

_THERMAL SPRAY

w-CERMET Wear Protection Coatings

Purpose of Coatings

Protection of machine parts from sliding wear, abrasion, erosion and corrosion

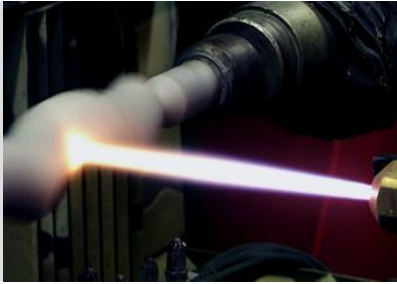
Applications

- Plungers, hydraulic pistons, sealing parts, valve spindles, gap rings for pumps, brake discs, couplings, drive shafts
- Guides, rope and wire pulleys, rollers, shafts, ball valves
- Extruder, screw conveyers, stirrer, rotary feeder, screen baskets
- Rough coatings (e.g. clutches)
- Forming tool for refractory construction and other
- Landing gear parts

Features

- Technologies: Plasma spaying, HVOF
- Coating materials (examples): WC-CoCr, WC-Co, WC-NiCrBSi, Cr₃C₂-NiCr, Cr₃C₂-Ni, Cr₃C₂-NiCrAlY
- Base body materials: Steel, cast iron, other alloys

	Tungsten carbide	Chromium carbide
▪ Coating thickness [mm]:	< 0.5	< 0.5
▪ Hardness HV0.3:	up to 1350	up to 1100
▪ Density hard particles:	15.7 g/cm ³	6.7 g/cm ³
▪ Surface roughness as sprayed Rz:	20...30 µm	30 µm
▪ Surface roughness finished Ra:	< 0.1 µm	< 0.1 µm
▪ Tensile adhesive strength (EN ISO 14916):	> 85 MPa	> 85 MPa
▪ Working temperature °C:	< 500 °C	< 850 °C
▪ Very good chemical resistance in both acid and neutral media, also in seawater		





Benefits

Tungsten carbide:

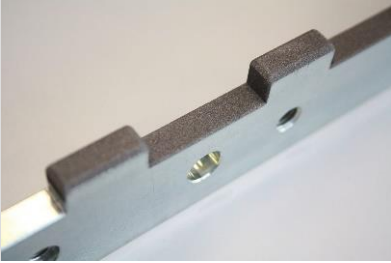
- Good chemical resistance in both acid and neutral media
- Excellent hardness and resistance against abrasion, adhesive and erosive wear

Chromium carbide:

- Very good chemical resistance in both acid and alkaline media
- Excellent friction and sliding properties
- Good resistance against cavitation, abrasion, adhesive and erosive wear
- High thermal stability, also under oxidising conditions

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 (sealing, grinding, polishing) or complete fabrication according drawing
- Cleaning, testing, quality control, 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.

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