Our Vision

To provide UK manufacturing with access to aluminium from efficient and low cost global producers, in an investment reducing, service orientated package.
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1. Background and Introduction

The ‘Aluminium Supply Guide’ has been complied and published by the Aluminium Stockholders Association (ASA) to assist users and potential users of aluminium. It is also designed as a resource for members to train employees in the basic technical and commercial aspects of aluminium stockholding and distribution.

This guide compliments another ASA publication ‘About Aluminium’, now in its third revision, which has been successful in increasing awareness of aluminium and its uses. As a relatively new metal, only commercially available since 1886, aluminium is now used widely with many applications in the newer technological sectors of telecommunications, electronics and aerospace as well as the more traditional engineering and construction industries, such as automotive, architectural and transport markets.

Environmental concerns are now of major significance to manufacturers, processors and consumers generally. The aluminium industry recognises the part it has to play, and the responsibilities it has, in minimising the impact of the modern consumer society on the natural world. Aluminium, the third most common element contained in the Earth’s crust, is completely recyclable in its manufactured form and is thus both sustainable and less environmentally damaging when measured against ‘whole-life’ environmental factors.

Producing aluminium, both as a raw material from smelters and in its semi manufactured forms of extrusions or rolled materials, is a heavy industry, used to dealing in large quantities of material. There is a long supply chain from aluminium production to a fabricated piece supplied for incorporation into a finished product application. Stockholders have designed their services to make the procurement of aluminium an easier and more efficient process for those users, thereby developing the use of aluminium overall.

As the industry itself has developed worldwide, the opportunities for supply have become greater, including the range of products and processes that aluminium rollers and extruders can provide. This has made the procurement process more complex for end users, but one that stockholders have simplified on behalf of their customers.

The Aluminium Supply Guide details the capabilities and facilities that stockholders can offer and outlines the role of the ASA in particular. This publication summarises technical and practical information about aluminium and provides information sources for further research if required.

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ALUMINIUM SUPPLY CHAIN

Bauxite Mining

Alumina Production

Primary Aluminium Production

Semi-Finished Products

Recycling

Stockholding and Supply

End-use Manufacture

Usage in Application

Application

Semi-Finished Products
2. About the ASA

The Aluminium Stockholders Association (ASA) was formed by aluminium stockists and distributors in 1962 to promote professionalism within the industry by providing training, advice and common standards for members.

ASA members operate within a strict Code of Conduct that ensures continuity of supply, high standards and adherence to quality systems. Members of the ASA can therefore offer their customers added assurance by virtue of their agreement and compliance with ASA standards and conditions.

ASA Code of Practice:

Members are required to:

- offer a service which meets customers needs, by providing goods and services which achieve and maintain the highest standards in regard to quality, value and continuity of supply
- develop and share mutually beneficial long term partnerships with customers and suppliers
- behave with total integrity at all times
- act responsibly towards the environment
- foster good relations with customers, suppliers, staff and the local community

The ASA is self-governing and operates under the secretariat of the Aluminium Federation (Alfed) in the UK, with a council elected from the membership. Through Alfed it is affiliated to the European Aluminium Association (EAA). Associate members are drawn from within the aluminium casting, rolling, extrusion, fabrication and finishing sectors supplying the ASA. Affiliate members offer equipment, goods or services to the members of ASA.

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Members of the ASA act as a link between the mill producers of aluminium rolled and extruded products and their customers in many sectors including aerospace, automotive, building, defence and general engineering industrial sectors and also associated industries and services. Stockholders usually offer not just aluminium products but also stainless steels, copper alloys and specialist alloys such as titanium and nickel. The larger stockholders can also offer plain carbon and alloy steels and plastics. All of these products are available in quantities and to exact specifications to match immediate production requirements with just-in-time deliveries.

Stockists pride themselves on being able to meet their customers’ constantly changing needs, holding a wide variety of products - in standard alloys, sizes and shapes and also special items to meet individual requirements. At any one time, ASA members hold over 30,000 tonnes of stock ready for immediate supply from a warehouse system covering all of the UK.

