



Facilitate

BELZONA'S FACILITIES MAINTENANCE MAGAZINE

ISSUE 4

SUMMER 2013

INSIDE FACILITATE

FOCUS ON:

THE EDUCATION INDUSTRY

Complex Roof Repairs

**BELZONA
TECHNOSOL LTD**

Specialist Application
Services

and more...

Belzona Help Fire Station
meet Energy Targets

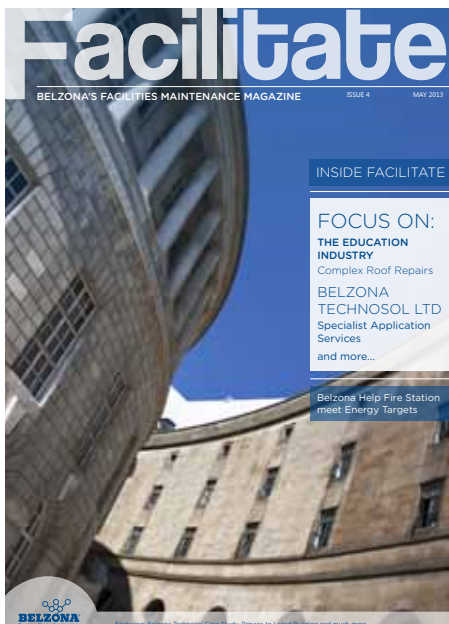
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For more application examples
please visit khia.belzona.com

BELZONA'S UNRIVALLED WATER AND WEATHERPROOFING SOLUTION, WEST YORKSHIRE

Since 1965, Belzona has lead the way in liquid applied roofing technology, becoming leaders in cold applied roofing systems. Offering an extensive range of high performance membranes, Belzona provides unrivalled water and weatherproofing for all types of roofing substrates and balconies.

Belzona was contacted by a local authority managing a block of flats above a row of shops. Three of the flats' balconies required a new waterproofing system as the shops were suffering leaks caused by damaged/porous asphalt from the balconies above. Upon inspection of the asphalt balconies, it was discovered that there were a number cracks across the asphalt balcony floors. There were also a number of areas around the perimeters of the balconies where pointing was missing or coming away.

Belzona specified a three coat system of Belzona 3131 (WG Membrane) incorporating Belzona 9331 (Reinforcing Sheeting) to the balcony to create a long term water tight seal.

The area was cleaned and any loose pointing was removed prior to the application. On bituminous substrates, no conditioner is required making this one product solution from Belzona extremely time and cost-effective. Two coats of Belzona 3131 (WG Membrane) were then brush applied combined with Belzona 9331 (Reinforcing Sheeting). A third coat of membrane was then applied incorporating Belzona (Surefoot Aggregate) in white to give the coating an anti-slip finish and provide a safe balcony area for residents

This solution is designed for all weather



DAMAGED ASPHALT



“Since 1965, Belzona Polymerics Limited has lead the way in liquid applied roofing technology, becoming leaders in cold applied roofing systems.”



APPLICATION OF BELZONA 3131 (WG MEMBRANE)

conditions and will not be damaged by rain immediately after application. Its liquid base binds to the reinforcing sheet to form a tough, flexible and elastic polymeric film which can tightly follow contours. It is impermeable to liquid water, but permeable to water vapour, thus allowing a moist roof to breathe.

The application was completed over the course of two days ensuring access to the residential flats and shops was maintained at all times.

“The completed application was then covered with sand-cast lead to ensure the repaired steps fitted in with the aesthetics of the traditional 16th century building.”



BELZONA REPAIRS STEPS ON LISTED BUILDING, CAMBRIDGESHIRE

60 years of research and development has enabled Belzona Polymerics to become a global leader in the innovation of repair compounds and industrial coatings for the protection of buildings and structures. Belzona's versatile product range can provide simple solutions to many of the maintenance problems experienced by Facilities Managers including the repair and protection of damaged concrete and stone.

In September 2012, Belzona products were used to restore some badly worn steps at a college in Cambridge. Several years of foot traffic had resulted in the deterioration of the stone steps causing around 75mm of tread wear in the centre of the steps. This had left the staircase slippery and dangerous to pedestrians.

Wooden formers were assembled around each step to ensure the accuracy of the repair.

Belzona 4131 (Magma Screed) was selected for the application as its unique formulation provides exceptional compressive strength and excellent protection against the effects of abrasion, chemical attack and impact.

