

# REINFORCE

JOURNAL OF THE BRITISH ASSOCIATION OF REINFORCEMENT

2018

CE clarity

**New industry  
initiatives**

Ensuring welding  
compliance

**BAR member news**

Continuity assurance

**Human rights –  
the next corporate  
responsibility?**



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- PRODUCT INNOVATION AND PROCESS DEVELOPMENT



BAR MEMBERS: GIVING YOUR PROJECT A REINFORCED ADVANTAGE

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# REINFORCE

## 2018

## Welcome: Taking the lead

Welcome to the 2018 issue of Reinforce, the journal of the British Association of Reinforcement, which aims to show how it’s all about leading and not following.

This issue outlines new initiatives undertaken by the association to forward the reinforcement sector as a whole. Initiatives include health and safety off-loading best practice guidance, the development of joint HSE/BAR noise guidance and the provision of technical information such as the industry acclaimed rebar toolkit and clarity on CE marking.

It also highlights the growing demands for reinforcement procurement that meets not only sustainable, responsible sourcing and social value criteria but increasingly meets ethical and moral scrutiny. Here, BAR members seek to take the industry lead by working with clients and contractors to assist them by offering products that enable them to meet both their legal and corporate reputation responsibilities.

In addition, this issue shows how BAR members are leading the industry in areas such as compliance to the new requirements for welding coordinators by investing in operative training, providing reinforcement products that are innovative and are of traceable high quality and delivering cost effective reinforcement solutions for a wide range of construction projects.

I hope that you enjoy this issue. Get in touch if you wish to learn how to reinforce your lead.

Stephen Elliott  
Chairman, British Association of Reinforcement

The British Association of Reinforcement (BAR) is the industry association for UK Manufacturers and fabricators of steel reinforcement products including cut-and-bent and mesh.

BAR aims to add value to the reinforcement industry via market and product development, the promotion of health and safety as well as social value and environmental best practice and providing a forum to help forward the reinforced concrete industry as a whole.

BAR is a member of CARES and all BAR members are CARES approved.

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Raising the **BAR**



# HUMAN RIGHTS: **THE NEXT CORPORATE** RESPONSIBILITY

First there was sustainability and responsible sourcing. Then social value became an important issue for reinforcement material sourcing. Now ethical morality concerning human rights is becoming a major concern. Steve Elliott, Chairman of the British Association of Reinforcement, explains how the association members are able to deliver on all accounts and calls upon clients and contractors to ensure that they deliver too.

Embedding sustainability and responsible sourcing as part of steel reinforcement manufacture and fabrication is essential as clients and contractors are increasingly scrutinised for reducing their environmental impact and for the transparency of their responsible sourcing. In addition, Government requires that public sector contracts fully consider the social and economic benefits of procuring steel requiring that core health and safety requirements are acted upon, local training and employment are provided and that whole life cost and not the lowest purchase price is focused on. For the private sector, BuildUK, the construction contractors' association, calls on its members to be committed to "providing opportunities for European-based steel producers to support local economies, create jobs and reduce carbon emissions from transport."

The Modern Slavery Act, which came into force in October 2015, has brought issues of slavery and human rights into sharp focus with the construction industry. The Act means that large organisations now have to report on human rights issues within their supply chains both at home and overseas.

This shows that increasingly construction clients and contractors are expected to take both moral and ethical responsibility for assuring that labour is treated and paid fairly, that health and safety regulations are enforced and that material sourcing and manufacturing has minimised polluting impact. For those clients and contractors in the UK such issues are, hopefully, a given. However, complex global construction supply chains means that the question of human rights do not simply apply to the UK building site or, in the case of reinforcement, the UK seller of imported rebar. It applies to the human rights of the country of origin. Importing reinforcement from countries with poor human rights is not simply

a responsibility that can be passed further down the supply chain. It is a tacit endorsement of a regime abusing its own citizens and is not one that clients and contractors mindful of their own corporate reputation should be ready to undertake.

For those wanting to determine the origin of their rebar they should check the rebar markings. All reinforcement should have rib markings to determine its country and mill of origin and its grade. The number of ribs between the CARES approval mark and manufacturer mark relates to the country of origin. Therefore, for the UK there is a 5 rib gap. For German manufactured rebar there is 1 rib gap. For rebar manufactured outside of the European Union the identification is a 9 rib gap. For the UK in addition to the 5 rib gap, the domestic manufacturer of rebar rolls "UK" on all bars at roughly one metre intervals to give a clear visual sign of country of origin.

