Castolin Eutectic®
Eutectic Castolin

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

UltraBond® 50000

- 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

UltraBond® 50000

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 multicomponent, pre-alloyed, nickel-base alloy powder which was developed utilizing patented ProXon® technology. When introduced into the torch fl ame, 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 fi nal 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

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.

Approx. Melting Point: 2500°F (1352°C)
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.

Recommended Surface Preparation:

Preparation	Surface Roughness Mitutoyo Surftest (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

Nozzle:	RL 210 or RL210W
RotoJet:	RPA 3@ 20 psi air
Module Adaptor:	Yellow/Red
Oxygen:	50 psi / 35 flow (FM-1 flowmeter)
Acetylene:	12 psi / 75 flow (FM-1 flowmeter)
T-Valve Setting:	8 clicks
Coating Rate:	8 lb/hr ±10%
Spray Distance:	6 to 8 inches

TD 2000 Alternate Parameters

Nozzle:	RL 200
RotoJet:	None (RPA-2 option. @20 psi)
Module Adaptor:	Yellow/Red
Oxygen:	50 psi / 35 flow (FM-1 flowmeter)
Acetylene:	12 psi / 75 flow (FM-1 flowmeter)
T-Valve Setting:	5 clicks
Coating Rate:	6 lb/hr ±10%
Spray Distance:	5 to 7 inches

TD 3000

Nozzle:	RL 210 or RL 210W
Rotojet:	RPA-3@10 psi air
Oxygen:	50 psi / 38 flow (3110 flowmeter)
Acetylene:	12-15 psi/ 60 flow (3110 flowmeter)
Carrier Gas:	Nit. or Ar @55 psi/37 flow
Terometer:	Adjust for spray rate
Coating Rate:	8 lb/hr ±10%

TYPICAL APPLICATIONS

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

Observe normal spraying practices, respiratory protection and proper air flow pattern advised. For general spray practices, see AWS Publications AWS C2. 1-73, "Recommended Safe Practices for Thermal Spraying and AWS TSS-85, "Thermal Spraying, Practice, Theory and Application." Thermal spraying is a completely safe process when performed in accordance with proper safety measures. Become familiar with local safety regulations before starting spray operations.DO NOT operate your spraying equipment or use the spray material supplied, before you have thoroughly read the equipment instruction manual. Refer to the Eutectic website for Material Safety Data Sheet (MSDS) information. DISREGARDING THESE INSTRUCTIONS MAY BE HAZARDOUS TO YOUR HEALTH.

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