

LIQUID WATERPROOFING

2019

ROOFS CAR PARKS BALCONIES WALKWAYS COATINGS

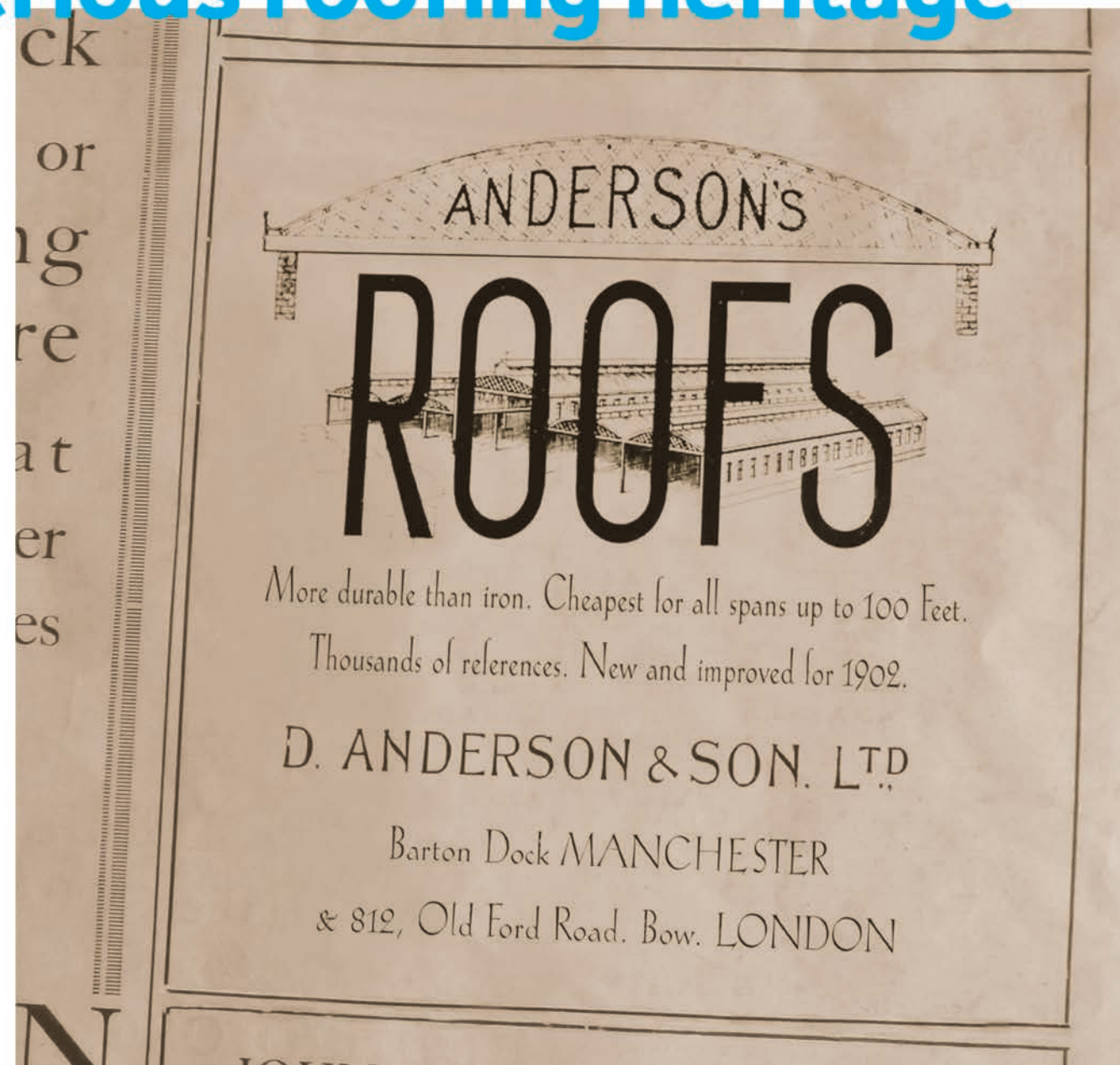


TECHNICAL ARTICLES
PROJECT INSTALLATIONS
CASE STUDIES

ROOFING
TODAY

in
association with
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Liquid Roofing and
Waterproofing Association

New name, serious roofing heritage



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Providing total roofing solutions



Sarah Spink, CEO

Foreword

Liquid Roofing and
Waterproofing Association
www.lrwa.org.uk

In the LRWA's 40th year, we are delighted to once again be contributing to the Liquid Waterproofing Supplement and helping to showcase our sector's products and people.

We are incredibly proud of our sector, which continues to rapidly grow as more contractors and specifiers now recognise the versatility of liquids. In many cases, the same liquid membrane used on a roof can also be used with ancillary products on a car park, balcony, wall and sometimes bridges. As this supplement shows, this versatility is resulting in lots of diverse and impressive projects all over the UK.

As we are celebrating our 40th anniversary, we have taken the opportunity this year to enlighten readers on the rich history of liquids and how the association has evolved over the last four decades.

With so much change happening across the

construction sector, we also guide you through some of the most important developments and how your business could be affected. These changes have been triggered by the devastating Grenfell tragedy in 2017 and follow the independent review of building regulations and fire safety, led by Dame Judith Hackitt.

In May 2018, Dame Hackitt's final report was published (Building a Safer Future) which set out 53 recommendations for government as to how to deliver a more robust regulatory system. It is only now that the impact of this is starting to be felt by clients, specifiers, product manufacturers and contractors.

Several of the report's recommendations relate to construction products, with a focus on product competency – a theme which we discuss in detail and provide readers with technical guidance and independent advice.

New measures are being designed to prevent the use of inappropriate products, and combinations, which could not only damage buildings, but put people's lives at risk. These include the development of a new framework that would establish mandatory requirements for the industry within the next five years and result in sanctions for those who fail to meet the new standards.

These will also help to stop value engineering – an issue that product manufacturers have long struggled to defend because the phrase 'equal or approved' can be used in a specification even though the person substituting that product won't know if the system will still perform as expected in a real scenario, such as a fire.

We also discuss the importance of nationally recognised qualifications in achieving a fully qualified workforce to install products. Specifying the right product

and ensuring it is properly accredited must go hand in hand with the right training. Despite this, there is no mandatory requirement for roofing qualifications in the UK, so it is notoriously difficult to ensure all operatives work at the same level.

Overcoming this challenge will require everyone in the supply chain to work more closely together so we can all help to raise standards. It is my hope that we can find a way in the industry to work together to address this issue.

Although significant change lies ahead, we must not lose sight of the fact that long-term, this will have a positive impact across the whole of the construction sector, helping to raise standards even higher.

And as an association we will continue to work closely with our members to ensure they are fully prepared to manage any future change and that the liquids industry can continue to thrive.



40 Years of Liquids: Looking Back, and To the Future



Remember any of these? The evolution of the LRWA is demonstrated by the logos of the association's predecessor organisations, right up to the present day.



The Liquid Roofing and Waterproofing Association (LRWA) is celebrating turning 40 this year. CEO, Sarah Spink, reflects on how the association has evolved and what the future holds.

It is our 40th year as an association and it is also our busiest and most exciting.

From the launch of our first Dragon Boat Regatta in May through to hosting our third LRWA Awards and Gala Dinner later this year, we are continuing to raise the profile of the liquids sector and support charitable causes. At the same time, we are helping our members to manage the impact of major industry changes through our involvement in several initiatives, and we have a number of new projects in the pipeline.

This diverse activity reflects the association's considerable evolution over the last four decades, which has been shaped by the rich history of liquid waterproofing.

Looking Back

There's often a misconception that liquid waterproofing is a recent development, but a combination of natural bitumen and various fillers, such as sand, was used to waterproof roofs as early as the 1820s. By the late 1800s, natural bitumen was being specified extensively, applied as a liquid with reinforcement layers using jute, straw, rag felt and other, man-made, materials.

The benefits of liquid waterproofing were also evident during the Second World War. Hermann Simon, a Doctor of Chemical Engineering, who went on to become the Chairman of Evode Holdings, developed a bitumen emulsion formula for the UK Government.

The breathable coating proved vital for waterproofing emergency water storage tanks for the fire service, and following the threat of biological warfare, was then used to waterproof and coat food stores.

Fast forward to the 1970s, and the benefits of bitumen coatings meant they were being used for a variety of waterproofing projects. However, this growth also began to trigger some negative perceptions of liquid manufacturers. Many products were being sold over trade counters to roofing contractors who were not applying them correctly or to the required specification leading to reports of failing roofs and subsequent bad publicity.

A Force for Change

These issues were the drivers behind the launch of the Bitumen Roof Coatings Manufacturers Association (BROCMA) in 1979. The brainchild of Anthony Cobbold, the Chairman of Evode Roofing (now Hyflex Roofing), BROCMA was formed to help improve the sector's reputation and develop initiatives that would raise standards of workmanship.

The association was reinvented as the European Liquid Roofing Association (ELRA) in the early 1990s, in-line with the growth in non-bituminous products. It also began to be recognised as an industry voice with an active role in drafting European standards. This included helping to write the European Technical Approval Guidelines (ETAG) for liquid applied waterproofing kits, with the association representing the UK alongside the British Board of Agreement (BBA).