As well as fully adhering to UK and EU human rights legislation, employment and workers' welfare legislation and environmental regulations, BAR members are accredited to BRE's BES 6001 Framework Standard for the Responsible Sourcing of Construction Products. This underlines not just their responsible sourcing commitment but also their considerable financial investment to deliver a quality product with a transparent, traceable supply chain that has a low carbon footprint and ethical benchmarks.

Clients and contractors should show their commitment by ensuring that their construction materials are not just responsibly but also ethically sourced. As a first step, everybody involved in the supply chain should be demanding information from their supplier concerning origin of material. With this knowledge, informed decisions can be made.

# CONTINUITY ASSURANCE

With a worrying increase in the importation of non-CARES approved reinforcement continuity strips, **specifiers need to ensure that their continuity strips are up to the job.**

Introduced in the 1980s, reinforcement continuity strips are designed to provide a time saving and cost-effective method to maintain reinforcement continuity across concrete construction joints via the simple concept of overlapping reinforcement to provide a connection.

Continuity strips consists of special pre-bent reinforcement housed in a purpose-designed carrier casing. The strip is fabricated off-site. On site, the entire continuity strip unit is cast into the front face of the concrete wall. After the formwork is struck, the casing lid is removed to reveal the connection legs (starter bars). These legs are bent out by the contractor ready for lapping the main reinforcement of the next pour. The casing remains embedded in the wall. This provides a rebate into which the concrete of the adjoining member is poured. This eliminates the need for scabbing preparation at the joint. Other benefits also include simplified formwork design, faster pour schedules, no formwork damage or drilled holes in shutters and improved site safety due to there being no projecting bars.

The structural importance of continuity strips in providing structural integrity at construction joints and the need to avoid any breakage of the product during installation that could result in injury to the fixer underlines the necessity of using technically approved strips. As continuity strips are one of the many reinforcement construction accessories not covered by national or international standards it is important that they have full compliance with the CARES Technical Approvals scheme. This provides product certification thereby offering assurance that the product is fit-for-purpose.

CARES developed its Technical Approval Scheme in the 1990s to cover those reinforcement structural components not specifically covered by any product standard. Reinforcement continuity strips were the first products to be so tested. The robust certification process includes testing at independent laboratories, a double re-bend test to verify the rebar element's ductility and its ability to withstand the forces involved in bending. Independent product testing is carried out at least twice a year. CARES also carries out in-situ structural testing to evaluate the performance of construction joints under loading.

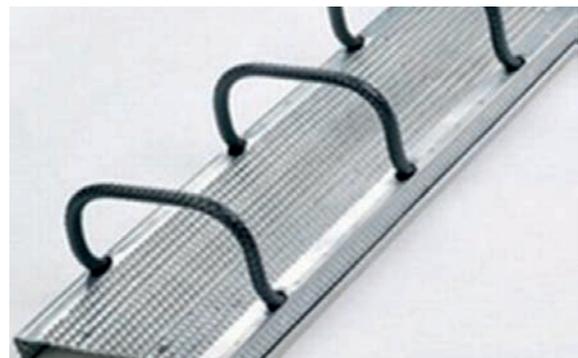
**There are currently four CARES technically approved reinforcement continuity strips on the market:**

- Startabox (RFA-Tech)
- Eazistrip (Ancon)
- Ferbox (Invisible Connections)
- Kwikastrip (Halfen)

These have the product assurance that non-approved systems do not. Specifiers are advised to ensure that their continuity strip has full CARES Technical Approval and it should be noted that the National Structural Concrete Specification (NSCS) recognises the structural importance of continuity strips and advocates use of products with a valid CARES Technical Approval certificate.

It has been reported that non-approved continuity strip systems may make spurious claims regarding certification, stating that the rebar is CARES approved so that should suffice. This is not the case. A continuity strip containing CARES-approved rebar cut and bent to conform to BS8666 is not the same as a continuity strip with CARES Technical Approval that has been fabricated in a BS EN ISO 9001 factory environment. Furthermore, many continuity strips imported into the UK do not have any recognised form of technical approval. These are imported and sold as an accessory when in fact their important structural integrity role means that they should really be viewed as being structural components.

