

# PRODUCT DATA SHEET

## Unicell® 40

Prebagged High Build, High Strength, Waterproof Class 40 Repair Mortar

### DESCRIPTION

Unicell® 40 is a prepacked vinyl acetate copolymer modified mortar requiring only the addition of clean water to produce a mortar suitable for concrete repair and rendering. The material conforms to the Hong Kong Housing Authority specification for Class 40 repair mortar system. The performance of the product is certified under the Hong Kong Concrete Institute (HKCI) Product Conformity Certification Scheme PCCS-RM : Class 40. It can be applied in thick section and is suitable for structural and non-structural application. Layers of 40 mm can be achieved depending upon substrate profile and technique. Greater thickness may be possible when applying material into pockets. Successive layers can be built up to achieve the required thickness once the previous layer has become firm.

### USES

- Thick section concrete repairs to vertical and overhead surfaces
- Can be used internally and externally
- Structural and cosmetic repairs to buildings and bridges
- Reinstatement of damaged concrete and protection of reinforcement

### CHARACTERISTICS / ADVANTAGES

- Prebagged giving greater confidence
- Single pack requiring only the addition of water
- Easy to apply on overhead surfaces
- Easy to achieve smooth surface finish
- Suitable for structural repairs
- Low VOC
- Can contribute to LEED certification

### PRODUCT INFORMATION

#### Product Declaration

#### Characteristics For Repair Mortar (from PCCS-RM Cl. 5.1 Table 1)

Test Method	Test Description	Age at Test	PCCS-RM Specification (Class 40)	Unicell® 40 Typical Performance
TM1	Compressive Strength	28 days	30–60	48 MPa
TM2	Tensile Strength	7 days	≥ 2.0	3.3 MPa
TM3	Elastic Modulus	28 days	15–25	18 GPa
TM4	Bond Strength	7 days	≥ 2.0	3.0 MPa
TM5	Coutinho Ring	1–28 days	Nil	No Cracking
TM6	Figg Air Permeability	35 days	≥ 200	360 sec

\* All of the above data complies with Product Conformity Certification Scheme.

Packaging	25 kg bag
Shelf Life	6 months from the date of production
Storage Conditions	Stored properly in undamaged and unopened original sealed packaging in dry conditions. Protect from direct sunlight, moisture and frost.
Appearance / Colour	Concrete grey

## TECHNICAL INFORMATION

Compressive Strength	Age at Test	Unicell® 40 Typical Performance	Test Method
	7 days	44 MPa	TM1
28 days	48 MPa	TM1	

  

Tensile Strength in Flexure	Age at Test	Unicell® 40 Typical Performance	Test Method
	7 days	7.0 MPa	BS 6319 : Part 3 : 1983
28 days	9.8 MPa	BS 6319 : Part 3 : 1983	

  

Tensile Strength	Age at Test	Unicell® 40 Typical Performance	Test Method
	7 days	3.3 MPa	TM2
28 days	3.5 MPa	TM2	

  

Tensile Adhesion Strength	Age at Test	Unicell® 40 Typical Performance	Test Method
	7 days	3.0 MPa	TM4
28 days	3.5 MPa	TM4	

  

Water Absorption	Age at Test	Unicell® 40 Typical Performance	Test Method
	28 days	0.0125 ml/m <sup>2</sup> /s at 10 min	BS 1881 : Pt. 208
	28 days	0.0105 ml/m <sup>2</sup> /s at 30 min	BS 1881 : Pt. 208
	28 days	0.0086 ml/m <sup>2</sup> /s at 60 min	BS 1881 : Pt. 208
	28 days	0.0053 ml/m <sup>2</sup> /s at 120 min	BS 1881 : Pt. 208

## APPLICATION INFORMATION

Consumption	Approx. 58 bags/m <sup>3</sup>
Flowability	Approx. 50 % (BS 4551 : Part 1 : 1998 cl.9)

## BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet (MSDS) containing physical, ecological, toxicological and other safety-related data.

### VOC DATA

< 10 g/litre when tested according to USEPA Method 24

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

#### For use as concrete repair

##### Surface Preparation

- All defective concrete should be removed to leave a sound substrate
- Loose rust and scale should be removed from exposed reinforcement
- Cut around the perimeter of the repair area to a minimum depth of 6 mm to avoid feather edges

##### Surface Priming

- Concrete surfaces to be primed must first be thoroughly wetted with clean water
- Mix the primer by the following ratio :  
Unicell® Primer : Cement = 1:1.5 by volume OR 1:2.0 by weight
- Prime the steel reinforcement and allow to become tacky
- Prime the steel reinforcement again and the previously dampened concrete surfaces

### MIXING

Mix the whole bag of Unicell® 40 with 4 to 4.5 litres clean water to even consistency with the aid of a mechanical mixer.

### APPLICATION

- Apply the well mixed Unicell® 40 mortar to the prepared and primed substrate before the primer coat dries
- Application thickness should be between 6–40 mm per layer
- Intermediate layers should be scratched or keyed and primed before the next layer is applied
- Finish the repair to the desired profile using steel trowel or wood float
- Allow the repair area to cure properly and consult with Sika's technical department for curing method in severe conditions
- Minimum cover to reinforcement should be 10 mm

### CLEANING OF TOOLS

Clean all tools and application equipment with clean water immediately after use.

## LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

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#### Product Data Sheet

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## LEGAL NOTES

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 accordance with Sika's recommendations. 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 user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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