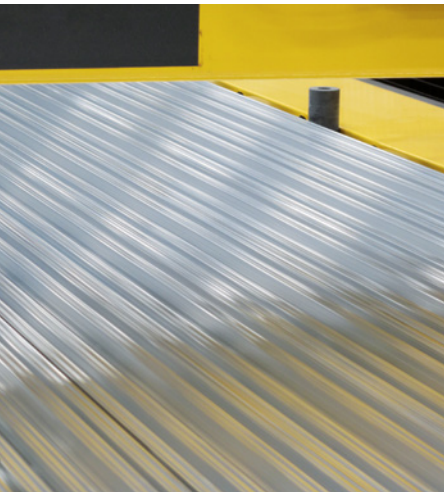
smart
aluminium extrusions

Extrusion

The UK's most modern and efficient manufacturer of extruded aluminium profiles

smart
aluminium extrusions



Smart Aluminium Extrusions is one of the UK's leading producers and suppliers of bespoke aluminium extrusion systems, with a reputation for product innovation and design excellence.

The Company

With more than 40 years' experience, Smart Aluminium Extrusions (SAE) is the UK's most modern and efficient manufacturer of extruded aluminium profiles. During this time, we have earned an enviable reputation both for the quality of our aluminium extrusions and for our technical and design support services, with our products being used across a wide range of applications and industry sectors.

We are part of the global Corialis Group of extrusion companies. With its headquarters in Belgium and manufacturing plants in France, Poland and China, the Group employs over 1,500 people worldwide and has an annual turnover in excess of £250 million. The Group's success is underpinned by its outstanding research and development capabilities and state-of-the-art manufacturing facilities and if required, we can draw on the wealth of expertise and experience within the Group to meet specific customer needs.

Our Reputation

We strive to deliver the highest levels of product quality and customer service, together with competitive prices and lead times. We also take pride in our ability to deliver innovative solutions whatever our customers' requirements may be and our highly-experienced sales team is always available to help quickly resolve any queries.

Our customers can be assured that we fully understand their requirements and expectations in terms of quality, reliability, value and responsiveness and with a capability that covers not only extrusion, but also a wide range of machining and finishing options, we are able to deliver a complete service, from design to delivery, from our own 60,000m² manufacturing and distribution base.

Above Top Left – A temper oven awaits stillages of extrusion as part of the heat treatment process. 'Ageing' or tempering the aluminium hardens the material to provide dimensional stability and toughness.

Above Bottom Left – Extruded aluminium once cut awaits auto stacking as part of the automated process.

Above – Our modern extrusion equipment and technology means we're capable of meeting high quality and technical standards across a range of industries. Aluminium once extruded is cooled, stretched, batched and cut on the equipment shown.

BES 6001 Responsible Sourcing of Construction Products — BES 668681

ISO 9001 Quality Management — FM21582

ISO 14001 Environmental Management — EMS554307

OHSAS 18001 Occupational Health and Safety Management — OHS571955

ISO 50001 Energy Management — ENMS634370

CAB

Centre for Window and Cladding Technology

Minimising Environmental Impact

An on-going commitment to the environment & community.

Minimising environmental impact has always been at the heart of our development and Smart is leading the way with the greenest manufacturing operation of its kind in the country.

We aim to continually improve the environmental impact of all our activities

Environmental Policy

SAE is fully committed to working towards a greener environment and so every aspect of our activities, from the procurement of raw materials to the delivery of finished goods, is conducted in accordance with sound environmental practices and in line with UK and EU environmental regulations and legislation.

Throughout our development, environmental considerations have been central to our planning and to help formalise our processes and procedures, in 2011 we achieved ISO 14001:2004 Environmental Management Systems certification.

As an ISO 14001 company, we regularly re-evaluate our working practices, ensuring we continually work to minimise the impact of our activities on the environment. As a result, we continue to invest in efficient machinery, effective environmental management systems and waste capture and recycling systems, as well as the use of sustainable power generation.

We aim to achieve a completely carbon-neutral production operation, which we are working towards through a combination of continued investment in efficient machinery; the operation of effective environmental management systems; the use of waste capture and recycling techniques and the introduction of sustainable power generation from natural resources.

