



Sika MonoTop[®] PIONEERED | ENGINEERED NUMBER ONE FOR **SUSTAINABLE** **CONCRETE REPAIR**

Sika MonoTop[®]-1010, Sika MonoTop[®]-4012, Sika MonoTop[®]-3020



SIKA – YOUR RELIABLE PARTNER

The causes of concrete deterioration are numerous and if not treated appropriately, can put a building's structural integrity at risk. Corrosion, water infiltration, freeze/thaw cycles, seismic activity and reactive aggregates are among the issues that have a debilitating effect on surfaces over time. However, thanks to years of research and decades of practical experience, Sika has developed Sika MonoTop® - a fully-comprehensive mortar solution to restore and rehabilitate concrete structures with reduced carbon footprint.

As well as our high-performance products, Sika provides top quality customer service. It means that from concept to conclusion, our technical team's expert advice is at your disposal to ensure your next building project is a success.

CONTENTS

- 02** Introduction: Sika – Enhancing customer value and reducing environmental impacts
-
- 04** Sustainability Portfolio Management (SPM) - Sustainability and performance categories
-
- 06** Concrete repair mortars with reduced carbon footprint
Sika MonoTop® concrete repair mortar range
-
- 08** Project Savings Examples
-
- 12** Sika MonoTop® -1010
High performing and sustainable bonding primer and corrosion protection slurry
-
- 14** Sika MonoTop®-4012
High performing and sustainable structural and non-structural concrete repair mortar
-
- 16** Sika MonoTop®-3020
High performing and sustainable structural and non-structural smoothing and levelling concrete repair mortar
-



MORE PERFORMANCE | MORE SUSTAINABLE

SIKA - ENHANCING CUSTOMER VALUE AND REDUCING ENVIRONMENTAL IMPACTS



SUSTAINABILITY

Sika's product platforms provide answers to global trends, such as resource-saving building methods, energy-efficient and low-emission construction materials, high-speed manufacturing methods and lighter, safer, and more environmentally friendly vehicles. The user-friendly properties of Sika MonoTop® are evidenced by its dust-reducing performance. By reducing particle emissions by up to 70% during application, Sika MonoTop® creates less hazardous, less polluted on-site working conditions for operatives and the surrounding environment. Furthermore, its sustainable credentials are fortified by the composition of products within the system, each of which is European standard approved. Recycled waste materials were used to create MonoTop's bonding binder, concrete and levelling mortars, resulting in a solution that protects our buildings and the environment.



RESEARCH & DEVELOPMENT

The Sika MonoTop® concrete repair range is the result of our unique mindset and development efforts where we can proudly prove that, yes, more performance and more sustainable is possible. Its sustainable, reliable performance follows years of research by Sika's technical teams. This commitment to innovation enables us to not only satisfy current market demands, but also anticipate future expectations. We recognise that the evolution of sustainable products, particularly those relating to concrete repair, are essential to creating and maintaining buildings in an environmentally-responsible manner; an outcome that itself will be crucial to the global effort in tackling the effects of climate change. Therefore, Sika places huge emphasis on research and development, with centres of innovation based throughout the world providing us with the knowledge and best practice to deliver solutions that will help enshrine the sustainable performance of our future built environment.

THREE ENVIRONMENTALLY-FRIENDLY PRODUCTS. **ONE OUTSTANDING SUSTAINABLE CONCRETE REPAIR SYSTEM**



THE Sika MonoTop® CONCRETE REPAIR SYSTEM IS A PRODUCT VERY MUCH ALIGNED WITH SIKA'S CULTURE WHICH COMPRISES FOUR STRATEGIC PILLARS: INNOVATION, PERFORMANCE, SUSTAINABILITY AND RESEARCH & DEVELOPMENT



INNOVATION

By 2023, Sika aims to achieve 25% of sales with products released in the past five years, with the innovative nature of our solutions being driven by customers' needs. It's why each new Sika system must add value for customers with improved environmental impact. Sika MonoTop® comfortably meets these requirements. It uses less carbon emissions compared to other concrete repair solutions – up to 1 tonne of CO₂ per 100m² – whilst setting new standards in the long-term protection of buildings worldwide.



PERFORMANCE

Sika's objective is to meet the challenges faced by customers today, by developing new solutions to meet ever-greater demands in terms of easy and efficient application and environmental compatibility. Sika MonoTop®, due to its simple, rapid-install qualities, reduces site working hours to improve the likelihood of projects being completed on time and to budget. Minimising on-site labour times also means fewer emissions are released by plant and other heavy machinery, leading to less pollution and a more environmentally-friendly application.

