

ALUMINIUM NEWS

THE VOICE OF THE UK ALUMINIUM INDUSTRY

ISSUE 5 JULY 2020



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ALUMINIUM FEDERATION

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Front cover image courtesy of Real Alloy

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BENEFIT FROM A RANGE OF SERVICES THAT HELP YOU DEVELOP YOUR BUSINESS, WORKFORCE AND SUPPLY CHAIN

As the voice of the UK aluminium industry, our mission is to expand the market for aluminium products by helping companies solve problems, lobby government and boost their competitiveness.

Whether it's providing technical support, delivering market insight, informing trade policy or offering networking opportunities – everything we do focuses on helping UK aluminium businesses capitalise on opportunities.

As a member, you become part of an influential community, getting your voice heard within the industry and at the highest levels of government. Working together, we're actively driving UK aluminium forward – and we look forward to working with you in this endeavour.

Collaboration:

We bring together recycling and secondary producers, extruders, finishers and stockholders – helping everyone involved in UK aluminium make connections for mutually beneficial business and supply development.

Innovation:

You benefit from a range of services that help you stay at the cutting edge. From research and development through to industry benchmarking and technical support, you get insight that assists you to develop your business.

Opportunity:

We give you a unique opportunity to get your voice heard - within the industry and in government. Whether you're a global company or an SME, you can advocate and influence to improve market conditions for your products and services.

MEMBER BENEFITS:

From technical support to lobbying, we support members working across all aspects of production and supply.

Here are some of the many you get as part of your membership:

- Advocacy & lobbying
- Market insight
- Training
- Technical support
- Consultancy from energy management support to bespoke training, coaching and e-learning
- Events
- Influence & Policymaking

- Shared Learnings & Networking
- Savings & Partnerships

WHY JOIN THE ALUMINIUM FEDERATION

Whatever your company size or speciality within the industry, we help you access the technical expertise, market insight, business support and government influence you need to boost your competitiveness.

We offer different levels of membership based on your business size – so it's both affordable and valuable.

"As an ALFED member, you get your voice heard. We're a small metal finishing company, but I get my voice heard very loudly. When I was the ALFED President, this gave me influence at a high level with government – I was routinely on calls with ministers and civil servants. And I had my voice heard even before I was president. In 2004, the British standard changed to an EU-wide one that was much weaker. I campaigned to change it, and as an ALFED member, I had a say via the Finishing Group. I got my opinions over, and the standard is now changing. It was a real success for our business." Giles Ashmead, Director, Powdertech

Contact us to discuss how ALFED membership can help your business

Membership levels are based on business size, so it's both affordable and valuable. T: 0330 236 2800

www.alfed.org.uk

'UNPRECEDENTED CHALLENGES FOR PEOPLE, SOCIETY AND BUSINESS'

The tragedy of the COVID-19 pandemic is having a profound effect on the lives of millions of people in the UK. Coronavirus has destabilised our communities, derailed our economy affecting companies and organisations and by its very nature changed how we conduct our daily lives. The imposed restrictions to daily life have forced us to quickly adopt different ways of working, learning, socialising, connecting, and engaging with each other. The country has adapted to digital meeting platforms and more significantly these platforms have been the driver for connectivity, engagement collaboration, creativity, and innovation.

BREXIT

On the 29th March 2017, the UK government invoke article 50 which started the UK's official process to leave the European Union. The UK aluminium sector has been with much uncertainty and many unknowns readying itself for leaving the European Union on the 31st December 2020 with the ever-

growing anxiety of the materialisation of a Free Trade Agreement between the UK and the EU.

Our work on Brexit with government continues, the published ALFED UK/EU trade negotiations position paper remains at the forefront of the government's ambitions for a trade deal with the EU, US and other countries. It is essential that future trade agreements create an environment that delivers growth for the UK aluminium sector, fair and competitive to UK manufactures and supply chains.

MFN TARIFFS CONSULTATION – UKGT

On the 5th May the Government published the new UK Global Tariff (UKGT). The UKGT will replace the EU's Common External Tariff on 1 January 2021 at the end of the transition period. The UKGT will only apply to goods from countries we do not have a preferential trading relationship with.

Our close consultation with government and our members MFN advisory workshop with BEIS in early March delivered a successful outcome preventing the complete liberalisation of Chapter 76 and retaining tariffs to meet the strategic objective for the UK aluminium sector and wider supply chains.

SAFE WORKING GUIDELINES

We were invited by government to join the consultation program on developing guidance to help employers, employees and the self-employed understand how to work safely during the coronavirus pandemic. These guides were designed to help companies think through what they need to do to keep people safe on return to work. Guidance is published on our website: <https://alfed.org.uk/working-safely-during-coronavirus-covid-19-2/>

WEEKLY GOVERNMENT CALL

Following much correspondence with government and Ministers and initial call was held with members of ALFED and Minister Nadhim Zahawi MP – Minister for Business and Industry discussing the impact of Covid-19 on the UK aluminium sector. Members discussed many topics including staffing – JRS, liquidity and access to CBILS, demand, supply, status of



business and ideas of how to continually support the UK aluminium sector. From this initial call with the Minister we now have a weekly scheduled call with government where members can engage directly to discuss the impact of Covid-19 and many other subjects. These calls have led to further direct offline discussions with some members.

WEBINARS

Like most organisations we have had to adapt the way we engage and communicate with members under these current restrictions. ALFED have been offering many free webinars for members from technical training, health & safety and mental health, wellbeing, and life at work after Covid-19.

MEMBERSHIP

The Aluminium Federation continues to develop membership attracting organisations that work in the aluminium industry, the wider industrial sector and now many others who support the sector supply chain. Our membership has grown by 22 this year and with many potential members who have made contact during these challenging times.

Our strategic partner program continues to expand connecting the Aluminium Federation members to a vast resource of knowledge and support from universities, Catapults, industry and across Government departments.

Tom Jones
CEO
Aluminium Federation



Initial investment of \$250 million US dollars.

Expected to be fully operational in the last quarter of the year.

Production of 20,000 metric tons per month in its first stage.

ARZYZ Metals announces an investment on a cutting-edge secondary aluminium smelter.

ARZYZ Metals, a leading company dedicated to the manufacturing of aluminium alloys and the commercialization of non-ferrous metals, is expanding its operations with the construction of a new plant.

It is expanding its operations with an initial investment of **\$250 million US dollars**, supported by the Inter-American Development Bank (IDB) Invest, which is the private investment branch of IDB.

The new plant will be located in the industrial heart of Mexico, in the Monterrey metropolitan area, 125 miles away from the south border of the United States of America.

The plant's cutting-edge technology will make aluminium recycling and its transformation into high quality aluminium alloys more efficient. The new site is expected to be fully operational in the last quarter of the year.

In its first stage, this facility will be **producing 20,000 metric tons per month** of continuous casting ingots, molten metal, slab, billet, T-bars, deoxidizers as cones, and granulates, among other products.

With the purpose of increasing its production capacity, the next stage of the project is to have all of the company's facilities in **one geographically strategic location** by relocating.



In the words of Mario Ramírez Zablah-Zimery, founder and Executive President of ARYZZ Metals, this project will help the company achieve these 7 objectives:

01. To promote **circular economy** through aluminium recycling by obtaining the maximum benefits of the recovered materials such as scrap and by-products originated from our clients' processes.
02. To ensure the efficiency of our operations by establishing **strategic alliances** with European equipment manufacturers of the highest quality.
03. To continue investing in **our R&D centre to improve technologies, products and processes** that can be applied to the aluminium industry.
04. To reinforce our commitment to be more environmentally sustainable by fulfilling **international standards**.
05. To keep relying on **state-of-the-art technology** in all of our manufacturing processes.
06. To become more socially inclusive and to empower our talented and motivated employees with **training and education opportunities**.
07. To prioritize the **health and safety of our people** by providing a medical centre and reinforcing the sanitation and hygiene measures in all of our business units.

ARYZZ Metals vision is to add value to the global supply chain of different sectors, such as:

- Aerospace
- Automotive
- Construction
- Domestic appliances
- Electrical
- Energy
- Military
- Naval
- Packaging
- Steel
- Technology
- Telecommunications

With this investment, ARYZZ Metals strengthens its path towards achieving its vision of becoming a secondary smelter leader, reinforces its commitment to the aluminium industry and emphasizes its relentless pursuit of continuous improvement.

 ARYZZ
 eduardo.musalem@arzyz.com



COVID-19 JOURNEY

The UK was put into lockdown on 23 March in an unprecedented step to attempt to limit the spread of coronavirus.

Boris Johnson announced in March that all UK residents must stay at home to protect the NHS and save lives amid the growing threat of coronavirus. In an unprecedented broadcast to the nation on Monday (23 March), The Prime Minister announced that the police will now have the power to fine people if they leave their homes for any reason other than the following:

- Shopping for necessities
- One form of exercise a day - either alone or with members of your household
- Medical need or to provide care help vulnerable person
- Travel to work - but only if necessary and you cannot work from home

On the 24th March the government sent a mass text message to as many phones as possible, urging people to stay at home during the coronavirus lockdown. The message directed recipients to the government's website about the outbreak and encouraging them to stay indoors. This short text message became the catalyst of confusion for the manufacturing sector and its employees, many of whom stayed away from work.

TO ALL THOSE WORKING IN MANUFACTURING AND INDUSTRY IN THE UK – PUBLISHED 8TH APRIL 2020

The Rt Hon Alok Sharma MP Secretary of State Department for Business, Energy & Industrial Strategy on the 8th April published a letter addressed to all those working in manufacturing and industry stating that manufacturing is a critical part of our economy and the government want to make it clear that there are no restrictions continuing under the current lockdown rules. The secretary of state goes on to say employees can continue to work consistent with the Chief Medical Officers advise on operating safely.

The secretary's letter mentioned the aluminium sector have answered the call to action and are playing a direct role in combatting COVID-19 by producing the material we need to fight the spread of the virus. 'It is vital that we ensure that servicing, parts, and raw materials are available to keep vehicles and services on the road and operating. I would like to give you all my personal thanks for everything you are doing'. (<https://alfed.org.uk/letter-from-secretary-of-state-alok-sharma-mp-to-the-manufacturing-sector-8-april-2020/>)

“...Manufacturing is a critical part of our economy and I would like to be clear that there is no restriction on manufacturing continuing under the current rules. Guidelines from Public Health England provide best practice advice on how this can be done safely. Many across aerospace, chemical, automotive, steel, aluminium, pharmaceutical, packaging and other sectors, including those providing essential services and materials, have answered the call to action and are playing a direct role in combatting COVID-19 by producing the material we need to fight the spread of the virus. It is vital that we ensure that servicing, parts and raw materials are available to keep vehicles and services on the road and operating. I would like to give you all my personal thanks for everything you are doing...”

THE RT HON ALOK SHARMA MP

Secretary of State for Business, Energy & Industrial Strategy

The following are extracts are from papers and exchanges of letters that we have written to government and received from government in support of the UK aluminium industry and our members. These extracts give a flavour of our engagement and work with government and officials following the lockdown. Full versions and replies from government are available on our website and the links are referred at the end of each extract.

THE VITAL ROLE OF ALUMINIUM DURING THE COVID 19 PANDEMIC – PUBLISHED 1ST APRIL 2020

'The aluminium sector generates £10 billion annually for the UK economy and employs more than 20,000 people nationwide. It plays a vital role in the supply chains of markets essential to managing the COVID-19 crisis, including medical device manufacture, electricity transmission, building materials and packaging. As a result, it is a sector of national significance during this pandemic – and aluminium sector operations must therefore continue in a safe yet productive manner'.