Sustainable billet from responsible sources

To ensure that we consistently deliver aluminium extrusions to the highest quality standards, we source our aluminium billet only from three of the world's leading suppliers, Emirates Aluminium, Dubai Aluminium and Hydro Aluminium. Sourcing from these responsible and highly reputable companies guarantees continuity of quality and performance for each and every one of our extruded aluminium profiles.

emal الإمارات للألمنيوم Emirates Aluminium

dubal Dubai Aluminium

We also adopt a strict policy of the non-use of conflict-affected minerals, and in 2016 embarked on securing certification to BES 6001. This is a standard published by BRE which enables manufacturers to ensure and then prove their products have been made with constituent materials that have been responsibly sourced.

In 2011 we achieved ISO 14001:
2004 Environmental Management Systems certification. As an ISO 14001 company, we regularly re-evaluate our working practices, ensuring we continually work to minimise the impact of our activities on the environment. As a result, we continue to invest in efficient machinery, effective environmental management systems and waste capture and recycling systems, as well as the use of sustainable power generation.

Above Left – Machined cleat profiles are deburred – one of our finishing processes.

Above – Aluminium billet is delivered into us in log form from three world leading suppliers. Sourcing from these reputable suppliers ensures our extrusions meet the best quality standards.

Bespoke Extrusions

State-of-the-art facilities which ensure we can extrude, finish and deliver a wide range of profiles.

We can extrude, cut, finish, paint, pack and deliver profiles all from a single UK facility.

Our experienced technical support team is always available to offer advice and to respond to specific queries.

Bespoke Extrusions

To support our continued growth and continue to deliver the highest standards of service and support, we have invested heavily in our UK plant and facilities over the last ten years. Most recently, we have installed a third, state-of-the-art extrusion press, a second vertical paint line and a range of state-of-the-art finishing equipment and machinery.

This investment in our plant has not only increased our capacity, but has also significantly enhanced our flexibility and the range of services we provide in-house. This enables us to extrude, cut, finish, paint, pack and deliver profiles all from a single UK facility – with complete quality assurance at every stage of the process.

As a result of our expansion programme, we now operate three modern extrusion presses – 1 x 8", 2,200 tonne extrusion press and 1 x 8", 2,500 tonne press and 1 x 6", 1,500 tonne press - which combine to deliver a total annual extrusion capacity of over 30,000 tonnes. This capability enables us to extrude a wide range of profiles to meet our customers' exact requirements, within the following parameters:

Technical Performance

Maximum Length	14,600mm
Maximum Height	200mm
Maximum Width	240mm
Maximum Weight	8.000 kg/m
Minimum Weight	0.250 kg/m

The precise specifications of the extrusion may vary depending on the particular design.

Our experienced technical support team is always available to offer advice and to respond to specific queries, working closely with customers to review, and if necessary suggest design changes, to ensure that the finished profile meets each customer's specific performance needs.

If a new die is required, during testing our highly-skilled team ensures that it will efficiently, effectively and accurately produce the specified extrusion, before it is sent to be hardened prior to manufacture.

All of our extrusion presses use the latest manufacturing software to minimise production waste – whilst maximising the efficient use of aluminium billets. 100% of the waste aluminium from the extrusion process is captured and then recycled into aluminium billets for future production and as a result, up to 30% of the aluminium used in our profiles is extruded from recycled billets.

During the extrusion process, Nitrous Oxide is injected in to the dies to cool them, making production faster and more efficient – this is particularly relevant when working with harder aluminium alloys. Finally, the extrusions are passed through a quenching process to further cool and stabilise them.

Standard Profiles

In addition to our bespoke extrusion service, we also carry extensive stock of a broad range of standard profile dies, developed to meet the needs of stockists.

Above Left – 'Logs' of aluminium are loaded into the billet furnace to bring them to the required extrusion temperature.

Above – Our state-of-the-art extrusion presses allow us to extrude a wide range of profiles and provide a capacity in excess of 30,000 tonnes.

Above Top Right – Extrusions are cut to customer's specifications at the press finishing saw.

Above Bottom Right – The press operator oversees extrusion from the 'Extrusion Control Pulpit'.

We have installed a third, extrusion press, a second vertical paint line and a range of finishing equipment and machinery.

This enables us to extrude, cut, finish, paint, pack and deliver profiles all from a single UK facility – with complete quality assurance at every stage of the process.

Finishing

We offer a complete machining and finishing service, enabling us to control the complete manufacturing process in-house.

We offer a full range of finishing options, including Polyamide thermal breaks. Extrusions can be wrapped and packaged to our customers' precise specifications.

Above – A double mitre cut saw for cutting to length based on customer requirements.

Right – An extruded profile is clamped in place in preparation for being machined.