In 2005, the ELRA evolved into the European Liquid Waterproofing Association (ELWA) to reflect the wider markets that liquid waterproofing was being used in such as car parks.



Above and right: There's often a misconception that liquid waterproofing is a recent development, but this Liquid Plastics and Uniroyal marketing material shows the technology's long-standing history.



"The liquid-applied roofing sector has grown by more than 30 per cent since 2013, making it the fastest growing part of the flat roofing market."

As the liquids market continued to grow at pace, the association refocused to include roofing and re-launched in 2010 to become the Liquid Roofing and Waterproofing Association (LRWA).

Liquid Progression

The association now represents a total of 11 different technologies, including polymer modified bitumen emulsions, glass reinforced resilient unsaturated polyester resins (GRP), flexible polyesters, polyurethanes, poly methyl methacrylates (PMMA), methyl methacrylates (MMA), other acrylics, polyureas, thermoplastic block copolymers, hot applied polymer modified bitumens (hot

melt), and silane terminated polyethers, one of the latest innovations in liquid waterproofing.

Every product has its place in the market and quality application is crucial. Ranging from highly specialised systems through to those sold through merchants, liquids are truly versatile as demonstrated by their use across a vast range of applications including roofs (domestic, large commercial and metal), car parks, balconies, walls, bridges and walkways.

This versatility has fuelled the expansion of the sector as highlighted by the LRWA's research in 2017. This revealed that the liquid-applied roofing sector has grown by more than 30 per cent since 2013, making it the fastest growing part of the flat roofing market.

This growth has since continued as reflected in the LRWA's membership. There are currently 26 manufacturer members compared to 16 in 2013. We also have associates plus a rapidly rising number of contractors, representing the fastest growing part of our membership.

Future Goals

As technology continues to advance, there is no reason why the liquids sector can't maintain this level of growth and success. As an association, we will also continue to evolve and adapt to deliver our aim. In less than a decade, this has already seen our structure change, expanding from an administrator and a technical secretary to a member-led

technical committee along with a marketing communications team, a training manager and a CEO.

This evolution will ensure we're in the strongest position to support our growing membership, be the collective voice for the industry, and provide expert guidance on industry standards and best practice.

Contact the
Liquid Roofing and
Waterproofing Association

For further information and advice call
0333 987 4581 or visit www.lrwa.org.uk





Cold Feat

The growth in the cold applied liquids market is down to ease of use and outstanding long-term performance. However, in order to achieve a great result, it's best to follow a few guidelines. Mat Woodyatt, National Training Manager, BMI UK & Ireland, considers the right approach.



Cold applied liquids are fast becoming the solution of choice, particularly in the domestic flat roofing market, as they provide quick and effective answers to both repair and refurbishment scenarios. Ideal for extending the life of tired and ageing roofs they also provide solutions for new projects as they now achieve guarantees



Blisters caused by moisture retention from a wet deck.

comparable to bitumen and single-ply membranes. This, however, as always, is dependent on the correct preparation and application of the waterproofing system by the contractor.

While that may sound obvious, the reality is that using liquids

requires the same level of expertise as any other flat roof covering. Upstands, corners and details still have to be catered for so there is still a requirement for a high level of workmanship.

Prime time

One of the many benefits of cold applied systems is that they offer speedy installation (when compared to other systems), but this doesn't necessarily imply they should be applied quickly. Far too often we see in the haste to get the job done either the wrong primer being applied or in the worst-case scenarios, no primer at all. Remember the primer is there for a reason - to penetrate and seal dusty or porous substrates. Most liquid systems have substrate-specific primers so the primer for a timber substrate may be different to the primer for a PVC membrane. Installing the incorrect primer could lead to full system de-lamination and therefore full system failure!

Dry zone

Another issue that we commonly find is the system being applied onto substrates that are still wet or damp. While the waterproofing system itself is wet on application, it does not mean the substrate

receiving the liquid can be wet too. Any retained moisture will provide a barrier between the surface and the waterproofing; this may result in pockets of un-bonded system being present which could lead to blisters and system delamination. This is not aesthetically pleasing and damage to these pockets could result in a system breach.

Made to measure

It is essential that the liquid be measured out accurately prior to application, as coverage rates will often determine guarantee lengths. If insufficient liquid is applied a guarantee may not be awarded for the project and the system itself may still be vulnerable to ingress, particularly if reinforcing fabrics are still visible beneath the liquid, which is something we still see quite regularly. The only thing worse is seeing that no carrier has been installed as this component is essential to the overall integrity of the system, helping the liquid form a solid layer that is UV protected.

In the mix

Prior to application most liquids will need to be mixed either by hand or paddle-mixed. This is to ensure that any catalyst is properly dispersed through the

liquid but beware, using the incorrect method can create bubbles which will ultimately degrade the performance of the liquid when applied to the substrate. So, check the manufacturer's instructions as to which method should be used.

“Cold applied liquids are fast becoming the solution of choice, particularly in the domestic flat roofing market, as they provide quick and effective answers to both repair and refurbishment scenarios.”

Time to cure

There are usually various curing stages, so it is also essential the manufacturer's guidance and recommendations are followed. Some products may typically

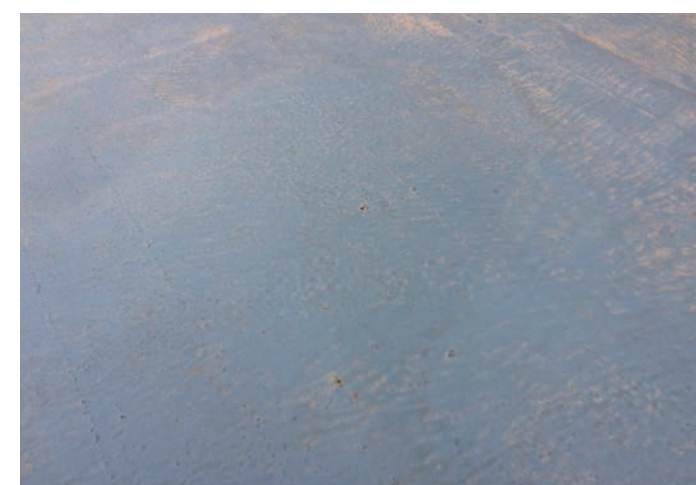
be 'rain proof' after a few hours – products such as our Enviroflex range are weatherproof after only 30 minutes – and they may be considered suitable to receive foot traffic several hours after that, but their fully cured state may not actually be achieved until 24 hours after initial application. Manufacturers may give advice on a product's colour, tackiness or odour to identify these particular stages so check the relevant literature for confirmation.

Choose wisely

With many cold applied liquid products available choosing the right one for job can be tricky. For instance, you would not use GRP for an overlay project, nor would you choose a slow curing liquid system for a walkway installation. Similarly, a solvent-based product would not be the ideal choice for a job where people are present such as a school. Making an informed choice based on existing roof surface, situation and environment is critical to achieving an outstanding result.

Attention to detail

When a liquid system is applied correctly it will provide a long lasting and durable finish with no side or head laps, which



Insufficient coverage of liquid where the grain of the fabric below can still be seen.

naturally improves its integrity. However, great care needs to be taken to ensure that application is even and that the system's performance is not impaired through poor workmanship such as poorly cut fleeces or badly cut details.

These might appear small things but inevitably will come back to cause big problems later on. Following the manufacturer's instructions will go a long way to making a good job great.

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KEMPER SYSTEM
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Kemper System Serves Up Roofing Solution for Popular Bakery

When the roof of a popular high-street bakery began to leak water into the food retail unit below, a specialist liquid waterproofing solution was required. Time-critical, the project had to be delivered quickly and efficiently to minimise disruption to shoppers and employees, and eliminate the risk of further issues in the food outlet.

Lincoln-based contractors, Metier Services Ltd, providing a durable, flexible waterproof membrane that bonded directly to the roof substrate.

Extremely durable and tear-resistant, Kemperol V210M also has excellent crack bridging capabilities and can accommodate structural details and penetrations without the need for additional mechanical fixings.



A Safe and Durable Refurbishment

Kemper System's Kemperol V210M was specified for the 230 sq m, single-storey roof which was leaking due to failing asphalt. The polyester-based system was installed in a single process by

Paul Young, Managing Director at Metier Services Ltd, said: "Hot works on site was not an option because of the location of the roof within a heavily-trafficked pedestrian area, and the building was still occupied. Kemperol V210M is cold-applied, so eliminated the fire risk for staff and customers."



Ease of Application

Another benefit of the Kemperol V210M was its quick application and versatility. The fleece-reinforced, liquid waterproofing system enabled the contractors to adhere to the strict timescales and operational restrictions on-site.

As work was carried out during the winter months, contractors had shorter working days and had to contend with cold, wet weather, so a water vacuum was used to help prepare the substrate prior to application.

Rapid Curing

After cleaning the existing substrate, contractors used Kemper System's rapid curing Kempertec AC Primer before applying Kemperol V210M to the roof deck. The cold liquid resin saturates a non-woven reinforcement fleece that is tailored to the exact contours and details of the roof.

Kemper System's new, perforated fleece was used by the contractors – designed to increase the speed of resin saturation and allow trapped air to escape quicker to save time on site and further improve the ease of application.