Aluminium is a vital input material in the fight against coronavirus

A vast range of essential products and services require aluminium for processes related to production and maintenance. Key examples include:

Medical Supplies – e.g. ventilators, devices, sterile tools and equipment and antimicrobial surfaces

Packaging – e.g. blister packaging for drugs, antibiotics, food wrapping and sealing, drink packaging and labelling

Electricity transmission – e.g. insulated cables, switch and outlet plates, metal boxes needed to meet ongoing capacity requirements (for example, needed for extra ventilation equipment at scale)

Electronics and communication – e.g. computers, smartphones, alarms and signalling equipment

Consumer goods – e.g. refrigerators, freezers, air conditioners and dehumidifiers

Building materials – e.g. HVAC equipment, wall panels and window frames for rapid infrastructure/field hospital construction and repair

Transportation – e.g. components for emergency and military vehicles as well as public transport and cars/vans being used by keyworkers and delivery drivers

Aluminium sector productivity must continue – safely

Most aspects of UK aluminium production can continue while adhering to heightened health and safety guidelines. Aluminium workers must therefore be allowed to continue working on site, where required – with the necessary social distancing, PPE and enhanced cleaning measures.

This means vital materials can continue flowing into essential supply chains. (<https://alfed.org.uk/alfed-position-paper-the-vital-role-of-aluminium-during-the-covid-19-pandemic/>)

FUNDING SUPPORT FOR UK ALUMINIUM – AN UPDATE - PUBLISHED 16TH APRIL 2020

The Government has announced an unprecedented scale of coronavirus business support, but the UK aluminium industry continues to struggle with the impact of COVID-19. Although we welcome the initiatives announced to date, many aluminium companies are unable to access the promised funding. This situation is creating short- and long-term economic risks for the UK.

Aluminium companies are struggling to access funding under Government schemes

The aluminium sector generates £10 billion annually for the UK economy and employs more than 20,000 people nationwide. It plays a vital role in the supply chains of markets essential to managing the COVID-19 crisis, including medical device manufacture, electricity transmission, building materials and packaging.

However, commodity prices, Chinese trade dynamics, Brexit uncertainty and US tariffs affected aluminium companies' financial performance over the past 2 years. This has put them in a weaker liquidity position than in the run up to the last financial crisis in 2008. Therefore, they urgently need Government support to manage the challenges caused by coronavirus. However, they're struggling to access funding under the 3 major loan schemes. (<https://alfed.org.uk/funding-support-for-uk-aluminium-an-update/>)

“...Thank you for your letters to the Secretary of State and to the Chancellor of 15 April, and your letters of 2 April to the Prime Minister outlining the importance of the aluminium industry and the Government's Covid-19 business support packages.

I recognise that this is a challenging time for those working in manufacturing industries and I am grateful for the work of the Aluminium Federation in supporting its members during this unprecedented period. As the Secretary of State said in his letter to manufacturing sectors on 8 April, Government is very mindful of the importance of the aluminium industry's contribution to essential supply chains and the resilience of our nation, which is why we have not restricted manufacturing under the current rules.

I appreciate the open and frank exchange of information and views you are providing at this critical time. This is helping Government fine-tune its business support programmes and strike the necessary balance between providing the support that business requires, whilst protecting taxpayers' money.

You may have seen that in response to industry feedback, including from ALFED and your members, on 16 April the Government announced revised rules for companies accessing the Coronavirus Large Business Interruption Loan Scheme (CLBILS).

I know that you are speaking regularly with my officials and that we will shortly speak regarding the issues which are of most concern to your members at this time. We remain keen to continue to engage with you over the coming weeks and months to ensure that the aluminium industry is in the best possible position to respond to the challenges presented by Covid-19...”

NADHIM ZAHAWI MP
Minister for Business and Industry

ALUMINIUM INDUSTRY COVID-19 RECOVERY PLAN – PUBLISHED 5TH MAY 2020

The UK aluminium sector is of profound national significance, generating £10 billion annually and employing more than 20,000 people.

As a result, the Government must take essential steps to help the sector recover from the impact of coronavirus. The UK manufacturing PMI fell to 32.6 in May, down a dramatic 19.1 points from February. ALFED members have reported order book reductions at levels not even seen during the 2008 financial crisis – some as high as 80%. And since 23rd March 2020, 14% of ALFED members have been forced to close temporarily.

The Government must continue supporting aluminium companies in the short term – and throughout the forthcoming economic recovery. Here we outline 3 pillars for our recommended recovery measures, which will help the aluminium industry drive UK growth in the short and medium term. (<https://alfed.org.uk/aluminium-industry-covid-19-recovery-plan/>)

“...Finally, on trade, one of the benefits of leaving the EU is to deliver an independent trade policy for the UK, which works in the interests of our businesses and consumers. On 5 May, the International Trade Secretary and the US Trade Representative, launched negotiations for a UK-US Free Trade Agreement and agreed an ambitious timetable for virtual talks, ensuring that talks can progress during the Covid-19 pandemic. We will expect to secure the swift removal of unjustified measures on exports of steel and aluminium originating in the UK pursuant to section 232 of the US Trade Expansion Act. The Government is also committed to negotiating and securing ambitious deals with other countries, such as Japan, Australia, and New Zealand, and we want to start negotiating as soon as possible. I appreciate the active role that aluminium companies have played in the lead-up to trade talks so far.

I am aware from the recent call with my officials that your members raised concerns regarding the availability of PPE for those individuals performing roles which required PPE before the arrival of Covid-19. I assure you I have requested to be kept sighted on this issue...”

NADHIM ZAHAWI MP
Minister for Business and Industry

GARNER ALUMINIUM EXTRUSIONS GIVES ACCEPTANCE CERTIFICATE TO SMS GROUP FOR NEW HYBRX 35 EXTRUSION LINE

Garner Aluminium Extrusions, also known as Garnalex, has reportedly acknowledged the supply of extrusion line by SMS group by giving them the final acceptance certificate. Together with OMAV SpA, SMS group had installed an integrated extrusion line with HybrEx 35 as the core machine at Garnalex. OMAV SpA had supplied a billet heating system with billet furnace and billet saw, a run out system including an intensive profile cooling station, a profile stretcher, and a finishing saw.

The new HybrEx 35 will help Garner Aluminium Extrusions boost its productivity by up to 20 per cent. It will also enable the company to continue manufacturing higher-quality products for its customers in an environmentally-friendly and resource-efficient way. Thanks to the new technology's significantly lower energy consumption levels.

Garnalex plans to use the new extrusion line to produce aluminium profiles for a fully integrated door and window system.

HybrEx 35 can extrude billets with a diameter of up to 228.6 millimetres and a length of up to 1,400 millimetres to produce aluminium and aluminium alloy profiles. The HybrEx® is also capable of producing high-precision profiles with extremely thin walls, boasting a deflection-resistant, three-part triple layer counter beam and patented precision guide for the container and moving crosshead.

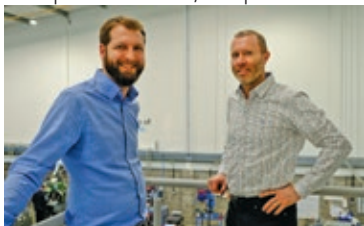
Garner Aluminium Extrusion is a new aluminium trade extrusion company that was formed in March 2018 by Roger Hartshorn, who worked with HL Plastics for over 42 years and was also one of the founders of Eurocell PLC.

Source: AlCircle



PowderBondPP®

PowderBondPP® is under evaluation by bigHead Fasteners Ltd to extend bigHead's Lean Bonding® process capability to join metal fasteners to polypropylene (PP), the most widely used thermoplastic. PowderBondPP has been developed to address the well-known short-comings in current polypropylene-to-metal bonding methods and delivers an exceptionally strong polypropylene-to-aluminium bond, unequalled by other products and systems on the market. PowderBondPP demonstrates tensile bonds strengths greater than 10MPa, the composite needs no pre-treatment, the process is rapid and repeatable, and no messy adhesives are used. bigHead's Lean Bonding system is a fast, clean and reliable way of bonding fasteners onto composite and metal substrates with a cycle time that can be as rapid as 10 seconds and PowderBondPP fits perfectly into this process. As Matt Stevens, Director, bigHead commented "Clearly the two technologies have a natural synergy and our research collaboration seeks to looking specifically at creating strong reliable bonds to PP, with a simple, customer-ready process."



• James Grant, Director, Powdertech Surface Science (left) and Matt Stevens, Director, bigHead Fasteners

James Grant, Director, Powdertech Surface Science said, "PowderBondPP is certainly a lean manufacturing process and fits well with bigHead's impressive Lean Bonding solution. We anticipate exciting results from our collaborative research and testing programme."

For more information:

Powdertech Surface Science:
www.powdertechnsurfacescience.co.uk

bigHead Fasteners:
www.bighead.co.uk



VERTIK-AL APPOINTS NEW TECHNICAL MANAGER

To drive forward its programme of continuous improvement, powder coating specialist, Vertik-Al has appointed Tristan Pope (right) in the role of technical manager.

To meet the changing demands of the business, the role will focus primarily on environmental strategy, monitoring and management; quality benchmarking; the implementation of sustainable pre-treatment processes; waste reduction; minimising the company's carbon footprint; and implementing lean manufacturing principles.

The board of directors believes that the appointment will help develop Vertik-Al as a sustainable, modern business, one that is both efficient and competitive, with a high-quality product and low environmental impact.

As a qualified biochemist, Pope will challenge existing processes and bring focus and commitment to the role. He is a proven educator with the desire to modernise and improve standards.

Pope will report to production director, Andy Best. Commenting on how the appointment will impact staff and customers, Best said: "Tristan will work with staff to achieve our aims and objectives for the role: explain, educate and encourage; ambitions that will be seen and appreciated by customers for many years to come. Tristan will also work closely with our supply chain to support them in attaining the standards we ourselves are striving towards."

www.vertik-al.com



THE VOICE OF THE UK ALUMINIUM INDUSTRY

ALFED quarterly magazine offers you a great opportunity to promote your products and services to key decision makers and influencers within the aluminium industry in the UK.

SCHEDULE:

Issue 6 – 23 September 2020

Issue 7 – 10 December 2020

Issue 8 – 26 March 2021

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ALUMINIUM
NEWS



YOU'RE BACK. WE'RE BACK. WE'VE GOT YOUR BACK.

Sadly, many organisations haven't or won't survive the impact of the Covid-19 pandemic, but those that do will do so based on a blend of positivity, sound choices and actions. Stick to doing the right things, trust the right people and focus on what you do best. Occasionally, businesses can get away - short term - with a poor decision, but it's when the tough times arrive that the real benefits of sound choices become evident. We've always taken pride in being a safe pair of hands and we always will. We're not here for the quick wins, we're here to help our customers build strong, resilient and efficient businesses that can weather the storms.

At elumatec, we've kept our heads throughout this pandemic, and we're going to keep on doing that. Our approach is simple: stand firm, do our job, support our customers, now and in the future - virus or no virus.

elumatec offers a range of high-quality machining centres, saws and small machinery for the processing of aluminium, steel and PVC-U. Their UK operations are based in Milton Keynes.

Contact them on 01908 580 800 or via email at sales@elumatec.co.uk.

elumatec

OBITUARY OF JOHN LAWTON

It is with sadness that we have to report the passing of John Lawton. After graduating with a degree in chemistry from Aston University John had a life-long association with the secondary aluminium industry, joining the commercial department at Aldec in the 1970's eventually becoming a director and later also joining the board of Milver Metals.

