BUILDING TRUST

PRODUCT DATA SHEET

Unicell® WF

Prepacked High Build Polymer Modified Waterproof Render

DESCRIPTION

Unicell® WF is a prepacked Vinyl Acetate Copolymer modified mortar requiring only the addition of clean water to produce a mortar suitable for waterproofing, rendering and general concrete repairing. The performance of the product is certified under the Hong Kong Concrete Institute (HKCI) Product Conformity Certification Scheme for Repair Mortars (PCCS-RM) Class S and is suitable for repairs to concrete with a characteristic strength (fcu) of 20 MPa.

USES

- High build waterproof render
- Internal and external rendering
- Structural and general concrete repairs to buildings and bridges etc
- Reinstate damaged concrete and protect reinforcement

CHARACTERISTICS / ADVANTAGES

- High build repairs, overhead 6 mm to 30 mm
- Vertical application 6 mm up to 75 mm
- Pre-packed for control and convenience
- Easy to mix and apply
- Easy to achieve a smooth surface finish
- Waterproof
- Low VOC
- Can contribute to LEED certification

APPROVALS / STANDARDS

WRc - NSF, Test Report No. MAT/LAB 250E, satisfied the criteria set out in BS 6920 : Part : 2000, Clause 7 and the product is suitable for use with hot (up to 30 °C) and cold water.

PRODUCT INFORMATION

Packaging	25 kg bag
Appearance / Colour	Concrete grey
Shelf Life	9 months from the date of production

Storage Conditions	The product must be stored properly in original, unopened and undamaged sealed packaging in cool dry conditions at temperatures between +5 °C to +35 °C, relative humidity < 80%, make sure the space has good ventilation. Protect from direct sunlight. Always refer to packaging and the current Safety Data Sheet for information on safe handling and storage.

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 S fcu 20)	Unicell® WF Typical Performance
TM1	Compressive Strength	28 days	≥ 27	50 MPa

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

Soluble Chloride Ion Content	0.01 % by mass of cement	(CS1 : 1990 : Vol 2 : 21.10.2)

TECHNICAL INFORMATION

Compressive Strength

Age at Test	Unicell® WF Typical Performance	Test Method
7 days	40 MPa	TM1
28 days	50 MPa	TM1

Tensile Strength in Flexure

Age at Test	Unicell® WF Typical Performance	Test Method
28 days	13 MPa	EN 1015 : Part 11 : 1999

Tensile Strength

Age at Test	Unicell® WF Typical Performance	Test Method
7 days	3.0 MPa	TM2
28 days	3.5 MPa	TM2

Shrinkage

Age at Test	Unicell® WF Typical Performance	Test Method
1–28 days	No cracking in 1–28 days	Coutinho Ring Test

Tensile Adhesion Strength

Age at Test	Unicell® WF Typical Performance	Test Method
7 days	2.0 MPa	TM4
28 days	2.5 MPa	TM4

Shear Adhesion

Age at Test	Unicell® WF Typical Performance	Test Method
28 days	40 MPa	BS 6319 : Part 4 : 1984

Water Absorption	Age at Test	Unicell® WF Typical Performance	Test Method
	28 days	0.0237 ml/m²/s @ 10 min	Initial Surface Absorption Test (BS 1881 : Pt : 208)
	28 days	0.0178 ml/m²/s @ 30 min	Initial Surface Absorption Test (BS 1881 : Pt : 208)
	28 days	0.0099 ml/m²/s @ 60 min	Initial Surface Absorption Test (BS 1881 : Pt : 208)
	28 days	0.0059 ml/m²/s @ 120 min	Initial Surface Absorption Test (BS 1881 : Pt : 208)

APPLICATION INFORMATION

Yield	Approx. 58 bags/m³

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 rendering application, remove all laitance and loose material from the concrete surface.
For concrete repair application, all defective concrete should be removed to leave a sound stable substrate for the repair material. Loose rust and scale should be removed from exposed reinforcement. Cut around the perimeter of the repair areas to a minimum depth of 6 mm to avoid feather edges. Use primer on all cut-out areas and exposed steel work.

Surface Priming

- Concrete surfaces to be primed must 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

Unicell® WF mortars should be mixed in a forced action mixer or using a slow speed drill (typically 500 rpm) and paddle.
Place the whole bag of powder in the mixing vessel and pour 3.5–4 litres of clean water in the powder. Mix for two minutes to achieve a homogenous workable mortar.

APPLICATION

Once mixed the mortars should be applied to the prepared and where necessary primed substrate before the primer coats dries. Build up successive layers as required allowing intermediate layers to firm up. Intermediate layers should be scratched or keyed and primed before the next layer is applied. It is important that the mortar is applied to wet/tacky primer. If the primer dries it must be thoroughly scarified and reapplied. Layer thickness is 6 mm up to 30 mm on overhead areas and 6 mm up to 75 mm on vertical surfaces. N.B. It is not always possible to achieve high build application, especially when working over large areas. Application depth is dependent upon the size and profile of the repair area, the consistency of the mortar, and the skill and technique of the applicator. Finish the surfaces to the desired profile using a wood or steel float, trowel, or sponge. To avoid slumping on high build application, the material should be allowed to firm up before final finishing is carried out.

CURING TREATMENT

Allow the area to cure properly and consult Sika®'s technical department for curing method in severe conditions.

CLEANING OF TOOLS

Clean all tools and 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.

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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