Aluminium production is truly global and stockists are able to use their expertise and buying power to ensure that the most competitive and efficient producers are used. Ensuring UK manufacturers are able to compete on a consistent basis.

Members, acting individually and through the ASA’s various committees, seek to improve their businesses and develop the UK aluminium stockholding industry. The ASA also participates with organisations such as Alfed and EAA in promoting the use of aluminium in a wide range of end product applications.
3. The Benefits of Using Aluminium

In its pure form aluminium has only a few uses; however, when it is alloyed it takes on a wide range of properties which are advantageous in many different applications.

The alloying elements used are dependent on the finished article required. Additions of copper, iron, zinc, nickel, tin, lead, magnesium and silicon are all used to improve its attributes. Improved strength, corrosion resistance, ductility, workability, weldability and machinability are all possible.

Weight

Aluminium is light with a density one third that of steel, 2.71 kg/m³.

Strength

When alloyed, aluminium is strong with a tensile strength of 70 to 700 MPa (N/mm²) depending on the alloy and manufacturing process. Extrusions of the right alloy and design are as strong as steel and, unlike steel, are stable at low temperatures.

Elasticity

Aluminium is three times more elastic than steel and therefore more resistant to permanent deflection when a similar force is applied.

Formability

Aluminium has good formability, so that unlike most metals it can be extruded and drawn. It has good malleability allowing bending and other forming operations within a wide temperature range.

Fabrication

Aluminium is very easy to fabricate using most machining, drilling and punching methods. It can also be welded or bonded using all the normal methods available such as TIG and MIG welding, friction-stir welding, soldering, adhesive bonding and riveting.
Corrosion Resistance

A thin layer of oxide is formed in contact with air, which provides very good protection against corrosion even in normally-corrosive environments. This layer can be further strengthened by surface treatments such as anodising or powder coating.

Conductivity

Aluminium has high thermal and electrical conductivities compared with most metals. Although it has lower conductivity levels than copper, an aluminium conductor has only half the weight of an equivalent copper conductor.

Linear Expansion

Aluminium has a relatively high coefficient of linear expansion compared to other metals. This should be taken into account at the design stage to compensate for differences in expansion.

Non-toxic

Aluminium is not poisonous and is completely impermeable and odourless. It is therefore highly suitable for the preparation and storage of food. It is widely used for food and drink packaging.

Reflectivity

Aluminium is a good reflector of both light and heat.

Recyclability

Aluminium can be recycled using only 5% of the energy used to produce the original metal. It is fully recyclable from its semi-formed finish.

Magnetism

Aluminium is paramagnetic i.e. it has almost zero levels of magnetism and can therefore be used in electronic and electrical installations where residual magnetism could be detrimental to the product.
4. Stockholder Services

Stocking

The aluminium stockholding and distribution sector developed in response to the needs of end-users. It became uneconomic for those aluminium users to hold stock of an increasing number of variations in alloys, sizes and forms, particularly when requirements were unpredictable in frequency or volume. Varying leadtimes from rolling mills and extrusion operations added to the difficulties for users. Stockholders now hold an extensive range of standard profiles, shapes, alloys and specifications supplied on demand and delivered the same day if necessary.

Consignment Stock

For critical supplies, stockholders will maintain stocks at the end-users’ premises for immediate call-off. Although this doesn’t save on warehouse space, it transfers the responsibility of stock management and its financing to the stockholder.

Inventory Management

As an extension of the consignment stock service, stockholders can manage the aluminium requirements of their customers by holding agreed levels of stock at either the customer’s premises or the stockholder’s warehouse. The stockholder replenishes the stocks of aluminium according to its use and predicted future requirements, working closely with the end-user and with aluminium suppliers.

JIT/Kanban Supplies

Stockholders have refined inventory management so that supplies are delivered on a just-in-time basis, i.e. to an agreed schedule and on a timed basis, sometimes directly to the customer’s production line, thereby eliminating stocks at the customer’s premises. Alternatively, using Kanban principles, customers can minimise their stocks by having an agreed (low) stockholding which is replenished by the stockholder on a daily/weekly basis.