Following an explosion at Aldec which resulted in the company's closure in 1999 John became commercial manager of Oldbury Aluminium Alloys. Latterly John had been co-owner of Stourbridge Metals and Alloys.

He is survived by his wife Denise, son Alex, daughter Gabriel and step son Gregg.



MEMBER SPOTLIGHT

AES METALS – SUPPLYING ALUMINIUM BARS AND PROFILES TO UK INDUSTRY SINCE 1998

AES Metals are the UK agent for Eural Gnutti S.p.A, the most established and modern bar producer in the world.

Our reputation has developed around a philosophy of establishing trusted long-term supply relationships and we remain the supplier of choice for premium quality products to stockholders across the UK.

Established in 1968 in Rovato, northern Italy, Eural produce a range of commercial, free machining and ecological lead-free alloys (2011, 2033, 6026, 6026 Lead Free, 6061, 6082 and 7075) in compliance with the most restrictive requirements of RoHS and ELV.

Bars are available extruded or drawn from stock or on a forward order to close tolerances and in a variety of shapes; round, square, flat and hexagon from 6mm – 254mm depending on shape (1/4" – 10").

Semi-finished profiles are available for various commercial applications including Actuators, Automotive, Heatsinks, Hydraulics, Pneumatics and Structural Framing.

To discuss your sourcing requirements, visit www.aesmetals.co.uk

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The Processing & Fabrication Specialists

RIGHTON

BLACKBURNS



Righton Blackburns stocks specialist materials for a wide range of market sectors. A portion of these materials are kept pre-processed; allowing our in-house services to slit, recoil, blank, cut-to-length, guillotine, poly-coat, CNC and fabricate bespoke products in a variety of materials to industry standards for immediate despatch.

Righton Blackburns' commitment to the constant improvement and development of production and customer service has enabled the development of a wide range of capabilities, allowing the production of some of the smallest blanks, narrowest coils, largest sheets and complex fabricated parts.

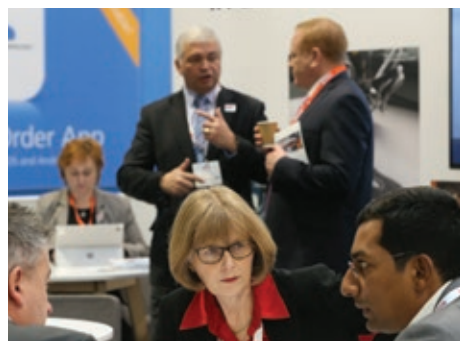
With on-site pallet and crate manufacturing facilities, all products are packed to customers requirements and specifications.

www.rightonblackburns.co.uk | Email: processing@rblimited.co.uk

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- Slitting
- Drilling & Tapping
- Paper-Interleaving

COVID-19 SUPPORTING BUSINESS TRADING INTERNATIONALLY

The Department of International Trade Advisers are working with businesses providing information and advice to support them through the current situation.



As businesses look to the future, putting together contingency and recovery plans which include looking at both existing and new export markets, the DIT International Trade Advisers can assist in developing export plans and update with the developments taking place in relation to changing requirements and restrictions in countries alongside update on the transition arrangements towards EU exit including the development of Free Trade Agreements.

Your local International Trade Adviser can help you access support on a range of export related matters including:

- smooth clearance of products with customs authorities
- intellectual property (IP) and other issues with business continuity
- export plans and exploring market opportunities
- finding new routes to markets
- dealing with agents and distributors
- finding alternative suppliers
- selling online and updating your digital (online) presence

In addition, DIT also have a comprehensive series of live training sessions to help you manage the impact of Covid-19 in relation to export. A list of the webinars for the West Midlands are available through the following link: www.events.great.gov.uk/ehome/index.php?eventid=200205299&.

You can get in touch with the West Midlands team by emailing info@tradewm.co.uk or call 0345 222 0159.

Based outside of the West Midlands? Visit www.great.gov.uk for more information on how to contact your local DIT team and get an update on webinars through the following link: www.events.great.gov.uk/ehome/index.php?eventid=200183473&.



Department for
International Trade

EDUCATION

ALUMINIUM DESERT WHEELS CHALLENGE FOR YEARS 3 - 6

For the second year we have partnered with BLOODHOUND Education to help get primary school pupils engaged in a world land speed record attempt. BLOODHOUND is a collaboration between world-leading engineering companies, universities and the military to build a jet car that reaches 1,000mph.

WHAT THE ALUMINIUM DESERT WHEELS CHALLENGE INVOLVES

The Aluminium Desert Wheels Challenge gives young people the chance to take on the role of engineer.

This KS2 Design and Technology project comprises of eight activities – inspired by the BLOODHOUND Land Speed Record. Working safely with aluminium cans, teams of 4 aim to design and build wheels for a model car, which are then tested on a simulated desert track.

This project lends itself to being part of an activity week – set up areas for each activity in your work area and allow each team to work around in a circus.

HOW TO GET YOUR SCHOOL INVOLVED

Aluminium Desert Wheels Challenge: www.bloodhoundeducation.com/desert-wheels-project-design-and-technology-resource-for-teachers/



YOUR CHALLENGE: DESIGN & TEST WHEELS FOR A MODEL BLOODHOUND CAR USING ALUMINIUM

- 1: Collect lots of aluminium cans, make sure they are not magnetic.
- 2: Make a model desert race track, like Hakskeen Pan in South Africa.
- 3: Build your Bloodhound model test car.
- 4: Research metal wheel designs.
- 5: Learn how to work safely with aluminium.
- 6: Design and make your aluminium wheels.
- 7: Test your wheels, then improve the design, until your wheels are as fast as possible!





ALFED TRAINING ACADEMY

During very difficult times the Aluminium Federation continues to offer online learning in vital skills during the COVID-19 crisis.

With social distancing restrictions having a severe impact on every aspect of our lives, our ALFED online learning and webinars continue to help develop essential skills while working from home. These are unprecedented times that require new skills and ways of working. Research has shown that online learning is a highly effective way to learn. It gives you what you need, when you need it, and wherever you are.

This selection of online courses and learning resources cover key skills that are required to work successfully from home. Using the zoom interactive marketing platform, we launched our first webinar 'Working from home during lockdown' and have continued to offer webinars and online live training for our members.

We have also introduced our Management Mentoring programme which is available remotely; please contact us for details.

DIARY DATES

We are strictly adhering to the Government guidelines so all our courses will be held remotely until the restrictions have been lifted.

August

- **Managing to leading**
Who is it for? This workshop is for anyone who would like to update their management skills and those who are new to managing and need support.
What will I learn?
 - Develop skills and behaviours for immediate improvement
 - Setting objectives
 - You as a manager, the role, its functions and your responsibilities
 - Dealing with challenges
 - Understanding the market and competition**Duration:** Two days in the classroom or four mornings tutor led, live interactive zoom platform.
- **Free half day LinkedIn for business workshop - 4 August**
Who is it for? This workshop is a must for business owners, managers, marketing and sales professionals.
What will I learn? How to use LinkedIn as a powerful sales and marketing tool.

September

- **How business has changed during COVID-19 and how to adapt**
Who is it for? All business owners and those managing departments or teams and take responsibility for delivering business objectives through other people.
What will I learn? You will learn advanced processes for the getting the best out of people and how to apply them to your organisation. You will have an opportunity to practice a range of specific skills essential to your organisation in today's turbulent environment and lead positive change more effectively.
- **Essential selling skills**
The power of sales training and development can never be overstated. When done well, you will be hard-pressed to find a better way to empower your sales professionals or to increase their commercial performance.
Sales professionals need to be fully empowered and equipped with the latest research, techniques and strategies which will enable them to react to their continually changing business environment and to strive for excellence.
Irrespective of your industry or sales training requirements, our courses can provide the solutions, deliver measurable results, and help you achieve your sales goals.

Who is it for? Everyone who is interested in sales and wants to improve their selling skills.

What will I learn? Better understanding of the new world of selling, this course will give you the skills required to improve your techniques and help your confidence.

- **The effective team leader**

The Effective Team leader has a variety of traits and characteristics to encourage team members to follow him. Team leaders naturally possess certain qualities such as compassion or learn leadership skills through formal training and experience. This workshop is designed to provide a foundation on which a successful management career can be built.

Who is it for? This workshop is for anyone who would like to update their management skills and those who are new to managing and require formal training.

What will I learn?

- Managing through people
- Building a team and knowing the team balance
- Effective communication, delegation and motivation
- Managing conflict, performance and development
- Leadership behaviour and effectiveness
- **Presentation skills**
Whether presenting to a public audience of 500 or to a boardroom of 5, there are skills that great presenters have developed which enhances the value of the presentation and creates engagement with their audience.
These are skills which can be learned, and this course is designed to provide you with these skills.
Great presentations tell a story, which has a strong beginning and end, even when presenting year-end financial or endless statistics. Visuals should be constructed to facilitate the story, but not lose the audience through 'death-by-PowerPoint' syndrome.
So, if you want to inspire & motivate, give compelling presentations, win more new business or delivery a killer elevator pitch, we have the course for you.
You will learn how to develop and prepare your material and slides, calm your nerves, deliver your message with increasing impact and deal with interruptions, and difficult questions.

As this is a highly practical and interactive course, we keep our groups small, typically under 10, so that everyone gets the greatest level of personal attention possible.

October

- **Middle management training programme**

Great management is necessary if a business is to maximise its potential and meet its goals. No matter the type of team, it will never reach its full potential or be as effective as it possibly could be, if it is ineffectively managed.

Unfortunately, many people are promoted to a management role as a result of seniority, necessity or because they were good in their previous position. Many are often required to make the step up without any or very little essential management training.

They are required to do a difficult job without the knowledge, tools and insight they need to be effective and to succeed.

With the ever-changing and dynamic business environment, managers today need to be flexible, adaptable and agile. To be a great manager, you need to be able to motivate and inspire your team while juggling all of the complexities of helping ensure the business is run well and interpret the complex financial information which is constantly put in front of you.

As a manager, you need to have clear and consistent communication skills, understand financial and budgetary planning, be able to set and monitor KPI's, ensure team dynamics work, remain calm in the face of pressure and instil confidence in your team and the business.

Managing a business is often stressful and demanding, with long hours and even longer to-do-lists of tasks and issues pressing for attention. It can become overwhelming. These demands and pressures often prevent owners and managers from taking the time to consider their own training and development needs.

So if you are looking to take your career as a manager to the next level, our management course will give you the skills, tools and techniques you need to be highly effective, shape your future, transform your management and unlock your full potential.

ALFED E-LEARNING PROGRAMME

- **LinkedIn mastery for business**

In business and in life, relationships matter more than most other things. And this is even truer in today's fast-paced, complex and dynamic business environment.

Most people seek out ideas and insights from the professionals and brands they have come to trust. LinkedIn provides the platform through which to develop new relationships, enhance existing relationships and showcase your brand and professionalism.

However, although most people are aware of the significant role LinkedIn plays in business today, only a very small percentage use it effectively or harness the opportunities it provides for business growth and development.

To ensure that your LinkedIn presence and contribution is valuable, grows your brand recognition and allows you to harness the opportunities LinkedIn provides, we have designed these experience-based on and offline courses and provide strategic consultancy to ensure your social media efforts are not wasted or misdirected.