The CARES Technical Approval scheme for reinforcement continuity strips offers specifiers and engineers the assurance that the system chosen is safe to install and will offer the necessary level of structural performance. Where assured structural integrity is at stake it is best not to cut corners.



*BAR member RFA-Tech's Startabox continuity strip is CARES approved*

# CE CLARITY

There continues to be worrying confusion as to whether steel reinforcement needs a CE mark with some engineers and designers believing a CE mark is actually a quality mark and not just a regulatory mark to allow freedom of movement of goods throughout Europe.

As there is currently no harmonised European Standard (hEN) steel reinforcement does not need a CE mark. What the sector has is a quality certification scheme that in many respects is a more rigorous check than CE marking – the well-established Steel for the Reinforcement of Concrete (SRC) scheme developed and managed by the UK Certification Authority for Reinforcing Steels (CARES). The SRC scheme covers all stages in the supply chain from the receipt of raw materials, the manufacture and processing of the steel through to the delivery to the customer. As a quality scheme, it offers a more robust certification route than CE marking.

It is expected that steel reinforcement will eventually be covered by a harmonised European standard. This standard, EN 10080, is still at draft stage and is not predicted to facilitate CE marking before 2019 at the earliest. Until then as there is no hEN there is no CE marking necessary for reinforcing steel, reinforcing fabric or lattice girders. Furthermore, there are no plans for cut and bent reinforcement to be subject to a hEN as it

is not included in the European Commission's mandate. It should be noted, however, that some reinforcement accessories are subject to CE marking and designers and specifiers are advised to check accordingly.

When in the future CE marking becomes a requirement for steel reinforcement, the sector will be able to offer the best of both worlds: quality assurance supported by product conformity.



*Punching shear systems should be CARES approved*

## WHAT ABOUT REINFORCEMENT ACCESSORIES?

Gerhard Bume of BAR member Max Franks explains the CE marking situation for punching shear systems.

Punching shear reinforcement is currently not covered by a harmonised European standard (hEN). Therefore, CE marking is not required. However, CE status - of a sort - can be achieved voluntarily via a European Assessment Document (EAD) but this route only states conformity with the EAD it is not an actual quality mark and gives no quality assurance as provided by CARES certification. As a structural component punching shear systems must be designed to BS EN 1992-1-1 Eurocode 2 and the appropriate National Annex. These refer to design and not quality.

For that reference must be made to the National Structural Concrete Specification for Building Construction (NSCS 4) which states: "all punching shear reinforcement system manufacturers shall hold a valid Technical Approval certificate issued by CARES" to ensure the product's quality and traceability. It should be noted that none of the just CE marked punching shear systems comply with CARES requirements. For reinforced quality assurance the industry advice is seek CARES approved products.

# ABERDEEN WESTERN PERIPHERAL ROUTE BALMEDIE TO TIPPERTY USE

Following its approval by Scottish Ministers in 2009, construction began in 2015 on the Aberdeen Western Peripheral Route (AWPR), one of the largest infrastructure projects in Scotland. The project set out to update one of the busiest routes in North-East Scotland in the hope of delivering a safe, efficient and cost-effective transport solution for the region. The new road will be 58km long and is expected to open early 2018.

Aberdeen is situated at the intersection of a number of major roads, including the A90 and A96 trunk roads, which currently channel heavy traffic and pollution into the city centre. The existing Balmedie to Tipperty single-carriageway road is a bottleneck, especially at peak times of day when over 22,000 vehicles can join the morning commute.

From the outset of this project, there has been a significant commitment to sustainability, responsible sourcing and carbon emissions management. The use of strong, sustainable and transparent supply chains has been of particular importance; as well as the adoption

of Responsible Sourcing Principles that follow BES 6001 - The Framework Standard for the Responsible Sourcing of Construction Products.

In total, 33,000 tonnes of responsibly sourced reinforcing steel has been supplied to this project. All of the reinforcing steel that has been supplied to this project has been produced by CELSA Steel UK at their Cardiff facilities, meaning that all of the steel for this project will be 100% UK sourced and contain a 98% recycled content.

These credentials, coupled with the fact that this material is certified to both BES 6001 and Eco-Reinforcement help to provide the customer with that extra bit of confidence that their material has been responsibly sourced.