Supply Range

Stockholders began by supplying a comprehensive range of standard sizes and alloys in aluminium, similar to the way in which other metals were being supplied. In the UK the range has also had to include imperial as well as metric sizes. For some of the same reasons as customers originally switched to supply from stockholders for their standard requirements, stockholders now supply an increasing number of custom (bespoke) shapes, sizes and alloy specifications.
Fabrication and Finishing

As end-use customers streamline their own facilities, concentrating on their core activities, so stockholders have been able to offer services such as fabrication and finishing, replacing those peripheral operations. This can be an in-house operation for the stockholder, or supplied by third parties. Stockholders manage the complete requirements, supplying semi-finished components rather than mill-finished metal. ASA members offer the following added value services and manufacturing operations for their customers:

- Processing & Cutting
- Waterjet cutting
- Product kits
- Packaging
- Plate sawing
- Rod blanking
- Coil slitting
- Guillotining
- Vinyl coating
- Powder coating
- Anodising
- Delivery

The use of stockholders to provide these services means that end users can reduce waste, minimise work in progress stocks and change processes and products more quickly and efficiently.

Advice on Material Selection

ASA members offer advice on the most economic and cost-effective supply of aluminium. Based on their experience, members can also help in the selection of the best way to satisfy different end use applications. There is a wealth of detailed metallurgical advice available to aluminium users to help them to choose the most suitable alloy, temper and form of aluminium for their specific use. For more technical advice, the Aluminium Federation (Alfed) have a free technical service for members, or for customers of ASA members. Contact details are shown in Section 12 - Page 24.
5. Why Use Stockholders?

Why should aluminium users buy through the stockholder supply route? For large tonnages of rolled or extruded products, direct supply from the producer was once the obvious option. Stockholders can, however, offer many benefits to aluminium users.

Global Markets

With modern communications and global logistic opportunities, material can be sourced from any location in the world. Stockholders expertise ensures that aluminium users can take advantage of the most competitive supply routes.

Short lead times

For many standard alloys and shapes, next day delivery is common and same day delivery is possible for critical supplies. Most stockholders have trade counter facilities for same day service. A direct supply from aluminium manufacturers is usually measured in months.

Small order quantities

Even for large bespoke profiles and quantities of rolled products producers require large minimum order quantities. Stockholders can reduce customer stocks by supplying only what is required. Particularly for standards, stockholders will order in large quantities to reduce the tonnage price and can therefore provide small quantities without a cost penalty for end-users.
Delivery logistics

Most stockholders can deliver to anywhere in the UK either on their own transport, or dependant on the size of the package, overnight.

Design and Manufacturing Costs

Stockholders can work with customers, helping with their initial design, and working with selected partners to provide bespoke size products, finished and fabricated to the customers requirements. This approach can minimise the cost to the customer over the whole process by

- designing for optimum production efficiency
- designing for lowest fabrication and assembly complexity
- managing inventory costs by ensuring supply consistency and short leadtimes

Single Sourcing

Many aluminium stockholders also supply other metals and specialised materials e.g. plastics and composites. End-users can therefore obtain a greater range of their requirements from one source.
6. Aluminium and the Environment

Aluminium is the third most common element and the most abundant metal in the Earth’s crust, being found as the ore, bauxite, from which aluminium oxide is extracted.

Aluminium is produced from its oxide by a smelting operation which is energy intensive. This high energy consumption is, however, mitigated by aluminium’s high recycling rate and by the use of renewable energy sources to produce the electricity required for the smelting operations.

Bauxite is mined in tropical and sub-tropical regions and is extracted from close to the Earth’s surface, leaving shallow pits. When a mine is no longer viable, the topsoil and vegetation that was removed originally is replaced, having been kept locally in nurseries specially constructed for the purpose. Local communities are heavily involved in the mining operations and also in the environmental rehabilitation of the mines.

Primary aluminium production in new smelters requires only 30% of the energy to produce a tonne of aluminium as it did 120 years ago. New smelters are sited to take advantage of renewable energy sources such as hydro-electric and geo-thermal schemes. Today over 50% of smelting is powered from renewable sources.