Continued Paul Young: "The new Kemper System fleece is a fantastic innovation to the Kemperol solution. It ensures even quicker application times which was a clear advantage to us on this project."

Details on the roof including air conditioning units and outlets, were easily accommodated thanks to the versatile roller-applied Kemperol V210M liquid resin.

Overcoming Challenges

Winter working can often be challenging, but thanks to the rapid curing of the primer and quick application of the Kemperol V210M system, which is rain resistant in 30 minutes, it was an ideal choice for the challenging conditions.

Furthermore, it ensured that this sensitive site was refurbished quickly and effectively, minimising disruption for staff and the public and the risk of health and safety issues.



For more information, please contact Kemper System on +44 (0)1925 445532, email enquiries@kempersystem.co.uk, www.kempersystem.co.uk



Metal roof refurbishment systems

With over 30 years' experience in the gutter and roof sector working alongside our network of Approved Contractors, Sharmans are the UK market-leading experts in the metal roofing repair and refurbishment sector.

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We provide a comprehensive range of hands-on training programmes and system guarantees to support contractors at every stage of the process, from initial repair to full roof restoration.

Guarantees

Sharmans unique scope of proven performance and certification underpins our market leadership in the metal roof repair and refurbishment sector. Independently tested against leading rigorous industry standards, the systems have been designed to meet the challenges of the roofing environment.

With a comprehensive range of both single point and product guarantees, ranging from 10-25 years, we provide a choice of guarantees to match your project needs.

Guaranteed system performance

- ✓ **Gutter and roof systems**
- ✓ **Extend building lifecycle**
- ✓ **Nothing else comparable**
- ✓ **30+ years** tried and tested
- ✓ **Proven technologies**
- ✓ **Single point and product guarantees**



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Online pricing tool

- Online pricing tool
- Quick and easy to use
- Quotes for all our systems

Plygene® gutterline Surveying & fitting guide.

- Quick reference tool
- On mobile or desktop
- Fixing instructions
- Simple to follow

Contractor training:

Training is provided on all aspects of our systems at a choice of purpose-built training centres. The popularity of these training courses has been phenomenal as contractors choose to become part of our Approved Contractor Network.

Pre-start support:

Our Technical Support team combine in-depth product knowledge with a wealth of practical hands-on roofing experience to provide best-in-class advice and support.

Site inspection and audits:

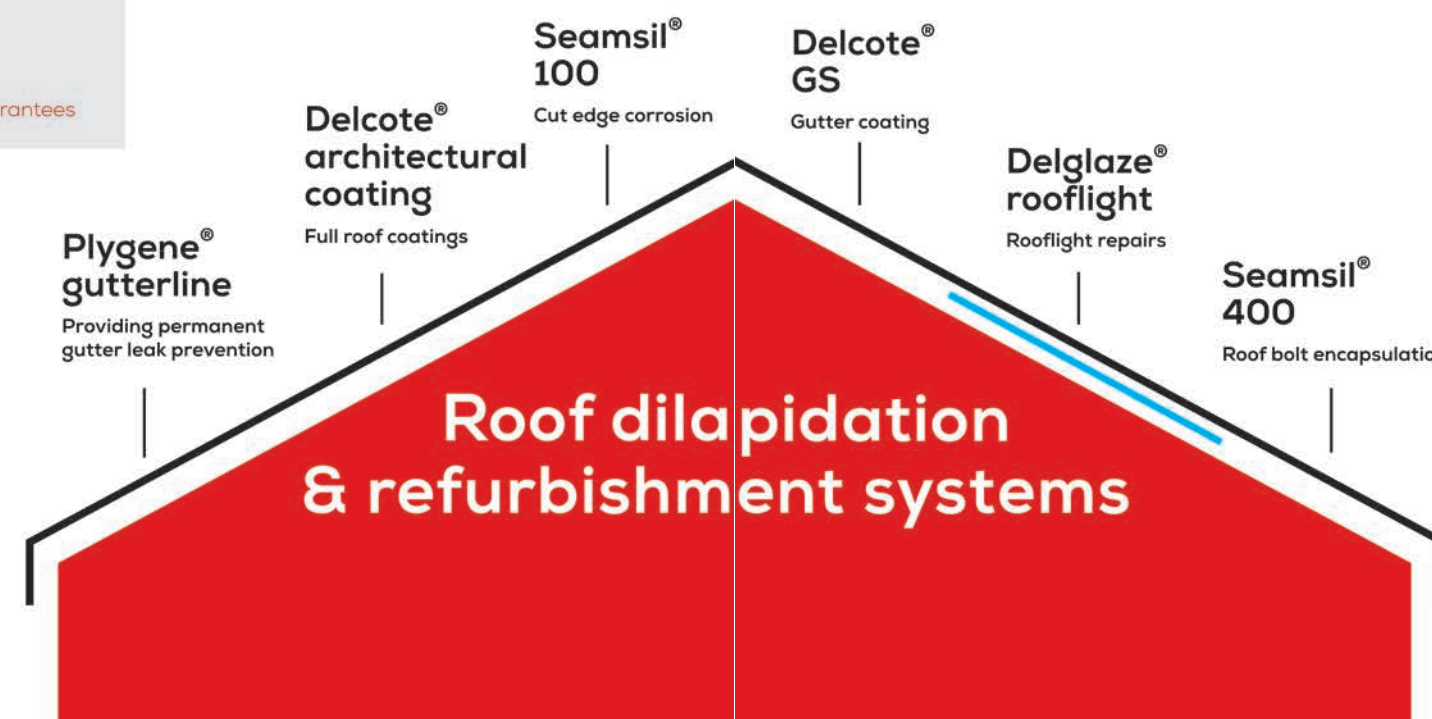
Our national team of Technical Services Managers provide site inspections and audits as an integral part of our support service.

Project management:

On major projects, we offer full project management support at every stage of the process from initial site survey right through to installation audit and inspection prior to authorising the release of the Single Point Guarantee (materials and installation/application).



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The Cursed Game of Deflection, Back Falls and the Vision of BS6229:2018

Deflection - an interesting word to describe a common amusement relating to in situ poured roof decks within concrete framed buildings and any resultant back falls that can mean the game is lost under the updated rules of BS6229:2018.

The real challenge is how to maintain a level playing field, so to speak, so that everyone wins!

So, what do we know? Well, we know that deflection is going to occur. At some point there will have been a predictive survey carried out to show where it will be, for all floors including the roof. Everyone in the project team now knows where the issues will be. Not a conundrum if deflection is present at internal floors, there are numerous solutions to level things up, but when it comes to the roof...not so many ways to resolve the challenge and a reluctance to employ any of them, for some reason. The roof also has the added issue of being exposed to the external elements and any water collecting in the deflected areas, and insulation sitting in it, then becomes an issue with more than one regulatory body. In situ concrete is poured with

tolerances for level, both positive and negative. If it was poured with mainly positive tolerance everything would be fine, unfortunately that's a rarity. The deck support structure and layout contribute to minor or major deflection. The easy choice for specifiers that are progressing the design of a concrete frame building is to keep everything flat, including the roof slab. Keeping the roof deck flat reduces costs and reduces construction time. Take falls out of the equation, especially if you have a building with numerous balconies and terraces, and the developer could save enough height per floor to gain an extra floor at the top. What developer is not going to want to achieve that? It's at this stage that deflection needs to be eliminated and ideally by the



Successfully completed hot melt system on concrete slab, Marischal Square



Andy Harper, Hot Melt Product Manager, Bauder

“Take falls out of the equation, ... and the developer could save enough height per floor to gain an extra floor at the top. What developer is not going to want to achieve that?”

concrete installer, though this repeatedly doesn't happen. The concrete installer has given the main contractor a flat deck, with areas of deflection, all of which come within his tolerances and was totally foreseeable.

Zero Falls

So, keeping the roof flat is basically creating zero falls... isn't it? Or so you would think. However, the interpretation of zero falls really depends on to whom you are talking.

And so, the next turn passes to the waterproofing company to work on the roof deck.

Most roof decks of this type will utilise an inverted roof waterproofing system, and generally one that comes with BBA certification stating it is suitable for zero falls so that it links back to the current Code of Practice and/or insurer requirements.

A typical question that we get asked pretty much every day, and even more since the publication of BS6229:2018, is this:

Your BBA certificate states that your Inverted Roof Waterproofing System (Hot Melt) is certified for zero falls, but it also makes reference to 'decks to which the system applies must comply with the relevant requirements of BS 6229:2018'. However, it does not make reference to the issue of ponding or back falls in zero fall roof situations?

Well it does, but not in those exact words.

By relating to compliance of BS 6229:2018 where zero falls are specifically defined as 'a roof with a fall between nil and 1:80'; and within section 4.4 of the standards it states that 'back falls on a roof deck are not acceptable and need correction through either an additional recessed rainwater



“Although it is a more skilled technique, and consequently more time consuming, laying the concrete to falls would reduce corrective action needed further down the line by following trades.”

outlet or localised screed to falls', so the BBA certification indicates that any deflection, back-falls etc., has either been designed out or dealt with prior to the installation of the waterproofing.

To get over the challenge of deflection and back falls, BS6229:2018 recommends that all flat roofs should be designed with a 1:40 fall to

ensure a 1:80 fall is achieved on the completed roof deck. Although not a simple task, it is possible using in situ poured concrete. One method which concrete installers could deploy is to lay the concrete slab to falls. Unfortunately, this practice seems to be something of a dying art and is rarely used. Although it is a more skilled technique, and

consequently more time consuming, laying the concrete to falls would reduce corrective action needed further down the line by following trades.