To achieve maximum adhesion to the stone steps the use of Belzona 4911 (TX Conditioner) was required prior to the application of Belzona 4131 (Magma Screed). The repair composite was trowel applied to rebuild each of the





DETERIORATED STONE
STEPS



WOODEN FORMERS
INSTALLED



BELZONA APPLICATION



COMPLETED REPAIR

steps to their original dimensions.

The completed application was then covered with sand-cast lead to ensure the repaired steps fitted in with the aesthetics of the traditional 16th century building. Belzona can provide solutions to any size establishment ranging from small primary schools through to a large colleges or

universities. With the majority of Belzona's systems being solvent free, minimum disruption is caused to facilities. Offering reliable, cost effective and energy saving solutions to several maintenance issues that can arise within the education sector from concrete and roof repairs to leak repairs in pump and boiler rooms.



BELZONA 4131 (MAGMA-SCREED)

High performance resurfacing screed

Additional Applications Include:

- Floors • Ramps • Stairways • Walkways
- Chemical Storage Areas • Loading Docks
- Machinery/Production Areas



BELZONA RESOLVES WATER INGRESS ISSUES FOR CHILLED FOOD SUPPLIER, WORCESTERSHIRE



Specially designed to withstand the most extreme of weather conditions, cold applied liquid membranes can provide excellent protection from water ingress. Belzona's range of flexible membrane systems can be easily applied to all types of roof substrates and offer seamless application to complex contours. Providing lasting protection with minimum disruption, Belzona solutions for roof problem areas offer Facilities Managers a simple, cost effective and reliable solution.

Water ingress and dampness can often be caused by blocked gutters, down pipes, roof outlets

or debris collecting on the roof. In September 2012, a chilled food supplier in Worcester required a repair solution to a seriously damaged roof. Months of inclement weather had resulted in several cracks in the felt roof. In addition, holes in the parapet wall were discovered which were leaking through into the packing area below. Belzona recommended an easy to apply liquid membrane system which has the ability to follow complex roof contours.

Over the course of a week, a two coat Belzona 3131 (WG Membrane) system incorporating

BELZONA 3131 (WG MEMBRANE)

Flexible, long term waterproofing system

Additional Applications Include:

- Flat Roofs
- Parapet Walls
- Complex Roofs and Domes
- Flashings
- Joints and Seams
- Glazing Bars
- Gutters
- Vents



BELZONA 3131 (WG MEMBRANE) SEALING LEAKS



a Belzona 9331 (Reinforcing sheet) was specified for the application. All loose substrate matter was removed and a fungicidal wash was used to remove all of the vegetation. To ensure maximum adhesion it was necessary to apply Belzona 3931 (WG Membrane Conditioner) to the application area. Two coats of Belzona 3131 (WG Membrane) were then brush applied to the entire roof area.

The client also requested an emergency walkway be created on the roof to provide its operatives with safe access where necessary. A third coat of Belzona 3131 (WG Membrane) was applied, this time incorporating Belzona 9221 (Surefoot Aggregate). This simple solution created a safe, durable and long lasting emergency walkway.

Belzona can provide solutions to many of the challenges faced by the food and drink industry. Our products have been designed to meet the challenges of this industry by curing quickly without odour and minimising downtime, labour and equipment replacement costs. For further information on Belzona's solutions for the food and drink industry please visit www.belzona.co.uk/foodanddrink



BELZONA REFURBISH THE FRONT ELEVATION OF SECONDARY SCHOOL, SOUTH WALES

In February 2012, a school in Port Talbot, South Wales was in desperate need of a refurbishment to its front elevation.

The sandstone on the front of the school building was severely weathered, the brickwork looked dirty and signs of water ingress were becoming apparent. The facilities maintenance team requested that Belzona provide a refurbishment to the Bath

stone and brick fascia and apply a clear waterproof barrier to prevent future water ingress and deterioration.

The entire front elevation was high pressure washed to remove all of the surface grime and plant life. The damaged areas were repaired using Belzona 4141 (Magma Build) and then the entire front elevation was sealed using Belzona 5122 (Clear Cladding Concentrate).

To ensure excellent adhesion to the substrate, Belzona 4911 (Magma TX Conditioner) was applied to the repair areas prior to the application of the Belzona 4141 (Magma Build). A cement tone additive was combined with the product to colour match the Belzona product with the bath stone. This product is a non-porous concrete repair compound and was used to rebuild the severely damaged vertical stone

BELZONA 5122 (CLEAR CLADDING CONCENTRATE)

Clear repellent treatment for masonry surfaces

Additional Applications Include:

- Concrete • Limestone • Brick
- Asbestos Cement • Sandstone





BELZONA 5122 (CLEAR CLADDING CONCENTRATE) SPRAY APPLIED

surface. Its light-weight properties enable the repairs to be undertaken without the need for fixed shuttering or formwork.