Aluminium can be recycled using only 5% of the energy required for its original production with no loss of its properties. Nearly all ‘process’ scrap, i.e. scrap produced in extrusion, rolling, casting and fabrication, is remelted for further use. From the aluminium used in product applications, over 70% is recovered for recycling. As a result of its high recyclability, 75% of all the aluminium ever produced is still in use and therefore potentially available for recycling at a relatively low energy cost.

The high recycling rate and abundance of aluminium combined with its corrosion resistance, which gives it a long product life, means that it is close to being environmentally and economically sustainable.
7. Aluminium Alloys

There are two main types of alloyed aluminium; wrought and cast. Wrought alloys (rolled, extruded or forged) are strengthened either by work-hardening or by heat treatment, with different alloying elements being added to achieve the required strength. Cast alloys are usually very different in their composition to their wrought counterparts, as suitable composition is required for the production of effective casting materials.

The wrought alloys are also divided into two groups: heat-treatable and non heat-treatable alloys. Heat-treatable alloys are produced in the main for their strength and durability. Non heat-treatable alloys are produced for their ductility, weldability and corrosion resistance.

Popular UK Extrusion Alloys

<table>
<thead>
<tr>
<th>ALLOY</th>
<th>TYPICAL PROPERTIES</th>
<th>TYPICAL APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>Commercially pure alloy, very ductile in annealed condition, excellent corrosion resistance</td>
<td>Heat exchangers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food processing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chemical engineering</td>
</tr>
<tr>
<td>1350</td>
<td>A high purity alloy with very good electrical conductivity. Formability and weldability also very good</td>
<td>Electrical engineering</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical bus bar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electronics</td>
</tr>
<tr>
<td>2011</td>
<td>A free machining alloy (suited to high speed cutting). High strength but reduced corrosion resistance</td>
<td>Repetition machining</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automotive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fasteners</td>
</tr>
<tr>
<td>2014A</td>
<td>Heat treatable. Widely used in aircraft and other stressed structures. Fair corrosion resistance</td>
<td>Aerospace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motorsport</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Road transport</td>
</tr>
<tr>
<td>6005</td>
<td>Heat treatable. Lower strength than 2000 series alloys, similar to 6082 for corrosion resistance and strength, easier to extrude</td>
<td>Architectural, Automotive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transport</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Engineering</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Domestic</td>
</tr>
<tr>
<td>6063</td>
<td>Extrusion alloy of lower strength than 6082 but capable of thinner and more intricate extrusions. Good anodising</td>
<td>Architectural</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transport</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Domestic</td>
</tr>
<tr>
<td>6082</td>
<td>Heat treatable. Lower strength than 2000 series alloys but easier to produce and form with better corrosion resistance</td>
<td>Transport sections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scaffolding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frames</td>
</tr>
<tr>
<td>6262</td>
<td>A free machining alloy now replaced in many applications by alloys with reduced or removed lead content</td>
<td>Repetition machining</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anodised components</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Couplings</td>
</tr>
<tr>
<td>7075</td>
<td>Heat treatable with a very high strength/weight ratio. Moderate formability in annealed condition</td>
<td>Aerospace</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sport equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Motorsport</td>
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</tbody>
</table>

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Popular UK Sheet, Plate & Strip Alloys

