surface technology

Datasheet

Plasma Spray Coatings

Plasma thermal sprays offer the greatest variety of coatings due to the high temperature range of plasma spray guns. The Plasma spray process is known as a cold process. This is because the substrate temperature can be kept low throughout (<150°C), and the coating thickness can be accurately controlled.

The Plasma flame (argon, nitrogen, hydrogen and helium) melts the powder and propels the molten metal out of the spray gun and onto the substrate. The metal then cools an solidifies forming a very strong bond onto the substrate.

Example Plasma sprays:

- Ceramic coatings: Chrome Oxide, Aluminium Oxide, Zirconium Oxide
- Abradable coatings: Nickel Graphite, Nickel Aluminium or Nickel Chrome
- Pure Metals and Alloys: Aluminium, Copper Molybdenum, Nickel
- Carbides: Tungsten Carbide, Chrome Carbide

BENEFITS

The great advantage of the plasma spray technique is its ability to spray a wide range of materials, from metals to refractory ceramics, on both small and large components offering:

- Corrosion protection
- Wear resistance
- Clearance control - abrasives and abradables
- Heat and oxidation resistance
- Temperature management
- Electrical reistivity and conductivity

TYPICAL APPLICATIONS

- Turbine blades
- Gas turbine engine components
- Down hole tools in oil and gas industry
- Mining equipment
- Pump components