- **Advanced consultative selling skills**

Our Rainmaker Selling program is our core consultative sales program. This comprehensive, 4-week off-line program will teach your team how to lead conversations masterfully from the first touch poZint to an ongoing relationship.

Our ACSS training courses combine the latest in neuroscience, human behaviour and benchmarks to help you and your team overcome a host of selling related challenges and to unlock all of the potential your market contains.

ALFED WEBINARS

Delivered via our zoom marketing platform

Duration: 45 mins

- Time management that can transform your productivity
- Writing skills that will improve your communication
- How to use Chrome extension to increase your online productivity
- Mental health and wellbeing

Please check our website for events and training information: alfed.org.uk/aluminium-federation-events/ or email our training and education manager, Kathy Romback: k_romback@alfed.org.uk.

ALUMINIUM FEDERATION TECHNICAL TRAINING COURSES

It's an exciting time to be in the aluminium industry, with market developments and innovations putting us at the cutting edge of British manufacturing. Our collective success is underpinned by an industry-wide commitment to training and skills development.

The Aluminium Federation manages high-quality training for both technical and non-technical staff. Our training programmes help everyone from apprentices and admin staff to experienced engineers.

WORLD OF ALUMINIUM:

Course dates: 28 October 2020

This one-day workshop gives an introductory and practical understanding of aluminium production, processing, application and markets.

Aimed at people who need to understand the basics, such as production supervisors, managers, production engineers, salespeople, purchasing and process technicians.

Cost: Members £275+vat/person
Non members £375+vat/person

ALUMINIUM FOR ENGINEERS:

Course dates: 25 & 26 November 2020

An intensive two-day course that creates the foundation and builds up knowledge from a basic introduction to metals to the wide application of aluminium.

The syllabus covers metallurgy, specification, heat treatment, wrought processing, joining, testing, corrosion, coating and more. All participants get a complimentary copy of the Aluminium Federation's book *The Properties of Aluminium and its Alloys*.

Aimed at metallurgists, designers, manufacturing engineers and companies transitioning into aluminium.

Cost Members £450+vat/person
Non members £550+vat/person

Whether you have 5 staff or 50, we offer training to meet your business needs – with an experienced trainer delivering conveniently on your site or you and your colleagues attending a course of your choice at our offices. We work with you to identify objectives, plan training and create course material, taking into account your products and processes, as well as delegates' level of expertise.

For further information please contact our Training and Education Manager, Kathy Romback, on 0121 281 2281 or email: k_romback@alfed.org.uk.

AN INTRODUCTION INTO 'ALUMINIUM AND ALUMINIUM APPLICATIONS' COURSE

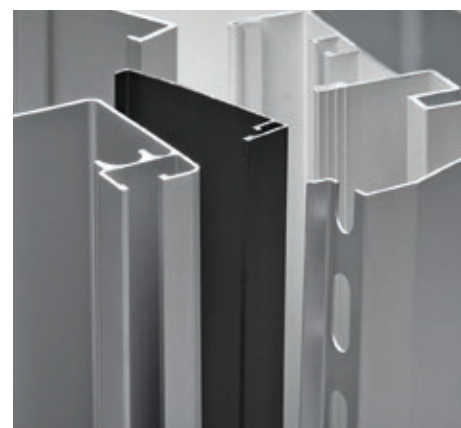
This course introduces and provides a broad basic knowledge of aluminium and its industry, for support staff, administration, accounts, purchasing, for those who are progressing their careers into sales, marketing, manufacturing or quality roles and for new entrants into the aluminium industry.

This introductory course is also intended to provide the new entrant a foundation for progressing into intermediate and advanced level technical courses on aluminium, its metallurgy, casting, manufacturing technologies and product applications, offered by the Aluminium Federation. Each of these advanced courses are specifically tailored to industry sector and to the target audiences from operators to post graduate technologist.

BENEFITS

- Enables a wide basic understanding of aluminium, its alloys, products use and applications
- Creates foundation level competence
- Ensures an understanding of the terminology used within the industry
- Explains what is driving global demand for aluminium and the supply chains
- Raises the knowledge level of/and supports the longer-term growth of into the aluminium industry.

- Equally applicable to a new entrant or as a refresher course for the more experienced
- Modular course gives the flexibility to tailor the training to suit the individual and company's needs
- Flexibility to complete the course at your own pace and in your own time
- Supported by up-to-date reference documentation (*Aluminium Properties Book*)



COURSE CONTENT

The Aluminium Federation introductory course comprises of 10 modules designed in their entirety as a stepped foundation course or as stand-alone modules to fill specific knowledge gaps.

- **Module 1 – Aluminium: 10 September**

Introduces aluminium as a strategic metal. It identifies each of the holistic properties of aluminium, explains their benefits and illustrates their applications within the industry and the basis of global demand.

- **Module 2 – Production of Aluminium and Global Demand: 24 September**

This outlines the sources of aluminium, how it is refined and produced, its growth relationship with the availability of electricity. It also introduces the low carbon recyclability of aluminium, that differentiates it from other materials. Essential to understand how supply is matching demand.

- **Module 3 – Wrought Aluminium and Applications: 1 October**

Building on the first module this outlines how aluminium alloys group specifications were developed, then focusing on the properties of each alloy specification group explains their uses and illustrates applications. Concluding by dispelling myths on aluminium, fire and health.

- **Module 4 - Heat Treatment of Aluminium: 15 October**

In simple, easily understood terms this explains the difference between non-heat treatable alloys and heat

treatable alloys. Then how non heat treatable alloys are strain hardened and heat treatable alloys age hardened. Understanding this module completes the understanding required to correct select alloys for applications.

- **Module 5 – Elastic and Plastic Behaviour of Metals: 29 October**

Essential to understanding how metals behave under load, and the applicability of the significant characteristic to product design. How these characteristics are determined/proved by tensile and/or hardness testing and an explanation into the significance of different test certificates.

- **Module 6 – Production of Wrought Aluminium: 12 November**

Complimenting and building on all the preceding modules, this explains how plate, slab, shate, sheet and foil are produced and some of their innovative applications. Included is an introduction to product defects.

- **Module 7 – Extrusion: 2 July & 7 November**

The super-plasticity of aluminium at moderate temperatures sets aluminium apart from all other metals in its ability to be extruded. This module explains the extrusion process, its potentials and then explores product designs and applications. Concluding with a study of extrusion introduced defects.

- **Module 8 – Drawing, Shaping and Forming Aluminium: 9 July & 10 December**

A very broad survey of how aluminium is shaped formed manipulated, cut, fabricated, joined and/or bonded including the emerging hot forming technologies. Thought provoking technologies for the designers.

- **Module 9 – Corrosion and Protection of Aluminium: 16 July & 14 January 2021**

Often overlooked is the exceptional corrosion resistance of aluminium and its longevity in service. This explains what corrosion is and its various mechanisms. Then researches the alternative coating and protection methods, ending with eye catching examples.

- **Module 10 – Casting Technologies: 23 July & 28 January**

More correctly liquid aluminium engineering, this module compliments both modules 3, 7 and 8 by exploring how castings offer alternative manufacturing processes, it outlines the various techniques and their application to specific product applications.

Cost: Each module: £33.33+vat per person
or
10 modules £250+vat per person

We can also deliver all or any specific modules for your company please contact Kathy Rombach for more details.

For any queries please contact

Kathy Rombach,

Training & Education Manager

on 0121 281 2281

or email k_rombach@alfed.org.uk.



THE AGE OF ENLIGHTENMENT

The Coronavirus has taught us just how small a blue planet we live on, perhaps for the first-time a true understanding of supply chains and the devastating efficiency of global communications. As the world tries to recover from the ensuing depression, both countries and industries must discover and establish the new “normal” so we can predict deglobalisation, anticipate trade barriers, extreme competition, and most certainly the escalation of technologies.

Surviving industries will attain new levels of efficiency forcing all countries to retrain, reskill and redeploy obsolete and displaced work forces. Training, education, and communications will be at the forefront of the new “normal”.

Aluminium as a young metal is still in the application development stages and the aluminium industries are very much growth industries, so both well positioned to ride the crest of a global recovery wave. The unique relationship between the Aluminium Federation and government, with Brexit in the background, has the absolute potential to create United Kingdom global competitiveness.



A core function of ALFED is to ensure that its members, the UK aluminium industry, and Government are well informed and trained in the developments of new alloys, processes, and products. Equally to offer business, financial, and commercial training to ensure a fully holistic, highly skilled workforce.

Reflecting the new emerging “normal” the United Kingdom and indeed aluminium industry is faced with retraining and reskilling its existing workforce. Training in global technology, a work force that is in employment so cannot be released, with a higher virus risk demography, and social distancing that precludes workshop or classrooms, where international or even national trainers cannot travel.

Worldwide virtually all universities have changed to on-line lectures, Cambridge university has already announced that there will be no face to face lecture before the summer of 2021. In June ALFED delivered an on-line lecture to Coventry University first year mechanical students.

Thus, the new training “normal” will be remote on-line, short modules that enable businesses to release key employees to learn either in the workplace or at home without travel stress. Online the lecturer can teach new hands-on skills, as they can take you into hazardous environments, to see inside processes, to simulate problems, to change tools, without “Personal Protection Equipment” or cramped spaces! Furloughing rules specifically allow learning.

ALFED has always provided training either to the sector groups or to its wider membership and indeed to universities. Before the virus such training was through conferences, seminars, and meetings, but the entire planned programme will now be offered on-line.

In fact, in 2016 ALFED pioneered on-line learning, when EWI in the USA remotely showcased, live for the first time in Europe, their ultrasonic welding to an audience of fifty members in a joint seminar.

ALFED members and specialist suppliers will be invited to lecture and train on their specific products or technologies. Following on-line courses have been already delivered on XRF and LIBS scrap sorting technical, developments in extrusion, and biocidal coatings. We are planning in the short-term lectures on machining aluminium, rolling, on fluxes and hardness testing. Effectively bringing new knowledge to ALFED members and sector groups as part of their membership package. The participation has been high with forty or more on-line participants benefiting from the short modules run thus far.

The full technical training programme will be offered on line, commencing with “Aluminium Light”, a ten module course intended for provide a broad basic knowledge of aluminium and its industry, for support staff, administration, accounts, purchasing, for those who are progressing their careers or for new entrants into the aluminium industry. One hundred participants registered for the first module.

Advanced level on-line courses for the specialist technologies are available, including on fatigue, welding, and anodising.

We offer on-line courses to fill knowledge and skills gaps. Please contact our training and education manager, Kathy Romback to suggest for future courses; email: k_romback@alfed.org.uk.



REASONS TO EMBRACE APPRENTICESHIPS

If you are looking for opportunities to upskill existing employees, have a look at our latest resources about apprenticeships to help you access government funding.

Apprenticeships offer a great opportunity to nurture talent in your business - whether you're bringing in brand new talent or upskilling your current workforce. Here's some reasons to embrace apprenticeships:

- At least 95% of your apprentice's training costs will be paid for (employer with a pay bill of less than £3 million per year)
- Your apprentice will make valuable contributions
- You can fill skills gaps in your organisation
- They create opportunities to bring in new talent at any level
- They will help you to upskill or retrain current employees



- You can work with your provider to deliver training flexibly
- Our free online tools make it easy to manage your apprenticeships

ALFED FLEXIBLE APPRENTICESHIPS

We have partnered with a direct provider of apprenticeship and work-based learning on behalf of the Education Skills Funding Agency. They specialise in the delivery of high-quality employer led apprenticeships that raise the standards of your workforce. They work closely with you, the employer, to implement and ensure the programme design meets your workforce development needs and is to the highest standard. Their programmes are varied and comprehensive, delivered by sector experts who are trained to access and deliver high quality bespoke training programmes.