Meanwhile, on site, the roof deck has now dried out sufficiently and is ready for the waterproofing. Everyone knows where the deflections are. The roofing installer needs to be given a deck that is zero falls to comply with the waterproofing system BBA certificate and again to abide by Codes of Practice and Building Insurers requirements, but the deck does not comply with BS6229:2018.

Stalemate?

At the design stage the two elements haven't been joined up and so are in conflict and the waterproofing installer is now pressured into providing a solution to make up for the deficiencies in falls caused by builders or designers not allowing for the challenges.

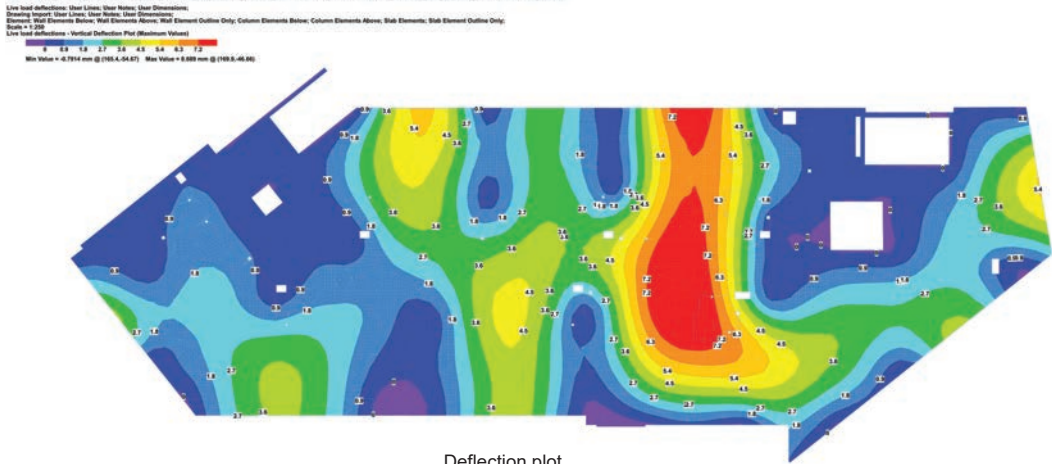
Deflection in concrete could be rectified by adding a screed to falls, but this puts pressure on upstand heights and lengthens the project due to drying out times, not to mention the additional costs.

Localised self-levelling screed could be included to take the pressure of upstand heights, but whose responsibility is that - the concrete installer or the roofing contractor? Another option could be to place outlets in deflection areas rather than where it is convenient to place them.

So, who holds the ace card to resolving the problem?

The answer is... everyone. Because a workable solution is best achieved at the design stage, which fundamentally requires dialogue between all concerned.

Live load deflections: Max Deflection Plan



Deflection plot

Your Comments

Share your views with Bauder on Twitter @BauderLtd or via email info@bauder.co.uk.





Proving Product Competence: What You Need to Know



Following the Grenfell tragedy, Sarah Spink, CEO of the Liquid Roofing and Waterproofing Association (LRWA), explains how the construction industry is changing, including the growing need to prove product competence in the roofing sector.

“Following the Grenfell Tower tragedy in June 2017, the construction industry is undergoing fundamental change and the liquid waterproofing and roofing sector must be prepared and rise to the challenge.”

Following the Grenfell Tower tragedy in June 2017, the construction industry is undergoing fundamental change and the liquid waterproofing and roofing sector must be prepared and rise to the challenge.

These changes are being driven by the Independent Review of Building Regulations and Fire Safety, which was led by Dame Judith Hackitt. Her interim report was published in December 2017 and called for a 'universal shift in culture'.

In May 2018, Dame Hackitt's final report was published (Building a Safer Future) which set out 53 recommendations for government as to how to deliver a more robust regulatory system.

Construction Products – Key Recommendations

These recommendations include several relating directly to construction products and are aimed at reforming the industry by preventing the use of inappropriate products, and combinations, which could not only damage buildings, but put people's lives at risk.

This will require various measures to be implemented over the next five years, including clearer, and more effective, testing and specification. Crucially, this will apply to individual products and those that are put together as a system, such as roofing.

The report also states the need for clearer statements on what systems products can, and cannot, be used for. This move is aimed at significantly reducing the scope for substituting products that are used in a system without further full testing and will make it unacceptable for specifiers to revert to old specifications.

Linked to this, the report stresses that information relating to testing, the application of products in systems and the resulting implications must be more clearly communicated in plain, consistent, non- technical language.

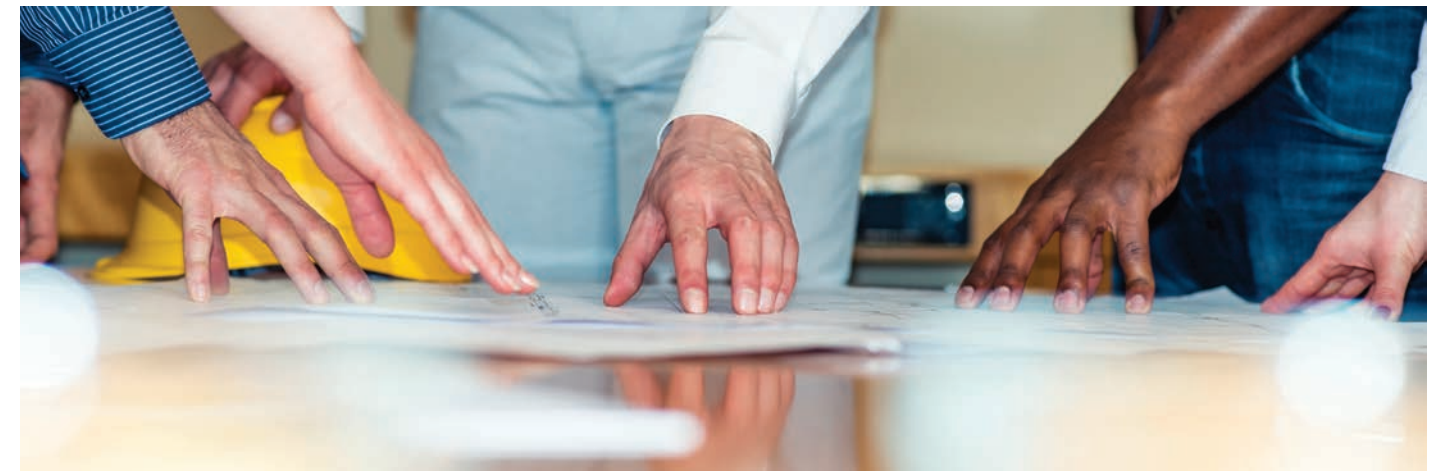
Proving Product Competence

Since the publication of the final report just over a year ago and in response to these recommendations, a considerable amount of work has been undertaken relating to construction products.

Led by the Construction Products Association (CPA), a number of working groups have been created to help meet the challenges set for the industry. These include the Industry Response Working Group 12 (Products) in which the LRWA, alongside the Single Ply Roofing Association (SPRA), are representing the flat roofing sector.

Through the work of this group, proposals are progressing that will drive the construction

“The report also states the need for clearer statements on what systems products can, and cannot, be used for.”



industry, including the roofing sector, to raise standards with a focus on product competency. Product competency is complex but in simple terms can be defined as 'an ability to apply knowledge and skills to achieve intended results.'

All those involved in choosing, deploying, maintaining and interacting with products from conception through to the end of an asset's life, will be affected by product competency improvements. That means that it won't just be manufacturers, specifiers and contractors affected but everyone in a product supply chain, including procurement managers, sales staff and marketers.

The proposals include a new competency framework for

product testing, design, procurement, installation and maintenance of all construction products, including roofing systems. This will be used to assess every individual involved in a product decision for a project to ensure they have the right levels of competency and understanding for their role.

Demonstrating competency will involve more than just training and different levels will be required depending on an individual's job. For example, those performing more critical roles in a construction project should be able to demonstrate more knowledge and experience of the potential outcomes of product interactions, and have the right attitude and skills to correctly respond to them.

To tackle growing concerns regarding the way product information is communicated, which could also affect competence, a Marketing Integrity Group is planning to develop a new Standard for marketing and technical information. The aim is for this to be adopted across the construction industry, including roofing, to significantly reduce the risk of products being mis-sold through manufacturers' misleading marketing claims.

