MULTI*technic* Limited

Technical Guide

Digital Anoprinting—1. The Product.

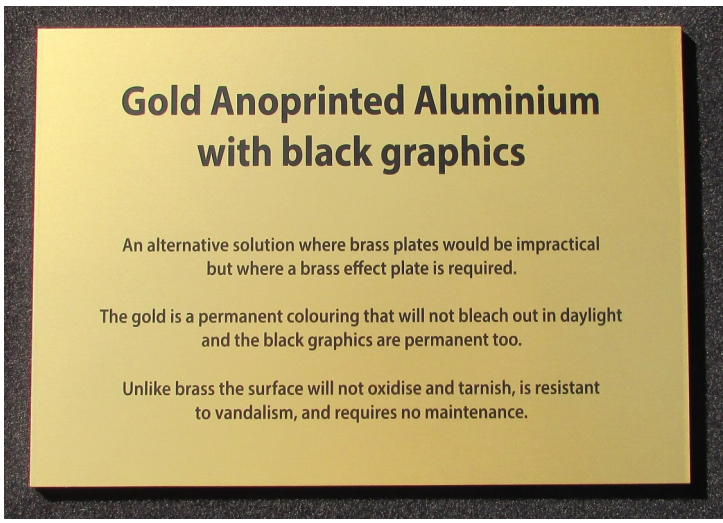
Anoprinted aluminium wayfinding signage.

Digital Anoprinting is a unique process that creates full-colour digital images inside the hard anodised surface of aluminium. There is no surface print, the surface is pure and smooth anodised aluminium. This makes it ideal for interior wayfinding signage in buildings where signs may be subject to wear or abuse. It is particularly useful in apartment blocks and student accommodation, being very easy to clean, requiring no maintenance, and because the graphics are locked inside the hard anodised surface, they cannot be defaced or interfered with.

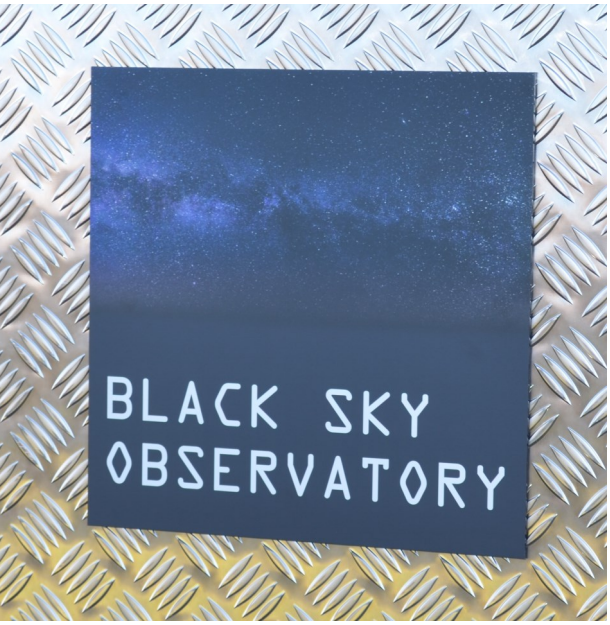
Because there is no surface print or coating, anoprinted aluminium is extremely safe to use where fire safety is concerned. Our internal wayfinding signage has been certified to BS 476: Part 6: 1989 + A1: 2009 – Fire Propagation, and BS 476: Part 7: 1997 – Surface Spread of Flame by an industry-leading independent test company.

An advantage of Anoprinted Aluminium is that it is extremely resistant to wear. Unlike surface prints or coatings, the graphics will not wear off even with very heavy use. This makes it an ideal process for applications such as control panels or interactive displays in museums and exhibitions, where surface printing would soon be rubbed away.

For outdoor applications we apply a specialist laminate to reduce daylight fade. This is not necessary for black graphics however, as the black will never fade away, not even in very strong sunlight. For extremely permanent outdoor signage, use black graphics on natural or gold anodising. Black graphics into gold anodising is a particularly useful solution where the appearance of brass is required, but where brass would be impractical due to maintenance and deterioration.

