

— NEW COATING SOLUTION FOR THE HYDRAULICS INDUSTRY —

KS-LaserInductiveCoat - The INNOVATIVE!

The BEST consequently developed! The results: more alloy options, low heat load, wide range of hardness. In addition, we are now able to coat and process safe thin-walled pipes and many special basic materials.

The **laser inductive** melted coatings KS-LaserInductiveCoat of course protect your piston rods just as effectively in the most extreme environments as the legendary coatings KS-InductiveCoat do - durably and carefree!

On the basis of our experiences over decades and the consistent development, the well-known two-step process of the KS-InductiveCoat could be further developed into a one-step process through the additional use of the innovative and state-of-the-art laser technology.

The process advantages are unique: minimal voltage reduction in the release of tension in the substrate due to a very low heat input and significantly more diverse alloy options due to adaptive heat management.

The KS-LaserInductiveCoat is permanently and unflakily attached to the substrate, 100 % moisture and gas-proof, offering maximum corrosion protection and maximum reliability. The completely numerically controlled process guarantees consistently perfect coating results.



The INNOVATIVE - LaserInductiveCoat by Karl Schumacher!



KS-COATINGS - When high performance matters!

BENEFITS: KS-LaserInductiveCoat

- + Best corrosion and wear resistance
- + 100 % steam and gas-proof
- + Low temperature of the basic material
- + Maximum dynamic resilience
- + Flake-resistant, also in the case of impact
- + Layer thicknesses from 0.1 to 0.5 mm
- + Excellent sealing compatibility
- + Very good repair capacity (in situ)

TYPICAL APPLICATIONS

- Piston rods (tubes and solid materials)
- Guide / Protective bushes
- Axial sealing / Sliding surfaces



Karl Schumacher
Engineering and Thermal Spraying

IT'S THE SURFACE THAT MATTERS!

KS-COATINGS	LaserInductiveCoat	InductiveCoat	HardCoat SuperCoat
PROCESS	NC laser inductive one-step process	TS with subsequently inductively melted down	HVOF (High-Velocity-Oxygen-Fuel)
Composition	Nickel-based alloys Iron-based alloys	Nickel-based alloy	CrC + Matrix / WC + Matrix
Layer hardness	30 - 65 HRC	45 - 60 HRC	900 HV _{0.3} / 1,400 HV _{0.3}
Layer thickness	0.1 - 0.5 mm	0.4 - 1.5 mm	0.1 - 0.3 mm
Corrosion resistance ¹⁾	good - excellent	excellent	very good
Wear resistance	excellent	excellent	excellent
Scratch resistance	very good	very good	excellent
Sealing compatibility ²⁾	very good	very good	very good
Repairability	very good	very good	conditional
TYPICAL APPLICATIONS	Piston rods (Pipes, solid material) Guide / Protective bushes Axial sealing / Sliding surfaces	Piston rods Guide / Protective bushes Axial sealing / Sliding surfaces	Piston rods Rotary feedthroughs Seal seats (e.g. Shaft seals)
FURTHER BENEFITS	100 % moisture and gas-proof Maximum dynamic resilience Flake-resistant, also in the case of impact Very good repairability (in situ) Lowest heat input into the substrate Numerous specific alloy options	100 % moisture and gas-proof Maximum dynamic resilience Flake-resistant, also in the case of impact Very good repairability (in situ)	High dynamic resilience Very broad range of application Application specific alloys
KS-DESIGNATIONS	KS-LIC45/55 KS-LIC3000-6500	KS-IC45 KS-IC55	KS-HC KS-SC

¹⁾ very good \triangleq 1.000 h (NSS DIN EN ISO 9227)

²⁾ Range of surface roughness values: Ra 0.05-0.2 | Rz 0.3-1.5 | Rpk 0.03-0.15 | Rvk 0.05-0.3 | Rmr* 70-90 % (*C = 0.25 x Rz)

We are pleased to send the following documents on request:

- KS - recommendation for coating
- KS - description of coating (specified)
- KS - coating overview (current)



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