

_THERMAL SPRAY

c-MET Conductive and Solderable Coatings

Purpose of Coatings

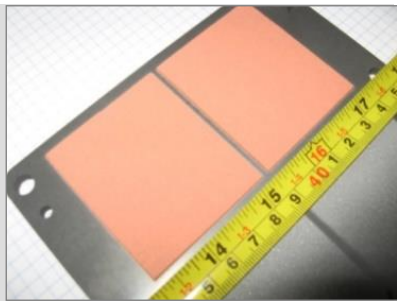
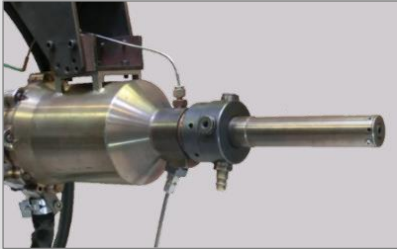
- Solderable and bonding layer
- Heat conduction and distribution, current conduction, sensors

Applications

- Heatsinks for power electronics, base plates, circuit carriers
- Busbars, conductor tracks, power connectors
- Apparatus engineering, cooling

Features

- Technology: Cold gas spraying
- Coating materials: Copper, also nickel, silver
- Base body materials: Al alloys, AlSiC, steel
- Hardness: ~ 180 HV0.3
- Density: 8.9 g/cm³
- Tensile adhesive strength (EN ISO 14916): > 50 N/mm²
- Electrical conductivity (comparison E-copper): 45...95 %
- Thermal conductivity: 300...340 W/(m*K)
- Coefficient of thermal expansion (20°C): 17 x 10⁻⁶/K
- Coating thickness: 0.05...> 5 mm
- Dimension tolerance, plain (masking): ± 0.1mm
- Porosity: < 0.5 %
- Oxide content: < 0.1 %
- Roughness Rz (as sprayed): ≈ 30 μm
- Roughness Ra (polished): < 0.1 μm



Benefits

- Selective copper coating with powder - dry process without any chemicals
- Highly reproducible solderability of the copper coating as sprayed (without any treatment or machining)
- Sharp contours of selective coating - positioning for soldering process, small dimensional tolerances producible by masking
- Best electrical and thermal conductivity of thermal sprayed coatings
- Low thermal impact on substrate material by coating process
- Excellent bonding strength on many alloys, especially steel and aluminium
- High resistance of the copper-baseplate interface to thermo-cycling loads

Our Service Offering

- Advisory service, design optimisation, development of specifications for serial technologies, serial production
- Coating of sample and prototype parts, including fixture construction
- Serial production proved facilities
- SPC, automated dimensional inspection, visual outgoing inspection
- Packaging according agreed specification (protective gas, vacuum) – ready for further processing without additional cleaning

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