SURFACE SOLUTIONS

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HVOF
High velocity oxygen fuel coatings are provided by the combustion of a super sonic gas stream carrying a variety of metal alloys and ceramics in the form of powder, producing an extremely dense and ultra-hard coating surface.

WIRE ARC
Two conductive wires are melted as they are acted upon by an arc. The arc produces such a temperature that it transforms the wires into a molten state. The resulting material is then atomized into small particles and ultimately propelled onto the desired substrate by ultra-clean, compressed air.

PLASMA
Powder is injected into a very high temperature plasma flame, where it is rapidly heated and accelerated to a high velocity. This results in the spraying of molten or heat softened material onto a surface to provide a coating.

SPRAY AND FUSE
The Spray and Fuse Coating process is a two-step process involving the application in most cases, of a self-fluxing alloy coating usually using a combustion thermal spray process and then fusing the coating by applying very high heat (1900-2000F). During the fusing process, the molten alloy forms a metallurgical bond with the substrate

COLD SPRAY
Cold Spray uses an electrically heated high-pressure carrier gas, like nitrogen or helium, to accelerate metal powders through a super sonic de Laval Nozzle above a critical velocity for particle adhesion. The bonding mechanism is a combination of mechanical interlocking and metallurgical bonding from re-crystallization at highly strained particle interfaces.

Surface Solutions are extremely effective in increasing component life and value, decreasing machinery down time, and improving performance in a wide variety of applications. IMM introduced this technology to its customers in 1976 and has been successful in helping our customers solve wear and corrosion problems in many industries. Coatings can be engineered to exhibit optimum properties using most metals, carbides, ceramics, and plastics. They can be used to coat virtually any surface or substrate.

HVOF
- Tungsten Carbide
- Tungsten Carbide/Chrome Alloy
- Chromium Carbide
- Nickel-Chrome Alloys
- Stainless Steel Materials

PLASMA
- Chrome Oxide
- Aluminum Oxide
- Chromium Carbide
- Yttria Stabilized Zirconia
- Alumina-Titania
- Ceramic

COLD SPRAY
- Zinc/Aluminum
- Nickel
- Stainless Steel
- Titanium
- Aluminum
- Chromium Carbide
- Nickel Chromium
- Tungsten Carbide
- Cobalt

WIRE ARC
- Aluminum/Bronze
- Monel
- Molybdenum
- #2 420SS
- #5 202SS
- 316SS
- SPRAY

IMM

COATINGS DEFINED

SURFACE SOLUTIONS

NI/CR - NICKEL CHROMIUM

Nickel chrome plating is the most common plating technique that utilizes nickel and chromium electrodeposits to form a multiple-layered finish on a substrate. The motorcycle and automobile industries use this process to achieve a shiny and glossy appearance
on their parts. It forms a hard outer layer that improves the corrosion and wear resistance of the substrate.

90 MXC HARD-COAT

The Wire Arc Spray Coating method is a Thermal Spray process in which two conductive wires are melted as they are acted upon by an arc. The arc produces such a temperature that it transforms the wires into a molten state. The resulting material is then atomized into small particles and ultimately propelled onto the desired substrate by ultra-clean, compressed air.

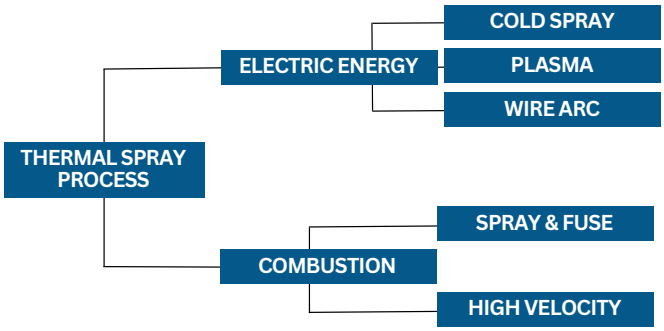
NI/GR - NICKEL GRAPHITE

Nickel Graphite powders produce abradable coatings for clearance control applications where the rotating component may come into contact with the coating as a result of design intent or operational surges. The coatings are designed to minimize the wear to the rotating components while maximizing gas path efficiency by providing clearance control in seal areas.

ALUMINUM/BRONZE

Has the highest corrosion resistance and maximum wear resistance of the arc spray bronzes. Major uses, in addition to bond coats, are for bearings in the steel industry and for reclaiming aluminum/bronze components, including propeller shafts for operation in sea water, pump impellers, bronze castings, plungers, armature bushing and many other parts.

APPLICATION PROCESS



T/C - TUNGSTEN CARBIDE

Hot, high-pressure gas is ejected through a small diameter nozzle and accelerated down a long barrel at supersonic speeds. Tungsten carbide powder (or another powdered coating material, as your project requires) is injected into the nozzle, where the particles mix with the speeding gases, reaching velocities up to 3,000 feet per second.

MOLY - MOLYBDENUM

Molybdenum coatings are thermally cured and thoroughly bonded to the base metal of the coated part. Uses for molybdenum disulfide coatings include applications that require a lubricant that is more unreactive when in use, and remains sturdy.

CERAMIC

Ceramic coatings are defined as non-metallic, inorganic materials. High hardness and thermal insulation are commonly recognized properties. When chosen correctly ceramic coatings can significantly halt wear & corrosion, insulate from heat, even promise dimensional, thermal and chemical stability.

ADVANTAGES & BENEFITS

- Increases component life and value
- Decreases machinery downtime
- Improves performance
- Solves wear and corrosion problems
- Coatings can be applied to virtually any substrate

Our team of surface solution experts will assist you in determining which application is best for your component in extending life expectancy.

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