

POETON

High Specification Coatings

Energy and Power

Apticote Coatings for the Energy and Power Generation Industries

Poeton offer a comprehensive range of coatings for the Energy and Power Generating Industries. These encompass:

- Wear resistant coatings, including thermally sprayed coatings and electroless nickel
- Anti-corrosion coatings, including anodic treatments for lightweight alloys of aluminium, titanium and magnesium
- Anti-fretting coatings
- Dry lubricating and non-stick coatings for sliding situations, including bearings, seals and gasket faces
- Anti-galling coatings, including titanium threads
- Coatings for surfaces requiring electrical insulation and high dielectric strength
- Thermal barrier coatings
- Hot oxidation resistant coatings



Typical Apticote Energy Applications

- Wind turbine bearings and lightweight structural parts
- Fuel cell gasket faces (for insulation)
- Solar cell lay-up plates
- Gate valves
- Lightweight structural parts for electric cars (for insulation)
- Solar hot water channels
- Nuclear waste containers
- Undersea components for tidal power equipment, requiring corrosion protection
- Components on wave power machines
- Insulation of titanium parts to minimise galvanic corrosion of mating parts, particularly undersea

Our coating service for the energy and power generation industries is aimed at meeting the challenge provided by the need for low friction, low wear and electrical insulation. We are focused on supporting low carbon technologies with our existing range of Apticote finishes, and with the development of new coating solutions through our R&D and technical Services. Using our expertise in characterising and understanding wear and corrosion processes, we work with our customers on a project basis, ensuring that the most effective coating solution is identified.

Poeton coatings are used in fuel cells, electric cars, wind turbines, solar arrays, nuclear power generation and other power related applications. In keeping with the ethos of the sector, Poeton are committed to developing and introducing more environmentally acceptable coatings for industry around the world. To this end, our R&D department is at the forefront of research to find alternatives to traditional, often hostile, coating processes like hard chrome plating and chromic acid anodising.

Our experience and track-record is unrivalled, bringing performance benefits to all aspects of the sector.

Which Apticote coating do I specify?

Apticote Coating	Features	Application areas and benefits
Apticote 100	Precision hard chrome	We specialise in precision plating, using jigging and robbers custom designed in our workshop, avoiding the need for expensive post-grinding or finishing. Parts include hydraulic supports in mining, and Applications in the nuclear industry
Apticote 200	Polymer coatings	A family of polymer coatings offering corrosion protection, low friction, non-stick and wear prevention. Parts include gasket faces in fuel cells and sliding parts in wave machines. Poeton will advise on which of the Apticote 200 coatings is best for a given application
Apticote 300	Hard anodising a of aluminium, and titanium anodising	Our hard anodising process gives greater than 1500 hours salt spray endurance as well as 1,200 volts DC dielectric strength on aluminium alloys for parts in electric motors. We specialise in treating titanium, with our Apticote 300T process, on parts such as sub-sea structural components
Apticote 350 & Apticote 356	Composite hard anodising of aluminium	A range of anodic processes with polymer infusion, providing wear and corrosion protection (up to 15000 hours salt spray), as well as exceptional electrical insulation for aluminium alloys. Ideal for parts on wave power machines subject to periodic immersion in sea water.
Apticote 400	A high quality electroless nickel coating	Ideal for precision parts needing anti-fretting and corrosion protection, on parts such as gaskets, couplings and splines.
Apticote 450	An electroless nickel/polymer composite	Providing very low friction, wear resistance and anti-fretting. Good for gasket faces where there is the risk of relative thermal expansion, and for anti-galling on threads, including titanium.
Apticote 800	Thermally sprayed coatings	We offer a wide range of metals, cermets and ceramics for wear resistance and as thermal barriers. Applications range across the whole sector, and Poeton will advise on which thermal spray coating will best solve you problem.
Apticote Keronite 3000	An electro-ceramic coating for aluminium, magnesium and titanium alloys.	The ultimate wear protection for parts made in lightweight alloys, and for providing an electrically insulating surface on titanium, ideal for eliminating galvanic corrosion on mating parts

Case-history

Nuclear Waste Storage

Problem - The customer required the ultimate in anti-corrosion treatments, one to eliminate any possibility of damage to storage drums containing low risk contaminated nuclear waste. The specification was for no corrosion after 50 years storage, on all parts of the drum, an inner container, an outer and a lid.



Solution - The Apticote treatment consists of a sacrificial 'super-zinc' base coating with a proprietary epoxy polymer top coat. The combination was perfected in the Poeton laboratory, using accelerated corrosion testing, first on the enhanced zinc coating, on a range of epoxy formulations for the top coat, then on the final combination of the two. In our tests, the extremely tough epoxy formulation has protected test panels for ten years, with absolutely no signs of deterioration! And to date, after many more years of storage, the customer's drums have exhibited zero problems.

The coating can also be specified to prevent saltwater or atmospheric corrosion of components or structures in marine, defence and industrial applications.

Disclaimer

The information contained in this leaflet is intended for guidance. Whilst every effort is made to understand the environment in which the coating is designed to work, success can only be determined by trials and in-service testing.



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NADCAP Accreditation is held by Poeton Industries Ltd with Poeton (Gloucester) Ltd Accredited for Plasma Spray (coatings) and Chemical processing, and Poeton (Cardiff) Ltd Accredited for Chemical Processing and NDT

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