Once cured, Belzona 5122 (Clear Cladding Concentrate) was then spray applied to the front elevation of the school building. This long lasting, water repellent treatment for masonry surfaces is designed to prevent water

penetration into building fabric, whilst retaining the natural appearance of the structure. This masonry treatment is an aqueous penetrating liquid which, when applied to porous surfaces, forms an invisible, micro porous, water repellent barrier with the substrate.

The application was completed by Belzona Technosol Limited, the

contracting network of Belzona, over the course of a week.

By choosing this repair solution from Belzona, traditional and listed buildings can be restored to high standards, in keeping with the aesthetics of the building.



Belzona Helps Local Fire Service Meet Energy Targets

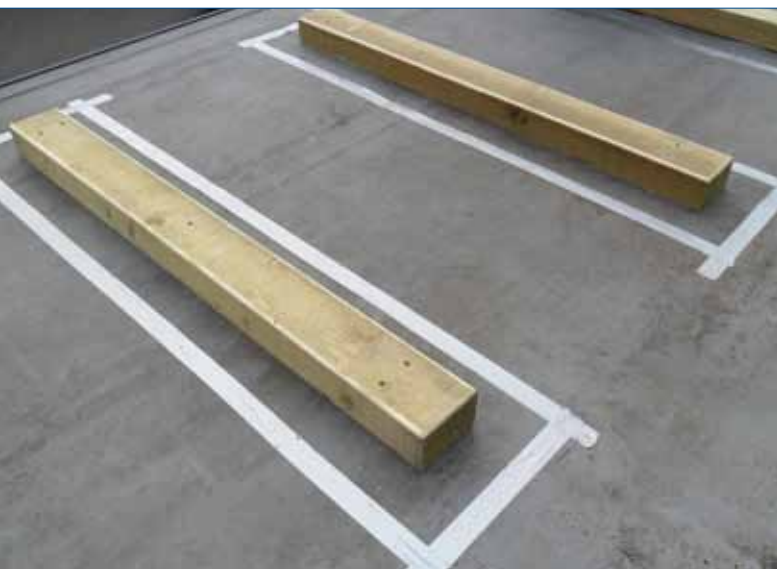
Long standing Belzona Authorised Contractor ARG (Mansfield) Ltd recently assisted a local fire service with achieving their environmental targets by applying a flexible membrane system to some newly installed solar panel timber base plates.

For over 13 years, ARG (Mansfield) Ltd have worked closely with Belzona Polymerics Limited to provide the Midlands with the expert on-site application services of Belzona products. In March 2012, a local fire service commissioned a national renewable energy company to supply and install a rooftop solar energy system to the flat roofs of several of its fire stations in the area. These roofs had been successfully coated in Belzona 3111 (Flexible Membrane) two years prior to this application. The fire service requested ARG (Mansfield) Ltd to provide a specification for a liquid applied

weatherproof coating which could be applied to the wooden fixings of the solar panels as well as the existing roof system. This application was to provide seamless encapsulation between the brackets and existing flat roof to ensure moisture could not penetrate into the wooden timber base plates and also ensured the integrity of the previous Belzona roofing application.

The chosen product for the application onto the solar panel brackets was Belzona 3111 (Flexible Membrane) which offers unrivalled water and weatherproofing solutions for all types of roofing substrates, complex architectural design and insulation. The simple solution provided by Belzona involved the surface area being prepared with Belzona 3911 (PSC Surface Conditioner) a brush applied porous surface conditioner, followed by

PREPARATION OF BASE PLACES



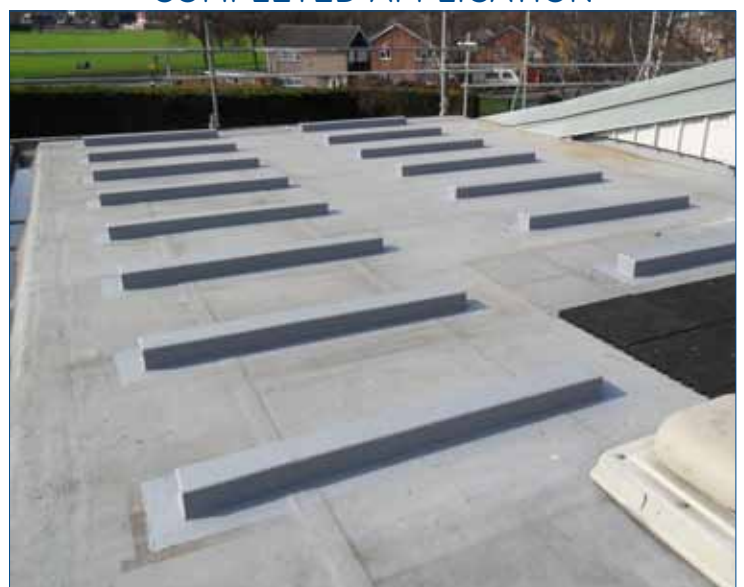
1ST COAT OF BELZONA 3131 (FLEXIBLE MEMBRANE)