This project will bring substantial benefits to the whole of the north east of Scotland. The economic impact alone is expected to bring over £6 billion to the area, as well as 14,000 jobs over the next three decades. Additionally, new business investment is anticipated to bring in £105 million and 600 jobs in that period.

For further information visit: [www.celsauk.com](http://www.celsauk.com)



ROM Group has supplied 1,300 tonnes of piling into the new 92,000 square metre Google Headquarters in London. This historic project is being described as a "landscaper" as it is as long as the Shard is tall.

Designed by Bjarke Ingels Group and Heatherwick Studios, the team behind Transport for London's New Bus for London and the 2012 Olympic Cauldron, the building will stand 11 storeys tall and stretch parallel to the platforms of London's King's Cross railway station.

Floor plans for the building show a "wellness centre" containing gyms, massage rooms a narrow swimming

pool and multi-use indoor sports pitch, and a rooftop garden split over multiple storeys and themed around three areas: a "plateau", "gardens" and "fields", planted with strawberries, gooseberries and sage.

A 200-metre-long "trim trail" runs through the roof, while employees can grab food in one of four cafes, including a "promenade" with views of the station.

For further information visit: [www.rom.com](http://www.rom.com)

# GUIDANCE FOR SAFE OFF-LOADING OF REINFORCEMENT

Updated guidance on 'The Safe Off-loading of Reinforcement Fabric' has been published by the British Association of Reinforcement [BAR].

Aimed at reinforcement suppliers, drivers, stockists and construction customers, the guide outlines best practice for all those involved with the off-loading of bundles of reinforcement fabric from delivery vehicles. In particular, it covers the preparation of the load for off-loading by the delivery driver and the safe working procedures for site staff when off-loading reinforcement bundles from the delivery vehicle. The guidance has been peer reviewed by CONSTRUCT – the concrete contractors association.

The comprehensive guide covers a wide range of potential hazards and explains how they may be best avoided. It covers lifting equipment and attachment methods only and highlights other statutory safety requirements such as never lift over people and always wear suitable personal protective equipment and clothing.

"Best practice guidance: The safe off-loading of reinforcement fabric" is available as a free download from: [www.uk-bar.org](http://www.uk-bar.org)

## REVISED REINFORCEMENT TOOLKIT

BAR as revised and updated its acclaimed reinforcement. The toolkit provides information on the design and detailing of reinforced concrete structures. It is intended to be used by engineers and technicians of all levels for scheme design and standard detailing guidance and the information provided works in tandem with current British and European standards outlined opposite.

Copies of the toolkit may be downloaded free from the BAR website: [www.uk-bar.org](http://www.uk-bar.org)

- BS 8110 Design - Shear; BS 8110 Design – Flexure
- BS 8110 Design - Axial; BS 8110 Design – Deflection
- EC2 Design - Flexure; EC2 Design – Shear
- EC2 Design - Axial; EC2 Design – Deflection
- Rebar tables BS8666: 2005 - user guide
- Rebar tables BS8666; 2005 - user guide
- BS8666: 2005 standard shapes 00-32; BS8666:20 standard shapes 33-39

## BAR/HSE NOISE INITIATIVE

BAR is working with the Health and Safety Executive [HSE] on a new reinforcement industry initiative to reduce the noise from shear line machines. It is proposed to develop industry guidance that will cover the expected noise risk and required noise control measures, how to be an informed plant purchaser when refurbishing or replacing shearline machinery and forward a range of noise control methods for existing machines.

It is hoped that the development of this guidance will lead to plant suppliers introducing higher levels of noise control as standard and assist BAR members in their compliance with the Control of Noise at Work Regulations 2005.



ArcelorMittal

# TIDEWAY EAST – A BEACON PROJECT FOR COOPERATIVE WORKING

Early engagement between the delivery Team at Costain/Vinci Construction Grands Projects/Bachy Soletanche Joint Venture [CVB JV] for Chambers Wharf at Greenwich Pumping Station CHAW and the specialist reinforcement cage supplier ArcelorMittal Construction Solutions [AMCS] resulted in efficiencies in both the supply and installation of the diaphragm wall reinforcement cages for the two shafts.