Working together with an experienced partner we currently offer the following apprenticeships:



Workshop skills programme

- Environmental practitioner
- Lean manufacturing operative
- Supply chain operator
- Engineering
- Maintenance

Leadership and management programme

- Team leader/Supervisor
- Junior Manager
- Improvement Leader
- Middle management programme

Senior degree programme

- Chartered managers degree
- MBA



For further information about any of the above, please contact our Training and Education Manager, Kathy Romback, on 0121 281 2281 or email: k_romback@alfed.org.uk.



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E-LEARNING PROGRAMME: LINKEDIN FOR BUSINESS

GETTING STARTED MODULE:

This module is a brief overview of the course and of the material you find over the next 7 weeks. You will be introduced to the platform and will understand how it works and where to find the lessons, videos and material for download.

Module 1:

Customer habits have changed radically over the past 5 years putting you, as the consumer, more in charge of your buying decisions. In this module, you will learn:

- The modern customer journey and how it has been impacted by social media
- The 7 pillars of social selling
- 7 Social selling best practices
- How to build a LinkedIn profile which is suited to you and your brand

Module 2:

Standing out in an ever increasingly noisy and crowded market space requires thought and planning. It needs to focus on personal branding. In this module, you will:

- Understand Personal branding and how it relates to success on LinkedIn
- Personal branding success stories
- Learn what a Blue Ocean Strategy is and how to use these ideas to create your differentiators

Module 3:

Developing a network which is relevant to your product or service is of greater importance to you and your business

than having a large network. In this module, you will learn:

- What strategy is and how important it is to building a successful social media presence
- What a Significant Target Market is and how to develop yours on LinkedIn
- How to build a network which is highly targeted and useful

Module 4:

It is imperative to understand the challenges and pain points your clients and prospects have in order to craft a message which resonates with them.

In this module, you will learn:

- How to discover your markets pain points using LinkedIn and how to provide the solutions your network is looking for
- To understand and utilise social listening
- The 12 types of message LinkedIn offers through which you can deliver your message
- The 4 elements to great communication on LinkedIn

Module 5:

Developing a content strategy which is consistent with your client and prospects pain points and answers the questions they are asking, is the key to building your authority and influence. In this



module, you will learn:

- How to develop a content strategy
- The tools available for creating effective content and for delivering on your content strategy
- How to build influence and authority using LinkedIn

Module 6:

Taking the right action at the right time is the key to success on LinkedIn. In this module, you will learn:

- The 8 reasons to use LinkedIn as a tool for business growth and positioning
- LinkedIn best practices
- How to generate leads on LinkedIn
- Introduction to The LinkedIn Influence System

Module 7:

Building your success using the LinkedIn Mastery Model. In this module, you will learn:

- Implementing the LinkedIn Influence System

..... TRAINING PARTNER FOCUS TRAINING PARTNER FOCUS: VIC WILLIAMS MBA

Vic Williams grew up and worked for many years in South Africa. He is a Change Leadership Consultant, Trainer, Author and Podcaster.

With over 30 years of experience in business as an entrepreneur, he ran nine different businesses in different industries and in different countries.

Since 2011, Vic has been creating & delivering innovative, bold, and forward-thinking training programmes. His courses and programmes are tailored to meet the uniqueness of today's business and environment. His aim is to educate, motivate and empower you and your staff to be better than you already are.

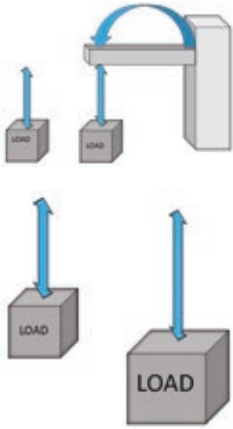
Every course or programme created and delivered is conceived in practical, real-world needs to help you see the success you want. And although we recognise and continuously adapt to the constant changes in the business environment, with growth in online sales, web-based applications, social media, remote workers and flexible hours, our mission has not changed: To create and deliver



education-focused training which is bold, innovative, inventive and unconstrained by previous ideas.

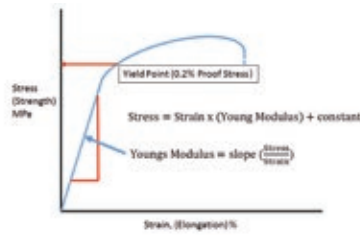
UNDERSTANDING STRENGTH, STIFFNESS AND LIGHT WEIGHTING OF ALUMINIUM

The strength of a metal is a measure of how much load it can support in direct tension before it fails, that is breaks, whilst stiffness is an indication of how it will elastically deform, that is bend, under a load.



Up to their yield stress, that is the limit of elasticity, all metals in direct tension behave elastically, that is they spring or stretch with increasing load, directly in proportional to the applied load and on removal of the load spring back or recover with no permanent deformation.

The slope of the stress/strain straight line portion of a tensile test up to the yield stress, is the measure of this elasticity and is called Youngs modulus, named after the 19th century British scientist Thomas Young who derived the relationship.



Youngs modulus of a metal is a constant and changes slightly with alloying of the base metal, so with the chemistry of the alloy, but not with work or strain hardening nor upon heat treatment.

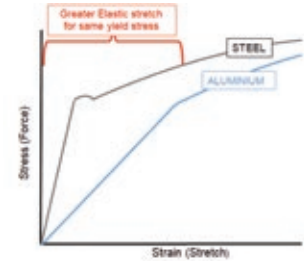
Very few structures stress metals in pure direct tension, that is in tensile strength, but virtually all require stiffness or a combination of both strength and stiffness. Simplistically, a moving car body requires stability that is stiffness and in the event of a crash strength.

Stiffness is function of Youngs modulus and the cross section of a component.

Given that Youngs modulus of a metal is a constant, increasing the strength of a metal through strain hardening or heat treatment allows down-gauging, so weight reduction, but because of the reduction in cross section decreases stiffness, so weakens a component in bending!

The Youngs Modulus of aluminium is 70Gpa, 33% that of steel, effectively aluminium is more elastic/springy than steel.

The high elasticity of aluminium is an advantage in buildings designed to be flexible, so to stretch and contract in response to the seismic



movement of an earthquake and yet be rigid enough not to fail. Equally to create automotive "Twist Beams" and subframes whose elastic movement incorporates them into active parts of the suspension.



In direct comparison, a steel component with the higher Youngs modulus would be much stiffer than aluminium with the same cross section.

However, stiffness depends on both Youngs modulus and the cross section of a component, thus through simple beam theory, increasing the height of the beam by 40%, whilst maintaining the same width, compensates for the lower aluminium modulus, matching the stiffness of steel. Significantly aluminium is a light metal with a density of 34% that of steel so increasing the beam height by 40% still results in a 50% weight saving with matched stiffness.



For further information please contact Jan Lukaszewski at ALFED: j_lukaszewski@alfed.org.uk.

ENERGY

ARE YOU SECR COMPLIANT?

As of April 1, the first Streamlined Energy and Carbon Reporting (SECR) reports are due.

SECR was brought in last year to encourage groups of businesses that fulfil the specified criteria to become more energy efficient and reduce their carbon footprint.

It replaced the Carbon Reduction Commitment Energy Efficiency Scheme (CRC) with the aim of widening the net and bringing the benefits of carbon zero to more businesses.

The new regulations will require an estimated 11,900 companies incorporated in the UK to disclose their energy and carbon emissions - a far greater number than were required to act under the CRC.

Qualifying companies will need to include information on their UK energy use in line with the SECR framework in their Directors' Report, or an equivalent Energy

and Carbon Report for LLPs, for financial years beginning on or after 1 April 2019.

Where energy use and carbon emissions are considered to be of strategic importance to the organisation, the disclosure may be made in the Strategic Report instead, with a statement in the director's report to indicate and explain this decision.

WHO NEEDS TO COMPLY?

Electricity prices were volatile at the Three groups of businesses are affected by the new regulations. Companies that fall within the following definitions must comply unless they meet certain exemption criteria:

1. Quoted companies of any size that are already obliged to report under mandatory greenhouse gas reporting regulations.
2. Unquoted companies incorporated in the UK that meet the definition of 'large' under the Companies Act 2006 will have new reporting obligations. This applies to registered and unregistered companies. Note that the criteria for 'large' differs from the ESOS Regulations.

3. 'Large' Limited Liability Partnerships (LLPs) will be required to prepare and file a 'Energy and Carbon Report'.

Unquoted companies or LLPs are defined as 'large' if they meet at least two of the following three criteria in a reporting year:

- a turnover of £36 million or more
- a balance sheet of £18 million or more or
- 250 employees or more.

Certain companies that would otherwise be eligible may be exempt if their energy use is low – 40MWh or less over the reporting period.

Whilst not a requirement, external verification or assurance is recommended as best practice to ensure the accuracy, completeness and consistency of data for both internal and external stakeholders.

Energy Management has a proven track record in ensuring companies are compliant with all the latest relevant industry legislation so if you want to find out more about your SECR requirements, you can contact us on 01225 867 722 or email sales@energymanagementltd.com.



A STUDY OF THE IMPACT OF INTERMETALLIC SPECIES ON CAST ALUMINUM ALLOYS FOR ANODIZING APPLICATIONS

By: Can Akyil - Politeknik-Coventya, Tuzla Kimya Sanayicileri Organize San. Bolgesi, Kristal Cad. No : 2 Tuzla/Istanbul - TURKEY

Today, there is a focus and movement across many industrial platforms, especially in the automotive industry sector, to utilize lighter weight materials. Aluminum alloys are an ideal choice for replacing heavy weight steel components, including those traditionally fabricated by steel die-casting processes.

Die cast aluminum alloys, due to their excellent weight to strength ratio, are finding new applications across many areas of usage for producing lower greenhouse gas emissions and helping to meet requirements toward fuel efficiency regulations. These alloys, rich in intermetallic species, are one of the types utilized in automotive applications for the replacement of steel parts and components.

Furthermore, weight reduction is also one of the critical goals for the electric mobility platforms. Present challenges include limitations by the capacity output of existing battery technology because these systems account for much of the weight of electric vehicles. It's important for identification of other areas of weight reduction must be considered by auto manufacturers in order to maximize distance of travel for those platforms to compete with gasoline engine technology.

However, aluminum, like all the other metals becomes susceptible to corrosion (especially pitting corrosion) in the presence of aggressive ions or under specific environmental conditions. Heat, cold and moisture provide conditions for accelerated corrosion potential. Other examples include detergents in automatic car wash systems or when additives are utilized to melt snow and ice on roads and highways during the winter months. Automobile components fabricated from aluminum and its alloys have a need for providing high corrosion performance in order to replace existing coating systems on steel components. The anodizing process, or "anodic oxidation" of aluminum is one of the most efficient and effective means for providing good corrosion protection and high performance to these range of alloys.

Process development work has been completed to optimize conditions for the anodizing of cast aluminum parts with high silicon concentrations. Taking into account the morphology/distribution of the intermetallic species and their impact toward the anodic oxide film quality, the results demonstrate how to optimize the entire anodizing process for minimizing their impact while improving the Anodic Aluminum Oxide Layer (AAO) quality.

Metallurgical inspections of the anodized and A356 alloy surfaces were evaluated with Optical Microscopy (OM), Scanning Electron Microscopy (SEM), and Neutral

Salt Spray (NSS) test methods per ASTM B117/ISO 9227. These methods support verification of the impact from the development results for the optimized process.

