



surface
technologies

KALISZ

thermal spray
coating processes

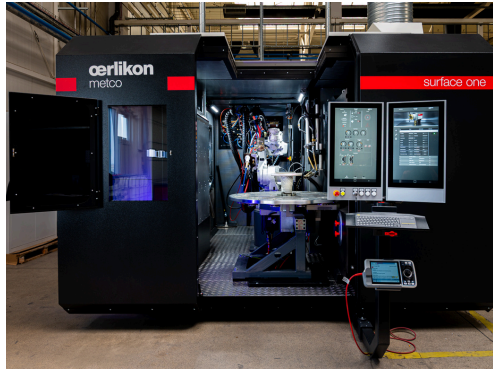
A red-tinted photograph showing a thermal spray coating process. A spray gun is positioned above a workpiece, with a spray of material being applied. The background shows industrial machinery and a control panel with some text, including 'BIU' and 'ODP'.

thermal spraying

In thermal spraying, a coating material in the form of wire or powder is melted or fused and accelerated onto the component to be coated. Before coating takes place, the surface is cleaned and roughened by blasting with corundum. The roughness of the surface enables mechanical bonding of the spray particles and ensures the adhesion of the coating.

Depending on the type of coating and the application, the usual coating thicknesses for thermal spraying are between one tenth and several millimeters.

The coatings are suitable both for the protection and functionality of new parts as well as the repair of worn components.



System: Oerlikon Surface ONE
 □ Processes: APS, HVOF-GF, Flame
 □ Guns: 3MBM, SinplexPRO90™,
 □ SM-F210, Diamond Jet™, 6P-IIA

Capacity:
 □ ID approx. 50mm, OD approx. 800mm
 □ Weight max 1000kg,
 □ Rotary table DIA1200mm, with 12 satellites
 DIA 150mm

Quality: AS9100, NADCAP
Industries: Aerospace, Power, Automotive, Industry...

Aalberts offer up to three spray processes, combined with a powder feed technology, spray gun and a handling system, in a single compact machine. With a footprint 20% less than a comparable thermal spray system, the production output per square unit on our floor space increased. Surface Part loading and unloading is designed for maximum efficiency and minimal operator exposure. To enable standardized coatings, we guarantees, coating reliability and reproducibility (for our future perspective to growth with another units) across multiple locations worldwide.

aspects	thermal spraying key characteristics
coating materials	Coating materials in thermal spraying are metals, alloys, hard metals or ceramics. Thermal spraying is superior to many other coating processes due to the large selection of materials for the targeted adjustment of functional properties. Common coating materials are: - metals and alloys: aluminum, copper and nickel alloys, molybdenum, bronze, white metal, chromium and chromium-nickel steels; nickel and cobalt-based hard alloys - hardmetals: tungsten and chromium carbide in metal matrix of nickel, cobalt or chromium - oxide ceramics: oxides of aluminum, chrome, titanium and zirconium
process	Thermal spraying processes differ in the form of the spray material and in the type of thermal and kinetic energy used to melt and accelerate the spray particles. The coating properties, such as wear and corrosion resistance, hardness or adhesion, are determined not only by the coating material but also by the spraying process. The processes we employ are: - powder and wire flamespraying - flame spraying and melting - high Velocity Oxygen Fuel spraying HVOF-GF (gas-fuel) - atmospheric Plasma Spraying APS - arc spraying
applications	Thermal spray applications include wear and corrosion protection, electrical and thermal insulation or conductivity, and the generation of certain friction and anti-friction properties. Examples are: - of turbine and compressor rotors - bearing and coupling seats of drive shafts - piston rods and cylinder running surfaces of compressors - bearing bores of pedestal bearings, gear housings or gear wheels - erosion and corrosion protection of turbomachinery components - fan blades and conveyor elements
service	Our services in connection with coating: - pre-machining and finishing of coated components - complete preparation of components - restoration of geometry and function of damaged components - quality assurance coating and component testing - technical advice on coating selection and design - application-oriented coating development