

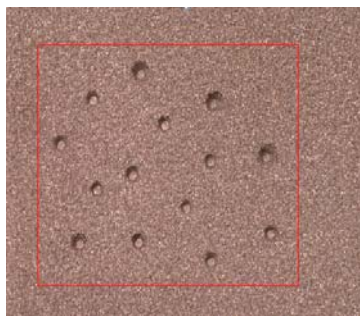
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# ArcMelt® 4305

A proprietary composite alloy wire made exclusively for the TWAS process. The deposited composition produces a hard, abrasive, corrosion resistant coating with added lubricity.

ArcMelt®'s 4305 is the first coating material designed exclusively as an economical substitute for hard chrome replacement.

AMC 4305 is particularly useful in large scale applications and when thicker coatings are required. This coating has excellent pitting, corrosion resistance and improved mechanical properties. It is extremely dense for a TWAS coating, and can be ground and polished to below 5 micro inches.



Fourteen 3/32" (2.3 mm) dia. indentations per square inch on the as-sprayed coating .020" (.51 mm) thick with no coating disbondment.



Opposite Side of Indentations

The surface hardness is comparable for bearing use, while the body of the coating remains ductile at 45 Rc.

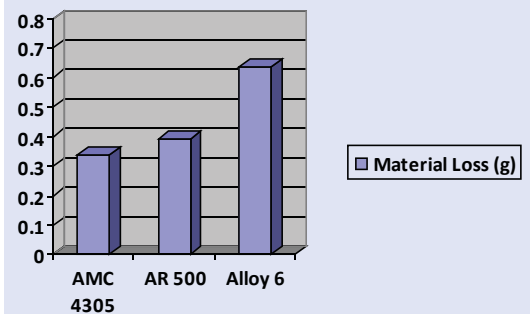
This coating is excellent for metal to metal contact when little or no lubrication is available. Coatings of AMC 4305 have performed well for machine components that require a press fit and anti-galling properties.

### Wire Characteristics

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

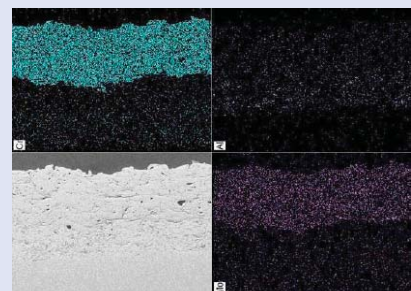
Cast/Helix - meets AWS C2.25

### Wear Resistance



### Average Coating Chemistry\*

Fe	< 60%
Cr	< 20%
Ni	< 12%
Mo	< 10%
Al	< 5%
Si	Trace Element



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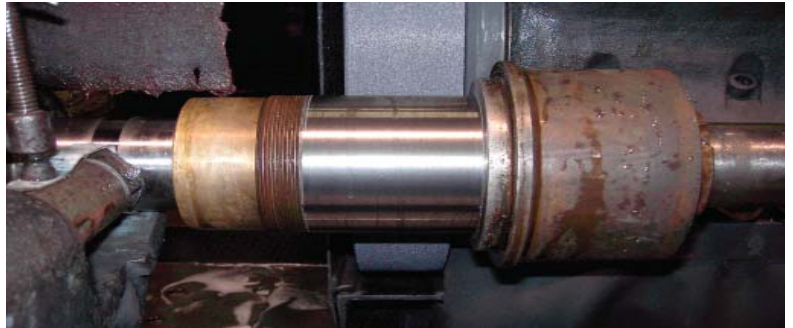
- **Bond Strength (ASTM-C-633)<sup>1</sup>**  
> 6,500 psi @ .040" (1.02mm)
- **Coating Texture**  
< 200 µin @ .200" (5.08mm) thick
- **Coating Hardness**  
45 HRC
- **Finish (Ground)**  
Excellent
- **Thickness Limitation<sup>2</sup>**  
> .225" (5.72mm)
- **Spray Rate**  
> 50 lbs/hr (22.68 kg/hr)
- **Deposit Efficiency**  
> 80 %
- **Porosity**  
< 10%
- **Oxide Content**  
< 30% 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



Bearing surface coated with AMC 4305 and rough ground.

## 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. 02/11

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