<table>
<thead>
<tr>
<th>ALLOY</th>
<th>TYPICAL PROPERTIES</th>
<th>TYPICAL APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1050A</td>
<td>High purity alloy with very good corrosion resistance. Easily formed and welded but lower strength than most other alloys</td>
<td>General Sheet Metalwork, Cabinets, Chemical Engineering</td>
</tr>
<tr>
<td>2014</td>
<td>Heat treatable; widely used in aircraft and other stressed structures. Fair corrosion resistance</td>
<td>Aerospace, Motorsport, Road Transport</td>
</tr>
<tr>
<td>3103</td>
<td>A work hardening alloy with similar properties to 1000 series alloys but with higher strength</td>
<td>Chemical Engineering, Building &amp; Construction, Heat Exchangers</td>
</tr>
<tr>
<td>5005</td>
<td>Medium strength alloy, high corrosion resistance, suitable for anodising</td>
<td>Architectural, Decorative, Panelling</td>
</tr>
<tr>
<td>5083</td>
<td>A strong, tough alloy with good work hardening characteristics. Excellent corrosion resistance</td>
<td>General Engineering, Marine, Transport</td>
</tr>
<tr>
<td>5251</td>
<td>Work hardenable alloy with good weldability and corrosion resistance. Medium strength</td>
<td>Marine Engineering, Panelling, Pressure Vessels</td>
</tr>
<tr>
<td>5754</td>
<td>Medium strength alloy with good weldability and corrosion resistance. Often produced in treadplate form</td>
<td>Building &amp; Construction, Shipbuilding, Food Processing</td>
</tr>
<tr>
<td>6082</td>
<td>Heat treatable. Lower strength than 2000 series alloys but easier to produce and form with better corrosion resistance</td>
<td>General Engineering, Jig &amp; Fixtures, Construction</td>
</tr>
<tr>
<td>7075</td>
<td>Heat treatable with a very high strength/weight ratio. Moderate formability in annealed condition</td>
<td>Aerospace, Motorsport, Sport equipment</td>
</tr>
<tr>
<td>Speciality Aluminium Plate</td>
<td>A group of alloys usually given proprietary names that are enhanced versions of standard plate alloys</td>
<td>Jig &amp; Fixtures, Mould Tools, High Strength Components</td>
</tr>
</tbody>
</table>
8. Product Applications

Aluminium’s characteristics and properties have meant that it has been developed for use in a wide spectrum of applications and product areas. The following sectors and products are listed as typical modern applications of aluminium in its different forms, showing the most common alloys used.

Aerospace and Defence

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>ALLOYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuselage, Wing Skins, Seating, Interior Furnishings, Ground Equipment</td>
<td>2014</td>
</tr>
<tr>
<td>Jet Engines, Landing Gear</td>
<td>7075</td>
</tr>
<tr>
<td>Armour, Military Equipment, Ordnance</td>
<td>7075, Speciality Plate</td>
</tr>
<tr>
<td>Naval and Marine</td>
<td>5083</td>
</tr>
</tbody>
</table>

Transport and Automotive

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>ALLOYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body panels, Caravans, Train Bodies</td>
<td>2014, 3 Series 5 Series</td>
</tr>
<tr>
<td>Automotive Components, Braking Systems</td>
<td>5754, 6002 7075</td>
</tr>
<tr>
<td>Commercial Vehicles and Tipper Bodies</td>
<td>3103</td>
</tr>
<tr>
<td>Autosport</td>
<td>2014, 7075</td>
</tr>
</tbody>
</table>

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### Building and Construction

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>ALLOYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows, Doors, Shower Cubical, Greenhouses, Decorative Trim</td>
<td>5 Series Alloys 6063</td>
</tr>
<tr>
<td>External Cladding, Curtain Walling, Shop Fitting</td>
<td>6063, 1050, 3103</td>
</tr>
<tr>
<td>Signage, Shelters, Street Furniture Access Equipment.</td>
<td>6063, 1050, 3103</td>
</tr>
<tr>
<td>Ventilation Equipment, Industrial Fixtures</td>
<td>1050, 3101</td>
</tr>
</tbody>
</table>

### Engineering and Electronics

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>ALLOYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precision Components, Jigs &amp; Fixtures</td>
<td>6262, 6082, 5083, Speciality Plate</td>
</tr>
<tr>
<td>Medical Equipment, Sporting Goods</td>
<td>2014, 7075</td>
</tr>
<tr>
<td>Machinery, Electronic Equipment, Domestic Appliances</td>
<td>6063</td>
</tr>
<tr>
<td>Computer Equipment</td>
<td>1050, 5251</td>
</tr>
</tbody>
</table>

### Marine and Offshore

<table>
<thead>
<tr>
<th>APPLICATIONS</th>
<th>ALLOYS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boat Construction</td>
<td>5083, 5252</td>
</tr>
<tr>
<td>Oil and Gas</td>
<td>5083, 7075</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>5083, 6082</td>
</tr>
<tr>
<td>Pontoon Harbour Construction</td>
<td>5083, 6082</td>
</tr>
</tbody>
</table>
9. Handling and Storage of Aluminium

Aluminium has a high resistance to corrosion due to a thin film of aluminium oxide, which forms over a few days when the metal is exposed to air. If, however, the metal has prolonged exposure to a damp atmosphere, a powdery white or grey film can appear which is easily removed by rubbing. Surface damage can also be caused by careless handling and storage but by taking simple precautions, aluminium will retain its structure and surface properties over a long period of storage.

