

# LCV-COAT HS

## HIGH SPEED LASER CLADDING

### INTRODUCTION – ENHANCED WEAR PROTECTION AT AN OPTIMISED COST



Laser cladding is a process in which metallic powder is welded into a substrate using a high intensity laser. The layer is fully bonded via an inter-metallic layer resulting in excellent wear resistance and corrosion.

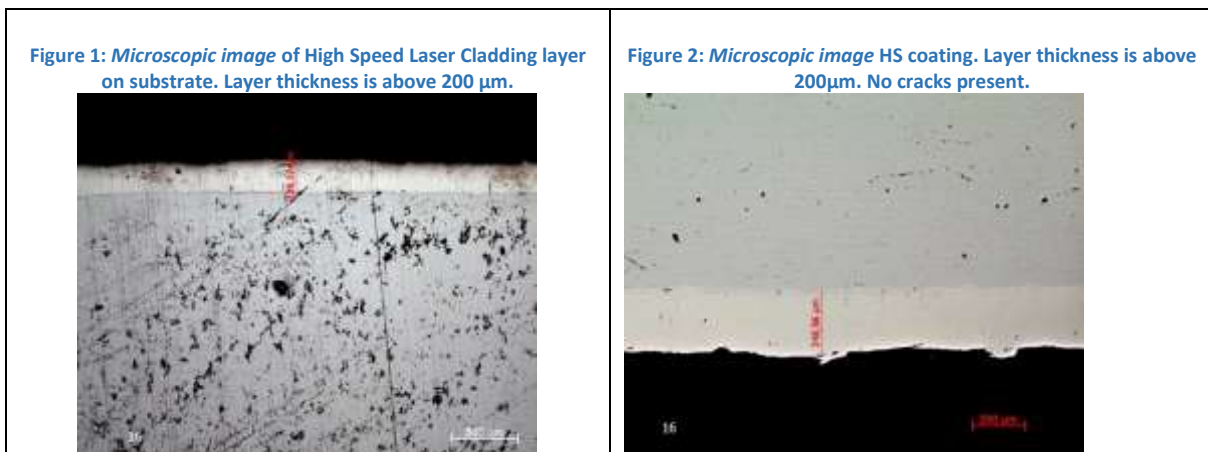
LCV boosts the productivity with High Speed laser cladding technology. This yields the supreme wear protection at an optimised cost.

### LCV-COAT HS : ZERO DEFECT MANUFACTURING FOR DEMANDING APPLICATIONS

The LCV-COAT HS process enables the deposit of thin layers of material at high speeds on the substrate.

High speed cladding achieves thin crack-free coatings, perfectly suited for corrosion and wear resistance. In order to achieve this goal the cladding speed increases a factor 25 till even 50 times over conventional cladding speeds. This results in a smaller region of dilution and a smaller wave in the surface. Finishing the surface is therefore less costly.

Figure 1 shows a high speed laser cladding sample in which Inconel is coated on a steel substrate. The layer shows a thickness of at least 200µm. As can be seen the coating is well attached to the substrate, since the interconnection line is not straight. No cracks are recognized such that corrosion applications become possible. Figure 2 shows a more detailed image of the coating. On this figure, it is easily seen that no cracks are present.



## LCV-COAT HS SPECIFICATION

### DIMENSIONS ROTATIONAL PARTS (CRANK SHAFTS, RODS, ...)

✓ <b>Boundary box</b>	8 m X Ø 0.75m
✓ <b>Weight:</b>	3500 kg
✓ <b>Internal and external</b>	
✓ <b>Layer thickness</b>	50µ - 400µ
✓ <b>Internal Cladding:</b>	
○ Minimum Ø	50 mm
○ Maximum Internal length	3 m at 100 mm ID - 1 m at 50 mm ID – 1 m at 30 mm ID
✓ <b>Multi-layer possible</b>	
✓ <b>Typical grinding stock</b>	150µ-200µ



### AVAILABLE MATERIALS

- ✓ **Inconel 625, Inconel 625 + WC (carbides), Stellite 6**
- ✓ **Other materials possible on demand (316L, NiCrBSi,...)**

Other materials are available on request.

### TYPICAL APPLICATIONS

The LCV-Coat HS process can be applied on rotational parts. Typical applications include;

- ✓ Rods and shafts
- ✓ Turbine axles
- ✓ Pump axles
- ✓ Plungers
- ✓ Hydraulic cylinders
- ✓ Guiding shafts
- ✓ Crank arms
- ✓ Drive shafts
- ✓ Instrumentation arms
- ✓ ....

### LCV-COAT HS FOR ALL TYPES OF WORK



LCV-Repair



LCV-Coat



LCV-Form

LCV-COAT HS can be applied for preventive coating, for repairs and for super-fast 3D printing of axial objects.