The cast aluminum alloy often utilized for replacing steel cast components, for exterior applications, is ISO AlSi7Mg, commonly known as ASTM A356. This is equivalent to SAE 323, or EN AL 42100, which represents a general purpose high strength alloy exhibiting very good casting properties, particularly utilized for fabricating parts subjected to cyclic or vibrational loads. This alloy is recognized and ideal for manufacturing complex design parts, including thin wall components used in many applications for industries including railway, aeronautical, machinery equipment and automotive applications for pump systems, combustion engine systems and wheels as a few examples.

Figure 1 presents the cross section study of the AlSi7Mg (A356) alloy samples. As shown in the polarized image (Figure 1a) at 50X magnification, due to the casting process and faster cooling rate at the walls of the die casting mold, the grains are smaller than the ones closer to the center of the sample. Figure 1b demonstrates the distribution of the secondary phases in the samples at 100X magnification as a typical shape and distribution of hypoeutectic permanent mold casting.

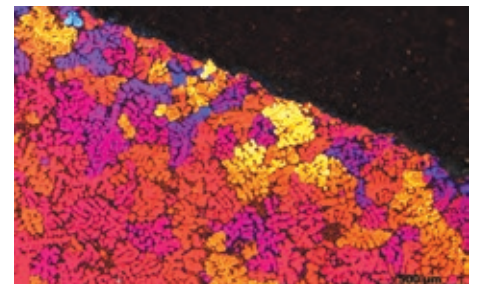


Figure 1a

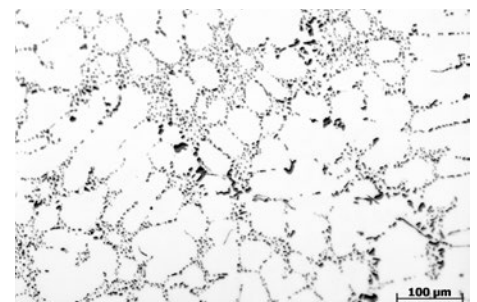


Figure 1b

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Silicon, an important intermetallic species, is introduced to aluminum as an alloying element for improving the die casting process. This includes the ability for complex shapes and geometries of parts to be manufactured. However, the presence of high concentrations and gradients of silicon throughout the aluminum alloy, referred to as "rivers of silicon" shown in the photomicrograph 1a can create problems in the anodizing process and post anodizing corrosion performance. Alloys with higher silicon concentrations can inhibit the growth of anodic oxide films under galvanostatic and potentiostatic conditions.

To better investigate and show the effect of the cooling on the surface morphology, and oxide growth; an advanced method is used. The samples are first machined with 15 degrees angle and prepared for optical micrograph, so that the top side of the images are actually between the interface of the oxide layer and the metallic substrate. **Figure 2** represents a polarized microscopy at 200X magnification of an anodized A356 alloy processed at 15°C for 20 minutes in a sulfuric electrolyte containing 5 percent oxalic acid and 17 percent sulfuric (GSX electrolyte). The dense small crystals at the top of photomicrograph represent the anodized layer. The aluminum and intermetallic species, including the silicon, are represented in the cross section by the larger grains in the image. As shown, the silicon intermetallic concentrated zones can be seen visually impeding the uniform formation of the anodize oxide layer.

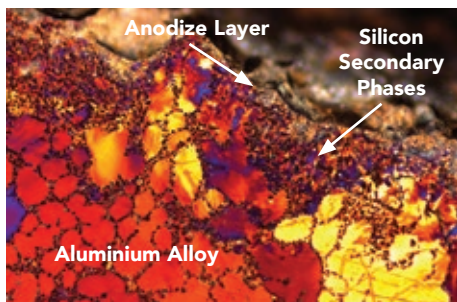


Figure 2: Polarized cross section micrograph image GSX anodized A356 alloy and machined 15 degrees for surface preparation demonstrating oxide layer discontinuity and non-homogeneous protective oxide thickness distribution.

Additionally, these areas of higher concentrations of silicon cause less oxide hardness and negatively affect the post anodizing sealing quality/efficiency. These are important considerations to the overall corrosion performance of the AAO layer. Under the formed anodized oxide film, silicon also acts as galvanic couples that can initiate a pitting phenomenon or cause other types of localized corrosion failures that is detrimental to the use of aluminum for many exterior applications.

Taking into account all these considerations, development work was finalized to optimize the process cycle for anodizing aluminum castings demonstrating improved success for achieving higher quality performance.

An evaluation of the process optimization were characterized by SEM/EDS and optical microscopy techniques. To validate the results and demonstrate the improvement of the developed process, neutral salt spray tests (NSST) were completed. For these evaluations, samples were directly DC anodized at 59 F in a sulfuric acid (170 g/L) based electrolyte with different organic additives designed to limit the inhibiting effect of silicon which causes the anodized layer to be discontinuous. After anodizing the A356 alloy samples, they were colored black with an organic dye at 150 F for 15 minutes. Additionally, they were processed through a cold seal process based on nickel fluoride and pH at 5.9 at 93F for 15 minutes followed by a warm water rinse at 150 F.

Table 1 (below) provides a detailed overview of the sequences evaluated.

To overcome the problems created by too high concentrations of silicon in the casting alloy and to obtain a greater oxide density, harder, uniform thickness AAO layer, a new acid immersion pretreatment process is developed to reduce silicon intermetallic heavy zones from the part surfaces. The specially formulated proprietary acid based process was applied to the cast parts for 10 minutes at 90°C resulting in the silicon being more evenly distributed over the aluminum surface.

This surface condition after the pretreatment is much more suitable for the resulting anodizing of the aluminum as shown in **Figures 3a** and **3b**.

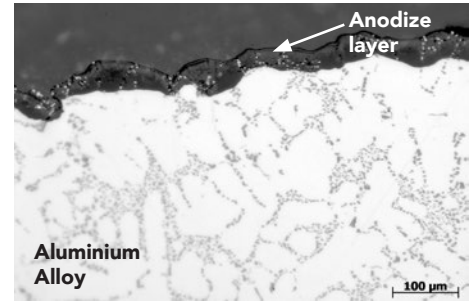


Figure 3a

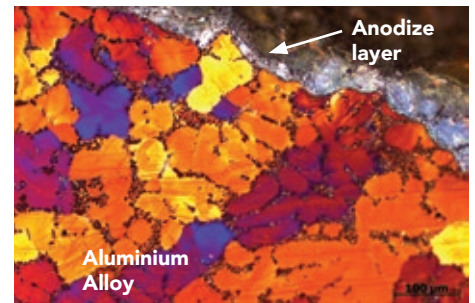


Figure 3b

Figures 3a & 3b) 200X Optical and Polarized microscopy images anodized A356 pretreated per Sample "C" in Table 1.

This increase in uniformity of the silicon distribution is a result of the decrease in their size and shape that allows the anodizing process to continue more homogeneously and at a faster rate of formation. The result overall is a 30 to 40% increase of oxide layer thickness compared to the standard reference under similar operating conditions. Such a dense and homogenous AAO layer result has higher corrosion performance and greater resilience against the fading of the dye colored samples.

Further improving the AAO layer properties, the next step was optimizing the anodizing chemistry electrolyte. Unlike oxalic acid additives to sulfuric acid electrolytes, there are developments of new organic based additives available for the anodizing electrolyte that function

Continued on page 22....

Table 1: Process sequence for the Samples A, B, C and D (including the samples dye colored for NSS tests)

Sample Codes	Degreasing	Special-Pre-treatment	Desmut	Anodizing	Dye Coloring (Only for NSS Samples)	Sealing
A Baseline GSX Electrolyte	15 mins at 145 F	-	-	20 mins at 59 F with 179 g/L H ₂ SO ₄	at 150 F for 15 mins	Cold Seal 15 mins Warm Rinse at 150 F for 15 min.
B Baseline + Additive	15 mins at 145 F	-	-	20 mins at 59 F with 179 g/L H ₂ SO ₄ and 30 g/L Organic Additive	at 150 F for 15 mins	Cold Seal 15 mins Warm Rinse at 150 F for 15 min.
C Baseline + Special Prep + Additive	15 mins at 145 F	4 mins at 195 F Acidic Based	2 mins at 95 F	20 mins at 59 F with 179 g/L H ₂ SO ₄ and 30 g/L Organic Additive	at 150 F for 15 mins	Cold Seal 15 mins Warm Rinse at 150 F for 15 min.
D Baseline + Special Prep + Additive	15 mins at 145 F	10 mins at 195 F Acidic Based	2 mins at 95 F	20 mins at 59 F with 179 g/L H ₂ SO ₄ and 30 g/L Organic Additive	at 150 F for 15 mins	Cold Seal 15 mins Warm Rinse at 150 F for 15 min.

Continued from page 21....

to overcome the negative effect of the intermetallics of silicon on the AAO characteristics. These additives help to control the dissolution of aluminum and function to incorporate the silicon into the oxide layer with minimal detrimental impact to the quality of the coating layer. Their use increases the conductivity of the electrolyte, and the heat generated during anodize layer formation can be more efficiently removed from the metal-electrolyte interface, as a result increasing the efficiency of the oxidation reactions.

By incorporating the use of a proprietary organic additive blend in the anodizing electrolyte, the negative effects of the silicon intermetallic species are suppressed. The resulting AAO layer has improved density and a thicker oxide film presented as shown in figures 4b) in comparison to the standard GSX anodizing presented in Figure 4a) referenced in figure 2.

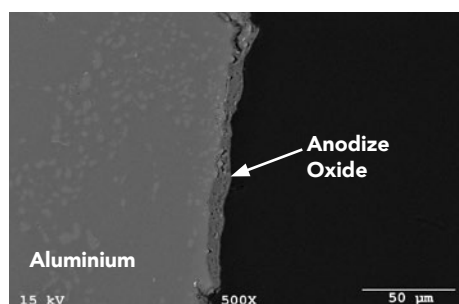


Figure 4a: A356 anodized SEM-BSE 500X per sample "A" table 1

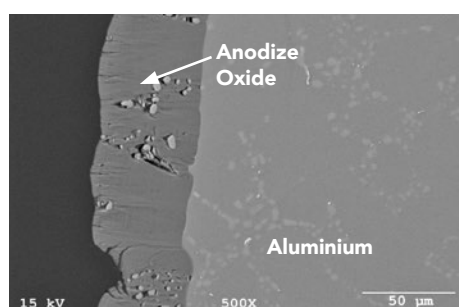


Figure 4b: A356 anodized SEM-BSE 500X per sample "D" table 1

Combined with the new immersion pretreatment process, the incorporation of the anodizing organic additive (Sample D) increased additionally the thickness of the oxide layer about 4 times under the same operating parameters for the GSX electrolyte (Sample A).

Next, the overall performance and success of the improved sequence using the special pretreatment and organic additive package to the anodizing electrolyte for creating the optimum oxide layer was easily evaluated through laboratory NSST testing.

The processes in **TABLE 1** were carried out for 4-sequences that are referenced in **FIGURE 5**. These samples A, B, C & D were processed accordingly to demonstrate the improvements would have on the corrosion performance and fade resistance of the anodized A356 cast aluminum.

The additional processing of these anodized surfaces through an organic black dye system was completed for samples B, C & D to help visually see more clearly the early formation of corrosion spots of the aluminum. Additionally, the fade resistance of the surface is also a gauge of the AAO layer performance with respect to corrosion resistance.