SUSTAINABILITY PORTFOLIO MANAGEMENT (SPM)

Assessment according to comprehensive sustainability and performance categories

Our goal is to provide the most innovative and effective solutions with reduced environmental impacts. This will ensure a project's technical needs are met whilst upholding our commitment to minimising our environmental impact. To achieve this, we have developed the Sustainability Portfolio Management (SPM) methodology – a mechanism which evaluates and classifies our products' performance and sustainability.

The performance categories are comprehensive and cover technical and sustainability topics essential to Sika. These include ease of application, durability, cost benefits, aesthetics and product comparability. Upon completion of the SPM assessment, products are assigned a final performance and sustainability rating. Only items which demonstrate significant performance and sustainability benefits qualify as 'Sustainable Solutions'.

SUSTAINABILITY CATEGORIES

Products which are assessed under the SPM methodology undergo an evaluation against 12 Sustainability Categories, ensuring that Sika Sustainable Solutions are following our commitment to the environment.

1 | **SUPPLIER CODE OF CONDUCT**
Sharing values for more success.

5 | **AIR QUALITY AND EMISSIONS**
Products that promote good air quality and minimise emissions.

9 | **RESOURCES**
Efficient use of precious resources.

2 | **RISKS**
Addressing current and future reputational and business risks.

6 | **HEALTH AND SAFETY**
Safe to use.

10 | **PACKAGING**
Prioritising the use of responsible packaging for products.

3 | **CHEMICAL HAZARD AND EXPOSURE**
Addressing and eliminating chemical hazards and exposure.

7 | **ENERGY**
Products that promote energy efficiency principles.

11 | **GREEN BUILDING STANDARDS**
Products that contribute to world-renowned Green Building Standards.

4 | **REGULATORY TRENDS**
Aligning product developments with regulatory trends.

8 | **CLIMATE**
Products that minimise the impact on the climate.

12 | **COST SAVINGS DOWNSTREAM**
Helping customers to directly, measurably and significantly reduce costs during application/use.

PERFORMANCE CATEGORIES

Products which are assessed under the SPM methodology undergo an evaluation against 6 Performance categories, ensuring that our Sustainable Solutions are fit for purpose.

1



TECHNICAL PERFORMANCE

This category includes the achievements of selected and relevant technical objectives.

2



EASE OF APPLICATION

This category rates the product's convenience and the ease of use.

3



DURABILITY

This essential category indicates the products that prove the test of time.

4



AESTHETICS

This category evaluates how pleasant the appearance and what this effect has.

5



SYSTEM CONFORMITY

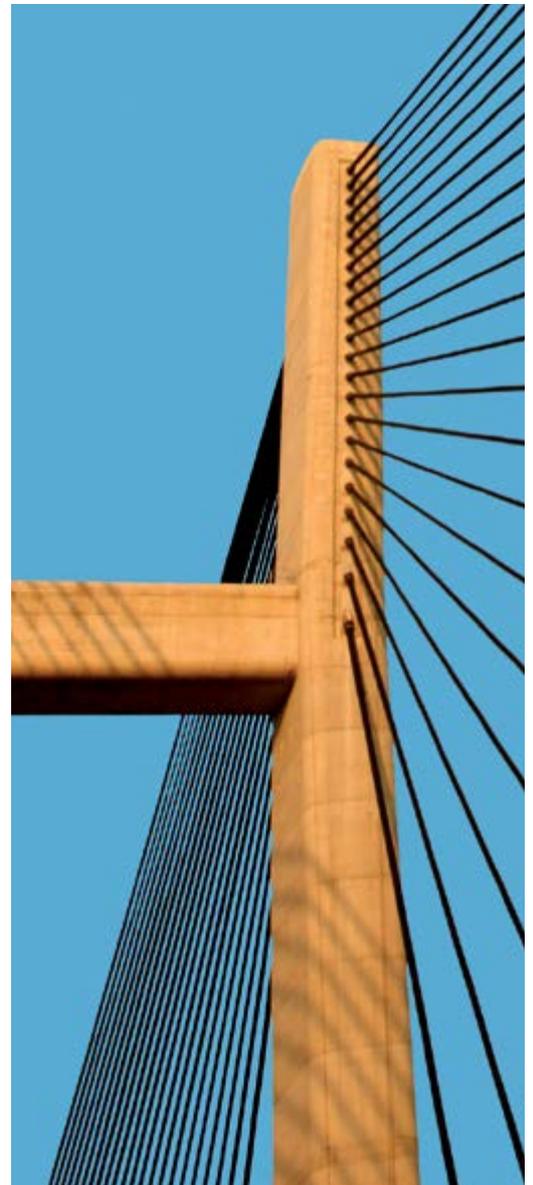
This category indicates the compatibility of the product with other system components.

