentration

Cement Industry

Across the metal and cement production industries, materials are needed which can line and protect the equipment used continuously.

Parts like Olmec's lubrication blocks and seals are examples of parts that are necessary to run crucial processes such as large industrial kilns, furnaces and vacuum heat treatment.

Graphite is used in industrial kilns, riding rings, trunnion rolls and insert seals where wet lubricant cannot be used.

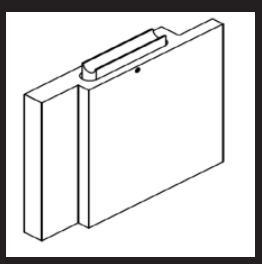
Olmec provide materials in the form of lubricant blocks and fully machined carbon seals.

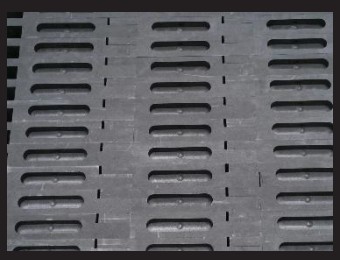
Graphite is self-lubricating and resistant to wear over time, making it the ideal material for this application.

Why Graphite?

Graphite is made up of layers of carbon atoms. Because these layers are weakly bonded together, they slide over each other easily. This is what makes graphite a soft and slippery material and gives it its self- lubricating properties.

Olmec's graphite lubrication blocks are kept in constant contact with the rolling surface, thereby depositing a thin film of graphite, which facilitates the lubrication of kiln guides.





Consultation at Olmec

If you have any questions about the kind of materials and parts we can provide, do not hesitate to contact us, or visit our website: www.olmec.co.uk

Olmec Advanced Materials Ltd.
Unit 37, Venture One Business Park, Long Acre Close, Sheffield. S20 3FR

T: +44 (0)114 236 1606
T: +44 (0)114 232 2322

E-mail: info@olmec.co.uk

Website: www.olmec.co.uk

GB Co Reg: 247 6257 | GB VAT No: 570 6797 06
EORI Number: 570 6797 06 000
DUNS Number: 50 505 2859