Machining & Finishing Service

Following the commissioning of our latest plant and equipment, we are now able to offer a complete machining and finishing service, enabling us to control the complete manufacturing process – from design to distribution – all from our own, purpose-built facility in the UK.

With this end-to-end capability, our experienced team takes responsibility for the whole process, ensuring complete and consistent quality control throughout to make certain the finished product is delivered on time and to specification.

The addition of three CNC automatic saws enables us to provide a fast and efficient cutting service, accurately cutting to any length from 6mm and above. The installation of a FOM double-mitre saw, also allows us to cut 45° and compound angles.

Our two four-axis machining centres enable us to provide a range of machining services for any cut length over 100mm – including drilling, tapping, slotting and routing. We also have a de-burring facility for smaller parts.

Finishing Equipment

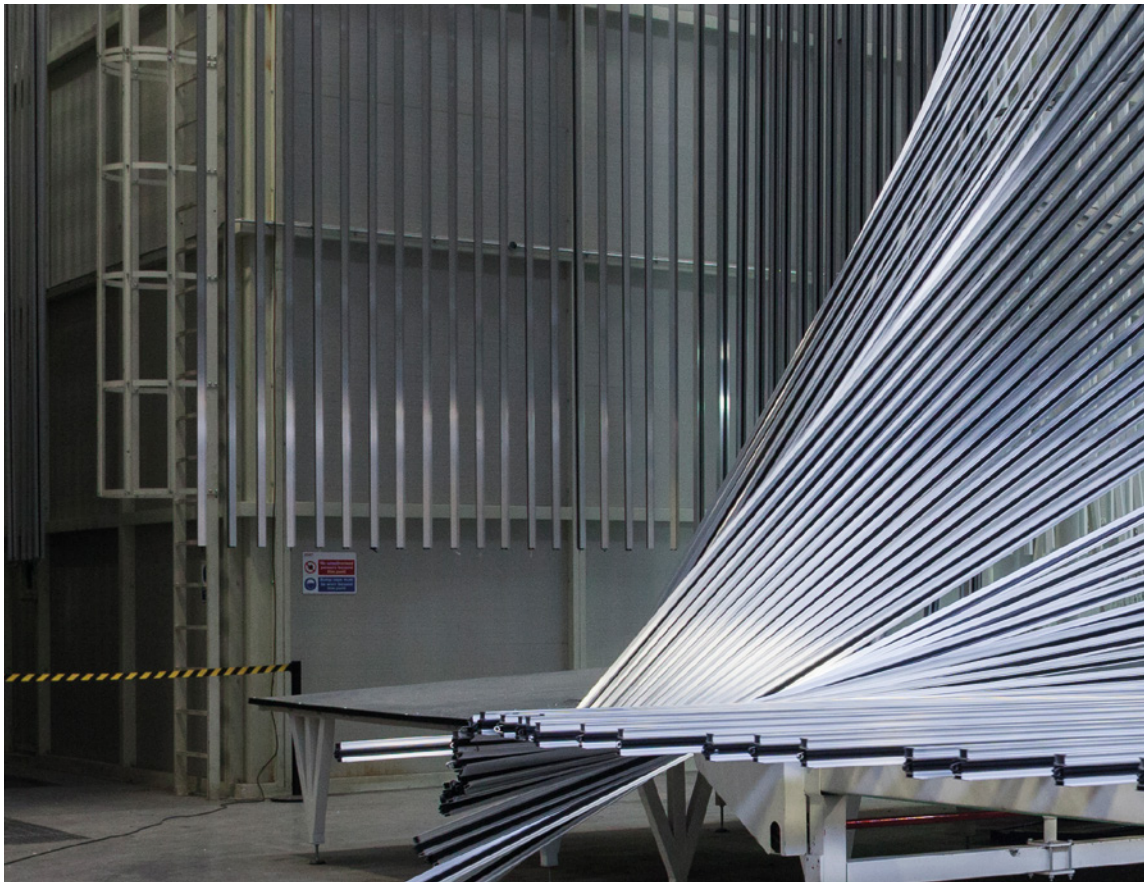
1 x Elumatec SBZ140 four-axis machining centre (7.7m bed)
1 x FOM four-axis machining centre with integral saw blade (7.0m bed)
1 x FOM double-mitre saw
4 x CNC automatic saws

With end-to-end capability and control, our experienced team takes responsibility for the whole process, from design to distribution.

We are now able to offer a complete machining and finishing service, enabling us to control the complete manufacturing process – from design to distribution – all from our own, purpose-built facility in the UK.

