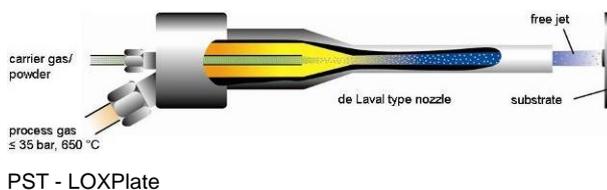


## PST – LOXPlate®

### The Technology

The PST - LOXPlate Technology has been developed in order to utilize the energy of a hot gas source to accelerate particles and heat them to a degree which results in a level of kinetic energy and plastic malleability which allows coatings of high tensile bond strength to be produced. The powder particles are injected continuously in the spray torch into a stream of compressed and heated non combusted gas. The following expansion of the particle/gas mixture in a "de Laval" nozzle results, dependant upon the type of gas, in speeds of several times the speed of sound. The pre-heating of the gas increases the absolute speed of the particle/gas mixture, in addition the short interval in which the particles are heated, results in increasing the formability at the point of impact. The component to be coated is positioned some 20-60mm down stream of the nozzle exit, the angle of deposition lies between 60°-90°.



Coating Al-Alloy (AA2224) on Al-Alloy (AA2024 T351)



Coating NiCr on low carbon steel St37-3

### LOXPlate® Process Characteristics:

- Combustion free
- No melting of Materials
- Use of inert process gases
- $T_{\text{Process}} < 650 \text{ °C}$ ,  $p_{\text{Process}} < 35 \text{ bar}$
- Particle Speed upto 1500 m/s
- Focussed spray stream,  $\varnothing < 8 \text{ mm}$
- Suitable for materials with a plastic malleable matrix

### LOXPlate® Process Advantages:

- Minimal Oxidation of the sprayed material
- Minimal heat input in coating and substrate
  - High number of material options
  - Avoids the introduction of thermally induced stresses and phase changes
- Low level of masking requirement
- Good level of tensile bond strength can be achieved with no grit blasting required for surface preparation

### LOXPlate® Coatings:

- Oxide content, purity and phase contents are comparable to the original powder composition
- Low level of Porosity
- Introduction of compressive stresses in base material by "Shot-Peening" effect
- Minimal coating thickness  $> 50 \text{ μm}$ , maximum several centimetres