Sheet products are more prone to damage because of the large contact surface area when stored together. Moisture can be drawn into the space between sheets and cause corrosion. Packing materials can introduce more contamination in these conditions and should be removed as soon as possible. Extrusions or forgings can also be damaged by moisture but usually by direct contact e.g. being left open to the weather, rather than by storage conditions.
Standard Precautions and measures;

- Separate, and lift clear individual sheets, extrusions or parts before moving
- Remove loose particles, swarf, dirt and other contaminants by blowing with compressed air before storing
- Before storing use emulsions or approved solvents to remove oil and grease, if the producer has used any for protection
- If metal is stored for long periods, inspect it for moisture ingress every six months
- Do not store aluminium where it is open to the weather or other direct sources of water
- Prevent condensation by avoiding sudden temperature changes and if possible, keeping the temperature above 16°C
- Avoid direct contact between aluminium and other metals
- Avoid direct contact between aluminium and alkaline substances such as concretes, mortars, plasters
- Store away from anodising operations or similar hostile environments
- Line racking with timber, plastic or nylon to avoid scratching
- Store extrusions and long lengths vertically or horizontally on trays to avoid bowing

Although aluminium has a low density for a metal, it is still heavy in long lengths or large sheets. The normal lifting and carrying precautions for handling heavy materials apply in addition to the advice above.
10. Stockholders’ Frequently Asked Questions

Why should I use aluminium?

- It is a light metal, one third the weight of steel.
- It needs no finishing to protect it from corrosion.
- It can be painted, coated, polished or anodised.
- It is easily and wholly recyclable.
- It can be easily formed into complex shapes.
- It is easily machined, fabricated and joined.

Why should I choose an ASA member?

- ASA members comply with a code of conduct to ensure continuity of supply, high standards and adherence to quality systems.

How do I choose my stockholder supplier?

- Members have particular specialisms, some are local, some will offer particular services but all members guarantee the ASA standard of service.
- Choose from the list in this booklet or visit the ASA website www.asauk.co.uk

How do I contact the stockholder?

- Contact details for all members associate and affiliate, including fabricators and finishers, are on the ASA website and are shown on the list at the end of this booklet.

Where can I find out more information about aluminium and its various forms?

- Contact any member of the ASA.
- General information can be found on the Alfed website www.alfed.org.uk and the European Aluminium Association website www.aluminium.org
- Contact Alfed for specific queries through the website or call 0121 601 6363

Visit us online at www.asauk.co.uk
What do I need to specify?

- Alloys and temper need to be specified for a particular application, your stockholder can help you with technical information.
- Many shapes, products and sizes are available as standard products. These can be identified via ASA members catalogues, which are available online or in hard copy format. For Non-Standard products dimensions or technical drawings will be needed.
- Quantities (weight or number) finish, packaging and delivery instructions.

How do I find out about alloys and temper?

- Some general information is contained in this booklet.
- Any ASA member will be able to offer more information about Aluminium.
- A technical manual ‘About Aluminium’ is available from the ASA.
- General information can be found on the Alfed website www.alfed.org.uk and the European Aluminium Association website www.aluminium.org
- Contact Alfed for specific queries through the website or call 0121 601 6363
- Alfed publish a technical manual ‘The Properties of Aluminium and its Alloys’, available directly from Alfed, or via your ASA member.

Should I order by weight or piece?

- Usually ordering numbers of lengths or sheets is more useful, but small variations in cross-section and tolerances on thickness, length and width dimensions can lead to variations in weight supplied.

What quantities do I need to order?