Powder Coating

Our finishes meets the demanding marine-grade standard,
allowing profiles to be used in even the most demanding environments.



Reflecting our commitment to sustainable manufacture, our finishing plant incorporates a number of environmental features.

Our in-house polyester powder coating facilities allow us to provide the widest range of high-quality standard and non-standard colours and finishes.

Powder Coating

With a combined production capacity of 800m² per hour, our two, vertical powder coating paint lines are the most advanced of their kind in the UK, with extrusions able to be polyester-powder coated in an extensive range of standard and non-standard finishes – including the RAL colour range.

We also offer a full range of finishing options, including Polyamide thermal breaks.

In line with our commitment to sustainable manufacture, our finishing plant incorporates a number of environmental features. For example, a rain water capture system can hold up to 900,000 litres of collected rain water which is filtered for cleaning prior to use in the pre-treatment process – the alkaline-based pre-treatment process is 100% chromate free.

Following use, the ionized water is filtered again, before being released into the environment and at this stage, it is cleaner than mains drinking water. During the painting process, our advanced technology allows us to capture 98% of the excess powder that is used in the booth during coating; the powder is then re-used.

Packing and Delivery

We operate our own fleet of vehicles to ensure a prompt and reliable delivery service across the UK. The modern, curtain-sided vehicles ensure that every aluminium extrusion reaches its destination in prime condition, with all extrusions being carefully packaged in stillages and all painted material wrapped prior to despatch, to our customers' specifications.

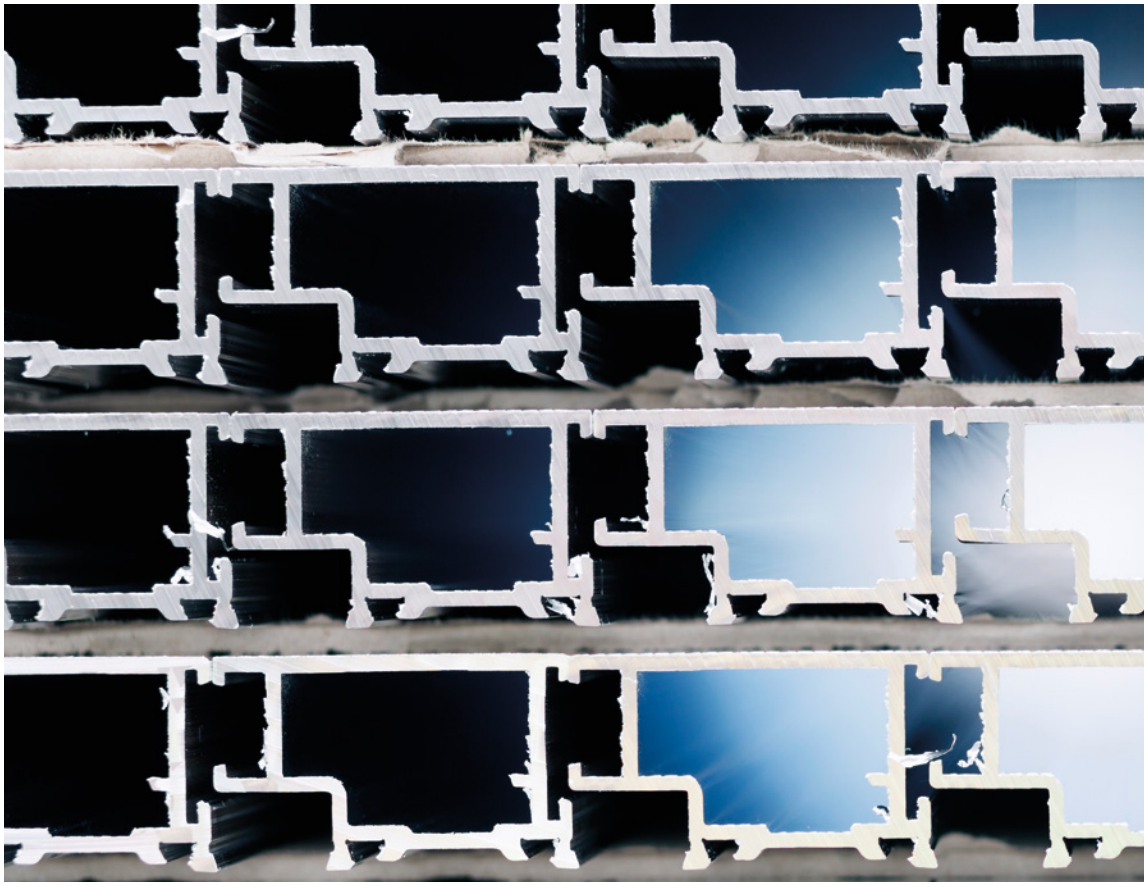
With a combined production capacity of 800m² per hour, our two, vertical powder coating paint lines are the most advanced of their kind in the UK, with extrusions able to be polyester-powder coated in an extensive range of standard and non-standard finishes – including the RAL colour range.