Figure 5 NSS results of Sample A, B, C and D after subjecting to NSS for 800 hours according to ISO 9227

All were evaluated after 800hrs of NSST exposure. As shown in the baseline sample A, there is base metal corrosion and some color change observed. In agreement with SEM images, the best corrosion behavior was achieved for samples C & D with the incorporation of the special pretreatment and use of organic additive in the anodizing electrolyte.

For sample B, demonstrating the impact of the organic additive to the anodizing solution does not show any corrosion, but the presence of the surface color change indicates the importance of oxide film thickness has toward color integrity.

In many applications for anodizing cast aluminum alloys, color retention and stability while being exposed to many environmental factors is just as critical as resistance to corrosion. By incorporating the use of these types of organic additives in the sulfuric anodizing process, and utilizing the special pretreatment process, the homogeneity and the thickness of

the oxide layer can be improved for cast aluminum alloys with higher silicon content. This also provides improved corrosion resistance and the ability to provide a greater range of color possibilities as shown in **FIGURE 6** that has greater resilience against fading of the dyed surface over time while in service use.

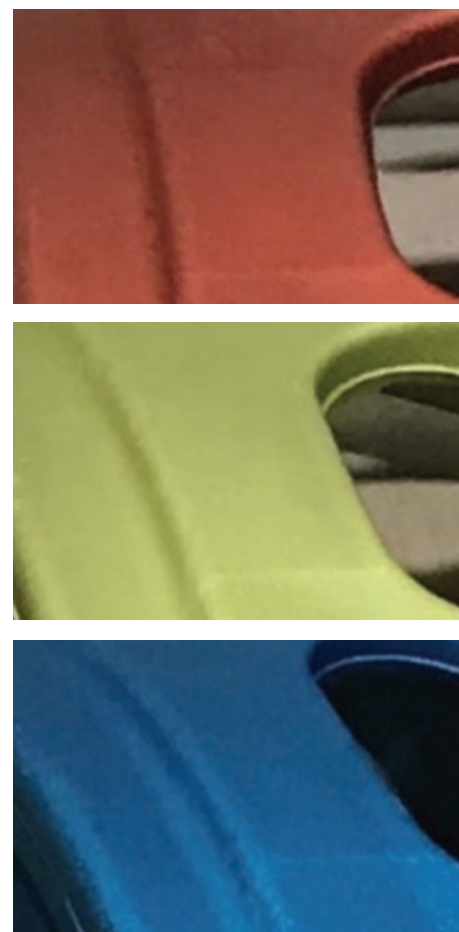


Figure 6: A356 alloy: New immersion pretreatment process + new organic additive to sulfuric acid anodize solution for improved organic dye penetration and performance.

Acknowledgments:

This paper is a summary of work carried out by Can Akyil^{1,2}, Güney Akdas^{1,2}, Pınar Afsin^{1,2}, Mesut Akkaya², Mustafa Urgan¹,

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References for article are available upon request to authors.

ENHANCEMENT OF ALUMINIUM PRODUCTS MANUFACTURING THROUGH SIMULATION

By: Nikolay Biba, PhD, Managing Director of MICAS Simulations Ltd., Oxford, UK

Energy-saving and electrification of cars require lightweight design solutions for all components, including body and engine parts made of aluminium alloys. Some of them are forged, some are extruded or rolled.

The main goal of metal forming technology is to get the near net shape of the parts required for minimum machining, while their mechanical properties must be tightly controlled. The only way to achieve these goals is to use the simulation for the entire manufacturing chain, including forming operations and heat treatment of the product.

The forming processes simulation provides optimisation of technological operations including avoiding material flow defects, keeping the material within the process window, limiting energy and load, minimising the material waste and extending tool life. During forming the material microstructure transforms. The final product microstructure and properties depend on the temperature, strain and strain-rate at every forming stage and dwelling time between them. Microstructural evolution also depends on the chemical composition of an alloy. Thus, the same technology results in different microstructure and finish properties depending on specific material. It is critical when new, more advanced materials are to be used.

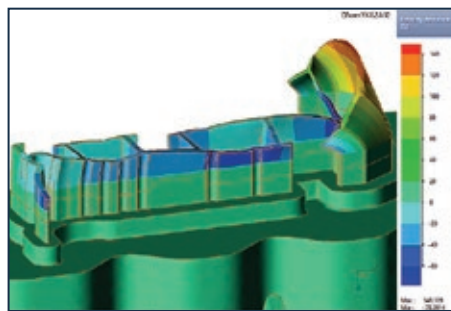
After forming, the part usually undergoes heat treatment, that for aluminium alloys is a solution treatment including quenching and ageing. Proper heat treatment must provide the best mechanical properties and minimise residual stresses and distortion. Heat treatment also can be simulated using material models for different alloys. The simulation helps

to find the best cooling conditions by trying various coolants or by adjusting the intensity of water sprayers.

All of these tasks can be effectively accomplished by QForm simulation software that has microstructure and heat treatment modules as well as a variety of metal forming modelling facilities for different processes. Fig. 1 shows how simulation can accurately predict an unbalanced material flow in extrusion. It means that this defect can be anticipated and eliminated by a modification of the die design before actual trials in a press that save material, time and reduces cost. To speed up this task, the automated

extrusion dies design is provided by a special program QExDD that is integrated with simulation. Such an approach provides a fast and effective balancing of the material flow. Another case illustrates the simulation of heat treatment of the profile after extrusion. Depending on the cooling conditions, the profile may significantly change, as is shown in Fig. 2.

More information on simulation of forging, rolling and extrusion can be obtained by contacting the author by email nick@qform3d.com.

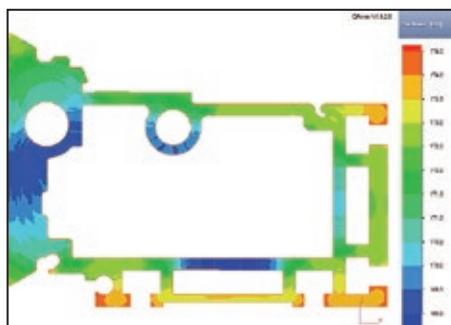


(a)

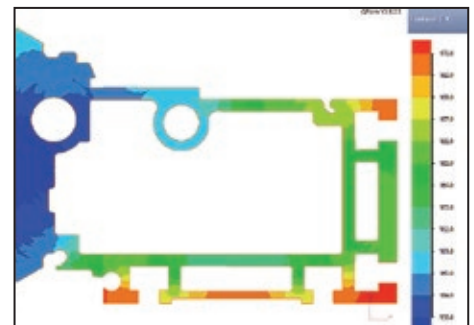


(b)

Fig. 1. Extrusion of a complex hollow profile: (a) relative velocity deviation distribution in % and profile front tip shape obtained in simulation by QForm-Extrusion; (b) photo of the actual front tip



(a)



(b)

Fig. 2. Hardness HV after T6 heat treatment of the extruded profile in case of cooling with different intensity: (a) Heat Transfer Coefficient (HTC) 5500 W/(m²K) and (b) HTC 500 W/(m²K)

A NEW GENERATION OF PHOSPHATE BONDED MONOLITHICS

By: Julie Hardy, Research and Development Manager, Capital Refractories

Phosphate bonded refractory castables have been around for decades, although most products still have a number of drawbacks. Older single component systems often showed short shelf life and were often difficult to mix and install.

Two component systems offer a longer shelf life, are easier to mix and have excellent adhesion but often exhibit short working times and low strength and abrasion resistance. Two component systems require corrosive liquid activators with associated issues relating to health and safety and transport. They can also create large amounts of unwanted plastic waste as the activator is typically supplied in a plastic jug for each bag of castable.

Capital Refractories Ltd has spent several years of continuous development to provide a new generation of products which can be supplied without a liquid activator, give improved installation characteristics with higher strength and abrasion resistance compared to two component systems.

Initial work was carried out on mullite based castable products, but further research resulted in products that were suitable for gunning and could also be installed using ramming or trowelling for smaller repairs. These products are now available under Capital's PBond Solo brand.

Application trials have been completed by our own installation and R&D teams with later trials carried out by third party contractors. Further trials are continuing at several other sites.

See below for further details about Capital's new generation of phosphate bonded castables, some of the testing that has been done, and case studies where the products have been used in situ.



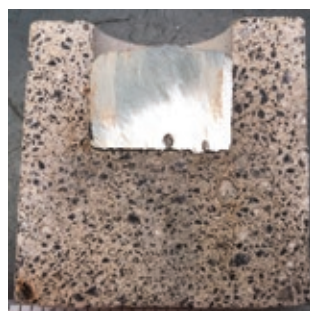
Pictured above, a section through a test panel of PBond Solo 60GM on a mullite based low cement castable. The sample was cut after firing to show adhesion to fracture surface of existing castable.

A summary of physical properties is shown in the table below. LC60M is a mullite based low cement castable which is a commonly used material in the industry, PBond Solo 60 is a new generation phosphate bonded castable and PBT 65 is a traditional two component phosphate bonded castable. This clearly demonstrates the superior physical properties of the new generation phosphate bonded castables when compared to older two component products.

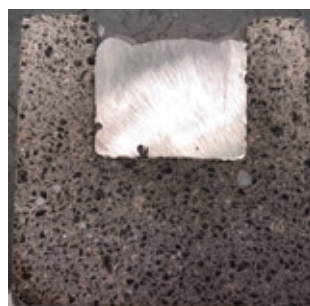
		PBond Solo 60	LC60M	PBT65
Chemistry (%)	AL ₂ O ₃	55.6	60.3	62.5
	SiO ₂	29.4	34.4	27.4
	Fe ₂ O ₃	0.9	1.0	0.71
CCS (MPa)	110°C	59	80	56
	815°C	43	121	22
	1370°C	136	145	41
HMOR (MPa)	815°C	7.9	13.5	2.1
Abrasion Loss (cm ³)		8.7	5.9	20.2

Resistance to Aluminium and Salt Fluxes

Aluminium contact testing was carried out using the crucible method and 7075 aluminium alloy PBond Solo 60 and PBond Solo 60 with an addition of silicon carbide. Both products showed no reaction or adhesion between alloy and refractory and the results were comparable with high performance non-wetting low cement castable products. See images below.

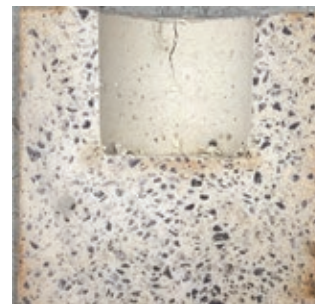


PBond Solo 60

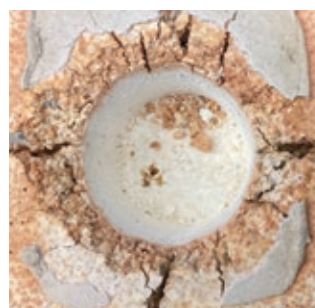


PBond Solo 60 with Silicon Carbide

flux. PBond Solo 60 shows no significant flux penetration with some minor cracking while the traditional two component phosphate bonded castable shows extensive penetration, cracking and matrix disruption.



PBond Solo 60 Flux Testing



Two Component Phosphate Bonded Castable (PTP65) Flux Testing

Continued on page 25....