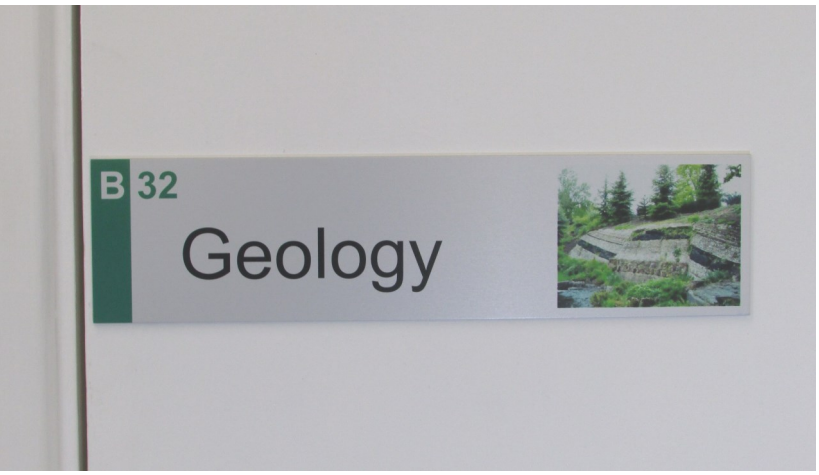


Digital Anoprinting—2. The Process.



When aluminium is anodised, the surface is porous until the anodising is completed. At this stage it can be coloured using dyes that soak into the porous surface. This process has been used to make coloured aluminium sheet, and brightly coloured metal objects by simply soaking in a vat of coloured dye solution. When the right colour is achieved, the surface is sealed so that the dye is locked into the hard anodised surface.

Our process works in exactly the same way. We have a specially designed digital printer that prints into the anodised surface before the anodising is completed. After printing, the anodised surface is sealed using a process that is very similar to setting concrete. This locks the graphics into the surface so that solvents, oils or even paint stripper will not remove the image. It is also extremely resistant to wear, so is useful for more challenging applications such as parking space identification.



The process uses CMYK colours so there is no white, and colours can blend seamlessly into the surface if required. This makes it ideal for colourful and creative wayfinding signage. Because it is CMYK, you can set up the artwork in the same way as for any similar digital printing process.

Digital Anoprinting—3. Key points

Durability in tough environments is the main advantage of digital anoprinting. It is especially useful where signs may suffer vandalism or a lot of wear. Because the graphics are locked inside the hard anodised surface, they will not wear off as surface prints will. The following examples show a simple wear test upon anoprinted aluminium, etched stainless steel, and a surface print. The test samples were subjected to even wear from an abrasive pad. After just 20 seconds, the surface print had been completely removed. After 60 seconds, the painted background of the etched plate had started to wear through. The anoprinted aluminium was unaffected.

This is not just useful for where signs will get a lot of wear, it also means that in tough environments such as schools the graphics cannot be defaced or altered, and surface vandalism can be cleaned off.

Like other full-colour signage , digital anoprinting will suffer from daylight fade. For outdoor use we normally apply a tough laminate to reduce fade, but care should still be exercised when considering the positioning of signs. Avoid fixing signs to face south if possible, and due to reflected glare it is sensible not to face signs towards the sun anyway.

Black graphics and most dark colours are not affected by daylight fade, and our pre-coloured gold aluminium is outdoor architectural standard, so can be used outdoors in very exposed locations. Because the gold sheet is pre-coloured, it is not possible to print colour images over the top, but some strong colours will work. If in doubt, please ask.

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Digital Anoprinting—More key points

Durability can mean a lot of things, but it is hard to imagine a more challenging environment than the example shown here. The wall graphic was created using anoprinted tiles, jointed with a specialist flexible sealant. It stands up well to the cleaning chemicals, as well as to graffiti and vandalism. The interiors of lifts can be just as harsh an environment for signage, and anoprinted aluminium works well there too.

Cutting to shapes is easy with anoprinted aluminium but it must remain flat, it cannot be bent, folded or rolled. Reasonably simple shapes can be cut in our workshop, but more complex designs such as control panels with holes and cut-outs are sent out to be machined by a specialist. Anoprinted aluminium works particularly well for control panels as it withstands a lot of wear and is easy to clean.

There is no white used in our digital anoprinting, it is a CMYK process onto matt aluminium. Good white effects can be created however by adding a grey tint to the background. The example on the left uses a 10% black tint fading from the top of the sign which produces an attractive appearance as well as allowing the white to stand out in the logo. We are only able to anoprint into our own specially prepared sheet material, we cannot anoprint into other aluminium sheet.

If you need any further information, advice, or technical help, do please get in touch.

Chemical Etching and Digital Anoprinting for the Sign Trade.

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