CAR PARKS REFURBISHMENT

BUILDING TRUST

MEETING YOUR NEEDS ON EVERY LEVEL

SUSTAINABILITY IN REFURBISHMENT

Refurbishment allows the lifetime of a car park structure to be prolonged and presents a more sustainable solution than demolition. Our refurbishment solutions will allow you to significantly extend the lifetime of existing car parks by reducing refurbishment frequency, thus minimising environmental impact and creating cost savings.

TRANSFORMING CAR PARK ENVIRONMENTS

FOR OVER 40 YEARS

INTRODUCTION

Regardless of how well designed or constructed car parks are, they can deteriorate virtually as soon as they go into service. If ignored, this can significantly affect their ability to generate income. Sika has been transforming car park environments for over 30 years and offers a single source solution to enable refurbishment work to be carried out with the minimum of disruption. Operating globally from over 70 countries, we have the extensive product range, expert knowledge and technical support to assist with your refurbishment project.

OUR WIDE RANGE FOR CAR PARKS INCLUDES:

- Decking systems for top, exposed and intermediate decks
- Overlay systems for asphalt
- Waterproofing and wearing surfaces for ramps
- Joint sealing for façades and precast concrete
- Concrete repair and protection
- Floor and wall coatings for entrance areas, walkways and stairwells
- And much more...

OPERATING IN OVER
80
COUNTRIES

EXPERIENCE AND EXPERTISE

Sika has an unparalleled track record of providing durable solutions for car park refurbishment. No car park project is too large or too small and over the years, we have rejuvenated thousands of car parks all around the world across a multitude of sectors, including:

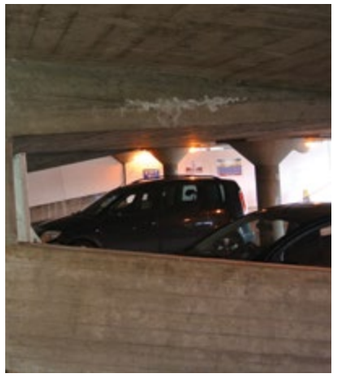
- Local Authorities
- Multi-storey Car Parks
- Shopping Centres
- Offices
- Leisure Facilities
- Retail Parks
- Supermarkets
- Airports
- Car Park Operators

YOUR TRUSTED PARTNER

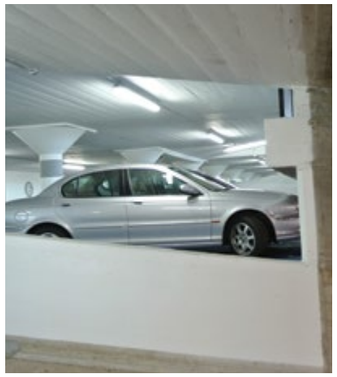
At Sika, we firmly believe in developing a true partnership and we will work with you to devise a bespoke, long-lasting solution to suit your project.

We'll use our experience to advise you on product selection and we'll provide much more than a standard materials supplier.

Our technical support team is on hand to provide support both during application and following completion.



BEFORE



AFTER

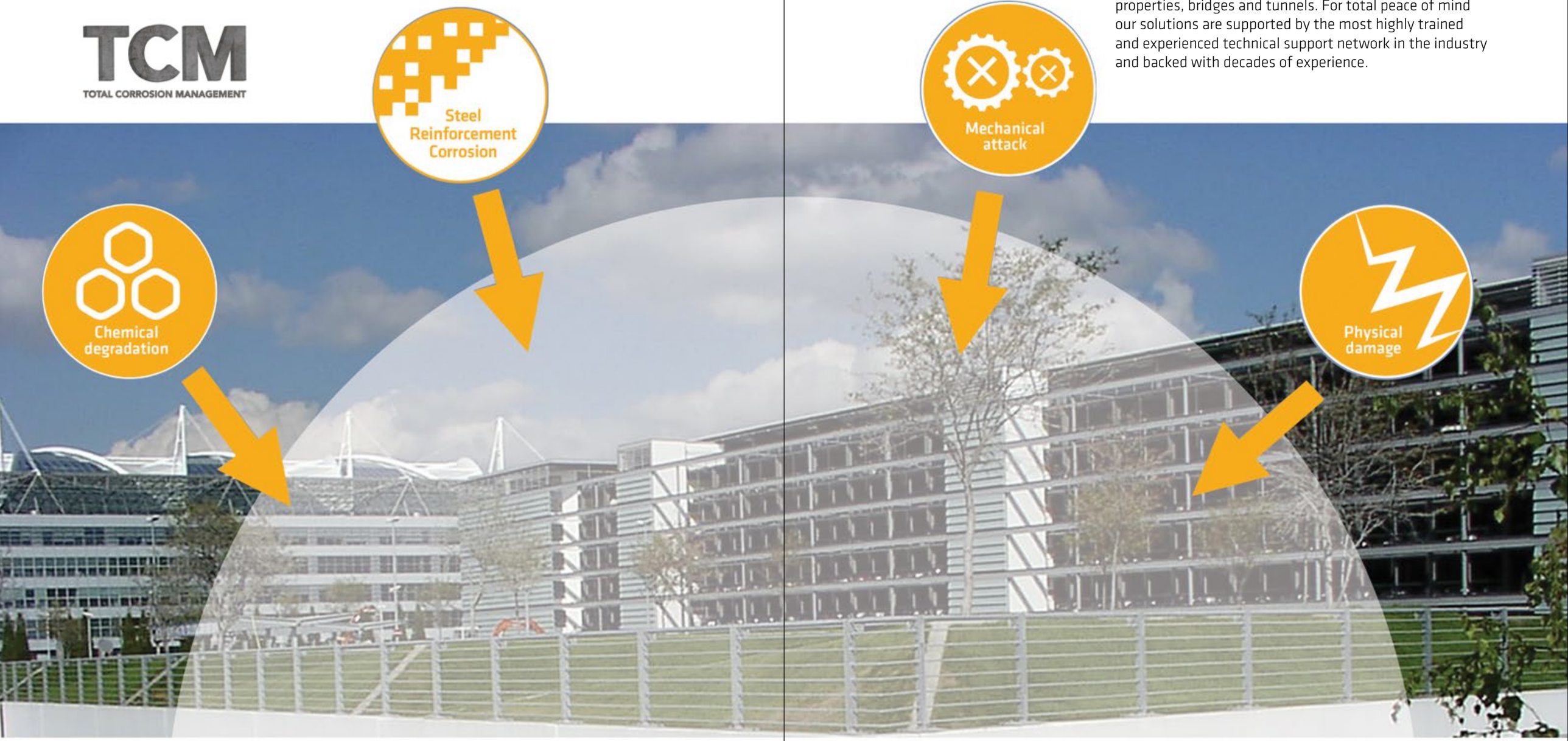
Global leaders

IN CAR PARK CORROSION MANAGEMENT

TCM
TOTAL CORROSION MANAGEMENT

Sika is the global leader in the corrosion management of concrete structures. Our Total Corrosion Management (TCM) approach encompasses concrete repair and protection, corrosion inhibitors, zinc anodes and structural strengthening systems. Helping to prolong and extend the life of buildings and structures as well as provide a viable and cost effective alternative to demolition and rebuilding.

Suitable for a wide range of applications including commercial and industrial buildings, car parks, residential properties, bridges and tunnels. For total peace of mind our solutions are supported by the most highly trained and experienced technical support network in the industry and backed with decades of experience.



COMPLIANCE TO BS EN 1504

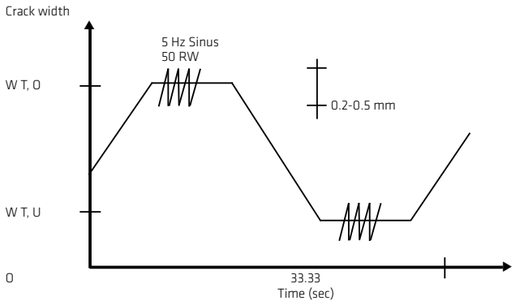
The European standard for repair mortars, protective coatings and waterproofing membranes is BS EN 1504. This waterproofing protection standard is based on the German equivalent Rili-DAfStb. The reason for following the German standard was because it was the most complete and complex standard for such applications; in fact it was the only standard that tested and categorised car park decking membranes. Therefore, this standard has had a significant influence on the development of the European standard (most of the test procedures within the German Standard have an EN number already).

OUR REFURBISHMENT SOLUTIONS WILL ALLOW YOU TO SIGNIFICANTLY

EXTEND THE LIFE OF EXISTING CAR PARKS

Example of test method used to determine crack bridging properties: (EN 1062)

System:	OS-11
Classification:	II T+V, dynamic
W T, O = 0.50mm	upper crack width
W T, U = 0.20mm	lower crack width
Δ W V = 0.30mm	change of crack with through traffic



Note: the graph is showing 1 cycle, the tests involves a total of 20,000 cycles @ -20˚C

Sika repair mortars, protective coatings and decking membranes for car parks have been tested in accordance with the German Rili-DAfStb and now the European standard BS EN 1504.

A QUESTION OFTEN ASKED IS, 'WHY IS THE GERMAN STANDARD OF IMPORTANCE TO THE NEW EUROPEAN STANDARD?':

- It defines surface preparation, for all concrete repair systems, injection resins and protective coatings – therefore, it is easy to compare different systems and their capabilities in order to choose the best and most appropriate ones
- It is the only standard that includes decking membranes especially for car parks – therefore, the tested systems will provide a high level of certainty for the end user
- It is approved by the German government (independent non-profitable organisation) – independent results to make an objective decision
- It defines standardised testing methods – comparison of different systems and materials is easily possible
- The tests within it reflect every possible exposure – to guarantee the applicability of systems

BS EN 1504

FOR EXAMPLE, THE TEST METHOD FOR THE RESIN BASED DECKING SYSTEMS, REFLECTS EVERY POSSIBLE EXPOSURE ON CAR PARKS, SUCH AS:

- Artificial weathering (DIN 53384 – EN 1062-11)
- Pull off tests in line with EN 13687
- Abrasion/wear resistance test SRT (61) to DIN 51 963
- Slip resistance test to (DIN 51130 or EN 660)
- Skid resistance test SRT (62) to BS 812
- Artificial ageing for 7 days @ 70°C (EN 660)
- Chemical resistance test (EN 660)
- Impact resistance test (EN ISO 6272
- Test to determine crack bridging properties of decking system (EN1062- 7)
  - Dynamic and static of 0.3mm @ - 20˚C
  - Static of 0.1mm @ -10˚C

GERMAN STANDARDS DEFINITIONS

OS 8: Rigid, broadcasted, coloured, high wear resistant surface protection system for concrete according to DIN EN 1504-2 in consideration of DIN V 18026 for OS 8.

OS 11 a/b: Flexible, broadcasted, dynamic crack-bridging, coloured, wear resistant surface protection system for concrete according to DIN EN 1504-2 in consideration of DIN V 18026 for OS 11 a/b.

OS 13: Flexible, broadcasted, static crack-bridging, coloured, wear resistant surface protection system for concrete according to DIN EN 1504-2 in consideration of DIN V 18026 for OS 13.

IMPORTANCE OF TESTING

When selecting a waterproof decking system(s) for New Build and Refurbishment of car parks, a suitably qualified and experienced Architect/Engineer should always consider the following factors in order to select the most appropriate system to meet their requirement based on the construction of the structure, i.e in-situ concrete, steel framed, composite decks or precast units.

MOVEMENT

- Ground movement or movement of the structure or of individual components, eg at construction joints, expansion joints is usually visible. Parking structures in use are always subject to dynamic loading

ATMOSPHERIC CARBONATION

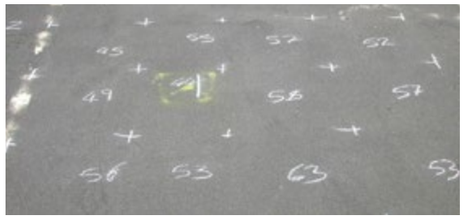
- Atmospheric carbon dioxide gradually and progressively reduces the protective alkaline layer around the reinforcement, which will allow the steel to corrode

THERMAL VARIATIONS

- Sunlight causes thermal expansion and stress cracking
- Frost causes thermal contraction and freeze / thaw damage
- Ultraviolet light causes degradation of organic materials, ie waterproofing membranes, resin and coatings

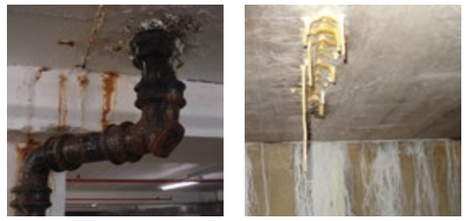
DE-ICING SALTS

- De-icing salts are based on chlorides. The penetration of water contaminated by de-icing salt into concrete cause corrosion of embedded steel reinforcement and often cracking, spalling and delamination of concrete cover



RAINWATER

- With water filling the pores and capillaries, concrete becomes susceptible to freeze/thaw damage
- In carbonated concrete water ingress will allow steel reinforcement to corrode



MECHANICAL EXPOSURE

- The decks of parking structures are exposed to different levels of mechanical stress, according to their location and function, ie:
  - Pedestrian levels: walkways
  - Standard levels: in primary parking bays
  - Heavy levels: entrance and exit areas, ramps and turning cycles

AGGRESSIVE POLLUTANTS

- Acidic oxide gases of sulphur and nitrogen from exhausts diffuse into the condensation and attack and corrode the concrete surface, which reduces the strength and increases the porosity
- Some liquids, such as hydraulic brake fluid, are very aggressive and will attack concrete and steel surfaces

EVERY CAR PARK OWNER OR OPERATOR HAS A LEGAL DUTY TO MAINTAIN THE PARKING FACILITY in such a manner that it does not endanger the people using it. Previous poor housekeeping has resulted in catastrophic collapses risking not only the general public but the reputation of the car park industry.

SIKA OFFER LIFE CARE PLANNING SUPPORT, FREE SITE SURVEYS AND BUDGETING SUPPORT.

WHEN YOU SPECIFY SIKA SYSTEMS

80% OF THE CAR PARK CAN STAY OPEN

AS NORMAL DURING REFURBISHMENT

There are thousands of multi-storey and underground car parks across the UK, many of which date back to the 1940's. These buildings were often built within tight constraints on limited town centre sites and can suffer from problems related to security and poor environment, poor build quality and layout, low durability and inadequate maintenance and repair.

Predominantly of reinforced concrete construction, car park structures are typically subject to deterioration from the effects of carbonation, water penetration, de-icing salts, automotive fluids and pedestrian and vehicular traffic. Structural defects need to be resolved in order to extend the lifetime of the structure and to address any shortcomings in safety.

POOR QUALITY REPAIRS

CORROSION MANAGEMENT

STRUCTURAL STRENGTHENING

CONCRETE REPAIR

SITE SURVEYS AND APPLICATION

Every car park is different and for any refurbishment works, it is crucial to determine the root causes of deterioration in order to extend the structure's design life.

As part of our service, we will provide a free site survey and assessment.

Thereafter, we will produce a complete specification with recommended product solutions and budget costings.

We are supported by a national network of contractors who are experienced in the application of Sika products and will strive to meet your individual needs.

MINIMAL DISRUPTION

When car parks are refurbished, it's important that there is minimal disruption, as facilities often need to remain open whilst work is carried out.

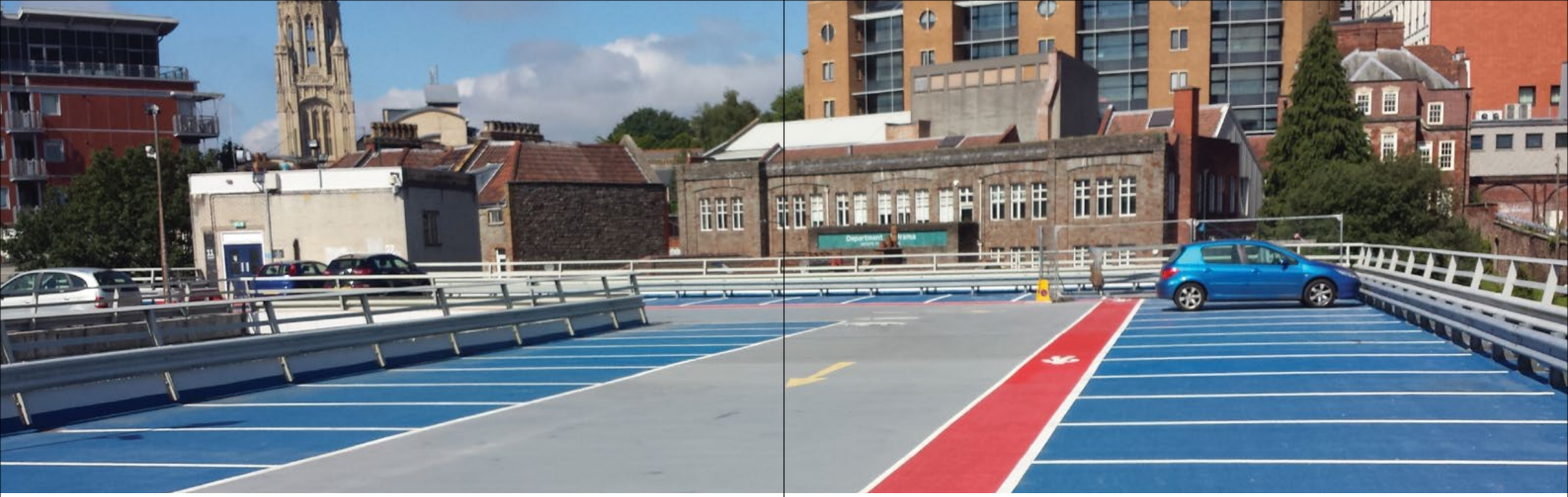
Closure of car parking facilities or access restrictions can lead to the loss of hundreds of thousands of pounds for car park owners and operators.

When you specify Sika systems, you can be assured that there will be limited disruption. In fact, 80% of the car park can stay open as normal during refurbishment works.

EMBEDDED GALVANIC ANODES

PROTECTIVE COATINGS

JOINTS



SIKA'S DECKING SYSTEMS GO WAY BEYOND PROVIDING

EFFECTIVE WATERPROOF PROTECTION

DECKING SYSTEMS

Car park decks are constantly exposed to aggressive and corrosive factors such as oil and diesel spills, carbon dioxide gasses, de-icing salts and water, all of which become even more of a problem if cracks already exist in concrete decks. The use of a waterproofing membrane is essential to extend the design life of decking surfaces. Sika's decking systems go way beyond providing effective waterproof protection, they also provide skid resistance, allow demarcation of parking bays and walkways and enhance aesthetics to create welcoming environments for car park users.

TOP DECKS AND EXPOSED AREAS

Top and exposed decks are amongst the most vulnerable areas of car parks. We offer a range of systems for top decks which offer superb protection against UV attack, water ingress, freeze/thaw cycles and chloride penetration. They have crack-bridging capabilities able to withstand structural movement as per design codes. Our systems for intermediate decks offer crack-bridging properties up to -20°C and can positively enhance the appearance of dark environments due to the wide range of colours available.

INTERMEDIATE DECKS

Although lower decks are not exposed to the weather, they still need protection against de-icing salts, abrasion, impact and other forms of deterioration.

PROTECTION OF GROUND BEARING SLABS

We offer a number of protective systems for ground bearing slabs. Able to deal with rising moisture due to damaged or non-existent damp-proof membranes, our range includes vapour permeable systems and Sika®EpoCem® technology for green and damp concrete.

RAMPS

Areas such as ramps and turning circles need heavy duty protection due to mechanical impact and abrasion. We offer a range of tough decking systems for ramps which provide maximum wear resistance and durability.

PROTECTIVE COATINGS FOR ENTRANCE AREAS, WALKWAYS AND STAIRCASES

Entrance areas, walkways and staircases have an immediate impact on visitors to car parks, so it is important to make them as welcoming and user friendly as possible.

We offer protective, water dispersed wall coatings which are both mechanical and abrasion resistant and are easy to clean, so exhaust marks can easily be removed. Ideal for application to walls and soffits, our wall coatings are available in a multitude of light, bright colours and special colours can easily be created.

Floors of entrance areas can also be made to look as inviting as possible with the application of a high performance floor coating. Sika floor coatings are easy to clean yet slip resistant and provide excellent wear, abrasion and chemical resistance.

DESIGN SUPPORT

DESIGN OPPORTUNITIES

Prior to refurbishment, many existing car parks can be dark and gloomy environments, potentially deterring motorists from parking. To allow building owners, operators and specifiers maximum design opportunities, our car park decking systems, protective coatings and marking systems are available in a vast range of standard colour and finish options which can significantly lighten and brighten parking facilities.

STANDARD COLOURS

Light Grey

Traffic Grey B

Gentian Blue

Dusty Grey

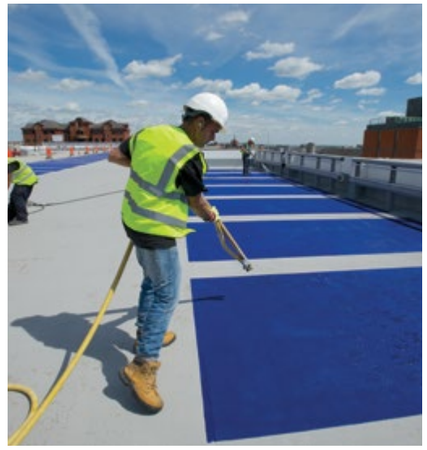
Leaf Green

Brown Red

LINE MARKING COLOURS

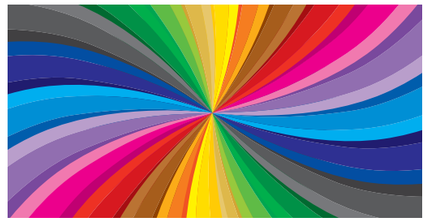
White

Yellow



As well as standard colours, we can also produce bespoke colours to match corporate colours or colour schemes such as Pantone or RAL. With virtually unlimited colour options, our products can help create safe, secure and attractive parking environments for users. Design and colour options can be utilised to create:

- Standard parking bays
- Disabled parking bays
- Parent and toddler parking bays
- Walkways
- Drop-off zones
- Driving lanes



COLOUR INFORMATION
Due to the nature of this product all colours are approximate.

SIKA MATCH SERVICE
All industrial resins are available in most RAL and BS colours at an additional cost.

CONCRETE REPAIR AND STRENGTHENING

EVERY CAR PARK OWNER OR OPERATOR IS LEGALLY OBLIGED TO MAINTAIN THEIR CAR PARK IN A SAFE CONDITION.

Car parks are subject to deterioration and depending on the condition and rate of degradation, repairs may be needed to keep them in service or to prolong their life.

We offer a range of innovative solutions for concrete repair, including advanced repair mortars, hydrophobic impregnation solutions, corrosion inhibitors and joint sealing solutions for façades and precast concrete.

We offer products that are exceptionally rapid curing, so will enable refurbishment projects to be completed rapidly and with minimal disruption to normal services.

Sika has been associated with refurbishment since the company was established over **100** years ago.

STRUCTURAL STRENGTHENING

Sika's structural strengthening solutions incorporate fibre reinforced polymers for flexural strengthening of beams and slabs, shear strengthening of beams and to increase axial, shear and flexural capacity of columns, as well as seismic strengthening systems.

The Sika range also includes carbon fibre reinforced polymer (CFRP) systems, such as plates, fabrics or post-tensioning systems.

Quality Products, Quality Service

QUALITY MANAGEMENT AND GUARANTEES

At Sika, we operate stringent quality management systems, with EN ISO 9001 certification for quality control and EN ISO 14001 for environmental management.

Wherever possible, products are manufactured to European and British Standards.

Our objective is to work very closely with all parties involved in a refurbishment or new build project to ensure an application which is finished to the customer's complete satisfaction.

Sika have a range of systems and guarantees available to ensure customers are protected.

100 YEARS

OF CONSTRUCTION EXPERIENCE AND OVER

40 YEARS

WITHIN CAR PARK DECK WATERPROOFING

bsi. ISO 9001 Quality Management

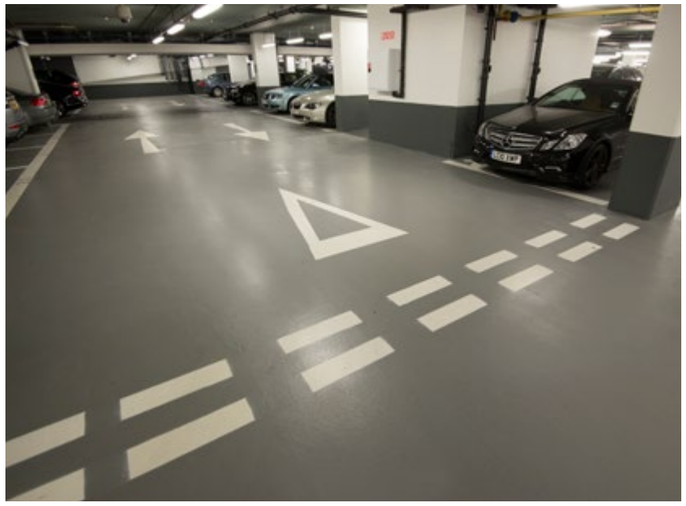
bsi. ISO 14001 Environmental Management

“ARE YOU WORKING ON A NEW BUILD PROJECT? SIKA CAN HELP”

New Build Car Parks

As well as for refurbishment work, Sika systems are often used during the construction of new car parks. We have a great deal of experience of working alongside designers, engineers, planners and project teams to recommend car park solutions that help extend the design life of structures and reduce future maintenance cycles. Modern car parks are often built using ‘fast-track’ methods of construction, utilising precast and prefabricated sections of steel frames and concrete decks and stairwells combined with composite structures.

We offer several rapid curing products and our extensive product portfolio helps achieve the design principles of the layout of new car parks, such as ensuring the smooth passage of traffic and ensuring user and staff safety. Sika products are often specified to increase durability on new construction and to present an ideal solution to non-conformance with specification. For instance, our concrete protection products provide structures with additional protection against water penetration, de-icing salts, freeze/thaw cycles and chloride ions, ensuring the design life of car park structures is both achieved and extended.



DECKING SOLUTIONS

RAMPS

STRUCTURAL COATINGS

JOINTS

FIRE PROTECTION

HELPING YOU KEEP YOUR CUSTOMERS HAPPY

KEY SERVICES

- Unique technical service and support
- Initial visual assessment of structures
- Concepts, specifications and detailing
- Product or system selection
- Application training on site support
- Quality control recommendations

CALL SIKA ON:
0800 112 3863
www.sika.co.uk

CASE STUDIES

SIKA HELPS BRIGHTEN BASILDON CAR PARK

The multi-storey car park at Basildon's Eastgate shopping centre has parking spaces for 650 cars. Before refurbishment, the car park was dark and quite dingy and not offering a particularly welcoming environment to visitors to the centre. The parking bays were tight, designed for cars from the 1980's and quite unsuitable for many modern vehicles.

The car park was in need of major refurbishment. Continual exposure to chlorides from de-icing salts, carbon dioxide and water penetration, had caused the concrete to spall as the steel reinforcement within had corroded. A repair solution that would inhibit future corrosion taking place was required together with a durable coating and decking system that would ensure the future integrity of the structure.

Sika were able to provide a single source supply for concrete repairs, corrosion management and both deck and soffit coatings. Spalled areas of concrete were removed and soffit repairs carried out using the Sika® MonoTop® system. This one-component system has the advantage of easy handling and application, with high build qualities. Decks were repaired using Sika® Rapid Repair mortar, a cementitious mortar with high early strength, which kept the time out of service to a minimum.

To protect the steel reinforcement from future attack, Sika® Ferrogard®-903 corrosion inhibitor was applied to the concrete surfaces. Sika® Ferrogard®-903 migrates through the concrete capillaries to the embedded steel surface, and forms a protective layer around the steel.

Soffits were coated with Sikagard®-670W, an environmentally friendly, low VOC, water-based, anti-carbonation coating.

Sika Car Park Decking systems are specially designed to meet the harsh conditions that car parks are subject to, and provide durability, cost effectiveness and an excellent finish. As they are solvent free, the car park was allowed to remain open during refurbishment, with just selected work areas closed at any one time.

The eleven month project has given the car park a new lease of life, with larger parking bays and a brighter more comfortable environment for shoppers.

SIKA WATERPROOF BRIGHTON CITY CENTRE CAR PARKS

Built in 1969, the Regency Square Car Park is a three storey underground car park located in the prestigious Regency Square on Brighton's seafront. Constructed from reinforced in situ concrete, the car park has a capacity of 499 car parking spaces with 77 on the top level, 184 in the middle and 238 on the lower level.

The reinforced concrete structure has had little maintenance until 2013 and in some areas the corrosion was extreme. In a bid to modernise and update the car park and to make it brighter, safer and more welcoming for residents and visitors, owner Brighton and Hove City Council's £2.82 million (£5658 per space) refurbishment plans included structural repairs, new waterproof deck systems, improved signage and bay markings and better lighting.

Following more than forty years of exposure to water, de-icing salts, airborne contaminants and the constant use of vehicles, the car park's ageing concrete structure was treated and repaired and a new waterproof and decorative decking systems was applied. The work was carried out one level at a time to ensure minimal disruption to residents and visitors. To reduce disruption during the refurbishment works, Sikafloor®-Pronto was used for the ramps. Based on PMMA resin technology the ramp system could be applied in low temperatures with a cure time of less than 1 hour between coats. This facilitated the application of the car park ramp system to be applied overnight, allowing the car park to be open to vehicles the following morning. This greatly reduced the disruption to the public during the refurbishment works and allowed the car park to remain open during normal hours.

Brighton and Hove City Council worked closely with the specialist contractor and building product manufacturer Sika to ensure that the car park structures were repaired to provide a safe environment for all car park users when reopened. Environmental conditions during refurbishment were fairly extreme, with prolonged cold temperatures (long winter; no sunlight); lots of rain and much noise and dust from concrete repairs. Nevertheless close monitoring of dust and noise levels ensured conditions were safe for workers, car park users and neighbours.

The car park remained open to the public throughout the one year contract period by phasing works, with work areas isolated by fencing and dust screens. Repairs and finishes to the access ramp was done with prudent access controls; allowing users to enter the car park up until 10am then parking on the lower level, allowing ramp work to proceed unhindered for the rest of the day.

With the Regency Car Park now complete and in daily use, the car park now has a reliable, durable and high performance surface, all thanks to a high quality refurbishment and a comprehensive selection of market leading products from Sika.

HIGH CHELMER CAR PARK AGEING CAR PARK GET NEW LEASE OF LIFE

A comprehensive range of concrete repair, corrosion management and waterproof car park decking products from Sika has helped transform Chelmsford's 1960's High Chelmer multi-storey car park into a safer, more stylish and modern parking facility. Completed to such a high standard, the project was shortlisted in the Best Car Park Refurbishment category at the British Parking Awards 2012.

In March 2011, following the discovery of localised instances of concrete spalling due to expansive corrosion of the reinforcement bars, Chelmsford Borough Council acted upon professional advice from the structural and civil engineers to close High Chelmer Car Park and Retail Market to allow significant repairs and a full refurbishment to be completed.

Aiming to reopen the car park fully within 16 weeks, an efficient concrete repair solution with a proven track record was required. With market leading reliability and the ability to exceed the requirements of BS EN1504, the standard for concrete repair and protection, a complete concrete repair, corrosion management and waterproof decking system from Sika was specified.

During site inspections it was discovered that the car park required 1,500m^2 of repairs – 50% more than the original figure of 1,000m^2. It was anticipated that the concrete required repairs to a depth of 75mm, however, on commencement of work this was amended to 85mm.

Sika, offered a full range solution for the concrete repair corrosion management using a combination of Sika® Galvashield® XP2 sacrificial anodes, Sika® Ferrogard®-903 migrating corrosion inhibitor and 120 tonnes of Sika® Armorcrete flowable micro-concrete.

The car park decks were then waterproofed with 36,000kg of the highly durable and cost-effective Sikafloor®-161/-264 car park inter-deck system – finished in a range of colours to differentiate between each car park section. The soffits and columns were cleaned of contaminants using a jet washing process before being repaired using Sika MonoTop 615 concrete repair mortar and coated with an anti-carbonation coating. The refurbishment package was completed within an extended 21 week time frame. This allowed the car park to reopen in November 2011 – in perfect time for the busiest shopping period of the year.

NORTHAMPTON CAR PARK IS REFURBISHED USING SIKA REPAIR SYSTEMS

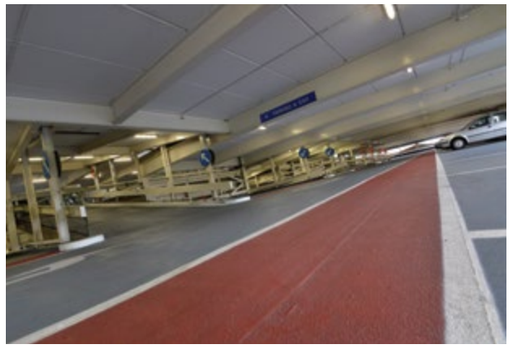
Mayorhold multi-storey car park situated in the centre of Northampton, with spaces for 880 cars, has recently been refurbished using Sika concrete repair and coating systems as well as waterproofing membranes. Testing of this five level car park, which was built in 1973, had shown increasing deterioration of the reinforced concrete decks, due to chloride attack of the reinforcing steel within the structure.

The car park needed to be completely refurbished in order to extend the life-span of the structure.

Due to differing extents of corrosion activity within the steel reinforcement, a ribbon anode cathodic protection system together with the Sika® Ferrogard®-903 corrosion inhibitor was used. After the application of Ferrogard® to deck A the corrosion rate was reduced by over 90%, test data was gained using linear polarisation. The combination of these corrosion control methods provides a cost efficient, technically driven solution. Following repairs and preparation, the tough elastic waterproofing system Sikafloor®-350 N was applied to the top deck including Sikafloor®-359 N, a very tough seal coat, flexible polyurethane seal coat, with a very good colour stability and resistance to weathering. The intermediate decks were coated with Sikafloor®-261, a durable, epoxy resin intermediate decking system.

Repairs to all decks were carried out using Sika® Rapid Repair Mortar, a cementitious, fast setting mortar with high early strength. Soffits and pillars were repaired using the Sika® MonoTop® concrete repair system, and Sika® Ferrogard®-903 corrosion inhibitor was applied. SikaColor®-671 W, an anti-carbonation decorative coating was applied to all surfaces. This environmentally friendly, water based, protective coating prevents water ingress, is vapour permeable and extremely durable.

The refurbishment works, together with the new upgraded lighting system won the International Concrete Repair Institute, Repair Project of the Year 2006 Award and has made Mayorhold car park brighter and safer, with an assured future.



SIKA GIVES FARNHAM ROAD CAR PARK AN EFFICIENT MAKEOVER

Sika has provided a range of proven concrete repair, corrosion management and car park deck systems during a major refurbishment of a 917 space multi-storey car park in Guildford, ensuring minimal disruption and allowing 80% of the spaces to remain in use during the works.

Forming part of Guildford Borough Council's £2.5 million plan for the maintenance and upgrades of three local car parks, the Farnham Road car park was in need of a refurbishment following years of exposure to water, de-icing salts, airborne contaminants and the constant use of vehicles. Guildford Borough Council once again turned to Sika who offered a long term solution which would address the requirement for concrete repair, corrosion protection, and a new highly decorative car park deck system whilst also offering minimal disruption to users of the car park.

Working with a main contractor on the 12 storey car park, Sika supplied 10,000m^2 of Sika® Ferrogard®-903+ due to the high chloride levels in the car park decks and 12,000m^2 of the Sikafloor®-161/-264 car park deck system. SIkafloor®-161/-264 car park deck system is a solvent free, highly durable car park deck system with outstanding abrasion resistance. The ultra-fast setting Sikafloor® Pronto System was used on the ramps and hammerheads of the car park during the phased works programme, allowing works to be completed overnight ready for traffic the following day.

Especially suitable for lower temperatures, Sikafloor® Pronto can be applied in a wide range of climatic conditions. Comprising Sikafloor®-15 Pronto Resin, Sikafloor® Pronto Hardener and Sika® Quartz Sand, the system also offers excellent mechanical and chemical resistance which makes it ideal for multi-storey and underground car parks.

As well as a market leading range of products, Sika also provides a free comprehensive car park survey service. The Sika technical team will visit the site and produce a visual site report that highlights the immediate issues and can be used in conjunction with advice from a qualified structural engineer to formulate a life care plan as recommended by the Institute of Structural Engineers.

With the renovation of this busy town centre car park now complete, the specification of a range of innovative products from Sika has ensured the car park has returned to its best within the shortest time frame possible and with minimal disruption to users.

BRIGHTON CAR PARKS SEEN IN NEW LIGHT

The typically shady and inhospitable environment of underground car parks has been radically transformed in Brighton, where the 350 space 'The Lanes' facility has received a welcoming and flawless finish thanks to the Sikafloor® Ecoline System.

The car park needed to be completely refurbished in order to extend the life-span of the structure.

Developed by Sika, global leader in specialist construction materials, the Sikafloor® car park inter deck system was selected for its outstanding surface finish. Previously dark and cracked, the floor now resents visitors with an attractive coloured surface that shines under the lights. Complete with a unique silver and black parking finish, which eliminates the need for white lines and creates easy definable spaces, the car park now has a safer and more welcoming atmosphere.

In total, 10,000m^2 of the Sikafloor® system was applied by a specialist contractor to the car park decks. The Sikafloor® system is quick and easy to apply – vital as any closure of parking spaces results in lost revenue. The project was completed in four phases, one for each floor of the car park, helping to minimise disruption to the client. Hard-wearing and economical, the Sikafloor® system was applied to the floor at a minimum thickness of 4 mm. This was important as the original concrete surface was uneven and cracked. The thickness of the Sika system enabled the creation of a smooth, level, finish.

With the work taking place underground, it was important to protect the public and the contractor's health and wellbeing. As Sikafloor® products are very low in odour, they offered the perfect decking solution that would provide workers and car park users alike with a comfortable and safe environment whilst the refurbishment works were being carried out.

Once finished, the system provided not only a stunning appearance, but also created a waterproof system that ensured protection to the concrete structure. The Sikafloor®-263 SL and Sikafloor®-264 systems are part of Sika's Ecoline range of resin based flooring products. Produced from next generation low allergy resin, reducing the risk of applicator sensitivity, they are CE marked for performance. They are available in tins and economically and ecologically advantageous drums that help reduce the amount of packaging required.

SIKA HELPS RAPIDLY REPAIR UPPER HUNDREDS CAR PARK

Upper Hundreds MSCP is located in Aylesbury Town Centre with spaces for 305 vehicles. The car park, which is owned by Aylesbury District Council, was suffering from a failed waterproofing system on its top deck, allowing water ingress into the lower decks of the car park. This water ingress had caused spalling to the concrete screed, to the ramps and pedestrian walkways.

After further testing it was found that the concrete substrate did not have sufficient cohesive strength to support the application of a new car park deck system without further case hardening.

To remove existing failed coatings and concrete screed and repair damaged concrete on deck, ramps and soffits. Apply a case hardening resin to increase the cohesive strength of the concrete and apply a waterproof car park deck system, with fast setting properties, to prevent further water penetration and resulting damage.

Concrete repairs were carried out using Sika® Rapid Repair Mortar, a cementitious mortar with high early strength. The high early strength property ensured that the time the deck was out of service was kept to a minimum.

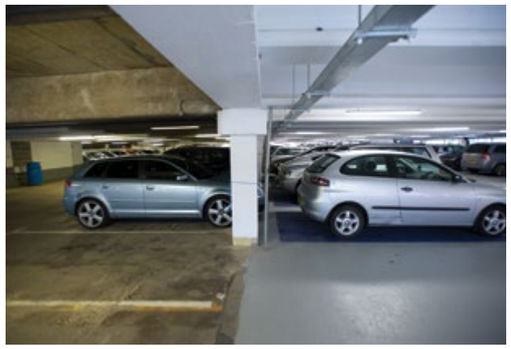
To increase the cohesive strength of the concrete decks, application of a case hardening resin was required. Sikafloor®-156 low viscosity epoxy case hardening resin was chosen to strengthen the concrete prior to the application of further car park deck systems.

To ensure the future integrity of the car park, a waterproof car park deck system, with fast setting properties was required, to prevent future water penetration and the resulting damage. the main contractors on the project, applied Sikafloor®-32 Pronto, a fast curing, crack bridging, mechanically and chemically resistant, elastomeric deck system. This system was chosen to give a, slip resistant, hard wearing waterproof surface.

Sika® Reemat Premium was incorporated into the Sikafloor®-32 Pronto system to protect areas of movement such as construction joints, existing cracking and up-stands. The Sikafloor®-32 Pronto system with the inclusion of Sika® Reemat Premium has been fully tested to meet the highest crack bridging standards available on the market. These include BS EN1062-7 Method B, which tests the complete system through 20,000 crack cycles up to 0.5mm @ -20 °c. The test demonstrates the ability of the system to protect against reflective cracking penetrating through the membrane and ensures the future integrity of the deck.

The fast setting properties of Sikafloor®-32 Pronto decking system, even at low temperatures, allows work to proceed quickly, minimising disruption to the client.

Sika Car Park Decking systems are specially designed to meet the harsh conditions that car parks are subject to, and provide durability, cost effectiveness and an excellent finish.



COMPLETE REFURBISHMENT SOLUTION FOR LEEDS' OLDEST MULTI-STOREY CAR PARK

Forming part of a £11.9 million upgrade of the iconic Merrion Centre Shopping Centre, Sika has provided a range of concrete repair, structural strengthening and corrosion management systems during a major refurbishment of the 950 space multi-storey car park which will see it transformed into a more welcoming and stylish facility as well as the most modern and technologically advanced car parks in Leeds.

Owing to the necessity of keeping this key city centre car park operational throughout the 48 week refurbishment programme, Sika's market leading reliability was essential on a project where the work was carried out one level at a time in order to minimise disruption to traders and shoppers.

The car park needed to use several systems to meet the different needs of each level with each area having to be durable and resistant to chemicals and abrasion. The external top decking also had to have superb crack bridging properties to accommodate freeze-thawing and the dynamic movement which is associated with reinforced concrete structures and exposure to UV.

The project engineer required an uplift in strength of the reinforced concrete elements of the car park, Sika proposed the use of a carbon fibre structural strengthening system using SikaWrap® anchors and the high performance SikaWrap 300, a reinforced carbon fibre fabric which was used for the flexural and shear strengthening of slabs within the building structure.

Sika® Galvashield® sacrificial anodes were applied to the concrete patch repairs to protect against incipient anode corrosion. Sika® Ferrogard®-903+ was spray applied to the remaining areas of the concrete slab to protect against further corrosion occurring to the steel reinforcement due to the presence of chlorides and carbonation.

For the intermediate decks, a system featuring Sikafloor®-161, Sikafloor®-375N Elastic and Sikafloor®-358 was chosen. Sikafloor®- 161, 2 part epoxy resin, was used as a highly moisture resistant primer. It was then covered with a layer of Sikafloor®-375N Elastic, a solvent free highly elastic polyurethane membrane with crack bridging properties and a seal coat of Sikafloor 358. Broadcast with quartz aggregate for anti-slip qualities and resistance to abrasion, it is an ideal choice for car park applications.

For the exposed top decks, which were failing and delaminated in large areas exposing the concrete deck to water ingress, the company's Sikafloor® Pronto decking system combined long term waterproofing integrity and exceptional resistance with a fast application that minimises the time that the car park deck would be unoperational. Featuring PMMA (polymethyl methacrylic), the resin flooring system is ready for foot traffic after one hour and fully cured after two.

As well as a market leading range of products, Sika also provides a free comprehensive car park survey service. The Sika technical team will visit the site and produce a visual site report that highlights the immediate issues and can be used in conjunction with advice from a qualified structural engineer to formulate a life care plan as recommended by the Institute of Structural Engineers.

With the renovation of Leeds' most iconic and busiest car park on track towards its completion in November 2014, the specification of a range of innovative products from Sika will ensure the car park is returned to its best within the shortest time frame possible.

SIKA FULL RANGE SOLUTIONS FOR CONSTRUCTION:

LIQUID APPLIED ROOFING

SINGLE PLY ROOFING

CONCRETE

CONCRETE REPAIR

STRUCTURAL STRENGTHENING

WATERPROOFING

JOINT SEALING

FAÇADE STRUCTURAL ADHESIVES

FLOORING

INDUSTRY

DISTRIBUTION

BUILDING TRUST

FOR MORE INFORMATION:

WHO WE ARE

Sika Limited and Sika Ireland Limited are part of the global Sika Group, specialising in the manufacture and supply of chemical based products. Sika have a leading position in the development and production of systems and products for bonding, sealing, damping, reinforcing, and protecting in the building sector and the motor vehicle industry. Sika has subsidiaries in 101 countries around the world and manufactures in over 200 factories. With more than 20,000 employees Sika generates annual sales of CHF 7.09 billion (£5.45bn). We are also committed to providing quality, service, safety and environmental care.

In the UK and Ireland, we provide market-leading solutions for concrete, waterproofing, roofing, flooring, refurbishment, sealing & bonding, and industry, and have manufacturing sites in Welwyn Garden City, Preston, Leeds and Dublin with more than 870 employees and a turnover of more than £260 million.

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