

Coatings & Platings Roundup

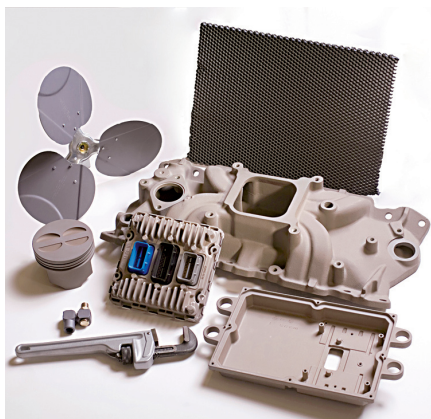
All safety equipment is onboard as required by IRI, FM and NFPA for gas-heated equipment, including a 325 CFM, 1/3-HP powered forced exhauster. A digital indicating temperature controller is also provided." www.grievecorp.com

Electro Ceramic Coating

Information from **Henkel Corporation**, Madison Hts., MI, USA, says, "Alodine® EC2™ from Henkel is an Electro Ceramic Coating for aluminum, aluminized steel and titanium substrates. This new multi-functional coating technology provides previously unattainable chemical, corrosion, abrasion and temperature resistance from a single coating process.

"The coating is applied using an electrolytic process that deposits 3 to 12 microns of titanium oxides on the metal surface. This coating's unique closed-cell pore structure delivers properties of hardness (800 Vickers), low surface roughness (0.07 microns), lubricity (0.2 COF) and abrasion resistance (1.5 Tabor Wear Index), while maintaining a high degree of flexibility (1 to 2 T Bends on test panels). The coating's thermal stability has been cycle tested in a muffle furnace heated to (600°C) and then directly placed into liquid nitrogen at -197°C with no loss of adhesion or change in coating properties.

"The corrosion resistance on aluminum fasteners is expected to exceed several thousand hours of salt spray. Actual ocean testing of aluminized steel bolts coated with Alodine EC2 has outperformed stainless steel bolts by 100% in engine teardown tests. The coating is currently being applied to titanium fasteners as a ceramic barrier to prevent galvanic corrosion when the fastener comes in contact other metals in marine environments.



Examples of parts coated with Alodine® EC2™ from Henkel Corporation.

"In addition to being an excellent stand-alone coating, Alodine EC2 will enhance the function of other coatings when used as a base for paints, lubricants and adhesives." www.henkel.com

Chemical Adhesive with Assembly Actuated Locking & Sealing Properties

Jaime Richey, Sales & Marketing Specialist at **Nylok Corporation**, a **Marmon Group/Berkshire Hathaway Company**, Macomb, MI, USA, says, "Precote® is a chemical adhesive with assembly-actuated, fast-curing, vibration-resistant locking and sealing properties for a wide range of internal and external fastener applications. Precote is the only dual microencapsulated pre-applied chemical adhesive on the market. During the assembly process the microcapsules are ruptured and the curing process begins.



Fasteners coated with Precote® chemical adhesive.

"Precote offers a very low coefficient of friction, providing excellent torque/tension results. Precote also offers many other advantages such as no additional locking devices needed, precise thread coverage for each part, increased productivity at the assembly line and environmental safety.

"Once Precote is applied, it has a four year shelf life at room temperature and will not be affected by humidity or atmospheric conditions." www.nylok.com

Environment-Friendly, Cost-Effective Corrosion Protection

Moshe Moked, P. Eng, of **DiSTeK N.A. LLC**, Elk Grove, IL, USA, says, "ArmorGalv® technology is an environment-friendly process that offers superior corrosion protection and wear resistance as well as anti-galling properties. Following are some highlights of the ArmorGalv technology which is, in fact, a modern, greatly improved, version of the well established Sherardizing zinc/iron vapor diffusion process.

"ArmorGalv is not merely a sacrificial coating. It coats and penetrates the surface of any steel part including wrought and/or forged steel, castings, powdered metal (with no impregnation required) and all grades of stainless steel, to become integrated with the part that is:

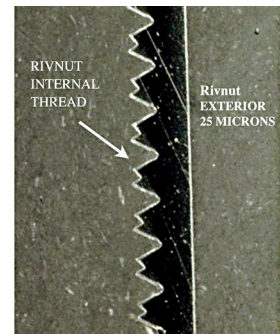
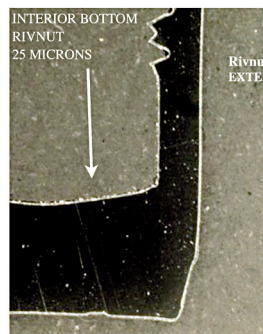
- Highly corrosion and abrasion resistant.

Continued ...

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- Excellent anti-galling properties— a replacement for cadmium.
- Controllable and precise— thicknesses from 0.0003" to 6 Mils.
- Hard, nonmagnetic, weldable and spark-free.
- Chip-proof and amenable to crimping and bending.
- Highly heat resistant 1200°F (650°C) continuous service.
- Excellent base for paint, powder coating and rubber bonding.
- Particularly interesting for powder metal parts, requiring no impregnation and providing not only extremely good corrosion protection, but also improved mechanical properties.
- Hydrogen embrittlement-free. Heat treated parts can safely be coated and protected.
- Works extremely well in harsh marine environment.
- Totally heavy metal-free nontoxic (RoHS-compliant). Recipient of the EPA's MVP² award (Most Valuable Pollution Prevention technology).

**ArmorGalv®
Bronze
25 microns,
4000 hr.
B117 salt
spray.**



Automotive rivnuts with ArmorGalv® coating (in white).

"The unique combination of properties offered by ArmorGalv coating, make it an excellent replacement for cadmium and hex chromium as well as being very interesting for a multitude of military and industrial applications from construction in corrosive environments and components on Navy ships to land vehicles, small arms, artillery and ordnance.

"ArmorGalv Thermal Diffusion Coating is covered by ASTM # A-1059." www.distekna.com

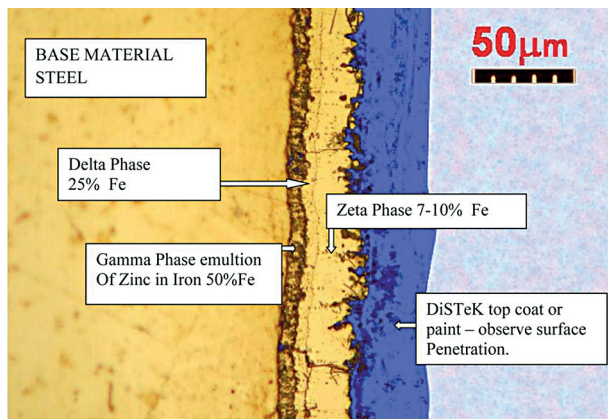
**ArmorGalv®
Natural
400 microns,
5000-hour
B117 salt
spray.**



New Zinc Flake Coating Systems for Automotive & Wind Energy Applications

Information from Doerken Corporation USA, Grass Lake, MI, USA, the North American operating unit of Dörken MKS-Systeme GmbH & Co., Herdecke, Germany, says, "Doerken Corporation USA has introduced Delta-Protekt® KL 101 zinc flake system, developed specifically for large automotive steel components and wind turbine construction. For a variety of automotive applications and the bolts used in wind turbines, KL-101 is a highly effective alternative to hot dip galvanizing and its drawbacks such as exposure to high temperatures and labor-intensive secondary operations. KL-101 also provides active cathodic protection with high corrosion resistance at extremely thin coats.

"The new Delta-Protekt KL-101 zinc flake system has been created specifically for susceptible grades



Coating structure.