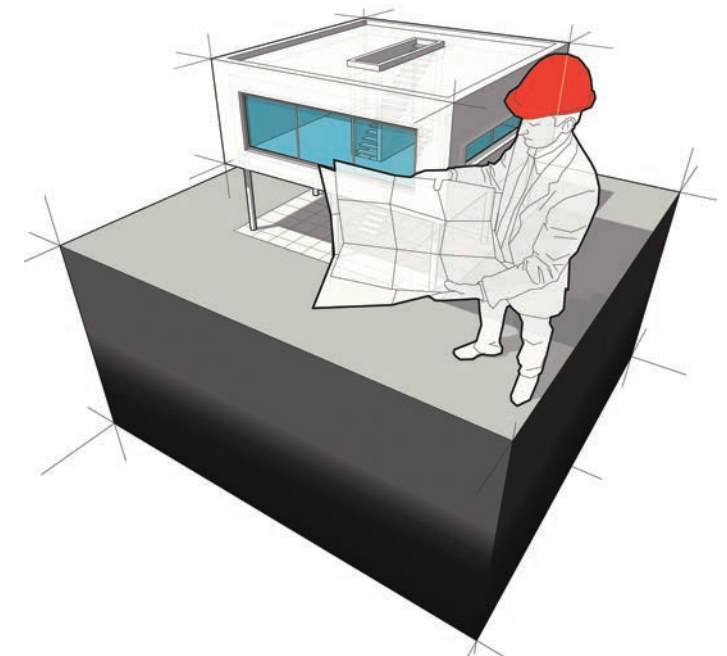
Time to Act Now

Product competency proposals, including the new framework, are being developed with a view to establishing mandatory requirements for the industry within the next five years. This would mean that anyone who failed to meet the new standards would face sanctions.

To prepare for such change, the liquids sector must move quickly. There is still a huge job to be done in terms of changing mindsets and cultures to help support the drive for product competency and we all have a role to play in that. This should be supported by further investments in product training for all staff and more stringent approaches to testing. For example, manufacturers should ensure they have fire tests on worst-case combustible

substrates to establish how their waterproofing products would perform in a more realistic scenario.

Ultimately, everyone in the construction sector will have a responsibility to ensure that products have been appropriately tested and are suitable for the application as intended, so must act now to ensure they are prepared for what lies ahead.



Contact the Liquid Roofing and Waterproofing Association

For further information and advice call 0333 987 4581 or visit www.lrwa.org.uk





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Langley Provides Safe and Swift Liquid System for Blake House Refurbishment

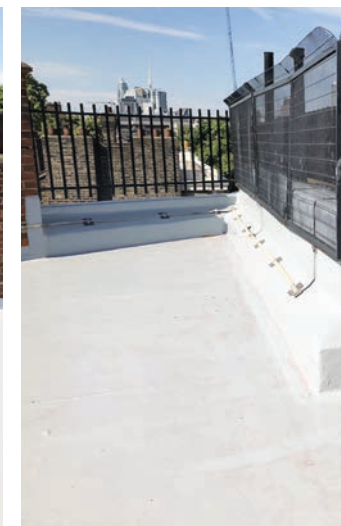
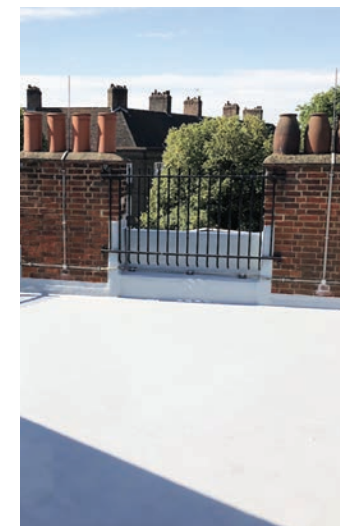
For the refurbishment of the roof on Blake House, a local authority owned housing development in Lambeth, Langley Waterproofing Systems' Paracoat Cold Polyurea Liquid Balcony and Walkway System was used to provide a safe, reliable and quick to apply waterproofing solution that would help minimise disruption for residents.

Blake House, built in 1922, is part of the William Blake Estate. Located in the London Borough of Lambeth, the property and estate takes its name from the famous poet and artist who lived in the area at the end of 18th Century.

Although the existing flat roof had not suffered any serious failures, roofing contractor M.H. Goldsmith & Sons was tasked with renewing and upgrading it as part of a program of planned remedial work. The refurbishment included the 900 square metre roof area, which is accessible for residents to

use as an outdoor space and amenity area. As well as renewing the waterproofing system, the concrete tiles were also replaced with rubber walkway tiles to provide an all weather surface for users.

Dennis Goldsmith, Director at M.H. Goldsmith & Sons, explained: "We needed a waterproofing system that could be applied quickly and efficiently but would also provide a high level of durability. As the residents would remain in the building throughout the work it was also important to ensure complete safety and minimise disruption.

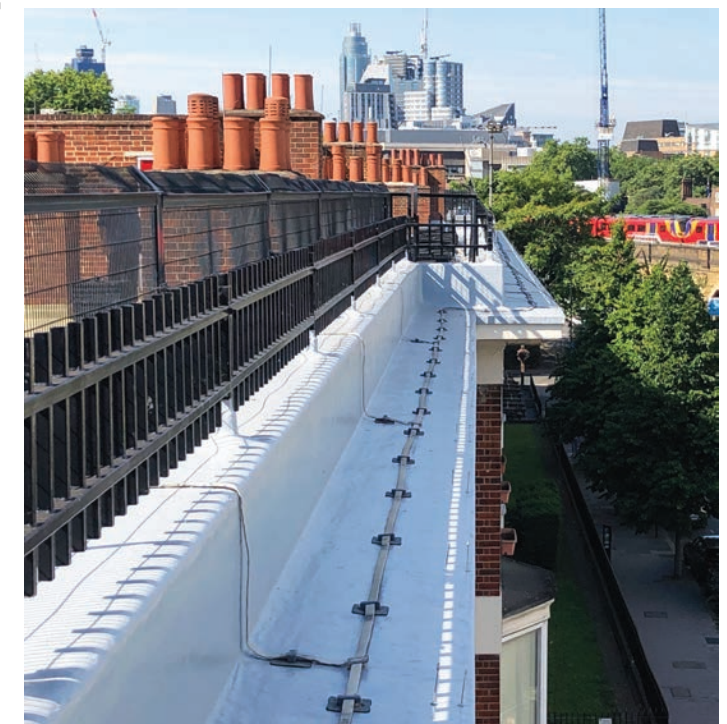


The fast curing Langley Paracoat Cold Polyurea system was an ideal solution for this project."

The structure of the roof includes a number of details, such as upstands, access doors, rooftop penetrations and perimeter details that added a high level of complexity to the installation. The cold applied, wet on wet, fully reinforced liquid system simplified waterproofing around these details and allowed a consistent and reliable seal to be formed in all areas of the roof. As a flame-free product, the polyurea system eliminated

impact of the weather on the progress of the work. Using a fast curing product that could be installed in lower temperatures if necessary, the operatives on site were less dependent on sustained good weather. As a result, the application of the waterproofing was completed in eight weeks with a further four weeks required to complete the refurbishment, reducing the amount of disruption for the building.

Dennis continued: "We were impressed by the Paracoat Cold Polyurea system, it has proved to a high-quality system



the risk of fire from hot works to provide safety for residents and peace of mind for the owners of the building. The Langley system can also be installed with a slip inhibiting finish, fully compliant with BS 7976 Pendulum tests and therefore particularly suitable for areas with high foot traffic such as balconies, walkways and rooftop terraces.

Furthermore, once the Langley Paracoat Cold Polyurea system is installed, the roof can withstand foot traffic within just three hours, making it one of the faster curing systems on the market. With the refurbishment taking place during the spring, one of the key advantages of the system was that it allowed the contractors to minimise the

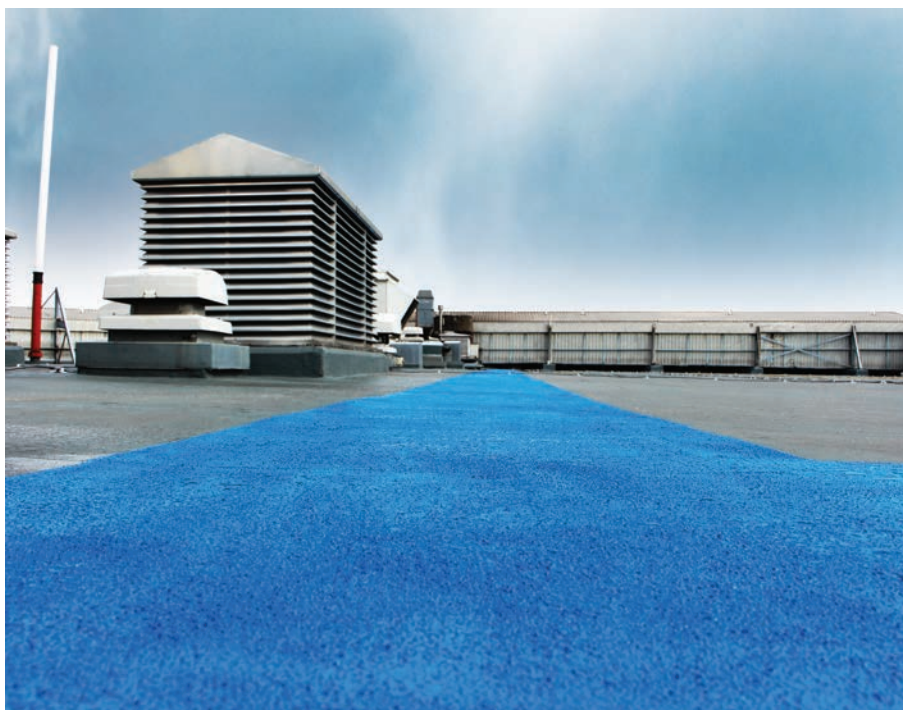
that we will be using on future projects. Langley provided full training to our installation team prior to the works and remained on site during the initial stages to provide support, as well as the usual weekly inspections. We found it quite simple to use and as a result the install went very smoothly."

