MERSEN

Expertise, our source of energy

MECHANICALS

CARBON AND GRAPHITE MATERIALS FOR MECHANICAL APPLICATIONS

GUIDING, ANTI-FRICTION BEARINGS AND DYNAMIC SEALING SOLUTIONS FOR ROTATING EQUIPMENT

TRIBOLOGY OPTIMIZATION

+ **SELF LUBRICATED** WITH EXTRAORDINARY DRY-RUNNING PROPERTIES

Carbon and graphite materials are used in a wide range of applications where traditional lubricating methods are not appropriate. Carbon and Graphite solutions from Mersen are self lubricated, in other words, external lubricants are simply not necessary.

- lubricants that could contaminate the product (food, pharmaceuticals, chemicals...)
- lubrication areas with a limited access (marine equipment, metering pumps,...)
- extreme operating temperatures up to 600°C in oxidising atmosphere where traditional lubricating methods are prohibited (furnaces, dryers, heated mixers...)

+ **LOW COEFFICIENT** OF FRICTION

Bearings, sealing rings and guiding solutions from Mersen have specific mechanical and physical properties, in particular their low coefficient of friction supporting productivity, efficiency and performance of the rotating equipment.

+ **EXCELLENT RESISTANCE** TO WEAR

Helping you to reduce maintenance operations and equipment damages.

- less wear
- less friction
- exceptional sliding features

IMPROVED RELIABILITY

With its outstanding properties, the carbon graphite material is the material of choice when it comes to reliability of your process.

INERT TO MOST CHEMICAL REAGENTS:

it survives where other materials fail

HIGH TEMPERATURE RESISTANCE:

Up to 450°C in oxidising atmosphere

Oxidation threshold can be raised to 600°C with an oxidation inhibitor

EXCELLENT THERMAL SHOCK CHARACTERISTICS AND HIGH THERMAL CONDUCTIVITY:

Remove heat from the interface

CONTINUOUS PERFORMANCE

Bearings, sealing and guiding solutions made of carbon and graphite materials by Mersen give the designer increased options to support the continuous performance of the process.

HIGH FATIGUE STRENGTH:

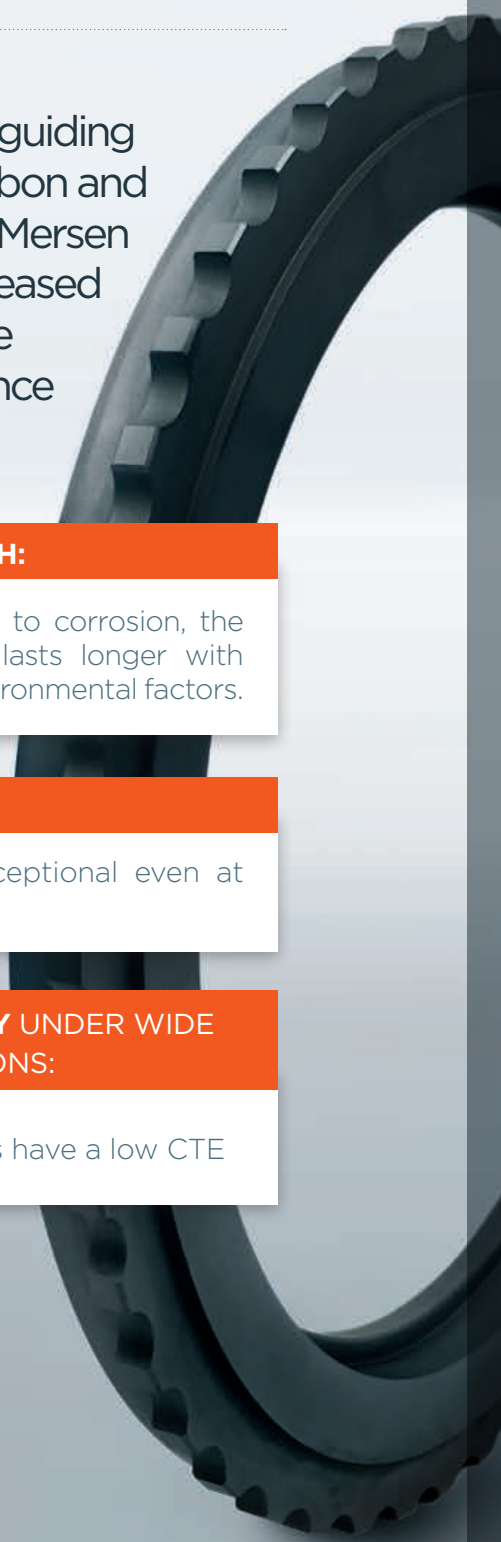
Due to its high resistance to corrosion, the carbon-graphite material lasts longer with limited impact from its environmental factors.

UNIFORM STRENGTH:

Performance remains exceptional even at high temperature

DIMENSIONAL STABILITY UNDER WIDE TEMPERATURE VARIATIONS:

Carbon-graphite materials have a low CTE



MERSEN PROVIDES EXPERTISE AND ENGINEERED SOLUTIONS THROUGH A COMPLETE RANGE OF CARBON AND GRAPHITE OFFERING

WHERE AND WHEN CARBONS AND GRAPHITES SHOULD BE USED

At high temperatures

Temperatures exceeding 100°C to 150°C prohibit the use of standard oils and grease. The thermal stability and self-lubricating features of carbon allow its use as a bearing material in this temperature range.

In corrosive fluids or atmospheres

Carbons and graphites are chemically inert and corrosion resistant. Wherever ordinary lubricants are not recommended, carbons and graphites perform well, either dry in a corrosive atmosphere or immersed in corrosive liquids.

To avoid contamination by lubricants

Carbons and graphites are critical in applications where the presence of oil or grease, even in vapour form, is prohibited. Examples can be found in the food, pharmaceutical and textile industries.

When lubrication is difficult or expensive

Carbons and graphites are efficient dry self-lubricants.

Where moving parts are inaccessible

Without carbons and graphites, the maintenance of certain types of equipment becomes virtually impossible due to difficult access to moving parts.

When weight saving is required

The density of carbon is about 1,5 to 2,5. Much lower than metals.

SOLUTIONS:

GUIDING AND FRICTION:
bearings, thrust bearings, rotors, vanes, bushing

DYNAMIC SEALING:
sealings, sealing rings, segmental rings

AEROSPACE:
main shaft seals, Flex tubing seals, APU (Auxillary Power Unit) seals

ROTATING EQUIPMENT:

Rotating shaft and pistons in pumps, compressors, turbines, fan, blowers, belt chain conveyors, dryers, mixers, vanes, blades...

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Material performance

- **THERMAL SHOCK**
- **TRIBOLOGIC**
- **LIFETIME**
- **CORROSION RESISTANCE**
- **TEMPERATURE RESISTANCE**
- **WEIGHT (1.8 DENSITY)**

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WWW.MERSEN.COM

GS.GRAPHITE@MERSEN.COM