Oxide fiber-reinforced oxide ceramics
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Components that are used in corrosive or oxidative environments must withstand extreme conditions. Schunk Carbon Technology uses innovative manufacturing technology for oxide fiber reinforced composite materials that can significantly increase the service life of your system components or tools. In collaboration with you, we can develop reliable components for your application.

Advantages

- Significantly longer service life through resistance to oxidation and corrosion
- Low thermal conductivity
- High damage tolerance (due to high strain to failure ratio)
- High thermal shock resistance
- Electrical insulator
- Low heat capacity leads to optimized production times
- No warpage under thermo-cycle loads
- Ideal for automated loading and unloading
- Significantly lower fixture weight compared to alloy based fixtures

Manufacturing technology

- Pressing technology for plates of up to 1000 x 600 mm
- Filament winding technology for pipes of up to Ø 1500 x 1000 mm
- Laminating and vacuum technology for 3D curved parts

| Material: aluminum oxide fiber reinforced aluminum oxide composite (Ox/Ox) |
|-----------------------------|------------------|
| Reinforcement | Fabric |
| Matrix | Al₂O₃ |
| Density [g/cm³] | 2.80 |
| Porosity [%] | 30-35 |
| Bending strength [X/Y direction plate] [MPa] | 160-260 |
| Young’s modulus [X/Y direction plate] [GPa] | 65-80 |
| Elongation at break [X/Y direction plate] [%] | 0.25-0.30 |
| ILSS [MPa] | 10-12 |

Areas of application:

- Fixture systems for heat treating applications
- Hot gas ducting components
- Components for chemical engineering
- Flame-/burner tubes
- Components for furnace construction (e.g. doors, baffles, flaps etc.)
- Isolation layer on C/C fixtures to prevent carbon diffusion into metallic parts (eutectic prevention)
Schunk Carbon Technology: Always at your side.

Schunk Carbon Technology focuses on development, manufacture and application of carbon and ceramic solutions. It combines innovative spirit and technological expertise with exceptional customer service to provide a range of products and services unique to the market.

In Schunk Carbon Technology, you have a partner who can offer all the technological possibilities of an international company and implement ideas custom-tailored to your needs, both for high-volume industrial markets and for highly specialized niche markets. After all, this is our commitment: Ahead in Carbon Technology. Closer to your Business.

A Schunk Group division.

Enabling, idea-driven, cooperative - if you hope to apply technology to develop better products and capture new markets, we can help. The Schunk Group has been supporting customers with innovative technologies since 1913. As an idea-driven technology company, innovation is fundamental to our culture. We forge long-lasting, cooperative working relationships with our clients.

You will find our custom-tailored high-tech products and systems in markets such as carbon technology and ceramics, environmental simulation and air conditioning, sintered metals and ultrasonic welding. The Schunk Group is active in a large number of key industries, from automotive, rail, aviation and marine technologies to solar and wind energy, medical and electrical technology as well as the semiconductor industry. Our more than 8,100 employees in 29 countries are ready to serve you.