

Multi-Component, Pre-alloyed, Nickel-Base Alloy Powder

UltraBond® 50000



COATING

- High bond strength for improved service performance
- Prealloyed Proxon Technology for consistent performance
- Rougher coating texture for improved final coat adhesion
- Clean, low oxide deposit
- Wide application range without appreciable loss in bond strength



DESCRIPTION:

The overall integrity of any cold process coating is closely linked to its adhesion or bonding to the part. Mechanical bonding to a roughened surface does not offer enough of a safety margin for most industrial applications. Eutectic UltraBond 50000 is formulated to produce a reliable high strength bond coating offering the best protection against coating failure. Eutectic UltraBond 50000 is a multi-component, pre-alloyed, nickel-base alloy powder which was developed utilizing patented ProXon® technology. When introduced into the torch flame, each particle undergoes an exothermic reaction, releasing heat energy. This additional energy enhances micro-welding of the alloy particles to the part and to each other. The result is a homogenous, well bonded coating with an ideal surface for the final coating build-up.

UltraBond 50000 can be applied by all Eutectic thermal spray torches, with the exception of the Eutalloy® B and UltraJet® Eutalloy “hot process” torches. It can also be applied by many other conventional thermal spray torches as well as plasma non-transferred arc systems.

TECHNICAL DATA:

Powder Properties:

Approx. melting point: 2500°F (1352°C)

Coating Properties TeroDyn 2000:

To provide realistic bond strength, ASTM C633 is used, specifying a ground surface. Using a ground surface rather than a blasted surface simulates the worst-case scenario. Abrasive blasting offers the best reliability and safety factor. Threading offers advantages over grinding. Rough grinding can and does provide for adhesion of the bond coat. However, part geometry and temperature become critical since they add stress and effectively subtract from the bond strength. *Better surface preparation equals better adhesion which in turn yields better reliability when the coated part is put into service.*

Maximum service temperature: >1200°F (649°C)

For temperatures in the 1200° to 1800°F (649°-973°C) range or for use on stainless steel base metals Eutectic 21031 powder is recommended.

TYPICAL APPLICATIONS:

- Shafts
- Fan blades
- Bearing journals
- Chutes
- End bell housings
- Pump sleeves
- Rolls
- Mismatched parts and castings

RECOMMENDED SURFACE PREPARATION:

PREPARATION	SURFACE ROUGHNESS MITUTOYO SURFTTEST (MICRO-INCH)	ASTM C633 BOND STRENGTH (PSI ON 1020 STEEL)
Ground	25-50	4500 ± 900
Ground	50-100	5100 ± 800
Abrasive Blasted	>300	7600 ± 750

RECOMMENDED COATING & SPRAY PARAMETERS:

TD 2000		TD 2000 Alternate Parameters		TD 3000	
Nozzle	RL 210 or RL210W	Nozzle	RL 200	Nozzle	RL 210 or RL 210W
RotoJet	RPA 3@20 psi air	RotoJet	None (RPA-2 option. @20 psi)	RotoJet	RPA-3@10 psi air
Module Adapt.	Yellow/Red	Module Adapt.	Yellow/Red	Oxygen	50 psi / 38 flow (3110 flowmeter)
Oxygen	50 psi / 35 flow (FM-1 flow)	Oxygen	50 psi / 35 flow (FM-1 flow)	Acetylene	12-15 psi/60 flow (3110 flow meter)
Acetylene	12 psi / 75 flow (FM-1 flow)	Acetylene	12 psi / 75 flow (FM-1 flow)	Carrier Gas	Nit. or Ar @55 psi/37 flow
T-Valve Setting	8 clicks	T-Valve Setting	5 clicks	Terometer	Adjust for spray rate
Coating Rate	8 lbs/hr ±10%	Coating Rate	6 lbs/hr ±10%	Coating Rate	8 lbs/hr ±10%
Spray Distance	6-8 inches	Spray Distance	5-7 inches		

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