6



COST BENEFITS

This category evaluates the effectiveness cost wise of the product.



Sika MonoTop® REDUCED CARBON FOOTPRINT CONCRETE REPAIR MORTAR SYSTEM

1

Reinforcement Corrosion Protection

Sika MonoTop®-1010

- To prevent further corrosion of steel reinforcement

2

Bonding Primer Sika MonoTop®-1010

- To promote adhesion of the repair mortar on demanding substrates

3

Repair Mortar Sika MonoTop®-4012

- To repair concrete defects
- To restore structural integrity
- To improve durability
- To improve appearance
- To extend the structure's design life

4

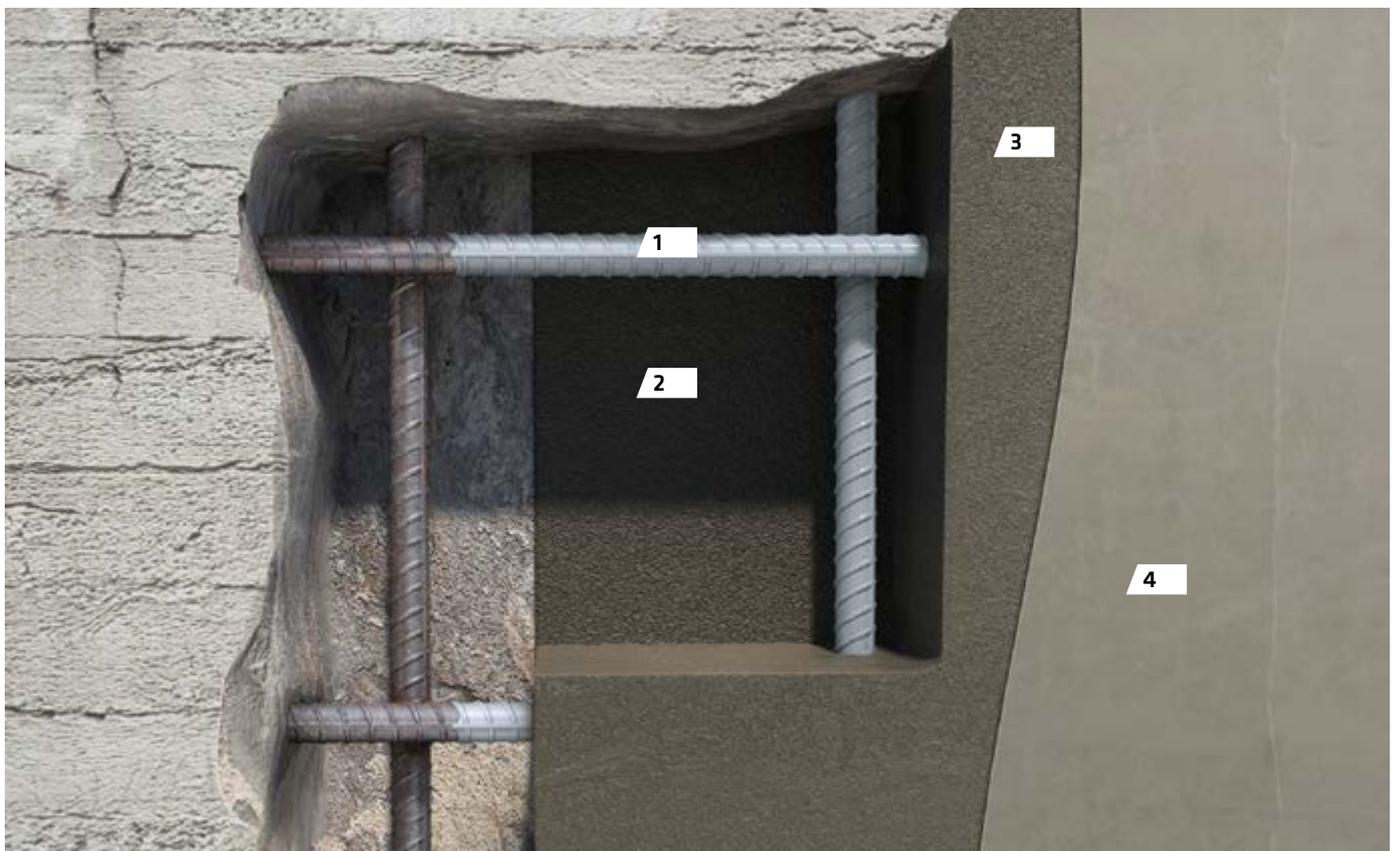
Pore Sealer / Levelling Mortar

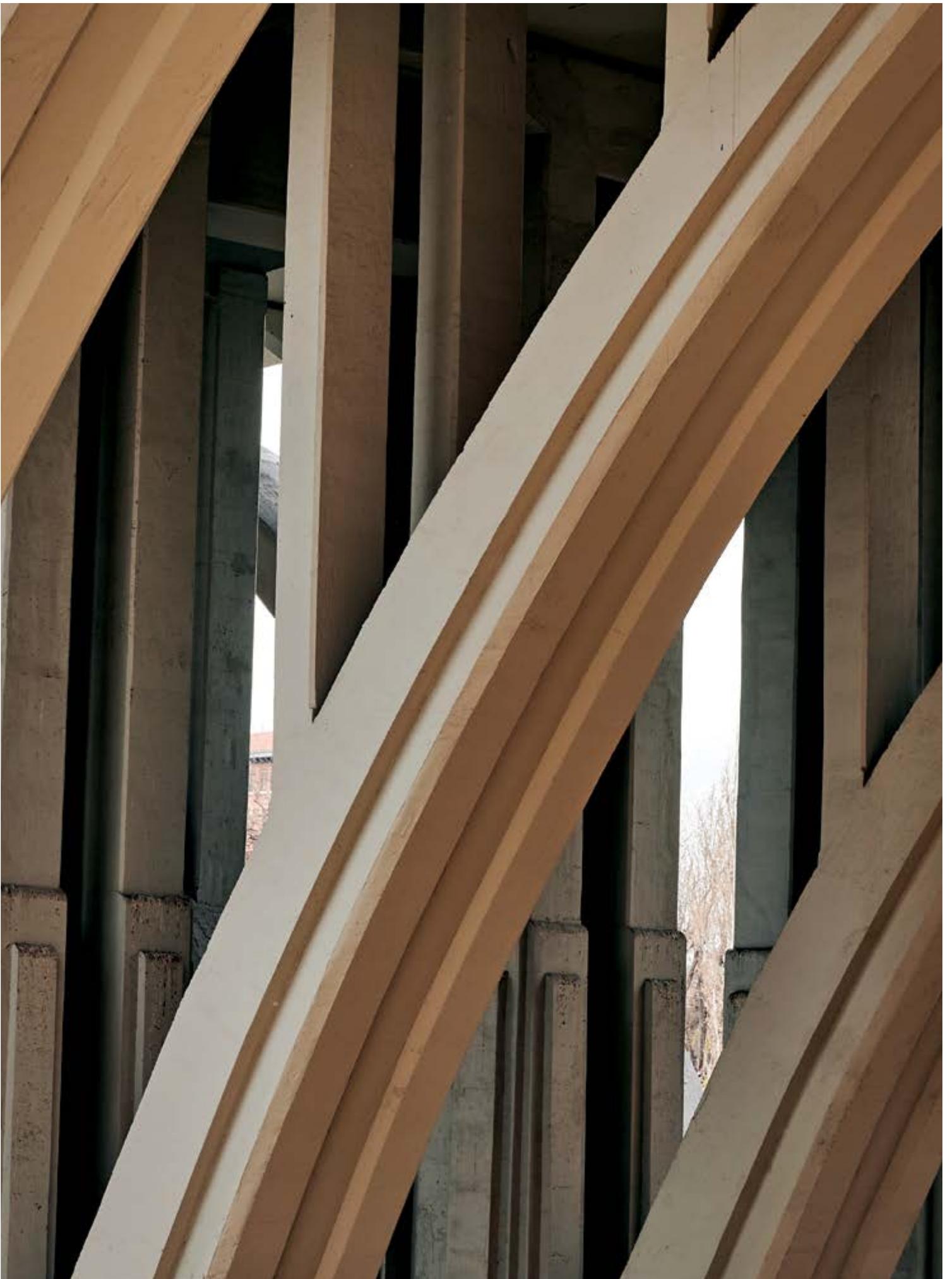
Sika MonoTop®-3020

- To restore durability
- To restore aesthetic appearance
- To restore geometric appearance
- To provide a surface for over-coating

This new Sika MonoTop® concrete repair mortar range was developed after years of research and is formulated to achieve a long lasting service life in all the remedial works of damaged concrete due to corrosion, structural damages, water infiltration, freeze and thaw cycles, seismic activity, reactive aggregates, etc. The range forms a complete system that will allow you to maximise the durability of your structure while minimising the resources used.

The complete range has the following products: Sika MonoTop®-1010, bonding primer and reinforcement corrosion protection slurry, Sika MonoTop®-4012, concrete repair mortar and Sika MonoTop®-3020, pore sealer and levelling mortar.





