

_THERMAL SPRAY

t-CER Thermal Barrier Coatings

Purpose of Coatings

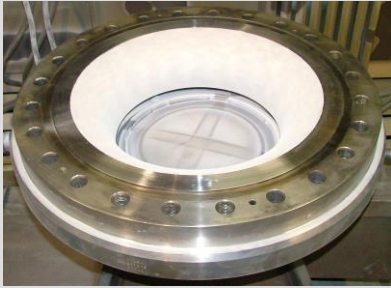
Thermal insulation on actively cooled components in hot environment

Applications

- Thermal energy generation, thermal plant engineering, foundry technology, mechanical engineering, combustion engines, turbines
- Thermal barrier coatings on turbine blades, burner chambers, burner parts, casting dies, foundry tools, motor components, thermal apparatuses
- Oxygen-ion conductors (λ probes, fuel cells)

Features

- | | |
|---|--|
| ▪ Technologies: | Plasma spraying |
| ▪ Coating materials: | ZrO ₂ and mixed oxides (Y ₂ O ₃ -, MgO-, CaO-stab.) |
| ▪ Base body materials: | Steel, cast iron, Al alloys, high temperature metal alloys, plastics |
| ▪ Coating thickness: | up to approx. 1 mm |
| ▪ Hardness: | < 1400 HV0.1 |
| ▪ Working temperatures: | > 1400 °C |
| ▪ Theoretical density: | 5.2 g/cm ³ |
| ▪ Tensile adhesive strength (DIN EN ISO 14916): | > 20 N/mm ² |
| ▪ Thermal conductivity: | ~ 1 W/mK |





Benefits

- With active cooling the surface temperature of the coated part can be lowered by several hundred °C
- Low wettability of coatings by molten metals
- High temperature and thermal shock resistance (due to microporous structure of the coating)
- Combination with oxidation protection coating o-MET possible

Our Service Offering

- Coating of sample and prototype parts, including fixture construction
- Advisory service, design optimization, selection of coating material
- Development of specifications for serial technologies
- Serial production
- Pre-treatment, coating and post-treatment of parts (machining)
- Quality control, testing, packaging according specifications



Who we are

With more than 100 years of experience, GfE is one of the world's leading manufacturers and suppliers of high-performance metals and materials. Based on our comprehensive materials science know-how, we develop high-quality tailor-made solutions for a wide range of industrial applications. We offer our customers fast service and qualified technical advice.



Certification in accordance with DIN EN ISO 9001, DIN EN ISO 14001, DIN EN ISO 50001, DIN ISO 45001 and DIN EN ISO/IEC 17025 support our claim to the highest quality and safety. We can thus guarantee products that meet the specific requirements of our customers. Your trust and satisfaction are the cornerstone of our business.

GfE is a subsidiary of AMG Advanced Metallurgical Group N.V., Netherlands, a global leader in the production of specialty metals and metallurgical vacuum furnace systems.

Technical Contact: Dr. Marcel Roth

Phone: +49 (0)37322 472-536

E-mail: marcel.roth@gfe.com

Commercial Contact: Steffen Schmidt

Phone: +49 (0)37322 472-505

E-mail: steffen.schmidt@gfe.com