

Weld Overlay with Tungsten Carbide

Eutroloy® 6504

Plasma Transferred Arc Powder



COATING

- Wear Resistant Deposit with Exceptional Resistance to Abrasion and Erosion
- Nickel Chrome Matrix with 60% Uniformly Distributed Tungsten Carbide Particles
- High Powder Deposition Rate = High Production Rate
- Up to 3 mm Weld Overlay Thickness per Pass
- Suitable for Application on Most Iron-based and Nickel-based Alloys



DESCRIPTION:

Eutroloy 6504 is a blended powder consisting of a nickel chrome matrix with 60% by weight cast and crushed tungsten carbide. The powder is specifically designed for use with the plasma transferred arc welding process. The coatings produced are hard, dense and especially resistant to low stress abrasion and erosion. Careful control of the chemistry and particle size distribution of both powder components assures consistent performance in the most challenging applications.

PROCEDURE FOR USE:

Remove damaged material. Clean areas to be welded. Match heat input during welding to component, its material and dimensions, and follow the prepared welding procedure for the specific base metal chemistry. Keep dilution with base metal low. Allow workpiece to slowly cool upon completion of welding.

COATING PROPERTIES:

Matrix Hardness: HRC 50
Carbide Hardness: 2000 HV
Coating Density: 0.476 lb/cu in (13.2 g/cm³)
Max. Service Temp.: 1200°F (650°C)
G65 Wear Test Results: 12.5 -15 mm³ volume loss/ Sch. A
Max. Thickness per Pass: 3.0 mm

FINISHING: Coatings of Eutroloy 6504 can be finished by grinding using silicon carbide or diamond wheels.

POWDER PROPERTIES:

Chemistry/Matrix:

B:	3%	Si:	4%
Cr:	5%	Fe:	2%
Ni:	Balance		

Chemistry/Carbide: WC - W₂C

TYPICAL APPLICATIONS:

- Stabilizer and Hardbanding Tools
- Decanter Screws
- Debarker Knives
- Mixer Paddles
- Shovel Bucket Teeth and Shrouds
- Utility Fan Blades and Clinker Grinders
- Agricultural Rub Bars (ground engagement tools)

PARAMETERS: Plasma Transferred Arc

System: GAP 2001 and 3001 systems

Torch: E52

Anode: dictated by part geometry (1.2, 2.0 or 3mm / 90° or 180°)

Cathode: standard

Shielding Gas Nozzle: standard or high deposit

Pilot Gas: Argon 2.5 Bar - 37 psi (1.5 L/min)

Carrier Gas: 2.5 Bar - 37 psi (1.8-2.5 L/min)

Shielding Gas: Argon/5% hydrogen (10-15 L/min)

Powder Feeder: EP2

Powder Wheel Speed: dictated by part geometry: 20-100 %

Powder Feed Rate: dictated by part geometry: 5-15 lbs/hr (2.2-6.8 kgs/hr)

Amperage*: dictated by part geometry: 90-200 A

Voltage*: dictated by part geometry: 19-28 V

***NOTE:** *amperage and voltage should be kept as low as possible to maintain WC integrity, while maintaining a well bonded overlay.*

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