

The UK's Aluminium Extrusion Experts



**With more than 40 years' experience,** Smart Engineered Solutions is the UK's largest, most modern and efficient manufacturer of extruded aluminium profiles.

- ◆ The UK's largest single-site extrusion plant.
- ◆ Dedicated press and finishing capacity for extrusion customers.
- ◆ Profiles are extruded, cut, finished, painted, packed and delivered from one site.
- ◆ Backed by a vastly experienced design, technical and sales support team.
- ◆ Fast turnaround of designs, prototypes, die manufacture and orders.
- ◆ Bespoke extrusion service as well as a broad range of standard profiles.



## The Team

Our dedicated extrusion support team works closely and collaboratively with customers at every stage of the process.

With extensive industry experience, the team has a wealth of in-depth market knowledge and understanding, as well as an unrivalled breadth of specialist expertise.

From initial enquiry, through design, prototyping and die manufacture to order, production and delivery, the team communicates regularly with customers to make sure we meet all their needs.

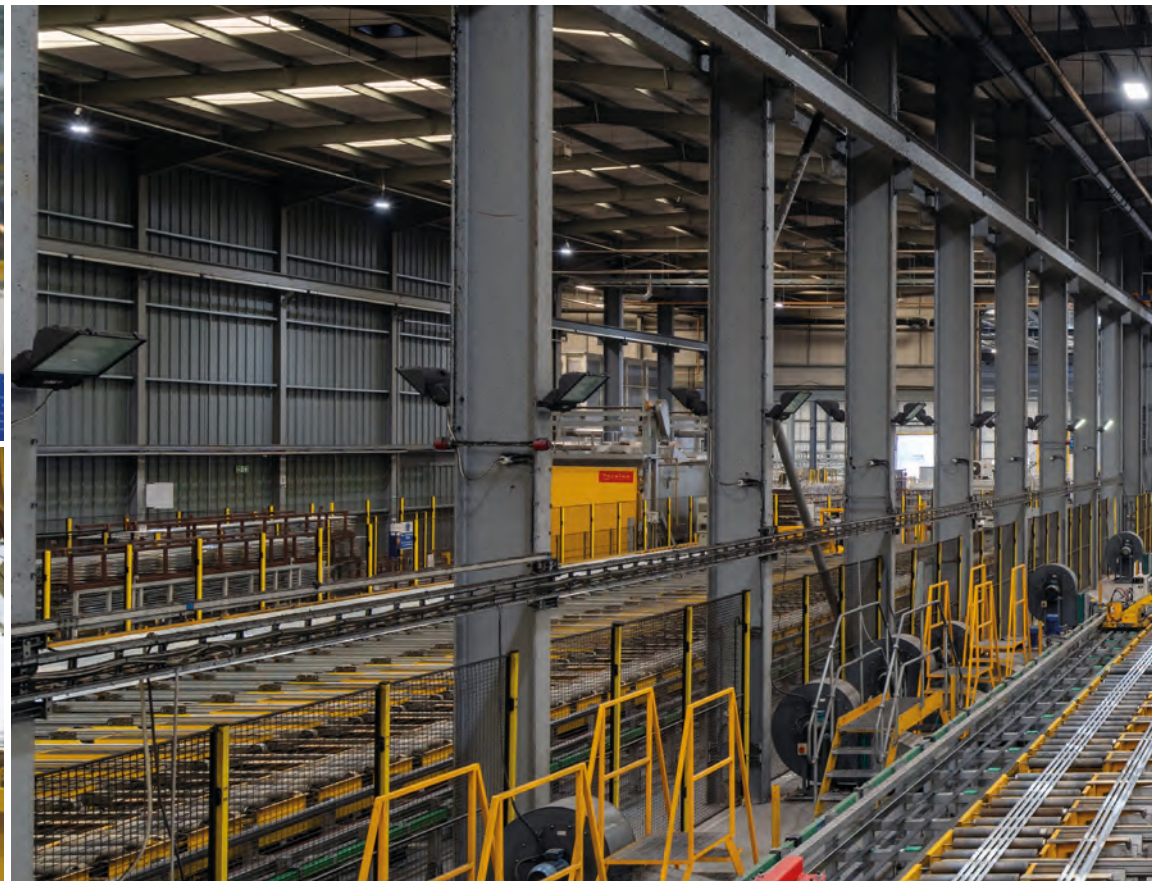
With clear leadership and a common goal to provide the highest standards of customer support, the individual members combine to make a superb support team.