In June, M.H. Goldsmith & Sons was awarded Langley's Contractor of the Month for its work on Blake House.

Contact Langley

To find out more about Langley's roofing systems visit www.langley.co.uk





Triflex PMMA: Minimise Disruption, Maximise Convenience, Save Time

“The typical time for a PMMA system such as our Triflex ProTect roof waterproofing system to be rainproof is only 30 minutes and if rained upon before this time the system will not react with the water.”

Cold, liquid applied resins are the fastest growing market for the waterproofing and surfacing of flat roofs, car parks, walkways, balconies and terraces due to their advantages over traditional and hot applied materials. But it is a situation of 'buyer beware' because not all resins are created equal.

In the UK we are known for talking about the weather, and with good reason in our temperate climate. In practice there

are very few days that are rain free across the country, especially when we move out of the two or three months that we call summer.

If you are a building surveyor, contractor or owner, this fixation with the weather forecast can be critical as wet and cold days can cause significant delays with external works. Ultimately, the more opportunities you have for the products to be installed, the sooner a project can be completed and handed over. For owners or end clients this simply means less disruption.

With the right liquid system, buildings and access can remain open during the works and continue to operate with minimal disruption. Every day lost to the weather costs money, and extends the programme.

This is where Triflex PMMA, or Polymethyl Methacrylate systems to

give them their full chemical name, really shine. PMMA cures exceptionally rapidly, and even very low temperatures cause only a very minimal extension of their cure times. This is a unique property of PMMA resins and something which cannot be matched by any other hand applied material.

Rainproof

The typical time for a PMMA system such as our Triflex ProTect roof waterproofing system to be rainproof is only 30 minutes and if rained upon before this time the system will not react with the water. The system will be cured and able to be walked upon after only 45 minutes at 20°C and approximately 60 minutes at 0°C. In addition, as the system is applied in a single process often without primer the contractor only needs one very brief weather window to apply.

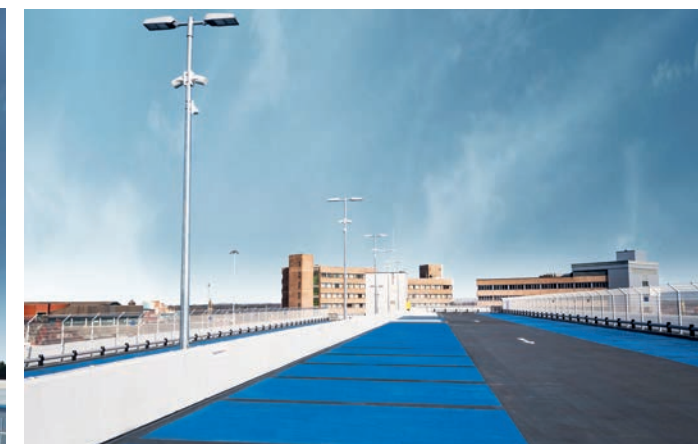
Yes, the fully reinforced system takes a short time to apply, but typically with a team working together even large areas can be securely waterproofed in a single day. For balconies and walkways where access restriction must be minimised yet multi-layer systems are required, they can still be completed in a single day. In the case of car park ramps they can be completed over night with no disruption to operations.

The curing of PMMA is based on a chemical cross linking process and neither temperature or atmospheric humidity have any significant impact. The resins are completely solvent free, do not rely upon either moisture to trigger the reaction or solvent to evaporate and have the additional advantage of being free from isocyanates and styrene which can offer significant health and safety benefits.

Many other systems that you will come across are based on alternative chemistries – most commonly polyurethane (PU) and polyurea (PUA). In complete contrast, most polyurethane systems require a primer which may take between 6-12 hours to cure and multiple (often 2 or 3) application coats for the waterproofing layer each of which may take 6 hours or more to dry/cure at 20°C and much, much longer at lower

rather than an entire day or more, ensuring your effective waterproofing season is uninterrupted. Additionally, with a Triflex PMMA resin the curing time is not temperature dependent, so it can be installed all year round down to temperatures of 0°C and -5°C for details, so that's winter covered.

In terms of overall installation cost, Triflex PMMA resins not only allow the installer to



temperatures. As a minimum, most contractors will allow 3 days to install a solvent based polyurethane system compared to one for a Triflex PMMA system. These systems also often have long rainproof times, this means that if it rains during the extended curing process the contractor may need to start the whole process again.

With Triflex PMMA systems you even have the benefit that you can work all year round. All you need is a weather window of just a few hours without rain,

maximise weather windows, but massively cut down installation time and time on site. This means there is reduced need for access to a building or roof, lower scaffold costs, less labour time for the installer and greater productivity.

By using a Triflex PMMA system, if you are a contractor you can work all year round, if you are a building surveyor you can solve your client's waterproofing problem quickly and if you are the building owner your problem is resolved promptly, with minimal disruption.

Now that's a real win-win situation.



Contact Triflex

Learn more about Triflex cold liquid applied waterproofing on www.triflex.co.uk.
Telephone: 01785 819119.
Email: info@triflex.co.uk

Triflex
Delivering solutions together.



Elastaseal Z coating system easily dealt with the existing standing seam zinc roof sheets at Benson House.

The Complete Solution in Roof Liquid Waterproofing Systems for Every Need and Budget

Tor Coatings's Elastaseal Z roof coating system is a cold-liquid waterproofing solution designed to offer long-term protection for flat roofs, gutters and pitched roofs in as little as two coats.

The system uses innovative technologies to deliver a fast, safe and completely odourless application that causes virtually no disruption to the day-to-day operations of a building or its residents. With this zero-odour formula, Elastaseal Z is able to deliver a safer, more user-friendly experience for sites where fumes can be hazardous, such as food, pharmaceutical and beverage manufacturing sites, hospitals, schools, commercial offices, and retail units. The system can also be applied as a wet-on-wet system, dramatically saving time and costs for clients.

Following the success of the system, Tor Coatings has worked on a number of projects using the Elastaseal Z coating system, delivering long-lasting protection for up to 30 years.

Benson House

Benson House at 33 Wellington Street, Leeds was originally occupied by accounting firm, Price Waterhouse Cooper for over 20 years. After their move in 2016, Benson House was acquired by law firm, Walker Morris to see all 500 members of their staff under one roof, becoming the biggest single-site law firm outside of London.

The building needed to undergo a comprehensive £10m refurbishment to provide a premium working environment for Walker Morris without causing disruption to the surrounding offices. The existing standing seam zinc roof sheets, perimeter gutters, inverted plant room areas and external vertical cladding and louvres were in poor condition. However, due to time constraints, full removal and replacement of the roof was not feasible.

Tor Coatings was asked to provide specifications for all of Benson House's roof elements. Elastaseal™ was chosen as it comfortably met the design brief and delivered a 25 year warranty, something the law firm were keen to secure.

Initially, there was concern regarding the adhesion of the new system to the weathered zinc roof

surface. However, after carrying out adhesion checks with the Elastaseal Z primer, the results demonstrated that the required adhesion could be achieved without any mechanical preparation, saving a significant amount of time and removing any risk of disruptive mechanical noise during application.

In addition to this, all elements of the Elastaseal Z system, including the primers, localised reinforcement coatings and the waterproofing itself, are completely odourless and therefore could be used on the gutters and the inverted plant room areas with minimal disruption.



All elements of the Elastaseal Z system, including the primers, localised reinforcement coatings and the waterproofing itself, are completely odourless.

“ With this zero-odour formula, Elastaseal Z is able to deliver a safer, more user-friendly experience for sites where fumes can be hazardous.”



Tintagel House

Last year, Tor Coatings was also tasked with revitalizing Tintagel House, a 1960s building comprising internal offices across 12 floors. Located on Albert Embankment in South London, immediately overlooking the River Thames, Tintagel House was home to the Metropolitan Police for half a century and, following a full refurbishment, today forms one of The Office Group's latest serviced office accommodation.

Tintagel House's location on the River Thames presented significant challenges during its 2018 refurbishment, such as high winds, difficult to access areas and the management of weight being loaded onto the membrane. As a large building site, there was also the added risk of working in close proximity to many other trades.

The 25-year Elastaseal Z system was specified for Tintagel House on the basis of

practicality, performance and cost. The system is compatible with almost all existing roof substrates and, on this project, allowed the new waterproofing layer to be installed over the existing membrane.

This delivers some significant benefits on a live site, such as ensuring the building is not compromised whilst the failing roof membrane is removed, as would normally be required when replacing asphalt or felt systems and could potentially lead to problems with the high winds. The process also eliminated the need for the failed roof membrane being sent to landfill and, with no joints in the system, there was also no risk of leaks.

The Tor Coatings approach

At Tor Coatings, we don't simply manufacture and market products: we provide clients with a complete service, where you'll receive the highest level of technical service, support



and back-up right through to the delivery of the finished project. From site surveys and testing, to bespoke

specifications and CAD models, we offer you complete peace of mind - all at no additional cost.

