



TitanCoat™ : Advanced Coatings for Casting

Our Coating

The UES TitanCoat™ Generation I and II coatings are high tech coatings designed to provide longer component life in die casting applications by reducing cracking during thermal cycling.

Longer component life will translate into enhanced productivity and reduced downtime.

UES can coat core pins and die inserts used in Al, Mg, and other metal casting operations.

Features

Physical Vapor Deposition (PVD) enhanced with Advanced Filtered Arc

Low temperature CVD process

Both PVD and CVD techniques allow deposition of highly dense microstructure with excellent adhesion

Defect free, ultra smooth hard coating

Coating thickness ranges from 2-5 microns

Temperature process is between 200° to 500°C

Coating Microhardness ranges from 2300 HV to 4000 HV

Advantages

Heat Resistant

Longer life due to significant reduction in molten metal attack on die steel

Reduced downtime and increased component life leading to significant return on investment

Precise dimension of the cast parts

Reduced thermal fatigue / heat checking

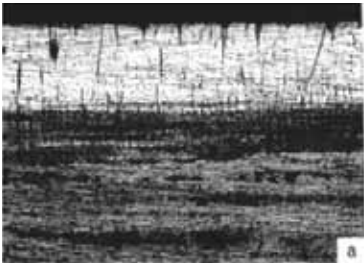
Environmentally friendly process



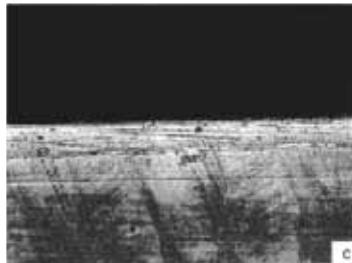
Tier 1 Supplier to Honda of America

TitanCoat™ Generation I & II Coating Performance

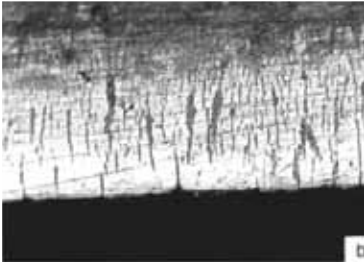
A: Uncoated Pin after 2000 cycles



C: Coated Pin after 2000 cycles



B: Uncoated Pin after 5000 cycles

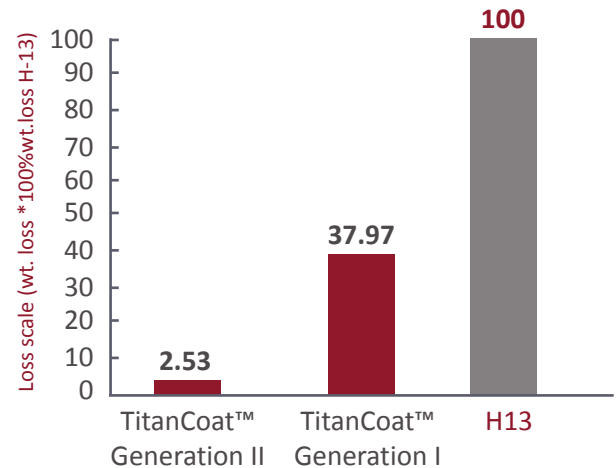


D: Coated Pin after 5000 cycles



Aluminum Dip Test Conditions

Test temperature: 690°C (1274°F)
Dip test time: 2 hours
Immersed length: ~ 60mm



Weight Loss from two hour dip test

Why UES?

Technical Excellence

40+ years of science & technology partnership with DoD and other customers.

Independent R&D, manufacturing facilities for product development.

Proven Partner

Robo-Met.3D® - AFRL technology licensee.

TitanCoat™ - Tier I supplier of erosion resistant die casting pin coatings to Honda America.

ProCast® - Process simulation standard for over 25 years, developed by UES.

Commercialization Excellence

2015 R&D 100 Award Winner (Dr. Rabi Bhattacharya, PCSS).

Tibbetts Award Winner.

DoD Commercialization Achievement Index of 100%.