

ALUMINIUM EXTRUSION SPECIALISTS

FINDING THE PERFECT ALUMINIUM EXTRUSION

A Buyer's Guide to Finding the Perfect Aluminium Extrusion and Finishing Partner



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Orgbar Aluminium is one of the UK's leading aluminium extrusion specialists and component manufacturers. Using our advanced industry expertise, we have complied this comprehensive buyer's guide to help potential buyers find exactly what they need.

Before entering a relationship with an aluminium extrusion supplier, it is vital to make a few considerations

THE FIVE KEY QUESTIONS YOU SHOULD BE ASKING IN THE FIRST INSTANCE ARE:

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Are they going to do all they can to make your project successful?



Are they experienced enough within the extrusion industry?

04

Can they offer a wide range of suitable finishes?

02

Do they have the design capability to bring your concept to life?

05

Can they deliver what you need, when you need it?



Colin, Dana and Neil -Orgbar Aluminium FINDING THE PERFECT ALUMINIUM EXTRUSION

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What next?

EXTRUSION

/!\ If at any stage you're unsure about anything, check with your supplier, a good supplier will be able to make recommendations based upon your requirements.

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- Do know exactly what your extrusion is for and what alloy is required.
- Do know which face of your extrusion will be visible (if any).
- if any (powder coat, anodising etc).
- Do have an idea of what quantities you need, if you expect to use many tonnes in a year you may get free tooling.
- · Do mention at the beginning if you need a stocking facility.
- · Do remember to consider lead time, minimum order quantities and service when buying on price alone

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• Do provide drawings with the right technical information to ensure advice you receive is accurate. If you need help with this don't hesitate to ask.

- Do check with your supplier that your design will work as an extrusion.
- Do know which finish you are having on your extrusion
- Do ask for 3D printed parts or wire eroded samples if your section is new
- and you have doubts. Don't just order and keep your fingers crossed,
- ordering test samples will be less expensive than cutting a new die (Tooling).

NDUSTRES

At Orgbar, we are capable of supplying to all industries which utilise aluminium extrusions. Some examples of industries we work with are:



AEROSPACE



SHIPBUILDING



CONSTRUCTION



CONSUMER GOODS

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PACKAGING



RETAIL

SOLAR PANELS

MEDICAL

DESIGN CONSULTATION

Good design is the foundation of a good product. At Orgbar, we ensure our in-house CAD department produces the highest quality of work possible.

This work is bespoke to a client's needs and is capable of bringing new design concepts to life as well as refining existing ones.

EXTRUSION

The process of extrusion itself involves the shaping of material by forcing it to flow through a specific shaped opening, forming a long piece of shaped material.

Extruded material is extremely adaptable and lends itself perfectly to fabrication and machining processes. This makes it ideal for a wide variety of specialised industries.

At Orgbar, we are able to extrude aluminium up to four metres in length, and apply a huge range of machining processes, from simple holes and slots, to layering, pockets, profiling, and face milling.

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ANODISING

POWDER COATING

Anodising is widely used as a surface treatment on aluminium and is done for many reasons:

Powder coating of aluminium is a very durable method of providing a decorative finish, and there are virtually no limits to the choice of colour and finishes. The 'main finish' reflects the gloss level of the final product; with the list usually consisting of gloss, satin or matte, but there is also a choice between flat finish and metallic.

- Provide an abrasion resistant surface.
- Create a surface that is decorative (colour and sheen).
- Smoother and more pleasant to touch.
- Give surfaces an electrically insulated coating.
- Create a dirt-repellent surface (excellent for hygiene standards).
- Preserve the appearance of the part, which prolongs the aesthetic life of the finish.
- Improve corrosion resistance.

and is the most widely used method. Although anodised aluminium can come in a very wide range of colours including black, bronze, red, violet, green, blue and orange.

The anodising process consists of several treatment baths, preparation, anodising, colouring (where applicable) and sealing. This type of anodising adds a film thickness of between 5 and 25 microns.

Hard anodising is defined as producing an oxide layer that is thicker than 25 microns and having a greater hardness but is not normally required on general aluminium extrusion usage.

Anodised aluminium is considered a highperformance metal, it requires minimal maintenance and if well preserved the finish does not chip or peel. By simply rinsing the anodised surface the item will look as good as new. Some examples of where powder coated aluminium is frequently used are lighting, curtain tracks, doors and windows, desking systems, office furniture, and shop fitting.

Powder coating is also suitable for products and components that live either internally or externally, it is down to customer choice as to how they want their finished part to look.

The powder coating process involves three basic steps, preparation, or the pre-treatment, the powder application, and then the curing.

The appropriate pre-treatment process, which normally consists of degreasing and etching followed by a chemical treatment of the surface, helps the coating adhere to the metal.

The most common method of applying the powder coating to the aluminium is to spray the powder using an electrostatic gun. The gun imparts a positive electric charge to the powder, which is then propelled towards the part either mechanically or by compressed air, with the electrostatic charge ensuring adherence to the part's surface.

The part is then heated, melting the powder into a uniform film, which is subsequently cooled to form a hard coating.

Powder coating produces a high specification finish, which is tough, hard, and abrasion resistant.

Powder coating has almost entirely replaced wet painting, once used to perform a similar function. Wet painting, though still occasionally used, has a much higher environmental impact and doesn't offer the same quality of finish.

ALUMINIUM POLISHING, BRUSHING ZANDSTAIN LESS EFFECT

Polishing and custom mechanical finishing add durability and style to aluminium extrusion products using chemical or mechanical processes. Mechanical finishes are achieved using various methods, such as buffing, brushing, bead blasting, sand blasting, or tumbling.

Polishing may be used to enhance the look of aluminium parts on vehicles, TV and Hi Fi stands, cookers, door furniture, handles and many more.

To achieve a bright reflective finish on parts that are used in a highly decorative function requires specialist metal polishing, involving the use of abrasives on the surface in order to remove oxidation, prevent contamination, and to create a reflective surface to enhance appearance.

This polishing takes place on various types of machinery, using the relevant abrasive on a polishing wheel or belt, dependent on application. The part may need a heavy polish or just buffing depending on the customer's choice of finish and the shape of the part.

To prevent further surface oxidisation, the parts can then be treated with a nitric acidbased chemical. This is the brightening process prior to the anodising which preserves and protects the bright finish.

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Brushing is another technique used to produce a desired texture on aluminium extrusion products. It is not actually performed with a brush, or even Scotch-brite, rather it is usually applied with the use of a large belt sander. The finish produced by brushing may consist of tiny parallel lines that are etched on the surface of the product in the same direction, or as tiny grooves to create a feathery texture and reduce the reflective qualities of the aluminium.

There is now also available a brushed finish, producing a similar effect to that of brushed steel.

Another mechanical finishing process is bead blasting, which creates a granular finish that helps to hide excesses of imperfections on a surface.

If the final aluminium extrusion product needs to be anodised, the mechanical finishing must be completed first. This allows the surface texture created by the mechanical finishing to show through the transparent, uncoloured anodised layer, and enhances the appearance of the product.

To learn more about Orgbar Aluminium and our expert extrusion and extrusion finishing capabilities, contact us today.