TYPICAL TOWER BLOCK

As an indication of MonoTop's sustainable credentials, if used as part of a large-scale concrete repair and corrosion management programme involving the restoration of six, 24-storey social housing tower blocks, a total of 378kg of CO₂ would be saved. This outcome is based on 42 bags of Sika MonoTop®-4012 being used per tower block, with a 1.5kg CO₂ reduction per 25kg bag of Sika MonoTop®-4012 when compared to a conventional concrete repair mortar.



372

CO₂ SAVING:
378KG
using Sika MonoTop® 4012



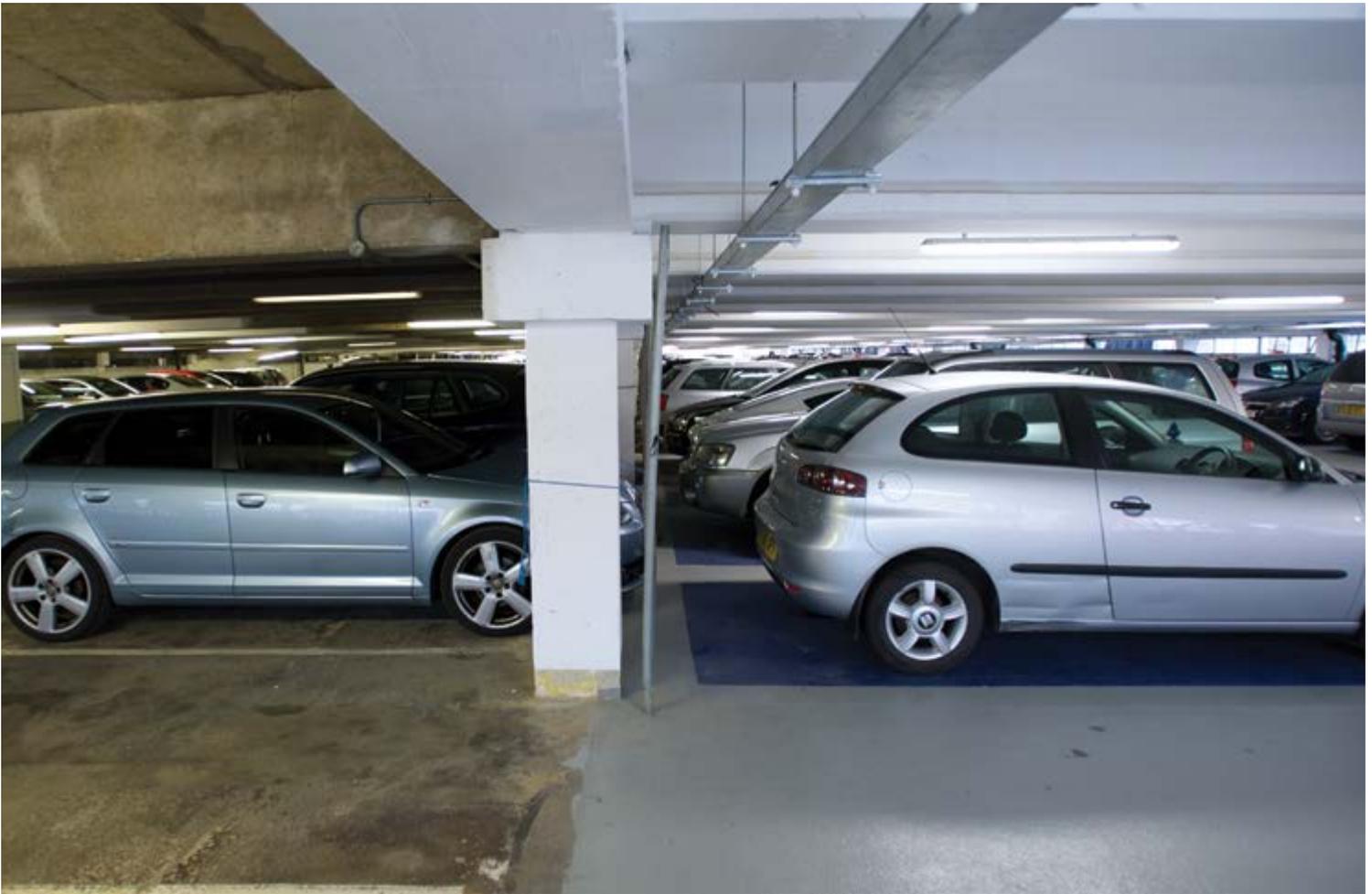
LEED V4:
3 POINTS
AVAILABLE

COMPARISON OF PRODUCTS USED ON TYPICAL TOWER BLOCK

<p>CONVENTIONAL CONCRETE REPAIR MORTAR</p> 	<p>Sika MonoTop® RANGE CONCRETE REPAIR MORTAR</p> 
<p>STANDARD CARBON FOOTPRINT:</p> <p>0kg of CO₂ saved per bag = 0 tonnes of CO₂ saved on the construction of a typical tower block</p>	<p>REDUCED CARBON FOOTPRINT:</p> <p>1.5kg of CO₂ saved per 25kg bag = 63kg of CO₂ saved on the construction of a typical tower block</p>
<p>STANDARD DUST FORMATION:</p> <p>Traditional products show dust formation resulting in suboptimal on-site working conditions for operatives and the surrounding environment.</p>	<p>AIR QUALITY AND EMISSIONS:</p> <p>REDUCED DUST FORMATION Sika MonoTop®-4012 shows a heavily reduced dust formation (approx. 70%).</p>
<p>GREEN BUILDING:</p> <p>Conventional Products may receive less points in some Green Building Programme.</p>	<p>GREEN BUILDING: MEETS LEED V4 & BREEAM 2018 REQUIREMENTS:</p> <p>Environmental Product Declaration (EPD) prepared to BS EN 15804 is available for Sika MonoTop®-4012 which can be used in MAT 01 and MAT 02 in BREEAM New Construction 2018.</p>
<p>TRADITIONAL CONCRETE REPAIR SOLUTION:</p> <p>Typical concrete repair solutions involve multiple layer applications resulting in waiting times and additional labour requirements.</p>	<p>COST EFFECTIVE CONCRETE REPAIR SOLUTION:</p> <p>Sika MonoTop®-4012's unique formulation allows the application of up to 120mm in one layer avoiding unnecessary waiting times between layer and saving labour work.</p>

TYPICAL CAR PARK

