TEST RESULTS

AL-COAT® PROVIDES SUPERIOR CORROSION PROTECTION THAN HARD COAT ANODIZING

CR
AL
COAT
Electrolizing
Aluminum Protection

METHODOLOGY AND TESTING

Eight (8) 6061-T6 aluminum coupons (l" x 2" x .031" thick) were coated on the left side with 0.001" of AL-COAT® Coating, while the right side was bare. Another eight (8) coupons were hard coat anodized on the left side, while the right side remained bare.

Seven sets of coupons were used. Each coupon was subjected to one of seven different liquid environments. The testing was conducted in order to characterize the corrosion resistance of the AL-COAT® Coating compared to Anodizing and bare, unprotected aluminum. One set of coupons were used for control. All testing was performed at room temperature. Environments and test results are presented in Table 1.

The AL-COAT® Coating increased the corrosion resistance of 6061-T6 aluminum and remained adherent when exposed to many environments, especially to alkaline and chlorinated solutions.

The average contact wear spot on the non-rotation Al-Coat™ sample was 0.0593", which corresponds to a final contact pressure of 1,086 psi. The average spot on the hard coat anodized samples was 0.1526", which corresponds to a final contact pressure of 164 psi. Al-Coat™ carried over 6.5 times the contact pressure of hard coat anodizing, without coating failure.

Table 1. Improved corrosion resistance of the AL-COAT® over Hard Coat Anodizing in harsh environments.

#	ENVIRONMENT	CONCENTRATION	TIME	RESULTS	
				AL-COAT®	Hard Coat 6061-T6
0	Control	NA	NA	NA	NA
1	Potassium Hydroxide	8.5% Solution	3 hours	No Effect	Severly attacked
2	Sodium Hydroxide	10% Solution	3 hours	No Effect	Severly attacked
3	Ammonium Hydroxide	30% Solution	I day	No Effect	No Effect
4	Phosphoric Acid, 01tho	85% Solution	I day	No Effect	Removed Anodizing, Pitted
5	Narragansett Bay Water	Undiluted	3 days	No Effect*	No Effect
6	Sulfuric Acid	96% Solution	I day	Removed Coating	Removed Coating
7	Oxalic Acid	10% Solution	I day	Some Coating Loss	Some Coating Loss
8	Sodium Hypochlorite	6% Solution	3 days	Slight Discoloration	No Effect

*AL-COAT® excellerated galvanic corrosion in the bare aluminum.

CONCLUSION

The testing concluded that the AL-COAT® Coating for Aluminum provides improved wear resistance over hard coat anodizing. AL-COAT® also could also sustain much high contact pressures than hard coat anodizing. AL-COAT® should be considered over hard coat anodizing in applications requiring greater wear resistance and contact pressures as well as increased corrosion resistance in most environments.

Testing provided by:

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VERSATILE PROTECTION FOR ALUMINUM ALLOYS

Electrolizing AL-COAT® is a thin dense chrome coating specifically engineered for aluminum. If you're looking for a solution to prevent wear, corrosion and galling in aluminum industrial applications, AL-COAT® meets every demand.

By applying AL-COAT® you can increase performace, reduce maintenance costs and improve the longevity of your tools, machinery and equipment.

AL-COAT® FEATURES

AL-COAT® provides a coating that performs similarly to stainless steel, meaning wear and tear on aluminum alloys is drastically improved. The wear is <1.2 TWI per AMS 2438.

In addition, the coating is ASTM-B-117 compliant making it a long lasting solution for extremely harsh and corrosive environments. AL-COAT® has a hardness rating of 70-72 Rc with lubricity as low as 0.09 CoF, meaning it has very low surface friction.

AL-COAT® acts as a dry lubricant which prevents galling and who needs cold welding when you can AL-COAT® instead? Absolute adhesion is also achieved, meaning the coating will not chip, flake or peel.

The appearance of the coating is a gray satin finish, with a deposit thickness of .000050"-.0001".

ENGINEERED TO PERFORM

AL-COAT® was developed to meet the challenge of protecting aluminum alloys. Our technologically advanced coating provides a dense, non-magnetic, high-chromium alloy deposited directly on an aluminum substrate.

The coating is very adherent, while remaining quite ductile. It is uniform in deposit thickness and consistent in appearance.

AL-COAT® meets specifications AMS-2460 and AMS-2438 and it is USDA compliant.

A SUPERIOR SOLUTION TO ANODIZING

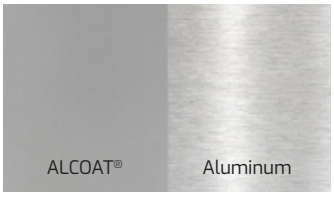
AL-COAT® is used across a wide variety of industries including plastic injection molding, food processing, oil and gas, aerospace, medical, and nuclear power. At the end of the day if you need better protection for your aluminum application, AL-COAT® is likely the answer you've been looking for.

PROVEN SUCCESSFUL IN MANY DIFFERENT APPLICATIONS:

- Sizing Dies and Molds
- Heat Sealing Equipment
- Medical Hand Pieces
- Aircraft Housings, Cylinders, and Shafts
- Automation Equipment (Plates, Rails, Slides)
- Computer Chip / Wafer Processing
- Test Equipment
- Robotics

THREE FINISH OPTIONS:

SATIN



NON REFLECTIVE

PLATINUM

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