two coats of Belzona 3111 (Flexible Membrane) incorporating Belzona 9311 (Reinforcing Sheet). In this case, the Belzona 3111 (Flexible Membrane) was selected for its waterproofing capabilities, ensuring the solar panel brackets remain protected from the effects of the environment for years to come. Furthermore, the product has been specially formulated to offer solar reflective properties, helping to keep facilities cool and reduce air conditioning costs over the summer months. The fire service has since expressed their satisfaction with the solution and Belzona is delighted to assist the fire service become more energy efficient and self-sufficient.

COMPLETED APPLICATION



EXPANSION JOINTS, CAMBRIDGESHIRE

Belzona Polymerics Limited has over 60 years of practical experience in the design manufacture and installation of repair and maintenance products for facilities maintenance. With this expertise, knowledge and attention to detail, Belzona can provide innovative repair solutions to repair damaged or failing expansion joints. Utilising specialist elastomeric polymer repair composites, Belzona can provide simple and cost effective solutions which will simplify maintenance procedures and provide long term protection against future damage.

A client in Cambridgeshire had an expansion joint which was creating a range of problems. The edges of the joint had suffered damage by impact, causing uneven running areas. The sealant used had shrunk allowing ingress of liquids into the joint, which could eventually lead to the contamination of the ground beneath. If the expansion joint had been

allowed to completely break down, conventional repair would require complete replacement and possibly the redesign of the entire joint area.

Due to its excellent impact resistance and bond strength, Belzona 4111 (Magma Quartz) was used to effectively and quickly reinstate the edges of the joint and thus provide protection against further impact damage. The joint was then sealed using of the Belzona 2211 (MP High-Build Elastomer) which, due to its outstanding elasticity, high bond strength and no shrinkage cure, will provide the ultimate long term seal.

Field Sales Engineer, Philip Miles returned to the site 3 months after the installation and the application was in perfect condition. The client was very pleased with the repair and plans to repair several other expansion joints in the future.

Expansion joint in perfect condition three months later



CONDITIONER APPLIED



REINSTATING EDGES OF JOINT



INSTALLING



BELZONA CONCRETE REPAIR PROVES SUCCESSFUL

Belzona Polymerics Limited, a manufacturer of industrial protective coatings and polymer repair composites, supplies maintenance solutions for the repair of damaged concrete. A leading supplier of industrial gases in the UK recently contacted Belzona looking for a solution for their damaged loading area at a distribution centre in Northamptonshire.

Areas of a concrete ramp had become damaged due to impact from the gas cylinders when being loaded and unloaded and also from frost damage. The badly degraded surface was making unloading increasingly difficult as the tall narrow cylinders could not stand up safely. This is a common problem at many distribution sites across the UK.

Several alternative repair methods were considered to restore the surface. One option was to have the concrete ramp dug up and re-laid; the second option was to repair the concrete surface with a Belzona composite repair solution.

Completely replacing the concrete would have led to long periods of disruption to the

site proving expensive. The option of using Belzona 4131 (Magma-Screed) to resurface the 8.5m x 5m area was found to be the most cost effective solution by the client and offered minimum disruption at the site.

The concrete ramp was pressure washed to remove any surface contamination. Belzona 4911 (Magma TX Conditioner) was then applied to the prepared areas to provide maximum adhesion before the Belzona 4131 (Magma-Screed) a two component system for the repair and resurfacing of concrete and stonework was applied to the ramp and troweled smooth. The product was selected firstly for its high performing properties which offer protection against impact and abrasion. Secondly for being impermeable and resistant to frost damage.

The customer was very happy with the new smooth surface provided by Belzona, and considered this to be a "trial site" for the organisation. As the application proved successful the application will be used at several other distribution sites in the UK suffering the same problem.