Suitable for a wide range of concrete repair projects, MonoTop® is a reliable, sustainable choice for the restoration of car park decks and surrounding infrastructure. In terms of CO₂ reductions, a typical repairs programme using Sika MonoTop®-4012 for the refurbishment of a 10m x 48m car park site including a concrete deck, soffits and beams would equate to an approximate 126kg of CO₂ saving when compared to using a conventional concrete repair mortar.



126

CO₂ SAVING:
126KG
using Sika MonoTop® 4012

LEED V4

LEED V4:
3 POINTS
AVAILABLE

COMPARISON OF PRODUCTS USED ON A TYPICAL CAR PARK

<p>CONVENTIONAL CONCRETE REPAIR MORTAR</p>	 <p>Sika MonoTop® RANGE CONCRETE REPAIR MORTAR</p> 
<p>SAME CARBON FOOTPRINT:</p> <p>0kg of CO₂ saved per bag = 0 tonnes of CO₂ saved on the construction of a typical car park</p>	<p>REDUCED CARBON FOOTPRINT:</p> <p>1.5kg of CO₂ saved per 25kg bag = 126kg of CO₂ saved on the construction of a typical car park</p>
<p>STANDARD DUST FORMATION:</p> <p>Traditional products show dust formation resulting in suboptimal on-site working conditions for operatives and the surrounding environment.</p>	<p>AIR QUALITY AND EMISSIONS:</p> <p>REDUCED DUST FORMATION Sika MonoTop®-4012 shows a heavily reduced dust formation (approx. 70%).</p>
<p>GREEN BUILDING:</p> <p>Conventional Products may receive less points in some Green Building Programme.</p>	<p>GREEN BUILDING: MEETS LEED V4 AND BREEAM 2018 REQUIREMENTS:</p> <p>An Environmental Product Declaration (EPD) prepared to BS EN 15804 is available for Sika MonoTop®-4012 which can be used in MAT 01 and MAT 02 in BREEAM New Construction 2018.</p>
<p>TRADITIONAL CONCRETE REPAIR SOLUTION:</p> <p>Typical concrete repair solutions involve multiple layer applications resulting in waiting times and additional labour requirements.</p>	<p>COST EFFECTIVE CONCRETE REPAIR SOLUTION:</p> <p>Sika MonoTop®-4012's unique formulation allows the application of up to 120 mm in one layer avoiding unnecessary waiting times between layer and saving labour work.</p>

Sika MonoTop[®]-1010

High performing and sustainable bonding primer and corrosion protection slurry



This smoothing and levelling mortar was developed to achieve the highest performances with the minimum application effort, limiting the contingencies on site.

