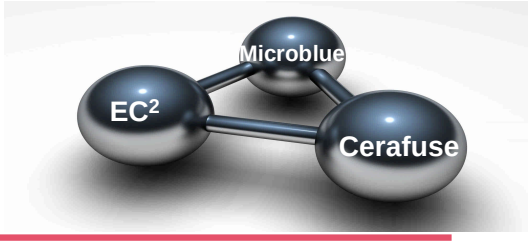
# Whyco Performance Coatings



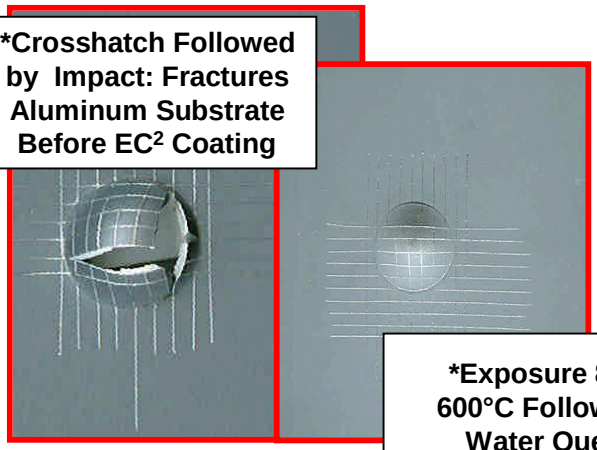

## Alodine® EC²

Henkel Technologies

- Titanium Ceramic toughness & durability for Aluminum & Titanium substrates.
- High corrosion performance extends life of components in all corrosive environments.
- Coating is ELV & RoHS compliant.
- High temperature resistance without corrosion performance loss.


| Corrosion Protection (ASTM B117) Neutral Salt Spray | | |
|---|---|---|
| Aluminum Alloy | Hours | Scribe Creep |
| 356 Cast | > 2000 | Nil |
| 356 Cast Painted | > 7000 | Nil |
| 6063 | > 5000 | Nil |
| 7075 | > 1000 | Nil |
| 2024 | 300 - 1000 | Nil |
| 2024 Clad | > 3000 | Nil |

## "A Coating That Won't Let You Down"



***Crosshatch Followed by Impact: Fractures Aluminum Substrate Before EC² Coating**

***Exposure 84 Hrs 600°C Followed by Water Quench Crosshatch & Impact**

*8 microns EC² applied over 6061 aluminum panels

## Application Examples

- Provides excellent base for paints, structural adhesives & flame sprayed coatings.
- Bare or painted corrosion performance dramatically extends life of cast and wrought Aluminum components exposed to sea water, high temperatures or other corrosive media.
- Provides superior stress durability and corrosion resistance to Al & Ti structural components.
- Provides a seal Al or Ti powder metallurgy substrates by coating penetration up to 12 mils (>300 microns) into these types of surfaces.
- Replaces chrome primers for environmental compliance.
- Coating wear performance is suited for engine and internal transmission or drive applications.
- Reduces galvanic interactions of Titanium & alloys from dissimilar materials.

Whyco Detroit LLC., 6565 East Nevada, Detroit, MI 48234, Phone:313-891-3356, Fax:313-891-3368

| EC² CORROSION RESISTANCE EXAMPLES | | | |
|---|---|---|---|
| Condition | Deposit Thickness | Exposure Time | Comments |
| Ethylene Glycol/Water mixture (30/70%) | 12 microns – (0005") | 3 weeks | No effect or attack |
| 10% v/v Sulfuric Acid | 12 microns – (0005") | 2 days | No effect & no adhesion loss |
| 10% v/v acetic Acid | 12 microns – (0005") | 30 days | No effect & no adhesion loss |
| Hot & Cold solvent borne paint strippers | 12 microns – (0005") | 30 days | No effect or attack |

| ADDITIONAL EC² COATING PROPERTIES | |
|---|---|
| Structure | Amorphous closed cell pore structure |
| Coefficient of Friction (μ) | < 0.1 μ most Al substrates no final polish required |
| Coating Thickness | 3 to 12 microns (0.00012 to 0.0005 inches) |
| Wear Resistance (Taber wear CS17 wheel) | > 2000 cycles no wear through 12 micron coating |
| Hardness (Nano-indentation Vickers) | Range 640 to 800 HV (54 - 62Rc) |
| Coating Compatibility | Oils, Microblue lubrication, Anodic/Cathodic E-Coat, Powder coat, adhesives |
| Substrates Application | Cast (Sand or Die) & Wrought Aluminum Alloys, IVD Aluminum, Titanium Alloys, Al or Ti Powder Metallurgy |

**Whyco Finishing Group** is a recognized leader and industry resource providing innovative surface finishing technology and has extensive experience in developing critical programs with our customers.

We provide technical coating solutions for all major industries including Automotive, Aerospace, Military-Defense, Medical, Marine, Electronics and Industrial Machine market sectors.

Our facilities are equipped to process a wide variety of components ranging from large to small sizes, and designed to meet the most demanding customer requirements.

We are dedicated to creating value and opportunity for our customers. We focus on solving customer problems including the development of tailored processes and coating systems. We have developed process systems for light metal alloys with our conventional and advanced Whyco tribological technologies.

The Whyco design, manufacturing and quality assurance systems are based on conformance to industry specific standards including ISO/TS16949 Automotive, ISO9001, AS9100 Aerospace, ISO13485 Medical & ISO14001 Environmental.