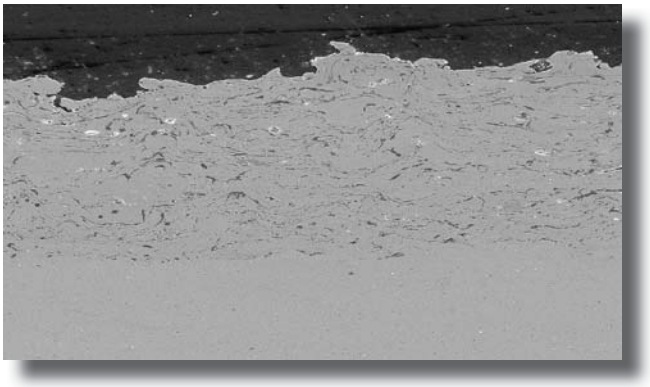


ArcMelt Company L.C. a subsidiary of CIC Group, Inc.
4734 Earth City Expressway
Bridgeton, MO 63385
Phone: 314-801-6900
Fax: 314-298-9684
www.arcmelt.com

ArcMelt™ 4301

A proprietary composite alloy wire made exclusively for the Twin Wire Arc Spray (TWAS) process. The deposited composition produces a hard, abrasive, corrosion resistant coating whose surface will harden in service. The addition of Ni improves the deposit's bond strength and corrosion resistance.

ArcMelt's 4301 is designed to extend component life and reduce downtime in severe service erosion, abrasion and sliding wear conditions. Excellent performance in high wear areas when temperatures do not exceed 1000 ºF (538 ºC). The coating reduces the coefficient of friction by creating a smooth, hard, sliding wear surface with impressive elasticity.

AMC 4301 is self bonding and has a thickness limit in excess of .150" (3.81mm). Typical applications can be machine ground and polished to 10 RMS surface finish.

When applied to boiler tubes, the surface of AMC 4301 did not contain any corrosion products. The coating thickness remained intact. A thin sintered layer of fly ash was detected at the surface using an SEM. The EDS analysis indicated Si, Al, Ca and Mg as the major constituents of the fly ash. The micro-hardness of the sample was greater than 892 HV (66 HRC).

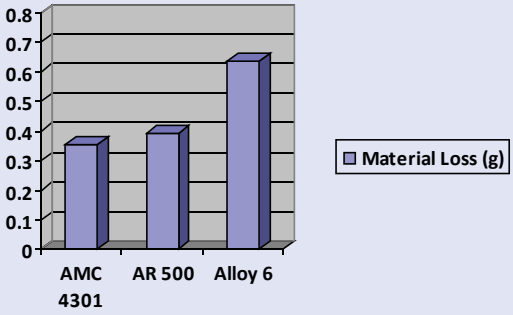
- **Wire Characteristics**

  Wire Size - 3/32" (2.3mm) dia.

  Cast/Helix - meets AWS C2.25

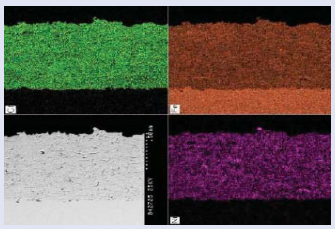
  Lube Free

- **Wear Resistance**



- **Average Coating Chemistry***

Fe	< 60%
Cr	< 30%
Ni	< 15%
Al	< 5%
B	< 3%
Si	Trace Element



ArcMelt™ 4301

- **Bond Strength (ASTM-C-633)**[1]

  > 6,000 psi @ .040" (1.02mm)

- **Coating Texture**

  < 200 µin @ .150" (3.81mm) thick

- **Coating Hardness**

  45 HRC

- **Finish (Ground)**

  Excellent

- **Thickness Limitation**[2]

  > .150" (3.81mm)

- **Spray Rate**

  60 lbs/hr (27.22 kg/hr)

- **Deposit Efficiency**

  > 80 %

- **Porosity**

  < 3%

- **Oxide Content**

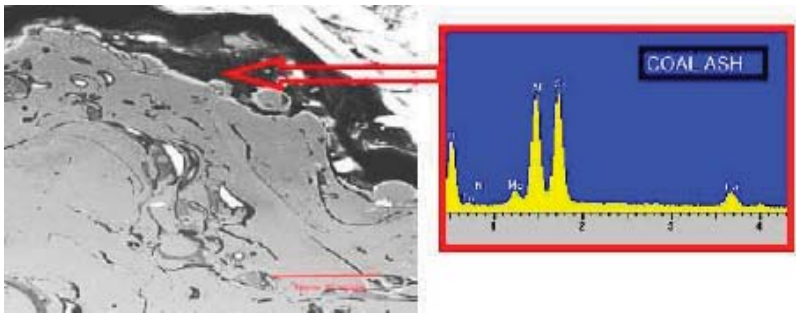
  > 10% avg.

* Based on multiple samplings and parameter configurations.

1 Bond strength measured using 3M™ Scotch Weld Epoxy Adhesive 2214 High Density

2 Prepared using 24 Grit Aluminum Oxide at 80 psi

Coating Performance



Sample taken @ 13,140 hrs from a Coal-Fired Boiler.
No signs of corrosion or abrasion are evident.

Safety Recommendations

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 OSHA safety regulations before starting a spray operation.

ArcMelt Certified Applicator:

Rev. 06/10

Results confirmed through third-party testing. Individual results may vary.