Above Left – Our vertical powder booth is able to powder coat in RAL, standard and non-standard finishes.

Above Center – The conveyor is feeding in to one of our two vertical powder coat paint lines.

Aluminium

Durable, light-weight and resistant to both corrosion and pollutants, aluminium products have a life cycle measured in decades rather than years.



The properties of aluminium include: low density and therefore low weight, high strength, superior malleability, easy machining, excellent corrosion resistance and good thermal and electrical conductivity are amongst aluminium's most important properties. Aluminium is also very easy to recycle.

We Believe in Quality

The quality of the aluminium extrusion is dependent on the quality of the alloy used, and so we use only 6000 series aluminium alloys – specifically, 6005A/6060/6063 and 6063A tempered to designations T4 to T6. 6000 series alloys provide the perfect combination of strength, hardness, durability and corrosion-resistance (even in marine environments), are the most widely-used alloys in extrusion and are ideal for structural extrusions and machining.

Used in a wide range of industrial sectors, including the construction industry, 6000 series alloys are found in a wide range of applications including window and door profiles, lighting, awnings, handrails and furniture.

The 6082 alloy in particular offers the highest strength of any of the 6000 series and is frequently used for load carrying structures in shipping, transport, building and offshore industries, as well as for platforms, bridges, scaffolds and handrails.

Quality Assurance

Our market-leading, in-house tensile testing facility is able to meet customers' specific requirements and to test to whatever standards are requested. If required, we are also able to offer external, independent testing by Zurich Laboratory Services, a UKAS registered testing facility.

Our quality procedures and management systems are all maintained in accordance with the following standards:

ISO 9001:2008	Quality Management Systems
ISO 14001:2009	Environmental Management Systems
OHSAS 18001:2007	Occupational Health and Safety Management Systems
ISO 50001:2011	Energy Management System

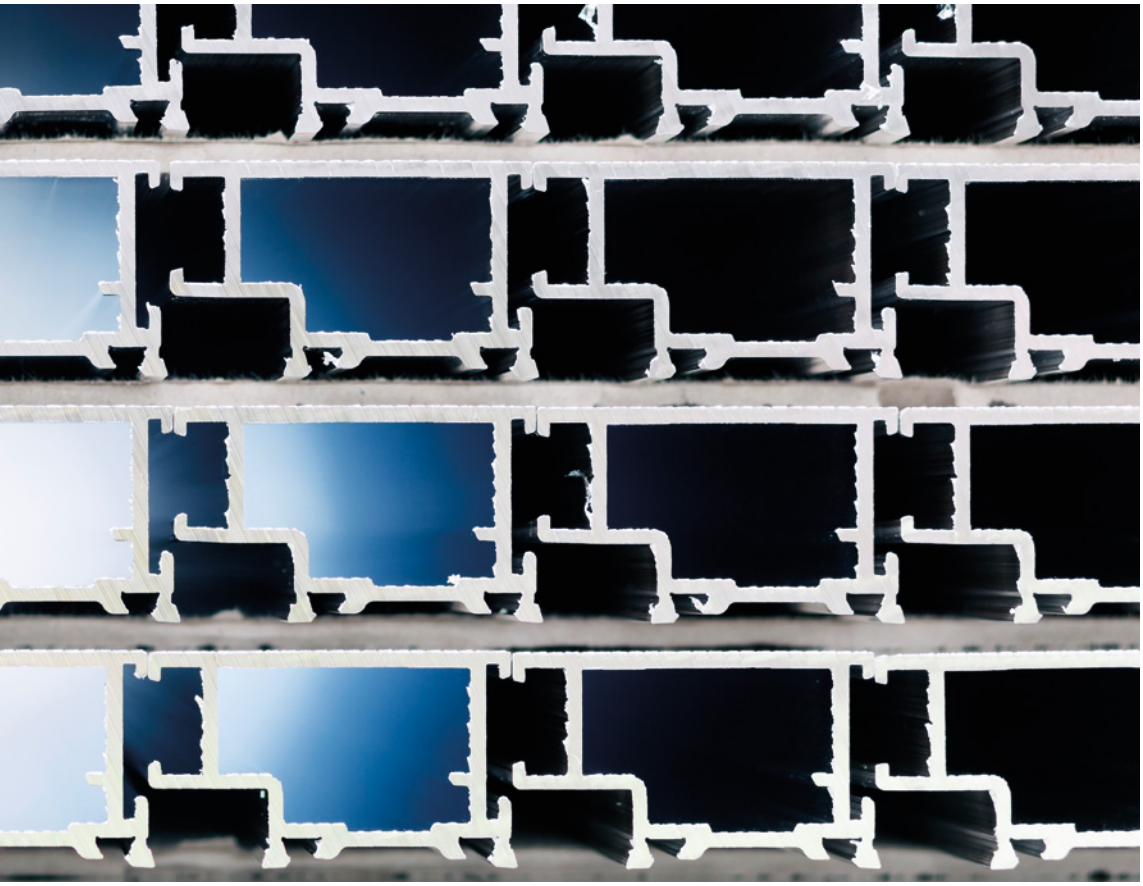
BES 6001 Responsible Sourcing of Construction Products — BES 668681