Following a pre-qualification and competitive tendering process, AMCS were appointed to be the prefabricated reinforcement supplier for both these shafts in May 2017 despite first panel construction was not anticipated until August 2017. The resultant pre-construction period was constructively used by the parties to hold a number of knowledge sharing and technical workshops to develop best practice for:

- Safety in fabrication, handling and installation
- Standardisation for fabrication efficiency
- Fabrication practices
- Quality Inspection
- Records and traceability
- Installation practice
- Stevedoring and handling at AMCS Chatham Dock
- Marine transit, delivery and safe offloading at Chambers Wharf



Upon receipt of the CVB design intent drawings, AMCS produced 3D models of the panels and the individual cage sections to identify all potential reinforcement clashes, to optimise the fabrication layouts and to ensure that the fabricated sections would join seamlessly, quickly and safely on site. The models were used by AMCS engineers to develop bespoke fabrication methods that ensured accurate placement of bars in the individual sections and guarantee seamless “over the hole” connection on site.

Special attention was given to the detailing of the cage joining areas to enable the connections be affected using the AMCS Quick Splice System [patent pending]. A series of “Operator Workshops” were conducted to impress upon the fabrication crews the implications of loose items being inadvertently left in cages and to properly brief the installation operatives on the correct methodology for connecting the cages and the application of the AMCS Quick Splice System.

AMCS sister company, Total Ship Services [TSS] worked closely with CVB logistics to develop method statements, passage plans and risk assessments for the marine transport of the cages between the ArcelorMittal facility at Chatham Docks and the Chambers Wharf site. This provided for the barges, upon arrival at site to be manned by TSS personnel to sling the cages and eliminate the risks associated with having to have site personnel board the barges at site to carry out this function.

The cooperative spirit engendered between the parties, extended to the client QA department and designers, the frequent meetings and brainstorming sessions at both the fabrication facility and the installation site ensured that potential improvements were identified, addressed and actioned throughout the fabrication process.

One notable improvement introduced as a consequence of this process was the modification of the details to enable the GFRP [Soft Eye] panel sections be connected to the adjacent steel sections using AMCS Quick Splice System. In turn, this allowed these often problematic connections to be carried out on site with a fraction of the manpower, in record times and with significantly reduced potential for entrapment or manual handling injury.

Altogether this knowledge sharing process has resulted in:

- Quick, efficient and safe manufacture, handling, storage and transportation of cages to site
- Availability of Quality Assured cages ensured no lost programme time due to reinforcement issues
- Significantly increased speed of installation of cages on site
- The development of an expertise sharing culture that is anticipated will generate further innovation on the next phases of the project

For further information visit:

[www.arcelormittalkentwire.co.uk](http://www.arcelormittalkentwire.co.uk)

# BIRMINGHAM UNITES



Birmingham's Eastside is an area of thriving growth, with the advantage of being close to the city and well connected in terms of infrastructure. Unite the Union decided to build a £35M complex at Birmingham Science Park, to be used as office, hotel and conference centre for up to 1000 delegates. The new buildings form part of the existing Holt Court, which prior to the development consisted of four office buildings grouped around a landscaped courtyard. The most southerly building was demolished in order for this development to commence. The site was formerly an area of 18th and 19th century domestic and small-scale industrial buildings, whose expansion was supported by the construction of the canal in 1790.

The seven-storey hotel was designed as a flat slab concrete frame. This method of construction is widely used nowadays, for its speed and efficiency. However,

the challenge arising with this method is the issue of punching shear around the columns, the danger of having the columns punching through the slabs. An industry acknowledged solution for this is the use of double headed studs on rails. These are placed around the columns within the reinforcement mats, to increase the shear resistance of the slab. With the support of MAX FRANK design software, the design and detailing of the punching shear solution was a quick process. In difficult cases the MAX FRANK technical team provide the project engineer with timely design support. The dxf output of the software can easily be integrated into structural drawings.