Together they work tirelessly to meet customers' needs and to efficiently resolve any issues that may arise – always in close communication with each other and our customers.

Over recent years we have made significant investment in our plant and equipment, but we also recognise the importance of a high-quality support service and so equally invest in training and development, providing rewarding career paths for our committed team members. Many of our employees have worked with Smart for a long time and have grown into senior roles in production, design, technical support, distribution and customer services.

# Smart Engineered Solutions

The UK's leading producer and supplier of bespoke aluminium extrusion systems, with a reputation for product innovation, sustainability and design excellence.



Through continued investment, our state-of-the-art, **60,000m<sup>2</sup> manufacturing facility** in the south west of England is now home to **four extrusion presses** and **four powder coat paint lines**, as well as a wide range of machining and finishing equipment.

## Experts in Engineered Solutions

With more than 40 years' experience, Smart Engineered Solutions is the UK's most modern and efficient manufacturer of extruded aluminium profiles. During this time, we have earned an enviable reputation for the quality of our aluminium extrusions which are used across a broad range of applications and industry sectors.

## The UK's Largest Single-Site Extrusion Plant

Through continued investment, our state-of-the-art, 60,000m<sup>2</sup> manufacturing facility in the south west of England is now home to four extrusion presses and four powder coat paint lines, as well as a wide range of machining and finishing equipment.

Already the largest single-site extrusion plant in the UK, the installation of our fourth press allows us to provide both a dedicated resource and guaranteed capacity for all our extrusion customers.

With our extrusion, machining, finishing and packaging processes all on one site, as well as our own fleet of delivery vehicles, we have complete control of every customer order, from receipt right through to final delivery.

## Market-Leading Technical, Design & Sales Support

Our experienced team provides dedicated support to customers at every stage of the process, from initial design right through to final delivery.

Having invested in a 3D printer, we are also able to manufacture prototypes quickly and cost-effectively, and pride ourselves on rapid response times and an unwavering commitment to delivering first class solutions that fully meet our customers' needs.



### **The Company**

Vastly experienced, Smart Engineered Solutions is the most modern, sustainable and efficient manufacturer of extruded aluminium profile in the UK. We have earned a reputation not only for the quality of our extrusions, but also for the service and support that we provide from initial enquiry right through to delivery of the finished profiles.

### **Trusted Supply Chain Partner**

With standard lead times of just two weeks, we work closely with customers to enable them to reduce their stock holding and to meet their supply chain requirements. We work in partnership to fully understand each customer's requirements - 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 provide a complete service, from design to delivery, all from our fully integrated manufacturing and distribution base.

### **Backed by a Multi-National Extrusions Group**

We are part of the global Corialis Group of extrusion companies. With its headquarters in Belgium and manufacturing plants in the UK, Belgium, France, Portugal, Poland and China, the Group's success is underpinned by its outstanding research and development capabilities and modern manufacturing plants. To meet customers' specific needs, we can draw on the broader range of resources and capabilities within the group, including a wide range of extrusion press sizes, additional finishing equipment and anodising facilities.

**Our state-of-the-art equipment and proven expertise mean we are capable of meeting high quality and technical standards across a range of industries.**

# Minimising Environmental Impact

We are firmly committed to operating in a sustainable way, reducing our carbon footprint and minimising our impact on the environment.



Sustainability has always been at the heart of **our development** and we are proud to lead the market with the **greenest manufacturing** operation of its kind in the UK.

With all our processes contained in a single, purpose-built facility, we ensure carbon and transportation emissions are kept to an absolute minimum, with no import costs, tariffs or borders to negotiate. Being a single site, UK-based facility, we also have clear and short communication lines between each of our functions and operations, all of which help to keep lead times to a minimum.

## Environmental Policy

Smart is fully committed to achieving 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.

Our goal is to achieve a completely carbon-neutral production operation, which we intend to achieve 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.

**We aim to continually improve our environmental impact across all our activities.**



### Sustainable Billet From Responsible Sources

To ensure we consistently deliver aluminium extrusions to the highest quality standards, we source 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.

All based in Europe, these world leading suppliers continually supply high quality billets that are responsibly sourced. The shorter distances minimize transportation distances – and therefore costs and carbon emissions, whilst providing a highly flexible raw material supply chain.

We also work extremely closely and collaboratively with our local supply chain to improve the CO<sub>2</sub> output through the value chain. The suppliers we work with provide us some of the lowest production CO<sub>2</sub> footprint in the world, whilst also enabling us to recycle 100% of our waste. In 2022 we received 60% of our raw material with our own recycled content.

