

Category: Materials, Coatings & Processes

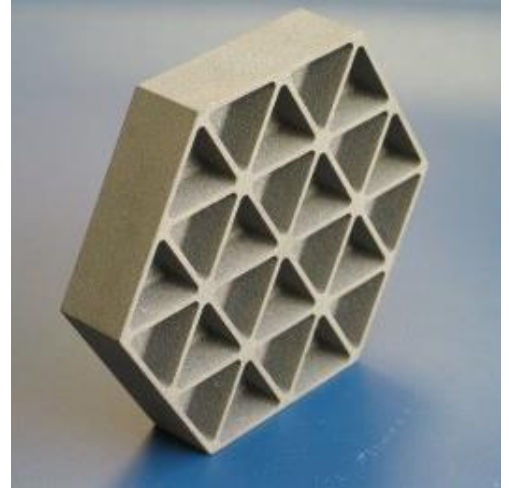
Reference: TD-DE-1027

Carbon fibre reinforced carbon

The technology donor offers a broad spectrum and wide range of high-temperature applications, with capability ranging up to 2,800 °C in a vacuum or inert gas atmosphere, and uses the principle of chemical vapour deposition (CVD) when it comes to coating and using chemical vapour infiltration (CVI) to deposit or infiltrate thin layers onto a substrate through thermal decomposition of the vapours. Layer thickness ranges from a few nanometres to several hundred micrometres.

These materials were used for space applications e.g. for the production of mirrors. This applies especially to ultra-light opto-mechanical systems.

Designed for use in extremely demanding environment in space, these products are characterized by an extremely low brittleness as well as a shrinkage that can be exactly defined during the manufacturing process.



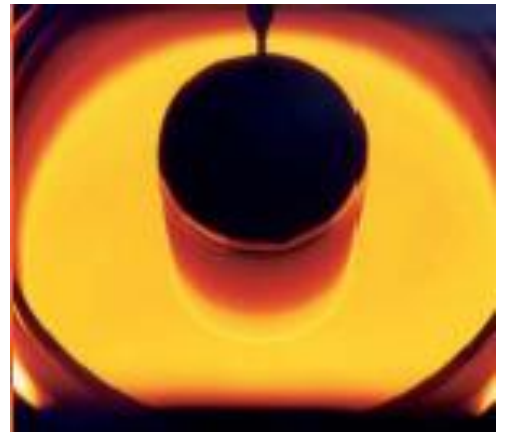
Innovative Aspects:

Designed for use in extremely demanding environment in space, these products are characterized by an extremely low brittleness as well as a shrinkage that can be exactly defined during the manufacturing process.

Application Areas:

Carbon-carbon is well-suited to structural applications at high temperatures, or where thermal shock resistance and/or a low coefficient of thermal expansion is needed.

While it is less brittle than many other ceramics, it lacks impact resistance. It was developed for the nose cones of intercontinental ballistic missiles, and is most widely known as the material for the nose cone and leading edges of the space shuttle. The Brabham team pioneered its use in the brakes of Formula One racing cars in 1976, and more recently it has also appeared in the brakes of some high end super cars.



Cooperation:

Interest in orders for production development and in cooperation.