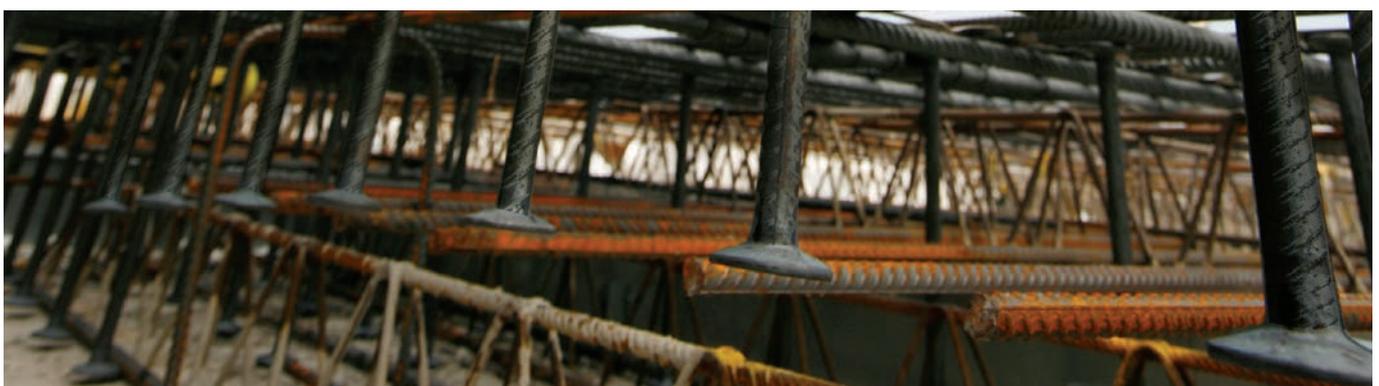
The software is supported with CPD's and workshops at the engineers' premises to examine various design options.

For further information visit: [www.maxfrank.co.uk](http://www.maxfrank.co.uk)

MAX FRANK Shearail® punching shear reinforcement is the only system available on the market which holds both CARES and BBA approval, demonstrating the technical benefit of the product. For Northfield Construction, the contractor erecting the concrete frame in Birmingham for Unite, the use of Shearail® was a clear benefit.

**“The engineers’ specification of Shearail® allowed us to save a considerable amount of time. Shearail® is much easier to place than traditional “bob and hook” reinforcement. The installation drawings are easy to understand, the product is clearly labelled and we therefore can ensure that no mistakes in installation are made.”**

The products used on this project ranged from 10mm pins to 20mm pins in variable length, bigger sized 25mm pins are available, but were not required. The product is manufactured in the UK under CARES surveillance to ensure its quality. However, as this case study shows, the ultimate success and quality of a construction project comes from the successful collaboration between all parties involved – engineering project team, site crew and MAX FRANK ensured a smooth process from design through to delivery and installation.



# OUTOKUMPU CELEBRATING 40 YEARS AND LOOKING TO THE FUTURE

BAR member stainless steel producer Outokumpu has celebrated its 40th anniversary at its melting and casting operations at SMACC in Sheffield. The first stainless steel melt at SMACC was done at the end of November 1977. SMACC started its operations under British Steel Stainless, that merged later to form Avesta Sheffield, Avesta Polarit and became part of Outokumpu in 2004. The production capability has developed through investments from mainly slab casting to producing primarily concast billets, blooms and cast ingots. SMACC stands for Sheffield Melting and Continuous Casting and was given to the operations originally as a project name.

SMACC is part of the Long Products Business Area, and focusses on producing highly tailored stainless steel for demanding end-use applications, such as the oil and gas, nuclear and chemical industries to name but a few. The yearly production volumes at Outokumpu in the UK are approximately 300,000 tonnes of stainless steel and the company has 500 employees.

Not content to rest on its laurels of a century of experience in creating efficient, long-lasting, recyclable stainless steels, Outokumpu is part of a European joint project to gear up the future competitiveness of the steel industry. The four-year Morse project aims to

improve products, business operations, competitiveness as well as energy and resource efficiency of the European steel industry. Morse comes from the words “model-based optimization for efficient use of resources and energy”, and the main focus is improving software tools. Companies will work together to develop even better tools for the improvement of steel quality and the management of complex processes, look for new ways to manage the entire production chain and reduce both the consumption of energy and raw materials and minimise yield losses.

The project is headed by VTT. Besides Outokumpu, other participants are SSAB Europe Oy and SW-Development Oy from Finland, BFI and GRIPS Industrial IT Solutions GmbH from Germany, Cybernetica AS from Norway, MFL steel foundry from Austria and software company Idener from Spain. The project is funded by the European Union together with the participants.

“The pedigree of Outokumpu is demonstrated by our successful 40 years at Sheffield”, said Stephen Jones, Rebar Commercial Manager at Outokumpu. “The joint European project confirms our commitment to ongoing product and process improvement.”