ISO 9001 Quality Management — FM21582

ISO 14001 Environmental Management — EMS554307

OHSAS 18001 Occupational Health and Safety Management — OHS571955

ISO 50001 Energy Management — ENMS634370



Quality Standards

Our extrusions fully conform to all the relevant British Standards. Covering the mechanical property limits, tolerances and temper designations of aluminium extrusions as well as the testing requirements, the specific British Standards include the following:

Above Left – Our dies are all cleaned and maintained by our highly skilled Die Technicians.

Above Center – Once sawn, extruded profiles are stacked into skips with spacer bars in between, thus preventing damage to visible surfaces.

Above Right – One of our machining centres that allows us to drill, tap, slot and rout.

Technical Performance

BS EN 515:2017	Wrought products – Temper designations
BS EN 573-3:2013	Chemical composition and form of wrought products
BS EN 755-1:2008	Extruded rod/bar, tube and profiles
BS EN 755-2:2013	Extruded rod/bar, tube and profiles
BS EN 755-7:2016	Extruded rod/bar, tube and profiles
BS EN 755-8:2016	Extruded rod/bar, tube and profiles
BS EN 755-9:2016	Extruded rod/bar, tube and profiles
BS EN 10204:2004	Metallic products – Types of inspection documents
BS EN 12020-2:2016	Extruded precision profiles in alloys EN AW 6060 and EN AW 6063
BS EN ISO 6892-1:2016	Metallic materials – Tensile testing
BS 1139-1.2:1990	Metal scaffolding
BES 6001:Issue 3.0	Responsible Sourcing of Production Products

Aluminium: A World of Possibilities

Aluminium extrusions are the perfect solution for a wide range of finished products and applications.

Aluminium extrusions are hugely versatile, lightweight (about one third the weight of steel), high strength, modern materials which retain their properties over a long life.

Aluminium has great 'formability' characteristics, enabling complex shapes to be achieved for extruded profiles.

Aluminium

Being naturally corrosion resistant and requiring only minimal routine maintenance, they also retain their aesthetic appeal over the lifetime of the material.

For extruded profiles, the material has great 'formability' characteristics making the most complex shapes achievable and then subsequently making the machining and joining together of multiple extrusions a very straightforward process.

These innate qualities make aluminium extrusions the perfect material for a host of finished products and applications, from materials for the home and office – including windows, doors, lighting tracks, awnings, balustrades, tables and chairs – to solar panels and exhibition stands.

At the end of their life, aluminium products can be recycled again and again without any loss of quality and, as the re-melting of aluminium requires little energy, 95% of the energy required for primary aluminium production is saved through recycling.

Being naturally corrosion resistant and requiring only minimal routine maintenance, our profiles retain their aesthetic appeal over the lifetime of the material.

Above – Part of our extensive stockholding of aluminium profiles.

Left – An extruded profile is clamped in place in preparation for being machined.


Tecatex

smart
aluminium extrusions

Smart Systems Limited
Arnolds Way, Yatton, Bristol
Somerset, BS49 4QN. UK
Reg. in England No. 1314601

T +44 (0)1934 876 100
sales@smartsystems.co.uk

F +44 (0)1934 835 169
www.smartsystems.co.uk

BES 668681 FM21582 EMS554307 OHS571955 ENMS634370

SME105SAE.201804