Contact Tor Coatings

To arrange a free site survey, please contact one of our Area Business Managers on 0191 410 6611 or email marketing@tor-coatings.com



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Green Roof Puts Lancashire Leisure Destination Ahead of the Curve

Located in the Lancashire hills, not far from Preston, The Flower Bowl is a new build leisure destination. Constructed as an extension to a busy garden centre, it features a curved green roof designed to echo the contours of the landscape. Indeed, when the growing medium has matured sufficiently, the owner plans to complete the optical illusion by grazing sheep on the roof!

Sika Liquid Plastics' Decothane Root-Resistant cold-applied liquid system provided the ideal solution for the building's green roof, and was installed with Decotherm insulation as part of a warm roof build-up.

Multi-directional Falls

Preston-based contractor, W Hughes & Son was appointed to install the roof and worked with the steel fabricator on construction of the curved deck.

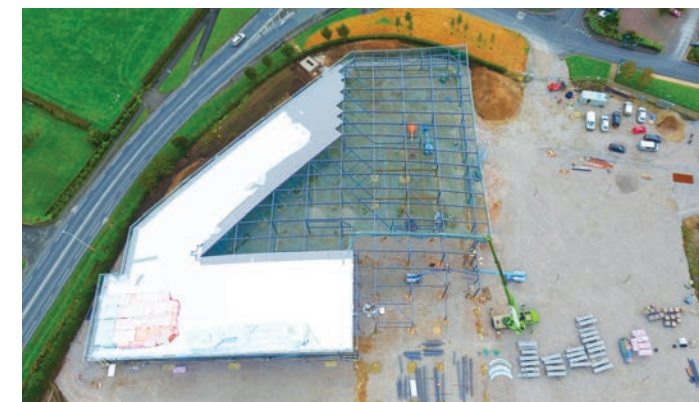
"The design intent was to create a smooth, rolling roof surface," explains Sam Kidd, Area Technical Manager at Sika Liquid Plastics, "but the actual roof deck was faceted, consequently, the fall of the roof had multiple changes in direction. The versatility of the Decothane Root-Resistant

"Our Field Technician visited the site throughout the programme to ensure that the roof was being installed to specification."

liquid membrane, along with the mechanically fixed boards, played a vital role in smoothing out the substrate ready to receive the green roof finishes."

W Hughes & Son installed Sika Liquid Plastics' S-VAP 500e vapour barrier directly onto the metal deck, before cutting the Decotherm insulation layer to allow the installation to mirror the contours of the curved roof. This involved cutting some complex shapes to achieve the required falls before mechanically fixing the insulation to the substrate.

The business-critical programme for the roof was scheduled around the client's commercial requirement to open specific areas of the



leisure facility in time for fixed deadlines. This meant that the project had to be carried out as a patchwork of roof areas, often involving moving to the opposite side of the 6000m² roof area. Sika Liquid Plastics' technical team worked collaboratively with the contractor's team to refine the design for the roof and develop the scheme of works to ensure buildability within the parameters of the main contractor's wider programme.

Versatile System

W Hughes & Son created a ply gutter detail around the perimeter of the curved roof, which also features falls in multiple directions, and the liquid Decothane Root-Resistant also provided easier installation for these

awkward, uninsulated areas.

Sam continues: "The versatility of the Decothane Root-Resistant liquid membrane, along with the mechanically fixed boards, were vital in smoothing out the substrate ready to receive the green roof finishes.

"Our Field Technician visited the site throughout the programme to ensure that the roof was being installed to specification in order to pass the guarantee at the end of the project, and to reduce the likelihood of any snagging works. These visits also enabled Sika and W Hughes & Son to work collaboratively to devise solutions for challenging areas of the roof.

www.gbr.liquidplastics.sika.com



Moy Materials Training Across the Nation

Investment into the next generation of roofing operatives is said to be a key corporate value held by Moy Materials, a supplier of waterproofing and insulation systems. In the year the company is celebrating its 40th year it is also celebrating having trained over 600 liquid waterproofing operatives in conjunction with its partners, Enke-Werk, in little over four years.

As a member of the Liquid Roofing and Waterproofing Association (LRWA), MOY has focused on the upskilling of operatives



from across the UK and Ireland to ensure the highest level of workmanship using its liquid waterproofing products. With continued growth across the construction industry across various market sectors, many roofing companies are focusing on the upskilling and development of their staff, particularly in the area of liquid waterproofing, a fast-growing technology in the roofing industry.

Cathal Quinn, Global Sales Director at MOY, said: "Through our valuable partnerships we have worked hard to upskill over 600 roofing operatives in the sector of liquid waterproofing, providing positive investment to their respective parent companies and ensuring highly-skilled roofing operatives who are committed to the highest standard of workmanship."



Read more about Moy Materials' technical services
<https://moymaterials.com/technical-services/>

Case Study London Road, Iselsworth

Moy Materials was invited to assist with the rooftop waterproofing design and specification package for this 155-home development.

MOY worked alongside the developer to redesign the roofs as inverted green roofs to improve the environmental impact of the project, whilst also enabling works to commence on site immediately ensuring the project was completed on time.

MOY Enkopur, XPS Insulation, Protection & Filter Fleeces and Seeded Green Roofs were specified across this project, installed by MOY-approved installers and managed by building developer, Bulger.

The project was shortlisted for Liquid Waterproofing Project of the Year at the Liquid Roofing and Waterproofing Awards 2017.



PROJECT DETAILS

PRODUCTS USED
Moy Materials Enkopur

ROOF AREA
4,000m²

COMPLETED
2017

ROOFING CONTRACTOR
Plan Construction Solutions Ltd.

ARCHITECT PRACTICE
Aros Architects

CONTACT MOY MATERIALS

Please contact your local sales representative or call one of our offices in:

- London +44 (0)1245 707449
- Glasgow +44 (0)141 8404660
- Dublin +353 (0)1 4633900
- Germany +49 69 50 95 75 551

Or visit moymaterials.com for more information on any of our systems.



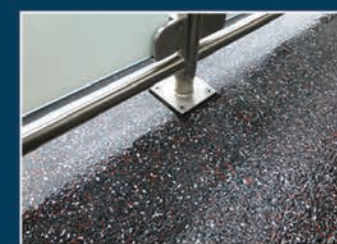
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40 Years



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Bitumen Roofing



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LRS RAISING THE STANDARDS IN LIQUID ROOFING



LEADING THE WAY WITH HIGH QUALITY

LIQUID ROOFING SYSTEMS LTD (LRS) has focused from the beginning on delivering high quality liquid waterproofing solutions.

LRS is a one stop shop for liquid waterproofing and our ranges include PMMA's (RapidRoof & RapidRoof Pro), Pure Polyurethanes (FastCoat & FastCoat Pro), SEB Thermoplastic (Karnak, Elasto-Kote) and Eco-friendly Polymer Bitumen (Liquid Rubber)

As part of our product development we have introduced our pro range across both our RapidRoof and FastCoat brands, our Pro range is exclusively available to LRS Approved Contractors and offers the additional benefits up to 25 year guarantees BBA and BDA certifications and NHBC acceptance.

Here at LRS we are committed to delivering the highest quality waterproofing systems with our key features being...

- Rapid application
- Quick cure times, saving time onsite
- Cost effective
- Seamless

Suitable for application onto new build substrates or as a refurbishment system overlay onto Felt, Asphalt, Concrete, Metal, Asbestos, OSB3, and GRP.

Raising the standards in liquid applications through our Approved Contractor Scheme.

Our extensive range of systems allows us to offer cost effective and time saving solutions for Flat Roofs, Corrugated Roofs, Balconies, Walkways, Gutters and Podium Decks.

As part of our continual drive to excellence we have now joined LRWA and are proud to be raising the standards in liquid applications through our Approved Contractor Training Programme.

We are committed to delivering the highest quality in liquid applied roof waterproofing training which takes place from our dedicated Training Centre and counts towards the practical side of Competent Roofer.



Call us today on **01948 841877** to become an LRS Approved Contractor, quote code **RT99** to receive this special offer of **£99**

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Solving Detailing Challenges with LiquiTEC

With a variety of products available for waterproofing, it can be tricky to select the most appropriate solution, especially when working in awkward areas. Bauder's cold liquid systems offer waterproofing on much more than just flat roof areas. Mike Bradbury, cold liquids product manager for Bauder, explains.



Bauder LiquiTEC Roofing and Terrace Systems

Bauder's cold liquid applied LiquiTEC range has systems for warm, inverted, green and cold roof roofing applications as well as terrace, balcony and walkways. Using proven, fast curing PMMA technology, the full waterproofing systems are reinforced with a polyester fleece and are applied wet on wet. This application method, coupled with the fast and controlled chemical cure of the waterproofing, allows roof areas to be fully waterproofed in a few hours.

Key benefits

- Great for smaller areas where the project can be completed in a day.
- Ideal when access is required over completed areas.
- The systems are highly adaptable and can be used for large open areas, areas with complicated detailing, small roofs and balconies and gutters.

Using LiquiTEC for waterproofing awkward areas allows contractors to use alternative membranes on the main roof area, without the challenge of working around plant or other obstructions whilst also maintaining reliable waterproofing.

For more advice on liquid detailing, visit our technical centre:
<https://www.bauder.co.uk/technical-centre>



All products in the LiquiTEC range are completely cold applied, meaning there are no risks from hot works on site. Drawing on Bauder's expertise in self-adhesive membrane manufacture and our extensive experience in high quality PIR insulation, the warm roof products are also cold applied. Bauder FA-TE foil faced insulation provides high thermal performance and is available as flat board or as a tapered system.

