



Plasmadize® Basic Thermal Spray

Mechanical deposition process for wear resistance

Our Plasmadize® Basic thermal spray is an engineered coating system for applications experiencing high wear and abrasion. In the Plasmadize® Basic thermal spray process, a metal alloy, ceramic or cermet material is applied by thermal application, creating a 0.003- to 0.25-inch layer on the surface. The high quality and process standards employed through this process make Plasmadize® Basic the only thermal spray worthy of the Magnaplate name.

Unlike chemically deposited coatings, Plasmadize® Basic thermal spray mechanically bonds to the substrate material without altering its surface properties. The coating also limits the heat encountered by the substrate material, further preserving its original properties.

UPGRADE YOUR COATING

For surfaces requiring more advanced lubricity and corrosion protection, consider upgrading to our synergistic family of Plasmadize® coatings. Coatings under the synergistic umbrella feature increased performance characteristics for applications requiring:

- More ductility.
- Less porosity.
- Non-stick properties.
- Low coefficient of friction.
- USDA and FDA compliance.



Another feature of our Plasmadize® Basic thermal spray is its lenticular or lamellar grain structure, which comes from the rapid solidification of small sprayed globules that flatten when deposited at high velocities.

In addition, our Plasmadize® Basic thermal spray is ideal for repairing tools and parts—by selectively adding material to bring worn or broken parts back to their original dimensions and back into service.



Technical Advantages

- Abrasion, corrosion, chemical, cavitation, heat, erosion and wear resistance.
- Maximum surface processing temperatures range from 250 to 275°C.
- Superior quality and process controls (NADCAP).
- Repair of worn parts.
- Electrical conductivity and insulation.
- High lubricity.
- Highly customizable range of materials.
- Thicknesses between 100 and 750 microns.

Thermal Spray Processes

Flame Spray

- Combustible gases mix with oxygen to create a flame where powder is induced and propelled to the substrate via compressed gas or air.
- Least amount of bond strength of the processes.
- Wire and rod spray process.

HVOF (High Velocity Oxygen Fuel)

- Exceeds Mach 2.
- Induces powder into a stream that propels it to the substrate.
- Only used for metallics.
- Best bond strength.
- Densest deposition less than 1% porosity.

Plasma

- Utilizes a direct current arc and uses inert gases to create a plasma stream that is introduced into the powder. The molten powder is then propelled to the substrate.
- Used for metallics and ceramics.
- Deposition less than 10% porosity.

Twin Arc

- Two conductive wires are propelled to a substrate as it becomes molten from the compressed air.
- Fastest deposition rates.
- Ideal for repair applications of general wear surfaces.

Ideal Applications

- Oil, gas and energy.
- Road and rail vehicles.
- Ships.
- Aircraft.
- Pumps and valves.
- Printing presses.
- Electric motors.
- Paper-making machines.
- Chemical plant.
- Food machinery.
- Machine tools.
- Power generation.

Materials

- Bronze.
- Copper.
- Ceramics.
- Molybdenum.
- Nickel alloys.
- Stainless steels.
- Tungsten carbides.



ISO 9001:2008
Certificate #43114



To learn more about PLASMADIZE Basic and other problem-solving surface enhancement coatings, contact technical representatives at General Magnaplate Corporation.