

LASER CLADDING & REPAIR

BENEFITS

- Increase of the component lifetime
- Repair of worn or defective parts
- Repair of high added value parts
- Adapted coating material according to the stress (friction, wear, corrosion, ...)
- Spot mechanical strengthening
- Saving of high added material

INDUSTRIAL SECTORS

- Automotive : valves, cylinder heads, anti-corrosion coating
- Defence : weapons
- Energy : drilling tools, turbine blades
- Aeronautics : turbine dynamic seals, MRO
- Health : prostheses, implants

PROCESS ADVANTAGES

- Very low dilution
- Fully dense coatings
- Spot treatment
- Low distortions
- Upgrading of the surface quality
- Wide range of coating materials



PRINCIPLE OF LASER CLADDING

Laser cladding consists in adding a melted metallic powder to a substrate to improve or change the surface properties of the material according to the stress. The powder is injected into a coaxial nozzle, melted by the laser beam, and deposited onto the substrate which produces a coating. This process is used to make spot treatment and repair.



Blade cladding



Cladding of agricultural machinery

LASER CLADDING & REPAIR



TECHNICAL SPECIFICITIES

- Anti-corrosion coating
- Wear resistance
- Easy to implement

IREPA LASER EQUIPMENTS

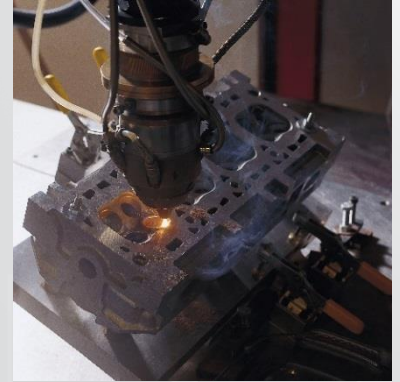
- CN cladding stations
- Coaxial cladding nozzles developed and patented by IREPA LASER
- Robot
- Fiber lasers from 200 W to 6 kW
- CAM software for cladding
- Metallurgical analysis laboratory
- Characterisation equipment (MEB, X-ray, optical profilometer ...)
- Failure analyses (NDC, chemical analysis, mechanical tests)

OUR INDUSTRIAL REFERENCES

CEA, CHROMALLOY, GE, COMPANIES OF THE ENERGY SECTOR

IREPA LASER
INSTITUT CARNOT MICA

Pôle API • Parc d'Innovation • F-67400 ILLKIRCH
Tél : +33 (0)3 88 65 54 00 • Fax : +33 (0)3 88 65 54 01
IL@irepa-laser.com



Robotized cladding of cylinder heads



Coaxial cladding nozzle