We also adopt a strict policy of the non-use of conflict-affected minerals, and in 2017 secured certification to BES 6001. This is a standard published by BRE which enables manufacturers to ensure and then prove that their products have been made with constituent materials that have been responsibly sourced.

In 2022, the recycle content of our aluminium billet was 62%, with 100% of all our aluminium waste being recycled.

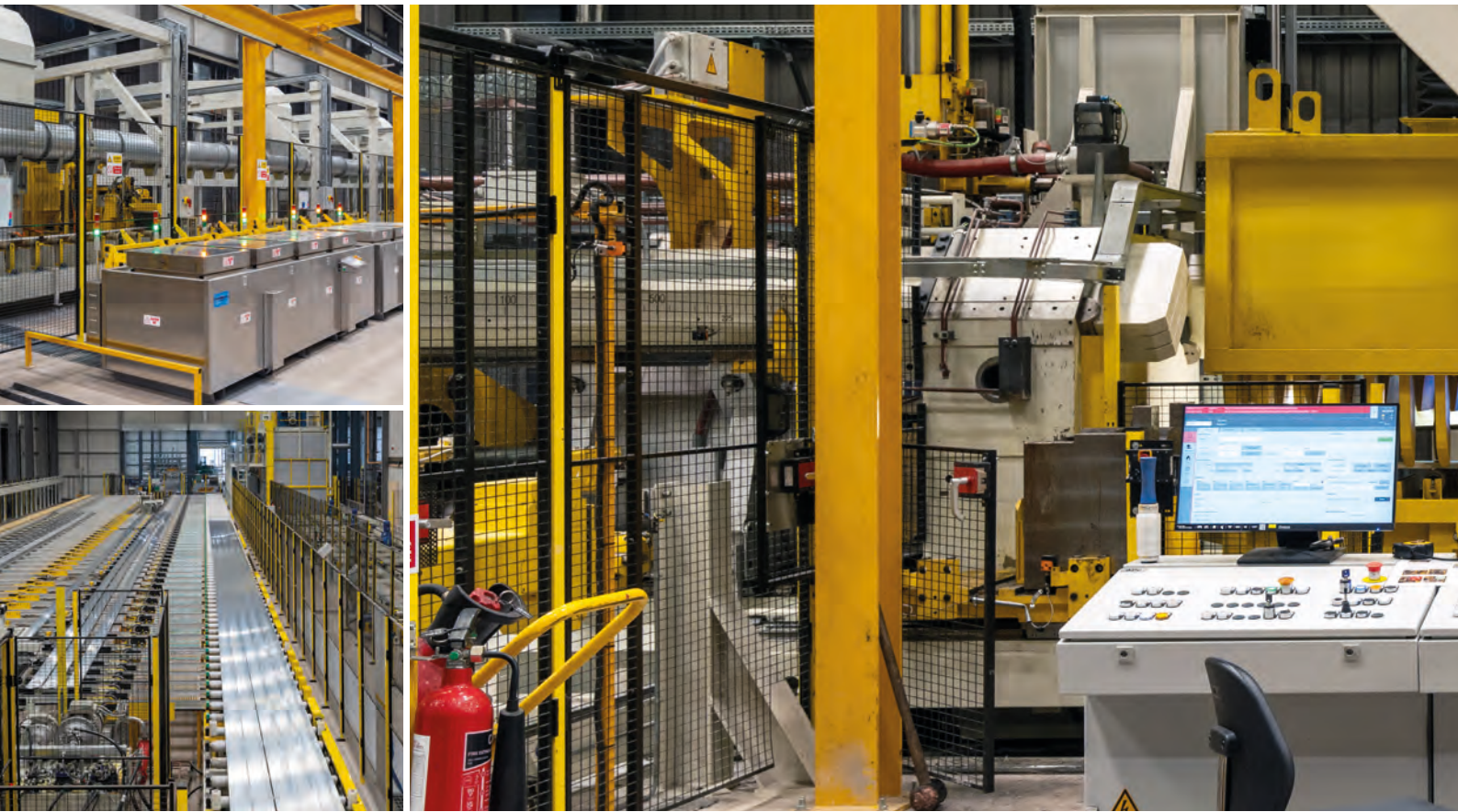


### ISO 14001:

*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.*

# Bespoke Extrusions

Our latest, most energy efficient press provides dedicated extrusion capacity for extrusion customers.