For further information visit: [www.outokumpu.com](http://www.outokumpu.com)

## RFA-TECH LAUNCHES INNOVATIVE CUSTOMER PORTAL

BAR member RFA-Tech are always striving to introduce new and innovative products and services for their customers. Following two years of software development, the company has introduced the first phase of its Customer Portal. The Customer Portal has been designed to ensure ease and accessibility for all of RFA-Tech customers. It provides customers with online access to information on their orders 24-hours a day on a real-time basis.

The Customer Portal can be accessed via the web-site [www.rfa-tech.co.uk](http://www.rfa-tech.co.uk). Each customer user is given their own unique login which allows them access to see their information only.

The key information available on the Customer Portal for all customer orders includes the following:

### Information on Order Status –

- Order Received
- Shipment Planned
- Goods Dispatched

### Important Documentation –

- Order Acknowledgements
- Invoices
- Dispatch Notes
- Signed Proof of Delivery

Following the launch of the Customer Portal, customer feedback has been extremely positive with a large number of key contractors signing up for access as they appreciate the time-saving benefits this offers them. RFA-Tech are currently engaging with customers to assess how the Customer Portal can continually be developed to increase the level of digital interaction and hence further enhance their overall experience.

For further information visit: [www.rfa-tech.co.uk](http://www.rfa-tech.co.uk)



# FIRST FOR BRC

Following recertification by BRE, BRC Reinforcement, the largest reinforcing steel fabricator in the UK, has become the first to achieve “Very Good” rating to the sector scheme Responsible Sourcing Standard. Eco Reinforcement and the Framework Standard for the Responsible Sourcing of construction products, BES 6001.

This was achieved through BRC aligning their robust and proactive management systems and KPI’s to the stringent requirements of both responsible sourcing standards.

As part of this achievement, the Company has also increased their contact with local communities around all of its operating facilities in the UK, to ensure that it is regularly engaging with community stakeholders regarding its operations and activities.

This is a significant milestone for the business as BRC was the first fabricator to be certified to these Standards in 2010.

“BRC is proud to be the first, and only reinforcing steel fabricator to achieve “Very Good” rating to Eco Reinforcement & BES 6001,” said John Collins, BRC Managing Director. “Yet again BRC is leading the way in demonstrating their commitment to responsible sourcing and sustainability principles which has become an increasingly important topic within the construction sector.”

Kevin Lloyd, Environment, Health and Safety Manager for BRC commented: “This is a great achievement for everyone involved. We have taken on board comments from the auditors and we have already started to implement a number of measures ahead of next year’s audit, with the aim of securing an ‘Excellent’ rating in both standards.”

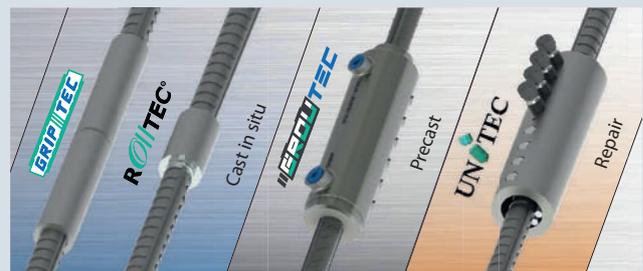
For further information visit:  
[www.brc-reinforcement.co.uk](http://www.brc-reinforcement.co.uk)

# WORLD LEADER IN MECHANICAL REBAR SPLICES

Established in 1983, Dextra is a leading manufacturer and distributor of mechanical rebar splicing systems, otherwise known as rebar couplers, for the building and civil works industries.

Dextra couplers are used every day in concrete building and civil infrastructure projects in the UK as well as in virtually every corner of the world and have been accredited by major independent regulatory bodies throughout the world. ISO 9001-certified since 1996 and ASME-certified since 2009, Dextra have always put quality first. In the UK, Dextra couplers have been granted seven independent certificates of approval by the UK Certification Authority for Reinforcing Steels [CARES].

Dextra is one of the few providers of rebar coupler systems that still manufactures its own couplers. Furthermore, all Dextra’s machines for the processing of rebar ends to suit the couplers, are fully designed and manufactured in house by Dextra.



*Couplers are available for cast in situ, precast and repair*

Recent high-profile projects in the UK include Crossrail, Southbank Place, 1 Blackfriars and Battersea Power Station, to name but a few.

