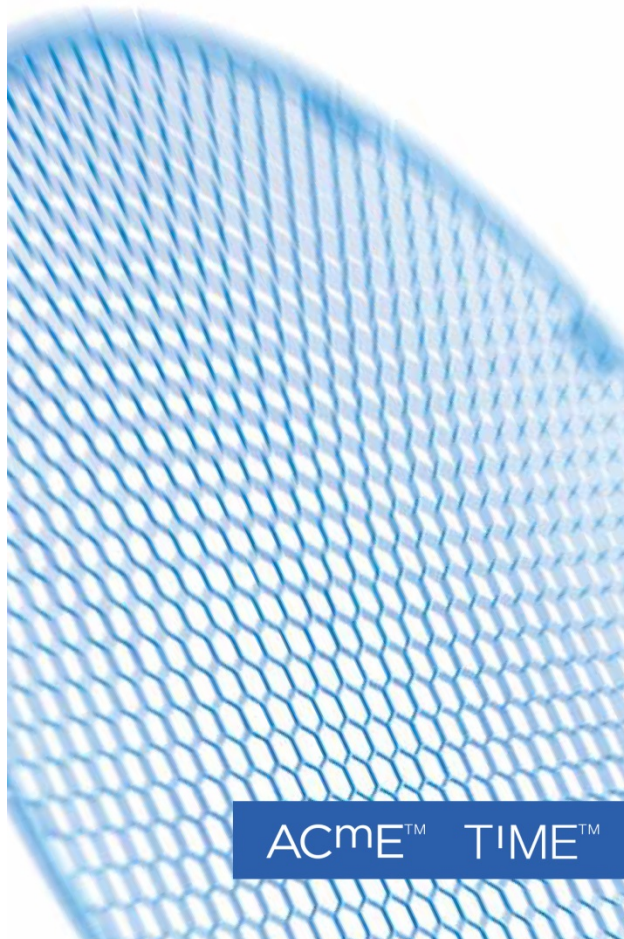


www.ace-uk.net

ADVANCED CHEMICAL ETCHING

a process of innovation



ACmE™ TIME™

COMPANY INTRODUCTION

Advanced Chemical Etching (ACE) is one of the largest specialist metal component manufacturers in Europe, innovating and developing a number of manufacturing processes to meet the needs of our National and International customers. ACE has scientifically developed innovative processes to etch corrosive resistant exotic materials including Titanium (TiME), Nitinol, Elgiloy, Inconel and Aluminium (AcME), alongside more everyday materials including the various Stainless Steel grades, Coppers, Mild Steel etc. Advanced Chemical Etching's bespoke manufacturing facility in Telford is equipped with the latest production machinery, a dedicated laboratory that is continually developing process parameters complemented by a full range of the latest state-of-the-art measuring equipment.

Since our inception ACE has been at the forefront of the Photo Etching industry by constantly challenging the normal process route. By undertaking continuous research and development new chemistry and process capabilities are constantly developed for the manufacture of competitively priced burr and stress free 2 and 3D components for a wide variety of industry sectors. From prototypes through pre-production, and ultimately volume production, ACE are able to supply bespoke components in short timescales utilising low cost digital photographic tooling. Our reputation of service and quality leaves our competitors standing.

ACmE™

ALUMINIUM COMPLIANT MOLECULAR ETCHING

ACE has pioneered a new process, Aluminium Compliant molecular Etching (ACmE), for etching Aluminium. Aluminium and its alloys are increasingly popular materials, thanks to their high strength to weight ratios and natural corrosion resistance. However, the ductility of these materials makes them prone to pick-up and galling during the machining process and exceptionally difficult to etch using conventional technology. The ACmE process overcomes this problem:

Fast Process

4 times the speed of conventional Aluminium chemical etching. (Now as fast as etching Stainless steels).

Efficient Process

10 times etchant metal load capacity.
Less down-time spent recharging etchant.

High Aspect Ratios

1:1 aperture aspect ratio possible
(0.2mm thick with 0.2mm lines and spaces).

New Levels of Quality Achievable

Smooth edge profile and smooth surface etch profile.

New Tighter Tolerance Standards

±10% of material thickness... equal to tolerances achievable with other basic metals.
(Industry standard is ±20% of metal thickness for Aluminium).

Flexible Process

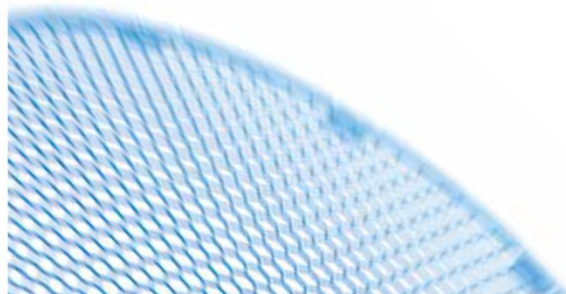
Suitable for all grades and hardness of Aluminium alloy including 'Clad' both single and double sided. To include 1000, 3000, 4000 & 6000 series specs.

Compliant Process

Thickness's range from 0.025MM (0.001") up to 1.6mm (0.064")

Economical

Speed, quality and efficiency gives significant cost advantages over conventional etching.



TIME™

TITANIUM MOLECULAR ETCHING

ACE has pioneered a new process, Titanium Compliant Etching (TIME), for etching Titanium. Titanium is renowned for its strength, light-weight properties and high temperature performance but is difficult to etch due to the fact that it rapidly forms a protective oxidised coating when exposed to air; a coating that is exceptionally hard to dissolve. Traditionally, Hydrofluoric Acid (HF) has been used as the preferred etchant because of its ability to remove this oxide layer but it is a highly toxic material and one to be avoided if possible.

ACE has vastly increased the processing speeds and etch rate of Titanium, the ACE chemistry has a higher etching capacity. This is still one of the only safe etchants for etching Titanium and is unique to ACE.

New Levels of Quality Achievable

Smooth edge profile and smooth surface etch profile.
No Surface Burr.

New Tighter Tolerance Standards

±10% of material thickness... equal to tolerances achievable with other basic metals.

High Aspect Ratios

1:1 aperture aspect ratio possible (0.2mm thick with 0.2mm lines and spaces and 0.2mm diameter holes).

Flexible Process

Suitable for all known grades and hardness of Titanium and a number of its alloys.

Compliant Process

Thickness's range from 0.025MM (0.001") up to 1.0mm (0.039")

Safe Process

Safer chemistry reduces personal and environmental risk.



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ACE currently holds ISO 9001, ISO14001, as well as a host of customer accreditations, and is continually adapting its systems to meet customer demands. Through continuous Quality Improvement we seek to provide levels of quality that exceed our customers' expectations. Close liaison with the customer at every stage ensures full traceability and allows us to offer value design and manufacturing, often securing significant cost savings in the process.

Our manufacturing facility is designed to allow the flexibility that is required to satisfy the demand from the various industry sectors our customers represent.

In this fast moving competitive age ACE are leading the field by constantly evolving where innovation is the norm.

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