SUSTAINABILITY



CLIMATE:
REDUCED
CARBON
FOOTPRINT



GREEN BUILDING:
MEETS LEED V4
REQUIREMENTS

PERFORMANCE



**TECHNICAL
PERFORMANCE:**
ENHANCED
BONDING
PROPERTIES



DURABILITY:
OUTSTANDING
CORROSION
PROTECTION



**CHEMICAL
RESISTANT:**
INCREASED
CHLORIDE
PENETRATION
RESISTANCE



MORE PERFORMANCE

DURABILITY: CORROSION INHIBITORS

Sika MonoTop®-1010 has a combination of corrosion inhibitors that result in an outstanding resistance against water vapor and chloride penetration to enhance the protection of the steel rebars, even in aggressive marine environments. This fact is measured with the diffusion resistance coefficients to water vapor and to carbon dioxide which show an improvement of ~30% compared to an equivalent cementitious slurry.

TECHNICAL PERFORMANCE: EXCELLENT ADHESION

Sika MonoTop®-1010 not only acts as corrosion inhibitor, but also enhances the adhesion of the repair mortars to the existing substrate. It achieves great adhesion and it is the primer to use in extreme application conditions, e.g. under live dynamic loads.

MORE SUSTAINABLE

CLIMATE: REDUCED CARBON FOOTPRINT

Sika MonoTop®-1010 has a reduced carbon footprint as a result of Portland cement replacement with sustainable industry by-products within its formulation. When compared to a reference cementitious concrete repair mortar, Sika MonoTop®-1010 shows an approx. 25% reduction in Global Warming Potential (GWP). This corresponds to approx. 3.5 kg of CO₂ saved per 25 kg bag of mortar.

GREEN BUILDING: MEETS LEED V4 AND BREEAM 2018 REQUIREMENTS:

Sika MonoTop®-1010 is part of the Sika LEED product portfolio and conforms on three LEED v4 credit requirements, thus directly contributing to the attainment of 3 points. More details about the individual credit fulfillment are given in the Sika LEED Attestations. An Environmental Product Declaration (EPD) prepared to BS EN 15804 is available for Sika MonoTop®-1010 which can be used in MAT 01 and MAT 02 in BREEAM New Construction 2018.



Sika MonoTop[®]-4012

Durable and sustainable concrete repair mortar



This structural concrete repair mortar offers unique advantages compared to an equivalent concrete repair mortar.

SUSTAINABILITY



CLIMATE:
REDUCED
CARBON
FOOTPRINT



**AIR QUALITY
& EMISSIONS:**
REDUCED DUST
FORMATION



GREEN BUILDING:
MEETS LEED V4
REQUIREMENTS

PERFORMANCE



COST BENEFITS:
HIGH BUILD-UP



DURABILITY:
SULPHATE AND
SEA WATER
RESISTANT



**TECHNICAL
PERFORMANCE:**
APPLICATION
UNDER LIVE
DYNAMIC LOADS



MORE PERFORMANCE

COST EFFECTIVE CONCRETE REPAIR SOLUTION

Sika MonoTop®-4012's unique formulation allows the application of up to 120mm in one layer avoiding unnecessary waiting times between layer and saving labour work. This is possible even when hand applied, although it can also be mechanically sprayed. It is suitable for indoor and outdoor vertical, overhead and horizontal areas.

TECHNICAL PERFORMANCES:

REPAIRS UNDER LIVE DYNAMIC LOADS

Sika MonoTop®-4012 is suitable for structural and non-structural repairs achieving the maximum class R4 according to the European standard EN 1504-3. This concrete repair mortar showed outstanding technical performances when passing the test for repairs applied under dynamic loads according to the "Guideline for the Protection and Restoration of Concrete Building Components" issued by the German Committee for Reinforced Concrete (DAfStb).

DURABLE SOLUTION EVEN IN HARSH ENVIRONMENTS:

Sika MonoTop®-4012 was formulated with the right combination of cements and aggregates to achieve resistance to sulphates and sea water, allowing this mortar to be used even in harsh environments like marine or industrial.

MORE SUSTAINABLE

CLIMATE: REDUCED CARBON FOOTPRINT

Sika MonoTop®-4012 has a reduced carbon footprint as a result of Portland cement replacement with sustainable industry by-products within its formulation. When compared to a reference cementitious concrete repair mortar, Sika MonoTop®-4012 shows an approx. 15% reduction in Global Warming Potential (GWP). This corresponds to approx. 1.5 kg of CO₂ saved per 25 kg bag of mortar.

AIR QUALITY AND EMISSIONS:

REDUCED DUST FORMATION

Sika MonoTop®-4012 shows a heavily reduced dust formation (approx. 70%) compared to a reference cementitious concrete repair mortar based upon suitable scientific internal laboratory tests and is amongst the best-in-class solutions in the market with regards to its dust reduction level.