For further information visit: [www.dextragroup.com](http://www.dextragroup.com)

# OFFSHORE REINFORCEMENT

As a global market leader in offshore wind, the UK is currently home to the world's largest offshore wind portfolio in a stable regulatory environment. By 2020, the UK offshore wind sector is on track to deliver 10GW, representing the largest expansion in any class of renewable energy technology.



As part of this sector development, Express Reinforcements have been working with contractors, designers and engineers to provide reinforced steel solutions for steel gravity based-foundations (GBF) which are likely to become increasingly popular offshore wind option.

One project in particular that has championed the use of these GBFs has been the Blyth Offshore Windfarm with an initial five wind turbines having a total generating capacity of 41.5MW installed 6.5km off the coast of Blyth in North-East England. Once operational, they will generate enough low carbon electricity to power around 34,000 homes.

Whereas traditional methods of constructing wind turbines have used either a tripod or monopile base, Blyth will use GBFs which use the innovative 'float and submerge' method, which means that the GBFs have been floated out to sea, and then submerged into a position so that they are just resting on top of the sea bed.

Once in place, the GBF is filled with sand to enable the foundation to rest securely on the sea bed to provide the appropriate support structure that will act as the foundation for the installation of the wind turbines. When each GBF is fully installed, they will weigh 15,000 tonnes. It is estimated that these turbines will save around 57,600 tonnes of CO2 emissions each year.

Express Reinforcements provided over 3,000 tonnes of responsibly sourced reinforcing steel to be used for the five GBFs. As the UK's offshore wind sector continues to grow, Express Reinforcements are continuing to work closely with industry experts regarding further utilising GBFs in future projects.

For further information visit:

**[www.expressreinforcements.co.uk](http://www.expressreinforcements.co.uk)**

# WELDING COMPLIANCE

BAR members are leading the reinforcement sector's investment in operative training to ensure full compliance with the new Responsible Welding Coordinator and Company Welding Coordinator requirements.

The requirements were brought in by BS EN 17660 Parts 1 and 2: 2008 which called for fabricators undertaking reinforcement welding to have a suitably qualified welding co-ordinator, BS 8548: 2017 'Guidance for arc welding of reinforcing steel' and the issue by CARES of new Appendices 11 and 12 to their Steel for the Reinforcement of Concrete Scheme. Between them these documents set out a more robust structure of qualifications for the control of reinforcing welding processes in order to ensure product quality. They have been prompted by the continued growth in the specification of pre-assembled welded fabrications.

Reinforcing steel bars manufactured to the requirements of BS 4449 and BS 4482 are produced by a number of different process routes. These include: typically quenched and self-tempered; cold reduced and micro-alloyed steel. The welding of steel reinforcement calls for a specific level of skill and job knowledge, both for the welder and for the organisation overseeing and controlling the whole process, from steel purchasing to eventual customer supply. The specific requirements for steel reinforcement welding are set out in BS EN ISO 17660 while BS 8548 provides general guidance and includes information on the avoidance of potential problems.

Cares Scheme Appendix 11 and 12 require all rebar fabricators to appoint a Responsible Welding Co-ordinator to act on their behalf. This co-ordinator is responsible for ensuring that the quality management systems and weld procedures are maintained to the standards set out in the relevant technical specifications.



# RAISING THE BAR



[www.uk-bar.org](http://www.uk-bar.org)

BAR members are fully supportive of the Association's objectives aimed at raising the bar for the UK reinforcement sector by:

- Providing a forum in which common issues facing the UK reinforcement industry can be addressed.
- Forwarding and supporting the market share of reinforced concrete against competitive structural materials.
- The Association cannot dictate material sourcing but expects its members to, wherever possible, to forward and support the UK steel and reinforcement sectors.
- Improving overall quality of the product and service within the UK reinforcement industry, through representation on the Board of CARES (Certification Authority for Reinforcing Steels) and on relevant BSI Technical Committees.
- Improving the health and safety record of the UK reinforcement industry.
- Improving the environmental record of the UK reinforcement industry.
- Actively promoting the UK reinforcement industry's products and capabilities to relevant target audiences.
- Representing the UK reinforcement industry with HM Government, in Europe and with other decision makers.

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# REINFORCE

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