Quality of products and installation are paramount for long term waterproofing performance. Both the LiquiDEK roof and LiquiBALKON balcony systems are covered by BBA certificates, ensuring that the systems meet Building Regulations and will perform their waterproofing function for years to come.

PRODUCT IN PRACTICE

Project name: Basildon and Thurrock University Hospital.

Location: Basildon, Essex.

Applied products: Bauder Total Roof System with tapered insulation and cold applied liquids.

Client: NHS

Approved contractor: London Seamless Flat Roofing Limited

Project scope: The existing roof was failing in multiple areas and 80 rooflights needed replacing. The rooms below included operating theatres, drug refrigeration and x-ray clinics.

Project challenges: Plant in situ could not be turned off or raised and many of the AC units and boilers had to be left running due to the nature of the rooms below. Certain areas had to be repaired before others and detailing under and around the plant that could not be raised was almost an impossible task.

Project Solution: By using LiquiTEC for the areas around the plant, the contractors could ensure a watertight seal with quick application, allowing them to complete the remainder of the roof using reinforced bitumen membrane, and meet the tight project deadline of 12 weeks.



Why Qualifications Hold the Key to Raising Standards

Sarah Spink, CEO of the Liquid Roofing and Waterproofing Association (LRWA), explains the importance of nationally recognised qualifications for roofers, and why we need better regulation to achieve quality installations.

“Liquid products vary considerably depending on different chemistry types, so it is vital that roofing contractors are fully trained in the application.”

Although the roofing industry is already leading the way in terms of competence, we can't stand still. The recommendations in the Dame Judith Hackitt report include several which relate directly to construction products. As a result, project teams, including building owners, will be looking more forensically at all aspects of roofing, from design through to maintenance.

As part of this shift, achieving the highest standards of workmanship across all projects, regardless of their size or sector, will be paramount. In the liquid roofing and waterproofing industry, that puts the focus firmly back on training and qualifications, ensuring operatives have the right skills to install systems correctly.



Liquid products vary considerably depending on different chemistry types, so it is vital that roofing contractors are fully trained in the application. If an operative does not have the right skills, this risks the product being poorly applied and the roof potentially failing.

Despite this, there is no mandatory requirement for roofing qualifications in the UK, so it is notoriously difficult to ensure all operatives work at the same level. Overcoming this challenge will require everyone in the supply chain to work more closely together so we can all help to raise standards.

The Importance of Getting Qualified

The most effective way for an operative to demonstrate

specialist roofing skills is to gain an NVQ Level 2 in liquid roofing. Nationally recognised across the whole of the UK, an NVQ is a lifetime qualification for an individual in a specific discipline.

There are several routes available for contractors to achieve an NVQ Level 2 in liquid waterproofing. These include a Specialist Applied-Skills Programme in Liquids for operatives with less than two years' experience and On-Site Assessment Training (OSAT), which is designed for experienced roofing contractors who have no formal qualification.

It is the Level 2 qualification that ultimately, also allows roofers to apply for a Construction Skills Certification Scheme (CSCS) blue 'Skilled Worker' card.

The CSCS plays a vital role in raising standards across the construction sector as its cards prove that individuals working on construction sites have the appropriate training and qualifications for the job they do on site.

Most principal contractors and major housebuilders already require construction workers to hold a valid CSCS card before accessing a site, as do Build UK members.

The Construction Leadership Council (CLC) has also announced (via the Industrial Strategy: Construction 2025) that industry, including trade associations, contractors, clients and Government, should specify and promote card schemes displaying the CSCS logo with no equivalents accepted.

Underlining the importance of qualifications, the CSCS announced earlier this year that in 2020, it will be phasing out cards issued under Industry Accreditation, also known as 'grandfather rights.' These allowed workers to obtain



“There is still evidence that CSCS cards are not being properly checked, or asked for, and that needs to change. This requires stricter rules to be put in place to ensure that all cards are thoroughly inspected.”



CSCS cards based on the strength of an employer's recommendation rather than the achievement of a recognised qualification.

From 1st January 2020, all cards renewed under Industry Accreditation will expire on 31 December 2024 and the CSCS will stop issuing the card from 30 June 2024.

Explaining the reason, Graham Wren, chief executive at CSCS said that: “Industry accreditation does not support the industry's desire for a fully qualified workforce and as such it will be withdrawn.”

This move will make it even more important for roofers to

achieve their NVQ Level 2 qualification and get a blue 'Skilled Worker' CSCS card, otherwise they risk not being permitted to work on certain construction sites.

What Needs to Change

Despite the many benefits of CSCS cards, they are not mandatory so the system is hard to regulate, especially on smaller job sites.

There is still evidence that CSCS cards are not being properly checked, or asked for, and that needs to change. This requires stricter rules to be put in place to ensure that all cards are thoroughly inspected by

main contractors as well as building owners, guaranteeing that individuals working on site have the appropriate qualifications for the work they are carrying out.

To help drive further investment in training, there must also be a concerted effort across the wider construction sector to demand CSCS cards for projects of all sizes, and not just on new-build sites, but for refurbishment work too. This is particularly important in the liquid roofing sector where the majority of projects are refurbishments and roofing contractors tend to work directly for the building owner, so operatives are rarely checked.

We must raise awareness among all client groups, including homeowners, of the importance of checking a CSCS card for a roofer's qualifications. The nature of the work and the skills required by a roofer, make this as important as ensuring an electrician has the right qualifications to rewire a house.

Specifying the Right Product

Although the importance of training can't be underestimated, it is also vital to remember that if the product being installed isn't up to

standard, then the system is likely to fail regardless of how competent the installer is. Specifying the right product and ensuring it is properly accredited must therefore go hand in hand with the right training.

As an association, and in-line with the Hackitt report, we are working with our members to ensure they have a voice and can influence the work needed to make sure that specified products are applied to the building.

For those seeking to enhance their skills, get qualified and play a part in further raising the quality of roofing and waterproofing projects, it is advisable to seek specialist guidance, which is available from recognised industry bodies such as the LRWA.

Contact the LRWA

For more information or advice call 0333 987 4581 or visit www.lrwa.org.uk.



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Polyroof Provides Peace of Mind for Teesside University

Teesside University's Greig Building, named in honour of the founding father of computer science Bill Greig, is the home of the university's Computer and

from signs of decay. This meant that the roofs could be retained and over-coated with a new waterproofing system allowing for a rapid, minimal-disruption solution.



Due to its fully cold-applied application the works could be carried out during the university's term times.

Mathematical Sciences Studies department. When the aged bituminous roof coverings show failures including splits, blow holes and crazing, it was of paramount importance that a waterproofing solution could be provided as quickly as possible to prevent the risk of water damage and disruption.

The university's site maintenance team turned to Polyroof for a solution, which started with a detailed survey of the three roof areas totalling 750m². Core tests taken at appropriate locations throughout the roof areas demonstrated that the existing warm roof build-ups were free

A bespoke specification was put together based on the findings from the Polyroof Survey Report that provided a comprehensive set of recommendations, including remedial instruction for many problematic roof details. With the peace of mind and satisfaction that the various problems on the roof would be solved through Polyroof's proposals, the client progressed with a tender process that resulted in a successful application by Polyroof Approved Contractor BBR Roofing Ltd.

Polyroof's Protec System, a hybrid polymer liquid system



Protec can waterproof vertical areas easily due to its thixotropic formulation.

with extremely fast curing and installation times, was chosen as the ideal solution for the project. Due to its fully cold-applied application the works could be carried out during the university's term times, without having to wait for closure periods between semesters.

Works began with the existing asphalt and felt coverings being made good where required, including the levelling and filling of blow holes and cracks with Polyroof Structural Repair Mortar. Next the surfaces were thoroughly cleaned and degreased to provide a sound substrate for the new waterproofing system.

Perimeters

Many of the roof perimeters and junctions featured parapet walls and these were identified as a potential point of water ingress during the survey. The inner faces and tops were therefore boarded-over with 18mm Polyroof approved plywood which would allow these details to be fully encapsulated with the Protec system, meaning their waterproof integrity would be covered under the new system's guarantee. Protec can waterproof vertical areas with the greatest of ease due to its thixotropic formulation, which means slumping and running is minimised during application.



The finished Protec membrane.



Fully encapsulated detail covered under the system's guarantee.

Polyroof's extra-tough GRP trims were then installed to create neat and robust edge detailing for exposed perimeters before the main Protec system application commenced. After priming surfaces where required, the first coat of Protec was applied and reinforced with PolyMat 450. With its RapidCure™ technology, the Protec can be walked on and over-coated after only 30-60 minute after applications, meaning large roof areas can be made fully waterproofed within a matter of hours. After the second coat of Protec was applied to complete the waterproofing system, designated maintenance walkways were formed through embedding quartz sand aggregate into a third coat of Protec liquid.

The refurbishment of the roof was completed within the client's target timeframe and budget. Following a final inspection by Polyroof Technical Services, which highlighted the quality workmanship of BBR Roofing, the client received Polyroof's trusted Accredited System Guarantee and now has the peace of mind the roof will be leak-free for decades to come.

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