DAMAGED AREA



DAMAGED AREA



COMPLETED REPAIR



ELASTOMER



BELZONA TECHNOSOL CASE STUDY

BELZONA PROVIDES CORROSION PROTECTION ON A BRAND NEW HIGH PRESSURE PUMP

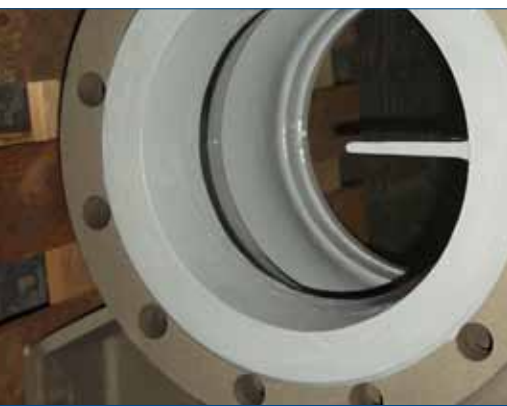
Belzona - providing solutions to industry for 60 years through industrial protective coatings and polymer repair composites has a recently undertaken an application to provide corrosion protection and increased efficiency to a pump casing and impeller.

A global producer and supplier of high-quality farmed salt water fish in North Wales, contacted Belzona looking for a reliable corrosion protection system. Application services division of the Belzona Group, Belzona Technosol Limited provided a full supply and application service ensuring the pump was back in service within 3 days.

Once the pump unit was high pressure washed and blasted to a substrate cleanliness of at least SA 2 1/2 and a surface profile of no less than 75µm it was found that the main areas of damage were the impeller and the volute casing.

The first stage of the application was to coat the internals of the pump casing and the impeller with two coats of Belzona 1341 (Supermetalgilde) a high performance coating for improving the efficiency of fluid handling systems and protection of all metals from the effects of erosion-corrosion.

The second stage of the application was to apply a



BELZONA TECHNOSOL LIMITED
SPECIALIST ● APPLICATION ● SERVICES

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Email: technosol@technosol.co.uk, Website: www.technosol.co.uk



protective coating to the externals of the pump casing. The Belzona 5811 (Immersion Grade) system was ideally suited to this application as it demonstrates outstanding protection from the effects of salt water and the environment and was designed for substrates operating under immersion conditions in contact with aqueous solutions.

The total cost of this repair was a fraction of the cost of a new replacement and the epoxy based coating supplied by Belzona will offer resistance against corrosive attack in the future.

BELZONA SEALS ROOF OVER PRODUCTION AREA

In September 2012, the bad weather experienced in the UK had caused rubber seal degradation on some ducting joints allowing rainwater to leak directly into the production area at a manufacturing factory in North Yorkshire. This was causing major disruption and health and safety issues to staff manufacturing products on the floor below.

Engineers selected Belzona 2211 (MP Hi-Build Elastomer), the multi-purpose rubber repair elastomer, as the best solution to quickly seal the leaking joints.

Surface preparation was carried out by using a wire brush prior to the application of Belzona 2911 (Elastomer QD Conditioner).

Once the conditioner was touch dry, Belzona 2211 (MP Hi-Build Elastomer) was applied with a plastic applicator to ensure the joints were fully sealed.

Once cured, a fully reinforced Belzona 3111 (Flexible Membrane) system was applied to the duct areas to fully encapsulate the HVAC equipment. This product offers unrivalled water and weatherproofing solutions for all types of roofing substrates, complex architectural design and insulation. The simple solution involved the surface area being prepared with Belzona 3921 (GSC Surface Conditioner), a brush applied general surface conditioner, followed by two coats of Belzona 3111 (Flexible Membrane) incorporating Belzona 9311 (Flexible Membrane Reinforcing Sheet).

In this case, the Belzona 3111 (Flexible Membrane) was selected for its waterproofing capabilities, ensuring the duct work would remain protected from the effects of the environment for years to come. Furthermore, when considering larger surface applications, the product has been specially formulated to offer solar reflective properties, helping to keep facilities cool and reduce air conditioning costs over the summer months.

The simple Belzona solution selected was applied by Belzona engineers over two days without disrupting production, giving a long term water and weather resistant solution.



CORRODED DUCTING JOINTS



JOINTS SEALED WITH BELZONA 2211
(MP HI-BUILD ELASTOMER)



FULLY ENCAPSULATED WITH BELZONA
3111 (FLEXIBLE MEMBRANE) IN WHITE

Please complete the form below
for your **FREE** Belzona survey



Name

Company

Address

Phone Number

Please give a short description of the problem area:



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To arrange your FREE consultation of how Belzona can help you or if you would like to see your problem featured in the next issue of Facilitate, please contact the Editor.

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