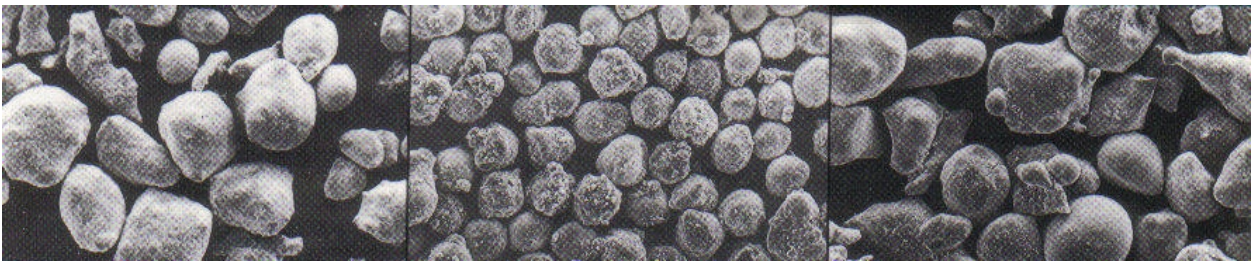


SELF-BONDING COMPOSITE POWDERS

Self-bonding Composite Powders are a type of thermal spray materials which can bond well with substrate surfaces during thermal spraying because of their exothermic reactions. Self-bonding Tungsten Carbide, Stainless Steel, Aluminum Bronze, Ni-Mo-Al, Alloy Steel and other composite powders perform as both protective coat and bond layer. Heat generated during the thermal spray stage promotes the micro-metallurgical bonding between the coat and the substrate. Thus a separate bond layer can be avoided.

Self-bonding Composite Powders are usually sprayed by plasma or by flame. Their coatings have high bonding strength and excellent resistance to wear and shock. They can be used for the restoration of wear resistant surface of worn parts.



SELF-BONDING COMPOSITE POWDERS

POWDER	PARTICLE SIZE (MESH)	TYPICAL COMPOSITION (%)	COATING FUNCTION & APPLICATIONS
TS-58 Self-bonding Nickel Base Tungsten Carbide Powder	-140+325	Self-bonding Nickel base powder: 30~70 Ni-Al clad WC powder: 70~30	* Exothermic, high hardness (Rc=35~40), dense, resistant to wear, grain and hard surface abrasion;
TS-59 Self-bonding Iron Base Tungsten Carbide Powder	-140+325	Self-bonding Iron base powder: 50~70 Ni-Al clad WC powder: 50~30	* Good for piston rods and ring liners, molds, turbine vanes and mechanical ratchet vanes
TS-91 Self-bonding Tungsten Carbide	-140+325	Co/WC: 50 NiCrBSi: 45 Ni/Al: Balance	* High bonding strength and wear resistance; * Restoration and repair of armored car parts, centrifugal pump axle sleeves in oil fields and molds for automobile
TS-120 Self-bonding Stainless Steel (Hard)	-140+325	Al: 5~7 Mo: 5~7 S.S.: Balance	* Resistance to wear by hard surface, abrasives, atmosphere corrosion & fretting, Rc=28~32; * Applicable to coating of grindable stainless steel substrate and dimensional restoration to repair fuel pumps, impellers & vanes, gas cylinder linings, pump pistons, hydraulic press pistons, crank-axle necks, wire drawing machine reels, pump seals, mechanical seal, engine parts & valves, etc.
TS-126 Self-bonding Stainless Steel (Soft)	-140+325	Al: 5~7 Mo: 5~7 S.S.: Balance	* Wear resistance, machinable coating, Rb=80~85; * Good for dimensional restoration of bearing necks, fuel pump impellers and vanes, pump pistons, machine parts, machine tool slide-ways, jet engines and valves, etc.
TS-130 Self-bonding Aluminum Bronze	-140+325	Al: 10 Cu: Balance	* Resistant to wear from hard surfaces, Rb=50; * Good for service coatings of soft bearing surface and direct dimensional restoration coatings of piston rods, pressure coordinated surface, bearing surface, stirring forks and damper brakes
TS-133 Self-bonding Nickel-Molybdenum -Aluminum Powder	-140+325	Al: 5~9 Mo: 4~8 Ni: Balance	* High bonding strength, resistant to wear from hard surface, abrasives, particle erosion & fretting, easy to machine, Rb=75~80; * Good for building up steel parts & dimensional restoration of fuel pump engines, machine tool slide-ways, hard bearing seats, extrusion surfaces, water power valves, engine & ventilator main-shafts, etc.
TS-150 Self-bonding Alloy Steel Powder (Hard)	-140+325	Al: 5 Mo: 5 Ni: 16 Cr: 14 Fe: Balance	* Wear resistance, Rc=28~32; * Good as coating of carbon steel or alloy steel substrate and renovation of bearing necks, moving bearing fittings, machine tool slide-ways, etc.
TS-151 Self-bonding Alloy Steel Powder (Soft)	-140+325	Al: 5.5 Mo: 5.0 Cr: 14 Fe: Balance	* Resistant to wear of hard surface and abrasives, cutting machinable, Rb=85~90; * Restoring bearing surface, gas turbine trunks, pistons, crankshafts, machine tool slide-ways, etc.