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Plasma Electrolytic Oxidation (PEO)

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COMPANY PROFILE

Curtiss-Wright Corporation (NYSE:CW) is a global integrated business that provides highly engineered products, solutions and services mainly to Aerospace & Defense markets, as well as critical technologies in demanding Commercial Power, Process and Industrial markets.

Our proven surface treatments meet industry demands for lighter materials, improved performance and life extension in key markets such as Aerospace, Automotive, Energy and Medical. We can prevent premature failures due to fatigue, corrosion, wear, galling and fretting. For more information, visit www.curtisswright.com



Surface Technologies is a Division of Curtiss-Wright (NYSE:CW) a global innovative company that delivers highly engineered, critical function products and services to the commercial, industrial, defense and energy markets. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing reliable solutions through trusted customer relationships.

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What is PEO?

- Plasma electrolytic oxidation (PEO) is a bath-based method of producing ceramic layers on the surface of light alloys. PEO surface coatings are characterized by their wear resistance, corrosion resistance and thermal and chemical stability. The method is suitable for alloys of high aluminum, magnesium, and titanium composition, but can also be applied to other metals such as zirconium, tantalum, niobium, hafnium and cobalt.
- Electrolytic oxidation without the use of plasma — anodizing — has been the prevalent technique over many years. The introduction of plasma fundamentally alters coating and performance characteristics in stressful end-use applications.

Key Benefits of PEO Applications

- Extreme hardness
- Corrosion resistance
- High strain tolerance
- Uniformly applied coatings
- Wear resistance
- Environmentally friendly
- High fatigue performance
- High dielectric resistance (for electrical component applications)
- Plasma resistant coatings

For more information about PEO, visit our website www.keronite.com or contact us at ker-info@cwst.com

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Key points

- Similar to anodizing but employs much higher potentials - plasma modifies (and enhances) the structure of the oxide layer.
- PEO is an environmentally safe / green process, typically low- concentration alkaline solution. No harsh acids are used in our process. In fact our waste electrolyte is pH adjusted and (with approval from the local water company) disposed of down the city drain system.
- Coatings can be developed & adjusted to meet specific application requirements. Coating thickness, density, pore structure and surface roughness can be manipulated to suit coating needs.
- Coating has attractive properties including corrosion, wear, thermal insulation, thermo-optical, dielectric and is an excellent pre-treatment for subsequent sealers, paints etc.



Most frequently coated materials

- Aluminum 2XXX, 4XXX, 5XXX, 6XXX, 7XXX series & cast alloys (A356, A380 & other high silicone content alloys)
- Magnesium diecast, sand-cast & extruded alloys (such as ZE41, EV31, AZ80, WE43, AZ91)
- Titanium Ti64, Cp Ti



Parts

- Aerospace: Bearing Carriers
- Military: Camera housings
- Military: Drone housings & optics
- Space: Satellites
- Industrial: Mixer gears & wheels
- Helicopters: gearbox housings / drive tubes
- Industrial Components
- Automotive: Shock absorbers / fuel mixers / roof panels / aluminum disk brakes