- Stockholders will supply as small a quantity as you require and there are no maximum quantities. On items that are manufactured specifically, there may be a need for commitment to the total quantity, but it does not necessarily have to be taken in one delivery.

Do stockholders only sell standard products - sheets, plates, bars, angles, etc.?

- No. Stockholders will work with you to provide the custom shape or form that you need, in extruded, rolled or fabricated products.
11. Conclusions and the Future for Aluminium

Aluminium has much to offer the designer, early designs made use of its inherent benefits of lightness, corrosion resistance and formability. More recently, for a relatively young metal, its extensive use in the automotive, building and transport market sectors has also drawn on aluminium’s recyclability and sustainability. Newer industries such as aerospace and electronics, where product design was possible without the constraints of existing production and assembly techniques, aluminium has been fundamental in the rapid development of new products.

Advances in joining technologies, for example metal adhesives and friction-stir welding, have extended the range of applications for aluminium. Aerospace applications, where strength and safety are paramount, have been able to reduce weight continually, improve fuel efficiency and increase performance by the innovative use of aluminium. Its use in commercial transport has been extended by design developments to allow an increase in the size of sections for train or truck bodies while reducing weight without sacrificing strength. New insulating and finishing technologies have increased the use of aluminium in construction projects.

Aluminium has a high level of sustainability because of its recyclability and the relatively common occurrence of its ore, bauxite, plus its easy extraction. The aluminium industry realises the importance of sustainability and social responsibility and, through its industry bodies, has encouraged and supported many initiatives in this area.
The stockholding sector has developed with the increasing use of aluminium and the widening range of product sectors and applications. As designers have realised the potential for this metal, the complexities of production and supply have required more sophisticated thinking in the specification, procurement, stocking and delivery of aluminium products, which are increasingly required in finished and fabricated form. ASA members have invested downstream in efficient handling and delivery facilities, on-line ordering and specification systems, and upstream in procurement and technical capabilities. In addition to helping established aluminium users, the development of the stockholding sector has encouraged the wider use of aluminium in product designs. Its per capita use in the UK is still only a third that of Germany, suggesting that the full potential of aluminium is still to come. The ASA and its members will be instrumental in making that happen.
12. Useful Contacts, References and Acknowledgements

The European Aluminium Association (EAA)

EAA represents the aluminium industry in Europe, encompassing primary producers, downstream manufacturers, producers of recycled aluminium and national aluminium associations. Through environmental and technical expertise, it aims to secure sustainable growth of the market for aluminium whilst maintaining and improving the image of the industry. It is a valuable source of information and statistics about aluminium and the aluminium industry.

www.eaa.net

The Aluminium Federation (Alfed)

Alfed is the trade association that represents the interests of the UK aluminium industry. Alfred acts as the point of contact between the aluminium industry and its many stakeholders. Alfred is a useful source of technical, environmental and market information about the UK aluminium industry.

www.alfed.org.uk

Aluminium Stockholders’ Association (ASA)

The ASA was formed by aluminium stockists and distributors. Members of the ASA act as a link between rolled and extruded aluminium producers and end-use customers. ASA members operate within a strict Code of Conduct that ensures continuity of supply, high standards and adherence to quality systems, providing training, advice and common standards. The ASA plays an active part in organisations such as the Aluminium Federation, in promoting the use of aluminium products in a wide range of end uses.

www.asauk.co.uk

Visit us online at www.asauk.co.uk
The Aluminium Packaging Recycling Organisation (Alupro)

Alupro is a not-for-profit company which represents the leading aluminium packaging producers and reprocessors in the UK.

www.alupro.org.uk

The International Aluminium Institute (IAI)

IAI has the world’s leading aluminium companies as its members. It exists to provide information on all aspects of the metal and is dedicated to the development and wider use of aluminium in all its forms.

www.world-aluminium.org

The Council for Aluminium in Building (CAB)

CAB aims to support the interests of the architectural aluminium industry by encouraging the increasing use of aluminium products in architecture and in the construction industry as a whole. It provides technical and marketing help for its members and has a technical enquiry service for construction industry aluminium users.

www.c-a-b.org.uk

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