We extrude, cut, finish, paint, pack and deliver profiles **all from a single UK facility**, supplying customers with a full **bespoke extrusion service** as well as a range of standard profiles.

To support our continued growth and ability to deliver the highest standards of service and support, we continue to invest heavily in our UK plant and facilities. Most recently, we have installed a fourth, state-of-the-art extrusion press designed specifically for our needs. Our most energy efficient press yet, is uses 33% less energy, and reflects our objective of continually innovating to provide a more efficient production facility.

We also recently invested in a completely new die storage system which allows us to have 99% of our dies ready to run on demand when the customer requires. Our service schedule of the dies allows us to store 50% of dies pre-filled before they need cleaning with caustic solution (meaning 50% less waste) and dies can be sent to our presses within hours, not days. Our caustic waste, which is harmful to the environment, and which would once have been sent to landfill at end of life, is now re-used, with a local business re-using the waste solution - free of charge. Working closely together this is an extremely positive outcome for both businesses.

We have also recently completed a building project, which connects the presses and packing department, improving throughput. As a result, once we have the die and customer quality verification, we will be able to ship

material to the customer in as little as 24 hours from order placement.

Our in-house expertise and local die suppliers can provide us with designs and produce dies with as a little as seven days depending on profile design.

This investment in plant has not only increased our capacity but has also significantly enhanced our flexibility and expanded the range of services we provide in-house. This allows 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.

## Extrusion Presses

We operate four modern extrusion presses –

<b>Two 8" Presses</b>	2,500 tonne Press
<b>One 8" Press</b>	2,200 tonne Press
<b>One 6" Press</b>	1,500 tonne Press

which combine to deliver a total annual extrusion capacity of over 35,000 tonnes.



Guaranteeing capacity, this capability enables us to extrude a wide range of profiles to meet our customers' exact requirements, within the following parameters:

#### Technical Performance

<b>Standard Alloys</b>	6082,6005,6060,6063, 6063a (others available if required)
<b>Maximum Length</b>	14,600mm
<b>Maximum Height</b>	200mm
<b>Maximum Width</b>	240mm
<b>Maximum Weight</b>	8.000 kg/m
<b>Minimum Weight</b>	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 their 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.

To respond to customers' needs, we can manufacture and test new dies in just 10 days.

All 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. As a result, up to 60% of the aluminium used in our profiles is extruded from recycled billets.

During the extrusion process, Nitrous Oxide is injected into 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.

# Finishing

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



We offer a full **range of finishing options**, including the addition of Polyamide thermal breaks. Extrusions can also be wrapped, packaged and delivered to our **customers' exact specifications**.

## Machining & Finishing Service

We 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.

Our three CNC automatic saws enable us to provide a fast and efficient cutting service, accurately cutting to any length from 6mm. The installation of an 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

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1 x Elumatec SBZ140 four-axis machining centre (7.7m bed)

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1 x FOM four-axis machining centre with integral saw blade (7.0m bed)

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1 x FOM double-mitre saw

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3 x CNC automatic saws

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**Our modern, in-house equipment enables us to provide a full range of machining services – including drilling, tapping, slotting, routing and de-burring.**



◆ *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 polyester powder coat paint finishes meet the demanding marine-grade standard, allowing profiles to be used in even the harshest coastal environments.



Our finishing plant reflects our commitment to **sustainable manufacture**, with a range of **environmental features** incorporated throughout the process.

## Powder Coating

With a combined production capacity of 800m<sup>2</sup> per hour, our 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 full RAL colour range.

In line with our commitment to sustainable manufacture, our finishing plant incorporates a number of environmental features. For example, our rainwater capture system holds up to 900,000 litres of collected rainwater 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.

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



### 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 800m<sup>2</sup> 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.*

# Aluminium

Durable, lightweight and infinitely recyclable, aluminium products have a life cycle measured in decades rather than years.



Used in applications across a **wide range of industrial and consumer sectors**, aluminium's properties include low density (and therefore low weight), high strength, superior malleability, easy machining, excellent corrosion resistance and good thermal and electrical conductivity.

## Quality Materials

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, rails 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:

<b>BES 6001:Issue 3.0</b>	Responsible Sourcing of Production Products
<b>ISO 9001:2008</b>	Quality Management Systems
<b>ISO 14001:2009</b>	Environmental Management Systems
<b>ISO 45001:2018</b>	Occupational Health and Safety Management Systems
<b>ISO 50001:2011</b>	Energy Management System





### 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:

### Technical Performance

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

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



BES668681



FM21582



EMS554307



OHS571955



ENMS634370



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