Further comparative tests were carried out using a particularly aggressive salt-based

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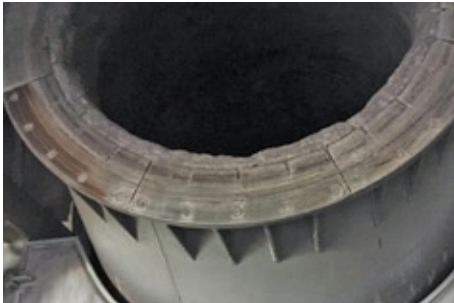
CASE STUDY 1

Secondary Aluminium producer in France

A 5 tonne tilting rotary furnace, processing automotive scrap experienced rapid wear in the nose area. This area was typically relined using a two-component phosphate bonded castable, with an addition of stainless steel fibre but achieved a maximum life of only 6 months.

The area was then recast using PBond Solo 60 with an addition of stainless steel fibres. The nose ring was recast in sections over the course of 1 day and then heated to operating temperature without special precautions allowing production to recommence.

This lining is still in use 17 months after the repair.



A PBond Solo 60 repair after 8 months in service

CASE STUDY 3

Secondary Aluminium producer in Czech Republic

The arch, walls and tapping block of a 12 tonne brick lined holding furnace were repaired by gunning of PBond Solo 60GM. The thickness of the repair was between 25 and 150mm thick in different parts of the furnace.

The material showed excellent adhesion with minimal rebound and dust generation during the installation. Preheat was started soon after the installation and production could be restarted within 24hrs of the repair.



The repair is showing no signs of wear or spalling after 3 months service.

CASE STUDY 4

Secondary Aluminium producer in UK

A sliding launder used to transfer aluminium from a 5 tonne tilting rotary furnace to its holding furnace was relined using PBond Solo 60. Formwork was built and the lining was cast on Saturday. The formwork was then stripped and preheat started on Sunday to allow production to restart on Monday morning.



The launder remains in excellent condition after 2 months service.

CASE STUDY 2

Secondary Aluminium Producer in UK

The arch of an 8 tonne aluminium holding furnace was bricked using 42% alumina firebrick. Extensive damage was observed within the first few weeks which is believed to have been caused by a combination of thermal shock and mechanical impact.

Loose brickwork was removed, and a cast repair was installed using vibration with PBond Solo 60 containing stainless steel fibres. Formwork was stripped after 1 hour and the normal furnace heating cycle started 4 hours later to take the furnace up to operating temperature.

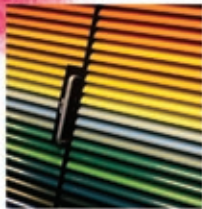
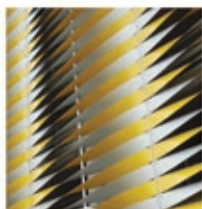
The repair remains in good condition after a further 7 months service and it is notable that the repaired area has far less metal and dross splash adhered to the lining compared to the bricked area.



A PBond Solo 60 repair after 5 months in service

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RETURNING TO WORK

As lockdown provisions begin to lift, and employers look at how to reopen their businesses, there will be a vast amount of considerations to present themselves as we return to the “new normal” of business life.

Croner, ALFED’s trusted HR and employment law partner, explain what these may look like and the key changes you can make to benefit your business.

For pragmatic advice and guidance, you have access to free advice through your ALFED membership. Call **0844 561 8133** to speak with an advisor today.

CHANGING TERMS AND CONDITIONS

In order to keep costs down, employers may consider making changes to staff contracts, such as reducing their hours or salaries. Contractual schemes such as enhanced sick or maternity pay could also be reviewed, as could introducing the option for job-sharing. These could either be temporary changes until the situation improves, or permanent. In the absence of a specific term already in a contract permitting the change, employers will need to seek their employee’s express agreement to it before going ahead.

REORGANISING JOB ROLES

To meet business demand, employers could require staff to undertake different roles on a temporary or permanent basis if their contract of employment allows for this. If not, employers should again seek agreement with staff to change their roles, and further training should be provided if necessary. If staff can take on additional work, it may be that only some of them need to be made redundant.

WITHDRAWING JOB OFFERS

Employers could consider postponing the start date for new members of staff, or withdrawing their offer entirely. However, if the individual has accepted their offer and been given a start date, withdrawing it now is likely to be in breach of contract. To avoid a potential claim,

employers may consider giving the new employee notice of termination and pay them for their notice period.

IMPLEMENTING SHORT-TIME WORKING

Instead of seeking to vary contractual hours, employers could pursue short-time working, where hours are reduced on a temporary basis. Again, in the absence of a contractual term, staff will need to agree to this beforehand.

Staff placed on short-time working for a period of four consecutive weeks, or six weeks in total in a thirteen week period, can claim statutory redundancy pay if they have worked for the company for at least two years. However, a ‘week’ of short-time working will only count if they received less than half a week’s normal pay.

LAYING-OFF STAFF

Instead of using the Job Retention Scheme to furlough staff, an alternative option is to lay them off. Also known as ‘temporary redundancy’, this is where staff are not provided work by a company, and therefore not paid, when their pay is dependent on them receiving work. Unless there is a specific clause in the employment contract allowing the company to lay staff off without pay, staff will also need to agree to this. Even with this clause, laid off staff who have been employed for at least a month may be entitled to statutory guarantee

Continued on page 27....

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pay (SGP), which is currently £30 per day for a maximum of five days.

As with short-time working, laid-off staff can also claim redundancy pay after being laid off for four weeks consecutively or six weeks in a 13-week period.

SOCIAL DISTANCING

One of the main challenges businesses will face is social distancing. While every workplace is different, and so the guidance will differ, you have a duty of care to your employees.

How to practice social distancing at work

You can perform a risk assessment to help determine potential issues ahead. But, in many instances, you should follow basic social distance guidelines for businesses. This is about ensuring all employees are able to maintain a two-metre distance from one another. Constantly.

This may involve some rearranging of workstations. If you do move employees around, be sure they're made aware of their new location in good time. And that they have access to everything they need to perform their role.

In areas that are likely to see a lot of traffic, use floor tape or paint to mark areas to help keep people two-metre distance apart.

It's not recommended for you to meet clients or have visitors if the meeting can be held via video call or postponed to another date.

Your workplace should only have those employees who need to be there on location. For instances where people can't maintain social distancing, manage risk as much as possible. For example, using screens or barriers, staggering shift times.

How to maintain social distancing at work

Once you're through the initial process of getting employees back into work and implementing precautions, you might start asking the question: "How do I keep this up?"

Maintaining social distancing measures at work after COVID-19 lockdown ends will be a challenge. For example, some employees may not want to abide by the measures you've put in place.

It's important to regularly review your risk assessment. It might be that once people are back, measures need to be changed.

For those who repeatedly fail to follow the measures you've put into place, it may be worth going down a disciplinary route.

Key health & safety checks for social distancing at work

When you're reviewing the situation, there are some key areas you need to keep in mind.

Remember, social distancing at work should always be at the forefront of your mind. Key checks include:

- Work areas: Are people two metres apart?
- Where employees can't keep two-metres apart: Have all possible precautions been taken?
- Communal areas: How are these made secure?
- Hygiene: Have you made handwashing facilities available?
- Information and guidance: Have you provided employees with all the information they need to stay safe?
- PPE: Where personal protective equipment is needed, has it been supplied?

Key considerations for a social distancing policy at work

One way to ensure you're set for social distancing at work is to create a policy. After all, social distancing at work may continue after lockdown for some time.

Here are the main things to consider when creating this document:

- HR and health & safety: Social distancing covers both HR and health & safety. So, it's important to cover both of these areas in your policy. Highlight the health & safety measures your business is going to take. And, highlight the HR processes you'll take if anyone fails to adhere to them.
- Are all risks addressed? Each workplace is different. There will be risks your workplace will face that others won't. Ensure you take these issues into consideration when developing your policy.
- Is it necessary? Consider whether you need to have a policy at all. Remember, only workers who need to be in work should be at the workplace. The policy should take these employees into consideration.

How often a business should assess their social distancing policy

Review your policy every time there's a new government update that could affect employees. Also review your policy if the situation at work changes. Finally, do so again whenever a new group of workers come back into the office for the first time.





By TOMRA Recycling

Demand for aluminium has risen steadily over recent years and is predicted to increase further over the next two decades, with the European car and construction industries likely to remain major end users of this highly versatile, lightweight, energy efficient and infinitely recyclable metal.

The challenge for European scrap metal processors – along with the growing number of aluminium producers who are investing in equipment to sort the scrap material themselves – is how to produce a consistently high quality, high purity furnace-ready aluminium product.

To achieve this, and optimise the use of scrap in their furnaces, the infeed material needs to be cleaned of heavy metals, of aluminium-plastic compounds and of other light material, such as magnesium.

Due to magnesium and aluminium being similar in density, traditional sink-float dense media plants struggle to clearly differentiate between these materials in order to separate them and remove contaminants. There is a risk that the aluminium recovered using a sink float separation process won't meet the quality standards required by end customers, and, as a result, processors would face penalties for supplying an inferior quality product.

Removing aluminium-plastic compounds, light plastics and magnesium from aluminium scrap requires advanced sorting technology, such as the latest application TOMRA Sorting has developed for our X-TRACT unit which enables the removal of aluminium-plastic compounds and magnesium from aluminium in products such as Zorba.

During testing we put hundreds of tonnes of sorted and traded material through the X-TRACT unit with the belt running at 3m (10 feet) per second and achieved consistently high purity rates of up to 99%. This means the material can be traded more robustly and used in domestic or close-to-home markets. The system uses existing TOMRA XRT x-ray technology but in a new configuration so that it is capable of sorting material of different density levels. It can separate light materials, aluminium-plastic compounds and magnesium from aluminium to create furnace ready products – including what's referred to as low magnesium Twitch – across the Zorba size spectrum from 5-120mm. This degree of separation of fines simply couldn't be achieved using dense media plant processes and, until now, it wouldn't even have been possible using TOMRA's sensor-based sorting technology because magnesium is very similar in density to aluminium so the technology couldn't recognise the difference between the materials.

Now though, the capabilities and combination of the x-ray technology used in TOMRA's X-TRACT unit make it by far the most consistently accurate solution available on the market today, capable of meeting the requirements of end customers who specify magnesium-free aluminium or

typically well below 0.5% by weight.

Being able to produce up to 99% recycled aluminium vastly enhances the market opportunities for processors who can sell their furnace-ready products, including low magnesium Twitch, across the full size fraction spectrum to secondary aluminium smelters within their own country or to customers in other European countries. And with the quality and purity of the material guaranteed to be consistent, processors can establish long-term, reliable sales channels within Europe, with no penalties for missing quality requirements.

ABOUT TOMRA SORTING RECYCLING

TOMRA Sorting Recycling designs and manufactures sensor-based sorting technologies for the global recycling and waste management industry. Over 6,000 systems have been installed in more than 100 countries worldwide.

Responsible for developing the world's first high capacity Near Infrared (NIR) sensor for waste sorting applications, TOMRA Sorting Recycling remains an industry pioneer with a dedication to extracting high purity fractions from waste streams that maximize both yield and profits.

For more information on TOMRA Sorting Recycling visit www.tomra.com/recycling.



• TOMRA's X-TRACT unit

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MACH RESCHEDULED TO **JANUARY 2021**

NEW DATES

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machexhibition.com

The Manufacturing Technologies Association (MTA), which owns and runs the MACH exhibition on behalf of the industry, has taken the decision to reschedule MACH from April 2020 to January 2021.

The MTA's first concern is for the safety and wellbeing of those who will visit and work at MACH. So, in order to ensure the best possible platform for exhibitors and visitors alike, the event will now take place from **25-28 January 2021**. It will stay at the NEC in Birmingham with the Hall arrangements remaining the same as 2020.

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