

An Atomized Nickel-Chromium Alloy with Tungsten Carbide Particles

Eutectic® 23005



COATING

- Hot process spray and fuse alloy
- May be used over a bond coating
- Excellent Resistance to Abrasion
- May be used with Plasma Transferred Arc Process



DESCRIPTION:

Eutectic 23005 is a high performance atomized nickel alloy powder blended with carbide particles (sintered tungsten carbide cobalt powder) designed to produce hard coatings which offer excellent abrasion resistance. This blend is primarily used to produce a hot process spray and fuse coating which best resists abrasion or erosion where the abrasive particulate is larger than about 200 mesh (0.0029 inch diameter). This powder can also be applied as a cold process coating over a bond coat to produce a gripping coating with a surface roughness of about 1 mil for applications which require good gripping action. 23005 can also be applied by the Plasma Transferred Arc Welding Process (PTA) for high productivity hardfacing.

TECHNICAL DATA:

Powder Properties

Nominal Composition: Nickel, Chromium, Boron, Silicon, Iron, Carbon, Cobalt, Tungsten

Hall Flow Rate: 15 seconds

Bulk Density: 4.5 g/cc

Powder Coverage: 0.051 lbs/ ft² @ 0.001"E

Coating Properties

Macro-Hardness: Rockwell C scale: 60

Micro-Hardness of Carbide Rockwell C scale: 75

Density: 8.4 g/cc

Shrinkage on Fusing: 17-20 %

ASTM G-65 Schedule A Volume Loss: 14 mm³

Approximate Thermal Expansion: 200-1000° F: $7.4 \times 10^{-6}/F$
1000-1400° F: $7.2 \times 10^{-6}/F$
1400-1800° F: $8.0 \times 10^{-6}/F$

PROCEDURE FOR USE:

Finishing Procedure:

Grinding Wheel Type: Green Silicon Carbide

Grit Size: 60 - 80

Grade: H (soft)

Structure: 5

Bond Type: Vitrified

Wheel Speed: Use Manufacturer's Recommendation

Work Speed: 50 -65 surface feet per minute

Traverse Speed

Roughing: 5-15 inches per minute

Finishing: 3-8 inches per minute

In-Feed

Roughing: 0.001 inches per pass

Finishing: 0.0005 inches per pass or less

Coolant: Flood coolant with rust inhibitors in 2-5% concentration

Notes:

1. Before grinding, all edges and ends of coating must be chamfer ground.
2. Frequently dress the grinding wheel face to reduce friction and heat.

TYPICAL APPLICATIONS:

- Bucket Teeth
- High Pressure Coal Slurry Pump Parts
- Slurry Pipes
- Coring Rods
- Thrust Collars

RECOMMENDED COATING AND SPRAY PARAMETERS:

TD 2000		TD 3000		CDS 8000	
Nozzle	RL 200 RPA-3@20 psi air	Nozzle	RL 200	Flame Setting	SSM 20
Module Adaptor	Yellow/Red	Oxygen	50 psi/32 flow (3310 flowmeter)	Flame Setting	Neutral
Oxygen	50 psi / 30 flow (FM-1 flowmeter)	Acetylene	12 psi/48 flow (3310 flowmeter)	Oxygen Pressure	60 psi
Acetylene	12 psi / 60 flow (FM-1 flowmeter)	Carrier Gas	Ni @ 55 psi / 37 flow	Acetylene Pressure	10 psi
T-Valve Setting	14-18 clicks	Terometer	120	Air Pressure	15 psi w/ extension
Coating Rate	18.0 lbs/hr	Coating Rate	20 lbs/hr	Spray Distance	8 inches
Spray Distance	7-9 inches	Spray Distance	7-9 inches	Vc Rotation	65 sfpm
				Advance in Rev.	0.1 inch/rev

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