

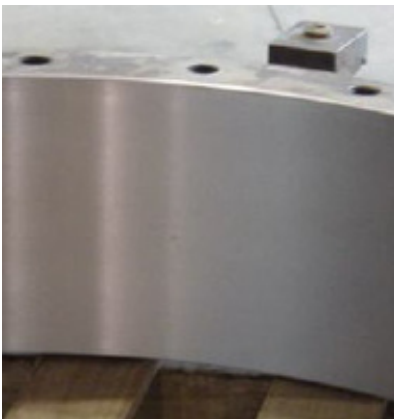
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ArcMelt™ 4303

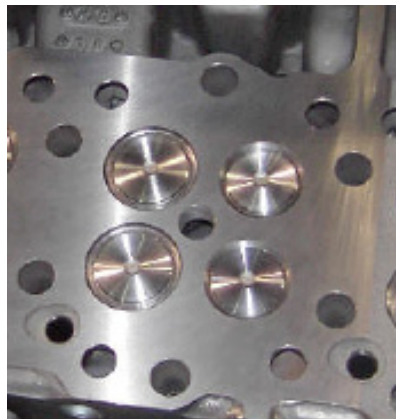
ArcMelt 4303 is a proprietary composite alloy wire made exclusively for the Twin Wire Arc Spray (TWAS) process. AMC 4303 is the first, fully machinable, arc spray coating for the restoration of tolerances on a wide variety of base materials, including aluminum and steel castings.

ArcMelt's 4303 composite coating offers high temperature heat oxidation resistance, low stresses and high build rates, making AMC 4303 an excellent coating for combustion engine component remanufacture. Coating thicknesses greater than 1/8" (.32 cm) are commonplace, providing greater versatility in the amount of material needed for build-up. This wire can be applied with greater thickness and less stress than most conventional solid wires.

3' (1 m) Diameter
Bearing Race



Remanufactured Diesel
Engine Head

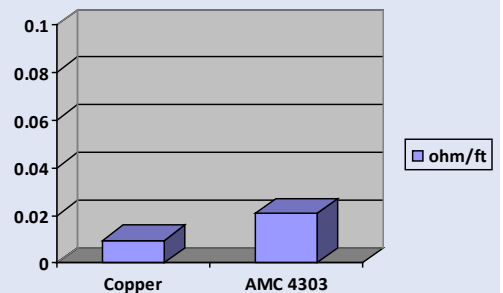


The addition of aluminum produces a composite which is self-bonding and has excellent performance characteristics that utilize both internal and external oxides for its protection.

Wire Characteristics

Wire Size - 1/16" (1.5mm) dia.
 Cast/Helix - meets AWS C2.25
 Lube Free

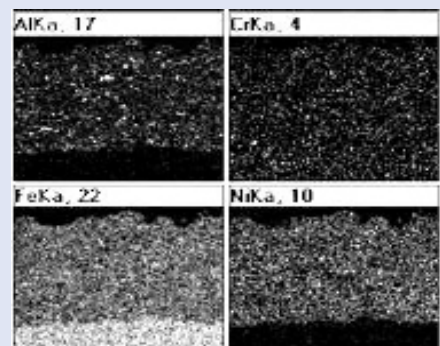
Resistivity



* Copper = 1/16" (.16 cm) dia. & AMC 4303 = 1/16" (.16 cm) dia.

Average Coating Chemistry*

Fe < 65%
 Ni < 35%
 Al < 10%
 Co/Si Trace Elements



ArcMelt™ 4303

- **Bond Strength (ASTM-C-633)¹**
> 5,000 psi @ .040" (1.02mm)
- **Coating Texture**
< 200 µin @ .200" (5.08mm) thick
- **Coating Hardness**
63.5 HRB
- **Finish (Ground)**
Excellent
- **Thickness Limitation²**
> .200" (5.08mm)
- **Spray Rate**
> 20 lbs/hr (9.07 kg/hr)
- **Deposit Efficiency**
> 80 %
- **Porosity**
< 3%
- **Oxide Content**
< 10%

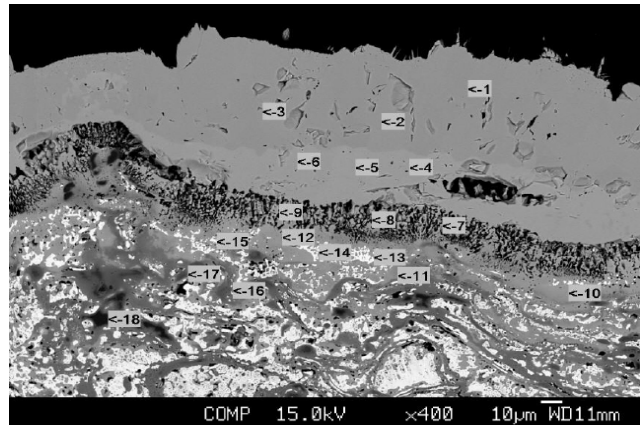
* Based on multiple samplings and parameter configurations.

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

Exposure to 1800 °F (982.2 °C) for 120 Hours in Air



* Test performed by Oakridge National Laboratories

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: