



Seamless Car Park Solutions

MasterSeal Traffic Systems



Master Builders Solutions

The Master Builders Solutions brand brings all of our expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry. The know-how and experience of a global community of construction experts form the core of Master Builders Solutions.

We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction.

The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, solutions for underground construction, waterproofing solutions, sealants, concrete repair & protection solutions, performance grouts, performance flooring solutions and solutions for on- and offshore wind energy.

Our comprehensive portfolio

- Concrete admixtures
- Cement additives
- Chemical solutions for underground construction
- Waterproofing solutions
- Sealants
- Concrete repair and protection solutions
- Performance grouts
- Wind turbine grouts
- Performance flooring solutions



Our reference in Stockport (United Kingdom):
Stockport Exchange Train Station

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Long Term Deck Solutions for Short Term Parking

The triumph of the car as a product for the masses started in the mid-20th century. At the same time, it became a key factor in urban planning with solutions ranging from cities designed for cars to pedestrian precincts. Especially when a large number of cars need to be parked in a relatively small area, at places of work, near public buildings and in densely populated cities, space is at a premium. Multi-storey and underground car parks provide the parking spaces required. At the same time, they are the drivers first point of contact with their destination. It is an architectural challenge to meet both sets of requirements.

Master Builders Solutions is a strong partner for your project. As a company, we can look back on a 150 year history and have decades of experience in the construction chemicals field. Thanks to this experience and continuous investments in research and development, we are in a position to develop optimum product solutions.

As a specialist in seamless traffic systems, we offer tailor-made solutions for any application. Our traffic systems are not only outstandingly well-suited to meet functional requirements but also allow designers considerable leeway for creativity.

MasterSeal Traffic a long Established Market Leader

MasterSeal Traffic systems have been specified and installed for more than 20 years in the UK. Formerly branded as CONIDECK, MasterSeal Traffic systems were first developed in the late 1980's and quickly gained success across Europe.

1993: Eden Walk Shopping Centre Multi Storey Car Park (MSCP), Kingston upon Thames
One of the first multi deck MaterSeal traffic installations

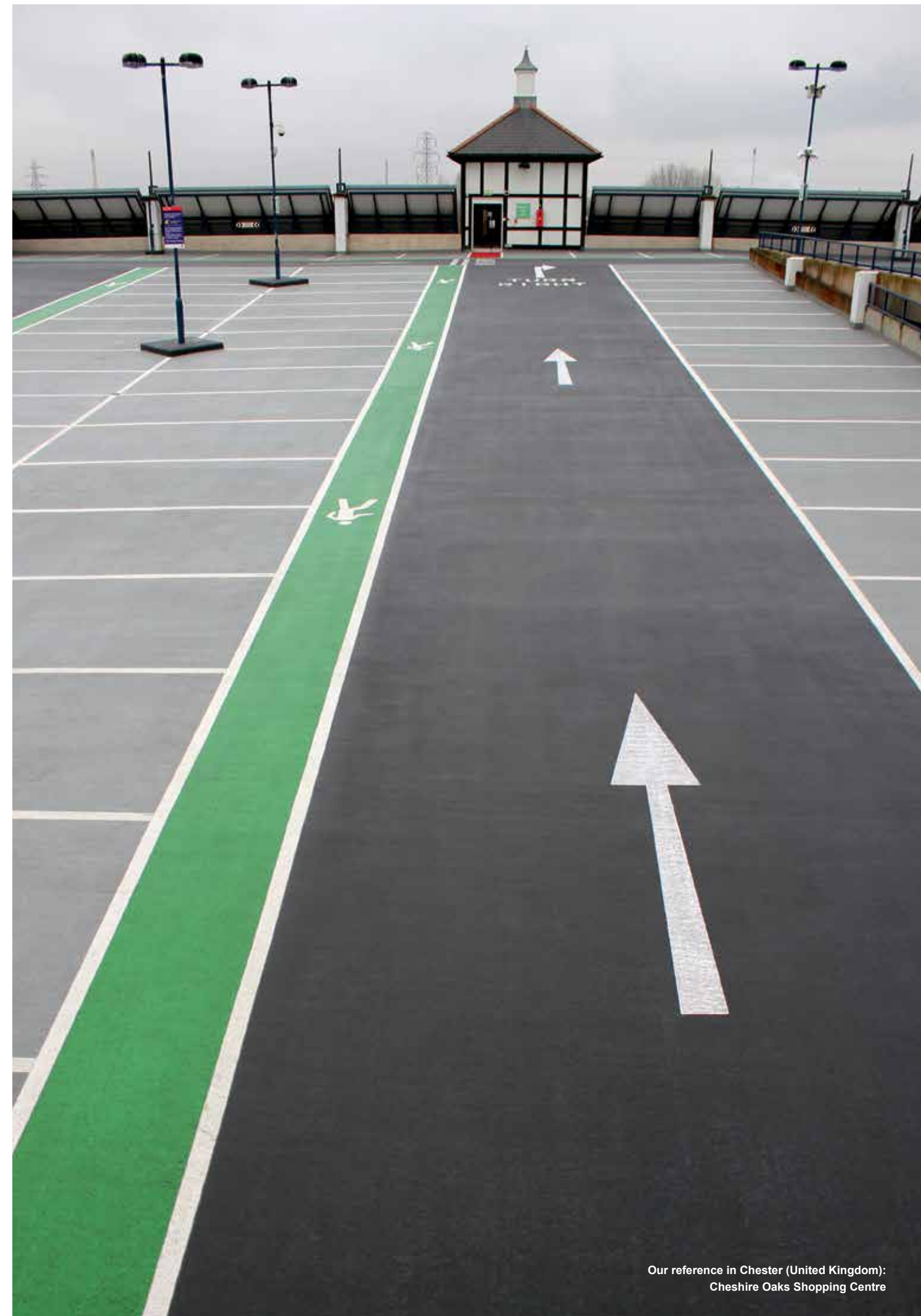
2000: Metro Centre Blue and Yellow MSCP's, Newcastle upon Tyne
The UK's largest shopping centre

2002: Q-Park Candleriggs MSCP, Glasgow
The introduction of fast curing MasterSeal Traffic polyaspartic coatings

2004: The Mall underground MSCP, Walthamstow
MasterSeal Traffic success with The Mall

2007: Q-Park Liverpool One MSCP's, Liverpool
All Q-Park carpark refurbishments and new build construction completed with MasterSeal Traffic

2015: intu Gade, Church, Sutton MSCP's, Watford
The largest single MSCP refurbishment project in the UK in 2015



Our reference in Chester (United Kingdom):
Cheshire Oaks Shopping Centre



Flexible Protection for Dynamic Structures

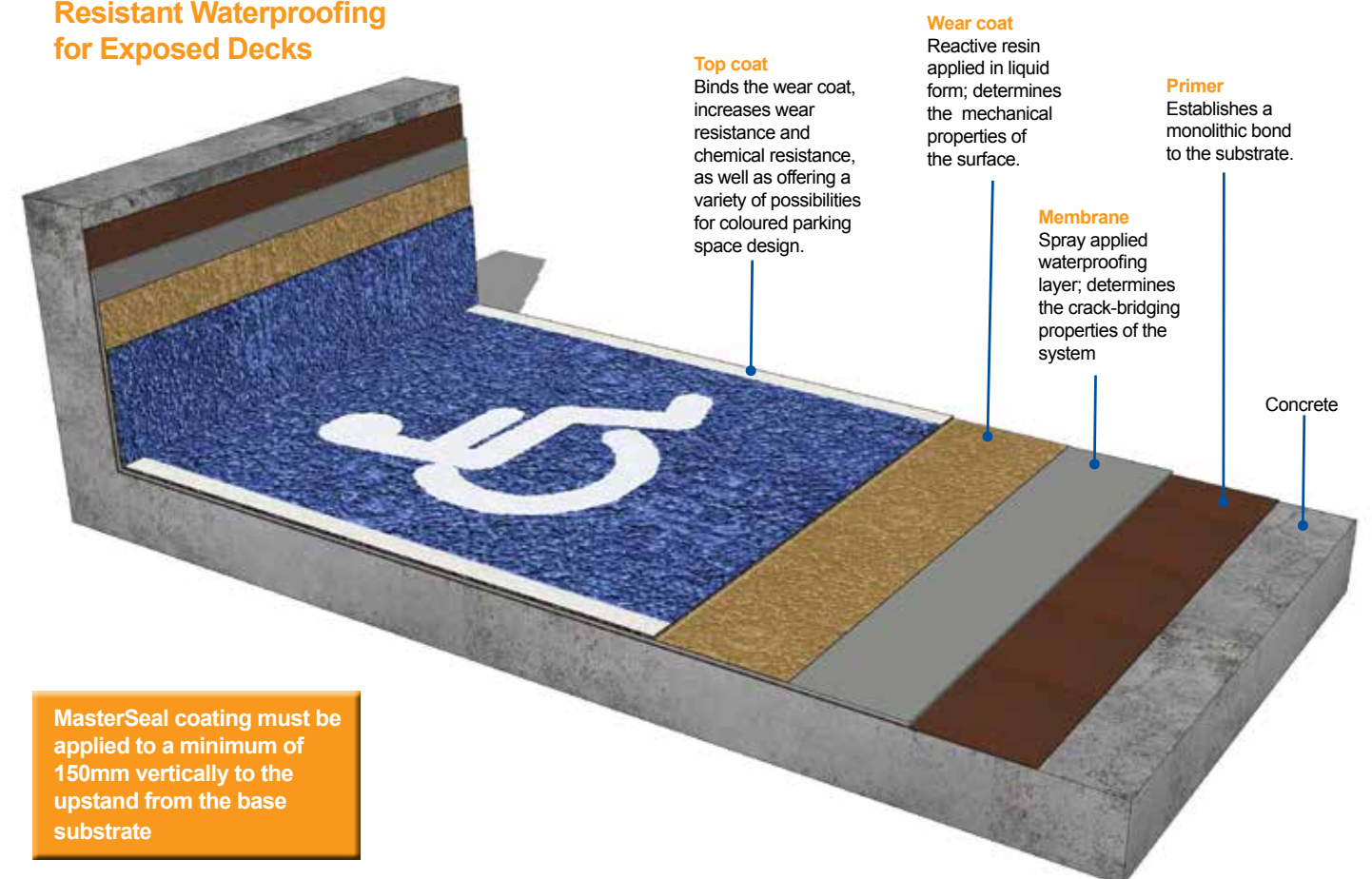
Elastomeric Wear Resistant Solutions

Even a small car can weigh 1,000 kg and more; the weight of an SUV can easily reach 2.5 tonnes. Even when parked, vehicles represent a significant load on a structure. As soon as they start moving, the forces on the structure and the surface are simply huge. A reinforced concrete structure is therefore the solution of choice. But what protects reinforced concrete against loads on its surface and ensures that the building continues to function properly and remains economical in the long term?

The surfaces of a car park face extreme mechanical, chemical and dynamic loads: mechanical loads caused by vehicles moving off and braking, chemical loads caused by oils, fuels and road grit and dynamic loads caused by temperature fluctuations and changing traffic densities combined with varying occupancy rates.

MasterSeal Traffic systems from Master Builders Solutions offer multi-layer traffic surfaces that are tailor-made to withstand the requirements faced by each individual project. They are ideal for both new and refurbishment projects where the rapid installation of parking spaces, ramps and spiral ramps save time for the investor. The large selection of colours available means that drivers can be given orientation and helps provide car parks with a clearly structured appearance.

MasterSeal Traffic Wear Resistant Waterproofing for Exposed Decks



MasterSeal coating must be applied to a minimum of 150mm vertically to the upstand from the base substrate



Bespoke Solutions

Surface Coatings for Car Parks

The function of a car park is always the same – to provide parking spaces for as many vehicles as possible. However, the requirements faced by the deck system may be very different depending on the position of a parking area in the building. MasterSeal Traffic systems consist of several layers, all applied in liquid form. This means that the coating can be adapted to the requirements of the specific project with regards to both cost/benefit analysis and the individual properties of the surface.

To allow customers to benefit from the variety of possibilities offered by Master Builders Solutions, we have developed a number of services to support owners, designers, architects and application contractors, from conceptual design through to the completion of a project. Our holistic consultancy approach includes support for each stage of the design and decision-making process. On the basis of your project requirements, our expert employees indicate the wide range of possibilities that are available. This way, you can always be sure that you choose the right system for a refurbishment, modernisation or new build project.

For further information, go to:
www.master-builders-solutions.com

The benefits at a glance

Individual:

- A variety of possibilities for coloured parking space design

Reliable and versatile:

- Implementation of special properties (such as crack-bridging, non-yellowing or anti-slip properties, high mechanical strength) is possible
- Fast track systems for fast and economical rehabilitation

Economical:

- Strong, proven car park systems with a long service life
- Low maintenance expenses thanks to easy cleaning of surfaces



- 1 Exposed Deck (pages 14–15)
- 2 Intermediate Deck (pages 16–17)
- 3 Spiral and other Ramps (pages 18–19)
- 4 Ground Bearing Slabs (pages 20–21)
- 5 Fast Track Systems (pages 22–23)



Concrete Repair

Easy to Apply and Durable Solutions



With Master Builders Solutions your concrete repair problems in carpark renovation are easily solved. We provide easy-to-apply mortars for hand application on vertical and overhead areas, systems for spray application, and flowable mortars for pourable applications. Our repair mortars are specifically designed not only to meet the demanding requirements of EN 1504-3 (the European standard for concrete repair) but also to offer excellent application properties.

MasterEmaco Repair



- 1 Corrosion Protection:
MasterEmaco P 5000 AP
- 2 Bonding slurry (optional):
Either MasterEmaco repair mortar
or MasterEmaco P 5000 AP
- 3 Repair Mortar:
MasterEmaco S 5400
- 4 Fairing Coat (optional):
MasterEmaco N 5100 FC



Reinforced Concrete Repair System

Long Lasting Low Maintenance Repairs

1 Corrosion Protection

MasterEmaco P 5000 AP

- Provides active corrosion inhibition to protect the reinforcing bars
- Polymer modified formulation for better adhesion on steel reinforcement
- Simply mixed with water
- Multi-use: can also be used as bonding slurry to improve bond of MasterEmaco repair mortars
- Light grey/off white colour for easy site control of coverage on reinforcement

2 Bonding Slurry

- Typically not needed for MasterEmaco repair mortars!
- A well-prepared, pre-wetted surface is absolutely sufficient for our time-saving MasterEmaco repair mortars
- In case a bonding slurry is demanded, you can use MasterEmaco S 5400 with 10 % higher water addition or MasterEmaco P 5000 AP

3 Repair mortar

MasterEmaco S 5400

- Cement-based, single-component, extra high-strength, high-modulus, fibre-reinforced structural repair mortar
- Meets the requirements of EN 1504-3 class R4
- Can easily be spray or trowel applied
- Vertical, horizontal and overhead application from 5 to 50 mm.
- Very easy to smoothen, gives very dense and uniform surface.

4 Fairing Coat (optional)

MasterEmaco N 5100 FC

- Cement-based, single-component, polymer-modified, fast-setting levelling mortar and blowhole filler
- Ideal for fine finishing and levelling repairs on large vertical and overhead areas
- Fast setting properties allows quick over-coating.
- Very tight and uniform surface



Application of MasterEmaco P 5000 AP on cleaned reinforcement



Levelling of surface with MasterEmaco N 5100 FC



Parking Deck Repairs

Easy to Apply and Durable Solutions

MasterEmaco T 545

Magnesia-phosphate Cement Fast Hardening Repair Mortar

- Applied when very early strengths are required, even in cold temperatures
- Minimum temperature: -20°C
- Mineral based; excellent adhesion to concrete and other mineral substrates
- Excellent resistance against de-icing salts; good freeze-thaw resistance
- No additional bonding primer required
- Rapid strength gain, areas can be returned to service in less than an hour

MasterEmaco T 1200 PG

Flowable Traffic Repair Mortar

- For flowable or fluid horizontal repair
- Fast hardening, even at sub-zero temperatures
- Can be re-opened to traffic after only 2 hours at 20°C
- High durability
- High freeze-thaw resistance
- Very little shrinkage



Cut out preparation, full depth repair.

MasterEmaco T 1100 TIX

Plastic Bedding and Traffic Repair Mortar for horizontal patch repair

- A thixotropic bedding mortar
- Fast hardening, even at sub-zero temperatures
- Can be re-opened to traffic after only 2 hours at 20°C
- For repair of inclined traffic areas
- High durability
- High freeze-thaw resistance
- Very little shrinkage

MasterEmaco T 1400 FR

Flowable Steel Fibre Reinforced Traffic Repair Mortar

- For large area horizontal repair
- Fast hardening, even at sub-zero temperatures
- Can be re-opened to traffic after only 2 hours at 20°C
- High durability
- High freeze-thaw resistance
- Very little shrinkage



Structural load bearing finished repair.



Concrete Protection

Anti-Carbonation Coatings for Vertical and Overhead Application

In order to protect the investment, concrete walls, columns and soffits in car parks should be protected against the environmental influences. In terms of protection from water and CO₂ ingress, our MasterProtect acrylic coatings are the optimal choice for these concrete structures. Their non-yellowing chemical base combined with excellent resistance to weathering and UV light, make them the ideal solution for concrete protection. Additionally they also provide an aesthetic finish. MasterProtect acrylic coatings are fully certified as Surface Protection Systems for concrete according to EN 1504-2.



Spray-application of MasterProtect 330 EL as crack-bridging anti-carbonation protection of a car park wall.



Manual Application of MasterProtect 330 EL (Carpark Airport Brussels, Belgium)

Surface Protection Systems



- Concrete Surface or Fairing Coat: MasterEmaco N 5100 FC
- MasterProtect 320 (rigid) or MasterProtect 330 EL (crack-bridging) acrylic coating

MasterProtect 320/330 EL

- Significantly delays concrete deterioration caused by freeze-thaw and de-icing salt attacks
- Excellent resistance against CO₂ diffusion
- Good adhesion onto concrete substrates
- Available in most common RAL colours
- Easy to apply by hand or spray
- Environmentally friendly, water-based, non-solvent formulations
- MasterProtect 330 EL with additional crack-bridging ability for structures subject to higher movements (physical and thermal)



Exposed Decks

Open-Air Parking

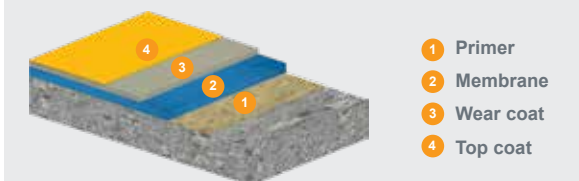
There is nothing more difficult to plan than an open-air event; the risk of bad weather is simply too great. In the case of car parks, special protection is called for. The top deck of a multi-storey car park is normally not covered and is exposed to the elements the whole year round. In addition to the chemical and mechanical loads in a multi-storey car park, materials are subjected to severe stress from ultraviolet radiation, rain, snow and ice as well as extreme temperature variations. In order to survive in the long term in such a harsh environment, surfaces must be coated with a high-strength elastomeric coating system that is resistant to these conditions.

The MasterSeal Traffic 2205 system combines exceptional elasticity with durable wear resistance. Due to its multi-layer monolithically bonded structure the system offers an optimal performance even on heavy-duty substrates. Our non-solvent containing polyurethane membranes are crack-bridging and provide a high level of mechanical resistance in combination with the tested wearing surface. The membranes are applied by specialist computer controlled spray equipment which allows for both fast application and cure time for almost instant waterproofing. To finish you can choose among a variety of coloured top coats.



System example MasterSeal Traffic 2205*

For crack-bridging coatings on exposed surfaces in accordance with OS10, BBA Approved.



System features

- Dynamic crack-bridging properties: class 4.2 in accordance with EN 1504-02 and DIN V 18026
- Homogeneous and anti-slip
- High wear resistance
- Resistant to road grit
- Stable colouring
- Resistant to petrol, oil, diesel and bio-diesel

System benefits

- Spray applied for fast application and cure times
- High level of protection for structure with separate membrane and wear coat
- Variety of colours for individual design of parking areas
- Low weight per square metre avoids unnecessary loads and reduces material consumption for buildings
- Tried and tested for many years

Other applications

- Exposed parking surfaces, intermediate decks

Other suitable systems

- MasterSeal Traffic 2263** – for crack-bridging coatings on exposed surfaces in accordance with OS 11a.
- MasterSeal Traffic 2203** – for the fast crack-bridging rehabilitation of exposed surfaces, with spray application in accordance with OS 10.

* The appropriate surface coating must be selected on the basis of the particular requirements for the individual project.





Intermediate Decks

A Compass for Drivers

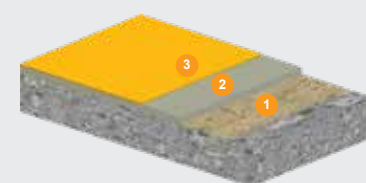


“Where’s the car?” This is a question you can certainly ask if the intermediate decks of the car park all look the same and there is simply no orientation. Colour-coded zones, if possible, marked clearly on the ground, can be a great help. But, before looking for your parked car, you need to find a parking space in the first place. Intermediate decks are subjected to continuous mechanical stress caused by traffic. The surface is also attacked by oil, petrol and other aggressive substances such as coolants and brake fluids.

MasterSeal Traffic systems offer the ideal solution for this application – for example MasterSeal Traffic 2257 provides an excellent textured surface for improved slip resistance as well as being available in a wide range of colours for clear demarcation. In general, Master Builders Solutions offers a wide range of tried and tested systems designed to withstand high stresses. Whether you need a coating with pronounced crack-bridging properties or a conventional coating, the systems can be adapted to the individual structure, rather than adapting the structure to the coating. Thanks to the different colours available, decks and individual areas can be colour-coded. The anti-slip properties required for traffic, parking and walking areas can be set precisely.

System example MasterSeal Traffic 2257*

For fast track UV light Stable coating of car parking areas, BBA Approved.



- 1 Primer
- 2 Optional scratch coat
- 3 Top coat

System features

- Fast curing and anti-slip
- High wear resistance
- Resistant to road grit
- UV light stable
- Resistant to petrol, oil, diesel and bio-diesel

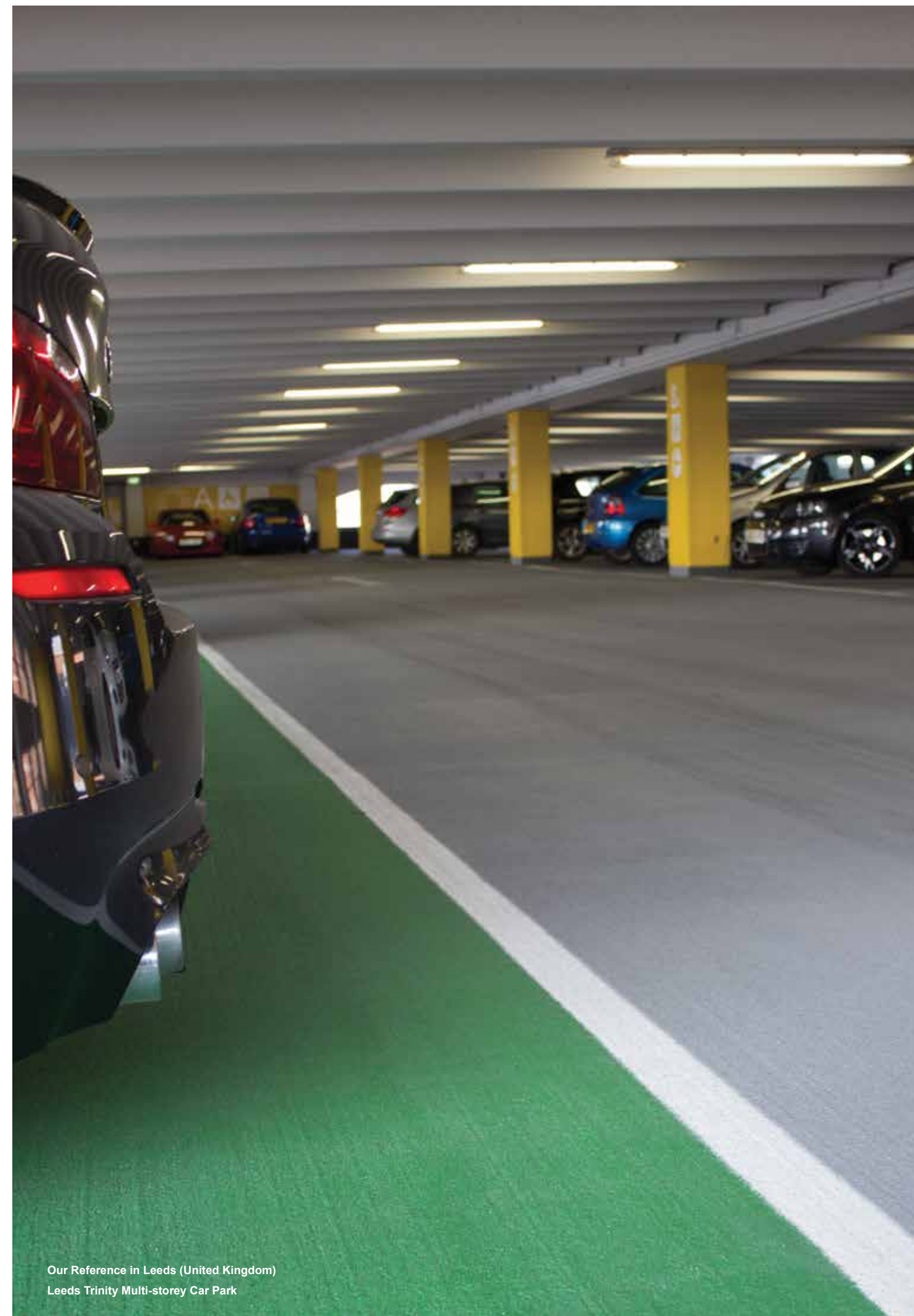
System benefits

- Variety of colours for individual design of parking areas
- Low weight per square metre avoids unnecessary loads and reduces material consumption for buildings
- Tried and tested for many years

Other applications

- Covered outdoor areas

* The appropriate surface coating must be selected on the basis of the particular requirements for the individual project.



Our Reference in Leeds (United Kingdom)
Leeds Trinity Multi-storey Car Park



Spiral and other Ramps

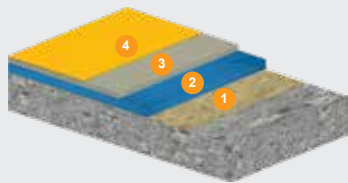
Increasing Shear on Tight Bends

They may not proof of the theory of relativity, but spiral and other ramps in multi-storey car parks also show that energy is equal to mass times speed. This energy acts directly on the surface of the ramp, which needs special protection against mechanical loads. These forces are further increased by the turning action of the moving wheels which increases the shear and thus wear on the deck significantly. In addition, ramps and spiral ramps are well-known accident black spots. It is especially important to use an enhanced anti-slip surface here.

Thanks to the use of higher thicknesses in these areas subject to high stresses, the extremely high-strength multilayer system MasterSeal Traffic 2262 ensures reliable long term protection in such areas. Different anti-slip classes are available to meet high safety requirements. Rapid curing properties make this system ideal for the refurbishment of such highly stressed areas with short closure times and a rapid return to day-to-day business.

System example MasterSeal Traffic 2262*

For high-strength coatings on spiral and other ramps.



- 1 Primer
- 2 Wear coat 1
- 3 Wear coat 2
- 4 Top coat

System features

- High wear resistance
- High chemical resistance
- Resistant to road grit
- Resistant to petrol, oil, diesel and bio-diesel

System benefits

- Easy to install and low maintenance
- Wide range of applications including ramps, entrances and exits

Other applications

- Indoor and covered outdoor ramps and spirals, with additional measures on floor slabs exposed to soil

Other suitable systems

- **MasterSeal Traffic 2260** – for parking areas subject to severe mechanical loads.
- **MasterSeal Traffic 2257** – for the fast crack-bridging rehabilitation of spiral and other ramps.

* The appropriate surface coating must be selected on the basis of the particular requirements for the individual project.



Ground Bearing Slabs

Versatile Coatings

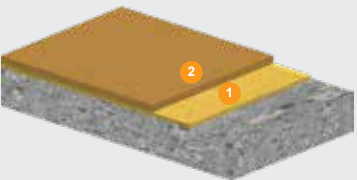


While structures above ground level need to be protected against rain water penetrating from above, parking decks at or below ground level need protection against moisture penetrating the structure from below as a result of rising damp or capillary action. The dynamic nature of open sided car park structures can also be significantly reduced.

In these cases, it is important to combine surface protection systems with high-performance primers with special chemistry to resist moisture and lay the foundation for a durable coating. The MasterSeal Traffic 2260 system is an economical solution for the coating of internal surfaces which can be precisely tailored to meet the requirements of the specific project.

System example MasterSeal Traffic 2260*

For the economical coating of parking areas in accordance with OS8, BBA Approved.



- 1 Primer
- 2 Top coat

System features

- High wear resistance
- Anti-slip
- Resistant to road grit
- Resistant to petrol, oil, diesel and bio-diesel

System benefits

- Simple, economical system
- Wide range of applications

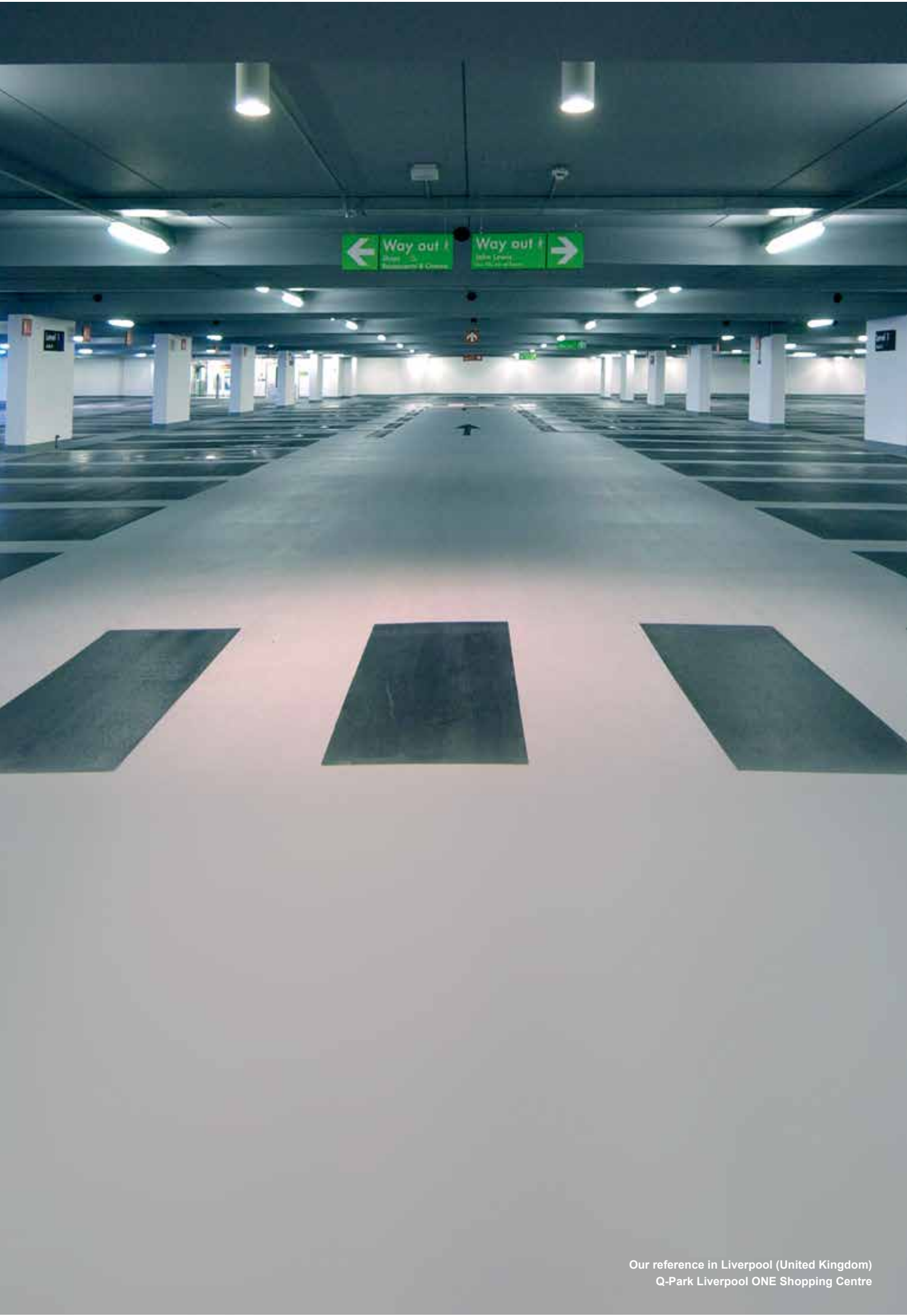
Other applications

- Ramps, underground car parks

Other suitable systems

- MasterSeal Traffic 2262** – for high-strength coatings on spiral and other ramps.
- MasterSeal Traffic 2257** – for exposed and covered parking areas.

* The appropriate surface coating must be selected on the basis of the particular requirements for the individual project.



Our reference in Liverpool (United Kingdom)
Q-Park Liverpool ONE Shopping Centre



Fast Track Systems

Refurbishment in Three Hours

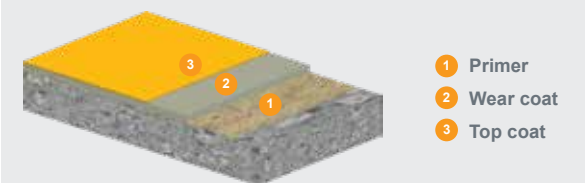
Speed counts, whether you are talking about travelling or the rehabilitation of underground and multi-storey car parks. Especially in the case of ramp refurbishment, time is also money. As access and connection routes, they are crucially important for the use of a car park. MasterSeal Traffic 2272 fast track car park system was specially developed for applications like this.

The solution is as follows: the system consists of only three products, which can be applied in a very short space of time. The deck surfaces can be returned to traffic in as little as three hours. The only requirement to be met is a structure and substrate temperature of at least 15 °C. Following completion, the system withstands severe mechanical loads on spiral and other ramps and also has anti-slip properties. It is therefore possible to install a durably resistant coating without closures, now or in the long term.



System example MasterSeal Traffic 2272*

For the fast and economical rehabilitation of parking areas and spiral and other ramps.



System features

- Fast low-temperature curing properties
- Polyurethane-polyaspartic technology
- In accordance with EN 1504-2 and DIN V 18026, OS8
- For traffic areas subject to medium to heavy mechanical loads
- Wear-resistant
- Resistant to road grit

System benefits

- Economical rehabilitation of car parks
- Minimal closure times and rapid re-opening
- Ideal for overnight rehabilitation

Other applications

- Indoor and covered outdoor parking areas, spiral and other ramps

* The appropriate surface coating must be selected on the basis of the particular requirements for the individual project.

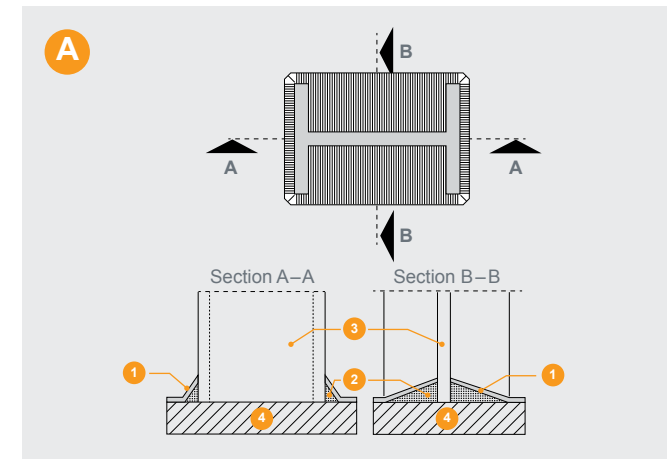


In Detail

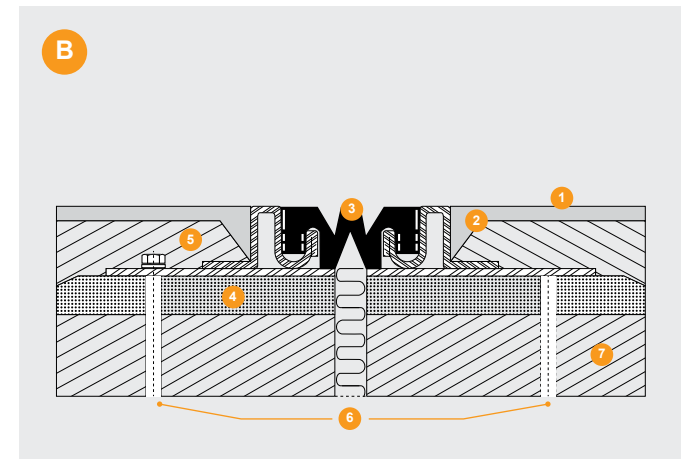
High Quality Detailing for Long Term Low Maintenance Solutions

These examples show that coating systems from Master Builders Solutions protect and provide a design for the highly stressed floor surfaces of multi-storey and underground car parks. In addition, they also feature convincing details. Any coating applied to a surface also raises the question of connections with neighbouring components, in this case especially vertical components

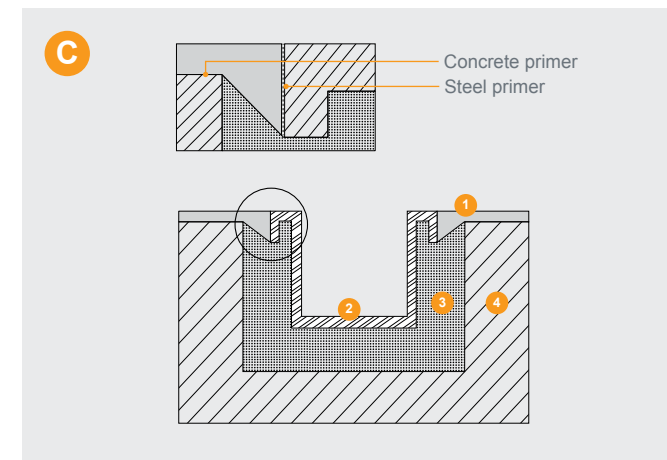
such as supports and walls, but also functional elements such as channels and expansion joints. Master Builders Solutions products provide durable solutions to these problems, ensuring the quality of the entire coating, both as standard details and as special details. Please contact your local Master Builder Solutions technical office for standard and bespoke CAD drawings.



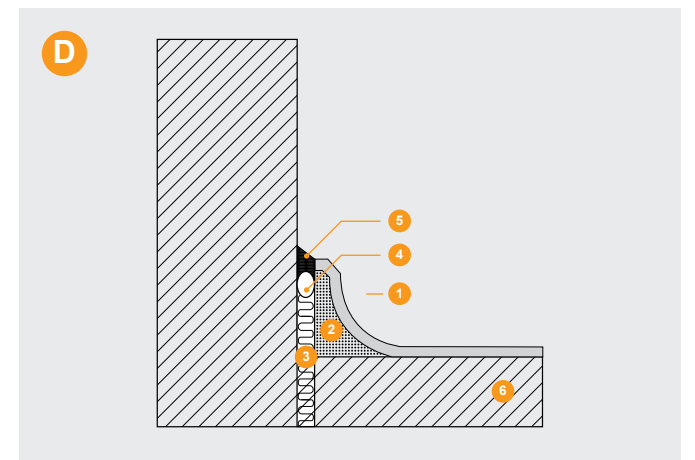
- 1 Coating system
- 2 Triangular wedge of EP mortar
- 3 Steel support
- 4 Concrete



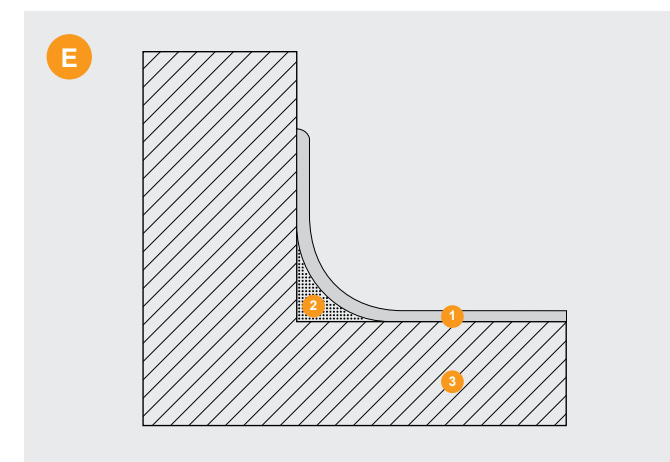
- 1 Coating system
- 2 Filling with triangular groove
- 3 Seal profile
- 4 EP mortar strip
- 5 Concrete/screed
- 6 Mount (on both sides, offset)
- 7 Concrete



- 1 Coating system
- 2 Steel channel
- 3 EP mortar
- 4 Concrete



- 1 Coating system
- 2 Triangular wedge of EP mortar/rounded joint with EP mortar
- 3 Insulating strip
- 4 Round PE profile
- 5 Elastic joint sealant MasterSeal NP 474
- 6 Elastic joint sealant



- 1 Coating system
- 2 Kicker joint with e.g. MasterSeal 590
- 3 Concrete



Notes



**Our reference in Peterborough (United Kingdom):
Queensgate Shopping Centre**



Master Builders Solutions for the Construction Industry

MasterAir

Complete solutions for air entrained concrete

MasterBrace

Solutions for concrete strengthening

MasterCast

Solutions for the manufactured concrete product industry

MasterCem

Solutions for cement manufacture

MasterEase

Low viscosity for high performance concrete

MasterEmaco

Solutions for concrete repair

MasterFinish

Solutions for formwork treatment and surface improvement

MasterFlow

Solutions for precision grouting

MasterFiber

Comprehensive solutions for fiber reinforced concrete

MasterGlenium

Solutions for high performance concrete

MasterInject

Solutions for concrete injection

MasterKure

Solutions for concrete curing

MasterLife

Solutions for enhanced durability

MasterMatrix

Advanced rheology control for concrete

MasterPel

Solutions for hydrophobization, anti-efflorescence and surface protection

MasterPolyheed

Solutions for mid-range concrete

MasterPozzolith

Solutions for water-reduced concrete

MasterProtect

Solutions for concrete protection

MasterRheobuild

Solutions for high strength concrete

MasterRoc

Solutions for underground construction

MasterSeal

Solutions for waterproofing and sealing

MasterSet

Solutions for set control

MasterSphere

Solutions for guaranteed freeze-thaw resistance

MasterSuna

Solutions for sand and gravel in concrete

MasterSure

Solutions for extraordinary workability retention

MasterTop

Solutions for industrial and commercial floors

Master X-Seed

Advanced accelerator solutions for concrete

Ucrete

Flooring solutions for harsh environments



QUANTIFIED SUSTAINABLE BENEFITS ADVANCED CHEMISTRY BY MASTER BUILDERS SOLUTIONS

Let the numbers do the talking: We have portrayed some of our most eco-efficient product solutions for concrete and precast production, construction, civil engineering, and flooring.

sustainability.master-builders-solutions.com



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