GREEN BUILDING: MEETS LEED V4 AND BREEAM 2018 REQUIREMENTS:

Sika MonoTop®-4012 is part of the Sika LEED product portfolio and conforms on three LEED v4 credit requirements, thus directly contributing to the attainment of 3 points. More details about the individual credit fulfillment are given in the Sika LEED Attestations. An Environmental Product Declaration (EPD) prepared to BS EN 15804 is available for Sika MonoTop®-4012 which can be used in MAT 01 and MAT 02 in BREEAM New Construction 2018.



Sika MonoTop[®]-3020

Performing and sustainable smoothing and levelling concrete repair mortar



This smoothing and levelling mortar was developed to achieve the highest performances with the minimum application effort, limiting the contingencies on site.

SUSTAINABILITY



CLIMATE:
REDUCED
CARBON
FOOTPRINT



**AIR QUALITY
& EMISSIONS:**
REDUCED DUST
FORMATION

PERFORMANCE



**TECHNICAL
PERFORMANCE:**
LOW CRACKING
BEHAVIOUR



DURABILITY:
SULPHATE
RESISTANT



**AESTHETICS/
OPTICS:**
OUTSTANDING
FINISHING



Before remedial works.



After remedial works.

MORE PERFORMANCE

TECHNICAL PERFORMANCES: STRUCTURAL REPAIRS

Sika MonoTop®-3020 is suitable for structural and non-structural repairs obtaining a repair class R3 according to the European standard EN 1504-3.

The mortar was formulated with the right combination of cements and aggregates to achieve resistance to sulphates and sea water, allowing this mortar to be used even in harsh environments like marine or industrial.

DURABLE: NO CRACKING

Sika MonoTop®-3020 was formulated to achieve a non-cracking finish enhancing therefore the durability of the repair. This essential characteristic increases the lifespan of the structure.

AESTHETIC: NO NEED TO USE A COATING AFTERWARDS

Sika MonoTop®-3020 leaves a smooth finish due to the selected grading curve used during the production of the mortar. This surface can be left exposed to the environment without the need of any additional finishing coating.

MORE SUSTAINABLE

CLIMATE: REDUCED CARBON FOOTPRINT

Sika MonoTop®-3020 has a reduced carbon footprint as a result of Portland cement replacement with sustainable industry by-products within its formulation. When compared to a reference cementitious concrete repair mortar, Sika MonoTop®-3020 shows an approx. 15% reduction in Global Warming Potential (GWP). This corresponds to approx. 1.5 kg of CO₂ saved per 25 kg bag of mortar.

AIR QUALITY AND EMISSIONS: REDUCED DUST FORMATION

Sika MonoTop®-3020 shows a significantly reduced dust formation (approx. 44%) compared to a reference cementitious concrete repair mortar based upon suitable scientific internal laboratory tests.

GREEN BUILDING: MEETS LEED V4 AND BREEAM 2018 REQUIREMENTS:

Sika MonoTop®-3020 is part of the Sika LEED product portfolio and conforms on three LEED v4 credit requirements, thus directly contributing to the attainment of 3 points. More details about the individual credit fulfillment are given in the Sika LEED Attestations. An Environmental Product Declaration (EPD) prepared to BS EN 15804 is available for Sika MonoTop®-3020 which can be used in MAT 01 and MAT 02 in BREEAM New Construction 2018.



SIKA FULL RANGE SOLUTIONS:



LIQUID APPLIED ROOFING



SINGLE PLY ROOFING



BITUMINOUS ROOFING



CONCRETE



CONCRETE REPAIR



STRUCTURAL STRENGTHENING



BUILDING FINISHING



WATERPROOFING



JOINT SEALING



FAÇADES



FLOORING



INDUSTRY



DISTRIBUTION



MODULAR/OFFSITE

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 has 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 300 factories. With more than 27,000 employees Sika generates annual sales of CHF 9.3 billion (£7.54 bn). 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, Wishaw and Dublin with more than 1000 employees and a turnover of more than £360 million.

The information, and, in particular, the recommendations relating to the application and end use of Sika® products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. Please refer to our homepage www.sika.co.uk for our current standard terms & conditions applicable to all orders. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request.



SIKA LIMITED

Head Office
Watchmead
Welwyn Garden City
Hertfordshire, AL7 1BQ
United Kingdom

Contact

Phone +44 1 707 394444
Fax +44 1 707 329129
E-Mail enquiries@uk.sika.com
www.sika.co.uk
@SikaLimited

BUILDING TRUST

