

METAL

FINISHING

FULLY COVERED

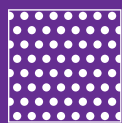
Metal finishing at Portsmouth Aviation has the power to enhance the performance, durability, and protection of the components we produce, enabling our process technicians to create reliable and long lasting protective coatings that can withstand challenging environments and operational demands.



TECHNICAL
SERVICES



CNC
MACHINING



METAL
FINISHING




QUALIFICATION,
INSPECTION
& TESTING



METAL
FABRICATION



PAINT
& FINISHING



Metal finishing is the application of various coatings to enhance the performance, corrosive protection and appearance of metals and aluminium alloys.

Metal finishing is a cost effective solution that protects components from corrosion and deterioration, providing maximum durability with minimal maintenance.

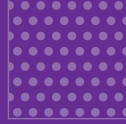
Portsmouth Aviation boasts a vast variety of metal finishing processes for our customers. From Anodising to electroplating, industrial metal finishing is an invaluable service we provide with extremely high standards of quality.

Why Portsmouth Aviation for Metal Finishing?

At Portsmouth Aviation we pride ourselves in producing a high standard of Metal Finishing processes for over 60 years.

This is ranging from Electroplating to Chemical Conversions and many more in between. We have one of the largest Metal Finishing facilities on the south coast which has the capability to process a large quantity of products.

We believe in having a quick turn around of work to meet our customer's requirements. This includes a minimum of 7 working days and within this time frame we can ensure that our customers products are being efficiently processed with a high standard of care and quality.



METAL FINISHING CAPABILITIES

We provide and deliver our services in house
to ensure optimal quality and control.

POLISHED

RESILIENT

AESTHETIC

PROTECTIVE

There are three primary types of metal finishing that we can offer:

Anodising

Anodising is an electrolytic process that converts the surface of the aluminium substrate with a protective oxide layer, increasing corrosion resistance and wear resistance.

It also enhances adhesion for paint primers and glues. Anodic films can be used for cosmetic effects with the ability to absorb dyes. The process changes the surface structure of aluminium alloys, making them harder and stronger. Sealing can be offered for added corrosion resistance, and wear resistance can be improved by increasing the thickness of the coating.

Electroplating

Whether its Tin, Zinc or Zinc-Nickel these processes deposit a sacrificial layer onto to the piece part, which forms a barrier between the surface of the piece part and the corrosive environment.

The purpose of electroplating is to deposit a more reactive metal than the piece part, to form a barrier from a wet corrosive environment. For example, with Zinc Plating we deposit Zinc onto iron and mild steel because it reacts more to corrosive elements.

Theoretically the deposited coating should corrode preferentially to the piece part.

Portsmouth Aviation's unwavering commitment to the environment is exemplified through their dedication to REACH compliance, ensuring a sustainable and responsible approach to the metal finishing industry.

Chromate Conversion Coatings

Chromate conversion (Alocrom) is a non-electrolytic process which forms a protective iridescent coloured chromate coating on aluminium and its alloys. It works as a great adhesive pre-treatment for painted products.

As an alternative to Hexavalent (CRVI) chromate conversions, we offer a Trivalent (CRIII) conversion coating such as Surtec 650V. We can also offer Iridite NCP which is chrome free, this has no hexavalent or trivalent chrome. These processes are paving the way to more environmentally friendly and REACH compliant chemicals.



A man in a blue lab coat and purple gloves stands on a green gridded platform in a factory. He is holding a yellow tool and looking towards the right. The background features large industrial machinery, including a large grey cylindrical component and a white funnel-shaped structure. Blue overhead beams and fluorescent lights are visible.

DID YOU KNOW?

Hard anodising doesn't just add strength to aluminium surfaces, it's like giving them a suit of armour, providing exceptional wear resistance and corrosion protection, making it the preferred choice for aerospace and industrial applications.

Technical Information

Sulphuric Anodising

A protective coating, 8-15µm thick, known for its anti-corrosion properties and clear silver finish unless dyeing is required.

Anodising with Black Dye & Dichromate Seal

Colour dyes applied after sulphuric anodising to achieve superior visual finish.

Chromic Anodising

Utilizing chromic acid to produce films up to 5µm, resulting in grey finishes mainly used for castings.

Hard Anodising

Similar to sulphuric anodising but processed at lower temperatures for longer periods, providing increased corrosion and wear resistance. Thickness ranges from 20µm to 70µm, up to 100µm possible for specific alloys.

ALOCROM 1200

A rapid non-electrolytic dip process creating an iridescent golden chromate coating on aluminium, serving as an adhesive pre-treatment for painted products.

Nitric Acid & Dichromate Passivation

Stainless-steel passivation to remove impurities and enhance corrosion resistance.

Nitric Acid Passivation

Traditional acid used to passivate stainless steel, widely accepted in various industries, though it may remove some parent metal.

Heat Treating

Stress relief and de-embrittlement method for high tensile steels, reducing brittleness and hardness while improving tensile strength.

Non-Destructive Testing (NDT)

Analysis technique to evaluate material, component, or system properties for characteristic differences, welding defects, or discontinuities without damaging the original part.

Salt Spray Testing

Accelerated corrosive attack to predict the coating's effectiveness in protecting metals and alloys.

Zinc Plating

Electroplating method utilizing electric current to deposit zinc ions onto metal components, forming a protective layer.

Zinc Nickel

Co-electrodeposition of zinc and nickel on components, providing superior corrosion resistance compared to other electroplating processes.

Iridite NCP

Iridite NCP provides both high adhesion values for paints and powder coatings as well as excellent corrosion resistance in its own right. This means that even unpainted areas of aluminium are protected against corrosion.

Iridite NCP does not contain Lead, Cadmium, Chromium (hexavalent or trivalent), Mercury or PBB / PBDE compounds.

SurTec 650V

SurTec 650V is a trivalent Chromium passivation treatment for Aluminium. It is hexavalent Chromium free and produces colourful and visible layers which are blue-grey to yellow iridescent. This process also offers excellent corrosion protection comparable to hexavalent passivations.

SurTec 650V is REACH, RoHS and WEEE compliant.



Metal finishing is the art of transforming raw surfaces into refined masterpieces, where chemistry and craftsmanship converge to enhance durability, aesthetics and functionality, leaving a lasting impression of excellence.

Simon Escott, Managing Director



CONTACT OUR TEAM

Whatever your engineering need, our expert design, build and manufacturing teams are on hand to help your business create a tailored solution. Find out how we can support you on your project.

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